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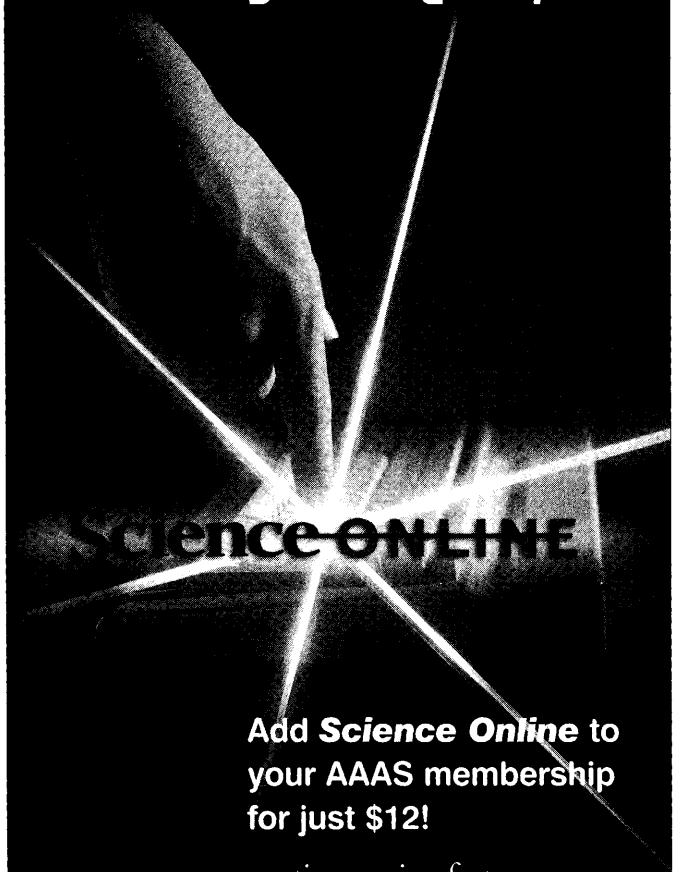

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Science
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Professor Steven V. Ley, FRS is Professor of Organic Chemistry at the University of Cambridge, UK

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LITERATURE

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Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS of any products or materials mentioned is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Reader Service Card and placing it in a mailbox. U.S. postage is free.

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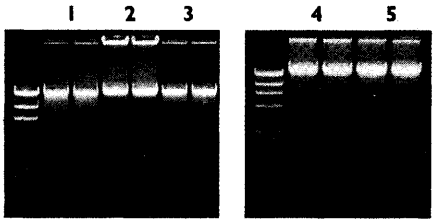

1. rat liver tissue
2. human blood
3. pepper leaves
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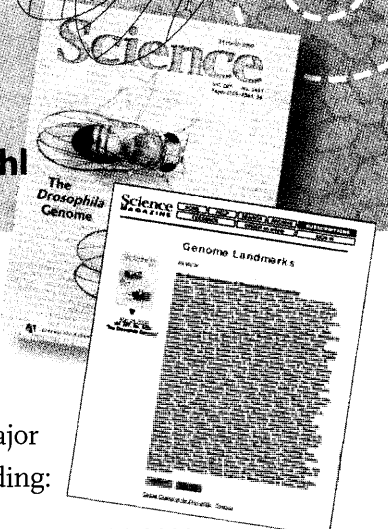
What's all the buzz?

Genome Landmarks

http://www.sciencemag.org/feature/data/genomes/landmark.shl



Find the most important research papers, viewpoints, and news on *Science*'s Genome Landmarks web page. This useful online collection provides a quick and easy way to review major genomic-related research that has been published in *Science*, including:

- The *Drosophila* Genome – The Genome Sequence of *Drosophila melanogaster March 24, 2000*
- The Promise of Comparative Genomics in Mammals *October 15, 1999*
- A Genome Sampler – *Arabidopsis thaliana:* A Model Plant for Genome Analysis *October 23, 1998*
- Building Gene Families – Gene Families: The Taxonomy of Protein Paralogs and Chimeras *October 24, 1997*
- A Gene Map of the Human Genome *October 25, 1996*
- The Minimal Gene Complement of *Mycoplasma genitalium October 20, 1995*

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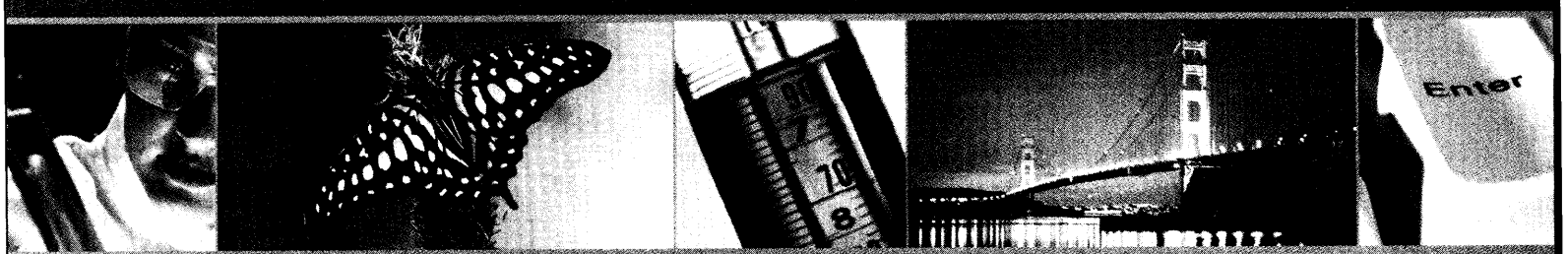
AAAS Annual Meeting & Science Innovation Exhibition

EXPANDED PROGRAM



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2001 Meeting Highlights

- **Plenary Lectures**

Mary L. Good, President, AAAS, Venture Capital Investors and University of Arkansas at Little Rock

Karen Stephenson,* Chair and CEO, NetForm and Anderson School of Management, UCLA

Christiane Nüsslein-Volhard,* Director, Genetics Division, Max-Planck-Institute for Developmental Biology

Robert Rubin,* Former Secretary of the Treasury, Board of Directors, Citicorp

J. Craig Venter, President and CSO, Celera Genomics

David Malin, Photographic Scientist and Astronomer, Anglo Australian Observatory

- **Topical Lectures**

Francis Collins, National Center for Human Genome Research, National Institutes of Health

Brenda Milner,* Montreal Neurological Institute, McGill University

Donald Kennedy, Stanford University and *Science* Magazine

And many others...

*** Invited, not yet confirmed**

- **More than 130 Symposia in Areas Including:**

Science Innovation
Brain, Mind and Behavior
Communicating Science
Doing Science Globally
Education and Public Understanding of Science
Environment, Food and Natural Resources
Life Science and the Science of Life
Looking Beyond Earth
Medicine and Public Health
Science and Society
Science and the Biosphere
Science, Engineering and Public Policy
Technology Impacts on Science and Engineering

- **Two Exciting Seminars**

Nanotechnology Seminar
2001 Genome Seminar

- **Poster Sessions** NEW!

Computers and Engineering
Education
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Physical Sciences
Social Sciences
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- ***Science* Career Fair**
- **Exhibition Hall**

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Office of the Dean

October 2000

The AAAS Annual Meeting is always one of the year's premier scientific events, and we expect the 2001 meeting to be truly exciting. The program is diverse, comprehensive and showcases some of the most innovative, cutting edge work in science and engineering. We are assembling lectures, symposia, seminars and other events that will challenge and inform you on a wide array of emerging issues in science, engineering and technology.

Many remarkable advances in science and engineering hold great promise for the future. With completion of the human genome, attention turns now to the application of this massive body of information. The 2001 Genome Seminar will examine many of the issues, including drug development, proteomics, data management and ethics that this new frontier presents. Equally exciting are the startling potentials that will be presented in a special seminar on nanotechnology. Leading researchers will present the opportunities and challenges of nanotechnology in materials science, medicine, electronics, and computing.

In addition to the outstanding sessions on cutting edge science and engineering, the meeting will provide opportunity to hear in-depth discussions on a wide range of issues that confront us all—from how to best educate our children to the role of science in government to international environmental initiatives.

With meeting co-chairs, Michael Bishop of the University of California at San Francisco and Goéry Delacôte of the Exploratorium, I invite you to be a part of a most exciting and intellectually stimulating week.

I look forward to seeing you in San Francisco!

Sincerely,

Mary L. Good
AAAS President,
University of Arkansas at Little Rock
and Venture Capital Investors, L.L.C.

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Chancellor
University of California, San Francisco

Goéry Delacôte
Executive Director
Exploratorium

Ellen M. Hancock*
Chairman and CEO
Exodus Communications

Plenary Lectures

Thursday, February 15

Student Science Convocation

5:00PM–6:30PM

American Junior Academy of Sciences' Poster Displays

AAAS President's Lecture and Reception

6:30PM–9:00PM

Mary L. Good, President, AAAS, Venture Capital Investors and University of Arkansas at Little Rock

Friday, February 16

Plenary Lecture

6:30PM–7:30PM

Karen Stephenson,* Chair and CEO, NetForm and Anderson School of Management, UCLA

Saturday, February 17

Plenary Lecture

6:30PM–7:30PM

Christiane Nüsslein-Volhard,* Nobel Laureate and Director, Genetics Division, Max-Planck-Institute for Developmental Biology

Sunday, February 18

Plenary Lecture

6:30PM–7:30PM

J. Craig Venter, President and CSO, Celera Genomics

Monday, February 19

Plenary Lecture

8:00AM–9:00AM

Robert Rubin,* Former Secretary of the Treasury and Board of Directors, Citicorp

Plenary Lecture

6:30PM–7:30PM

David Malin, Photographic Scientist and Astronomer, Anglo Australian Observatory

**Invited, not yet confirmed*

Lectures

Topical Lectures

Friday, February 16

■ Morning Lectures (8:00AM–8:45AM)

Daniel Kleppner,* Massachusetts Institute of Technology
Quantum Mechanics

Luis Villarreal, University of California-Irvine
Role of Persisting DNA Viruses and Retroviruses in Host Evolution

■ Special Lecture (12:30PM–1:15PM)

Philippe Busquin, Commission for Research-European Union
Towards a European Research Area Opened to the World

■ Afternoon Lectures (1:30PM–2:15PM)

Gen. Lee Butler,* Second Chance Foundation

Troy Duster, University of California-Berkeley
Human Genetic Technologies and Taxonomies: Old Wine in New Bottles and New Wine in Old Bottles

Judy Kegl, University of Southern Maine
Language Emergence in a Language-Ready Brain

Lisa Randall, Massachusetts Institute of Technology
New Dimensions to Einstein's Gravity

Saturday, February 17

■ Morning Lectures (8:00AM–8:45AM)

Lewis Branscomb, John F. Kennedy School of Government, Harvard University

Charles Groat,* U.S. Geological Survey
Natural Hazard Reduction

Maria Elena Zavala,* California State University-Northridge
Molecular Signaling

■ Afternoon Lectures (2:00PM–2:45PM)

Donald Kennedy, Stanford University and *Science* Magazine

Isaiah Warner, Louisiana State University
Diversity: A Necessary Component of Science

JOHN P. MCGOVERN AWARD LECTURE:
Brenda Milner, Montreal Neurological Institute, McGill University
Memory

Francis Collins, National Center for Human Genome Research, National Institutes of Health
Consequences of the Human Genome Project for Medicine and Society

Sunday, February 18

■ Morning Lectures (8:00AM–8:45AM)

Mark Yim, Xerox PARC
Rethinking Robotics: A Modular Reconfigurable Approach

Alison Gopnik, University of California-Berkeley
The Scientist in the Crib

■ Special Lecture (1:00PM–1:45PM)

Rita Colwell, National Science Foundation

■ Afternoon Lectures (2:00PM–2:45PM)

Jerry Nelson,* University of California-Santa Cruz
Astronomy and Adaptive Optics

Margaret Johnston, National Institute for Allergy and Infectious Diseases, National Institute of Health
Progress in HIV/AIDS Vaccine Development

GEORGE SARTON AWARD LECTURE:
David A. Hollinger, University of California-Berkeley
Why Are Jews Preeminent in Science and Scholarship? The Veblen Thesis of 1919 Reconsidered

Cynthia Kenyon, University of California-San Francisco
The Regulation of C. elegans

Monday, February 19

■ Afternoon Lectures (2:00PM–2:45PM)

Walter Alvarez,* University of California-Berkeley
Extinction of the Dinosaurs

Goéry Delacôte, The Exploratorium
Science Education and the Science Museum

*Invited, not yet confirmed

Science Innovation

Symposia at a Glance

Brain, Mind and Behavior

Fri	AM	Reading & Dyslexia: The Brain
Fri	PM	Addiction Is a Brain Disease
Fri	PM	Statistics in Natural Language
Sat	AM	Origin of Mathematical Thinking
Sat	PM	Many Languages—One Grammar
Sun	AM	The Human Brain After Injury
Sun	AM	Wine & Conversation
Sun	PM	Precursors to Human Communication
Mon	AM	Modality Effects on Language
Mon	PM	Language Learning in Infancy

Communicating Science

Fri	AM	From Juggling & Magic to Combinatorics
Fri	AM	Who Should Write the Story of Science?
Fri	PM	Communicating the Future
Sat	AM	Science & the News Media
Sat	PM	Science Is Fun!
Sun	AM	Science & Conflicts of Interests
Sun	PM	Communicating Sustainability
Mon	AM	Biotechnology Communications
Mon	PM	What Makes a Science Book Become a Best Seller?
Tue	AM	Science Fiction & Science

Doing Science Globally

Fri	AM	Int'l Efforts to Stop Invasive Species
Fri	PM	Science & Health Disparities
Fri	PM	Int'l Efforts to Stop Invasive Species
Sat	AM	Science at the Earth's Poles
Sat	AM	Drug Abuse Research: Latin America
Sat	PM	Science at the Earth's Poles
Sat	PM	Science & Technology in Latin America
Sun	PM	Pollutants Without Borders
Sun	PM	Agr Biotech & the Public Sector
Mon	AM	Globalization of Science
Mon	PM	Global Perspectives on Emerging Research
Mon	PM	Capital, Innovation & the Pacific Rim

Education and Public Understanding of Science

Fri	AM	Science Education as a Subversive Activity?
Fri	PM	Policy for Pre-College Science Education
Sat	AM	Minority Outreach in Science & Math
Sat	PM	Technological Literacy
Sun	AM	Beyond TIMSS: Professional Development
Sun	AM	Making Active Learning Successful
Sun	PM	Journey Beyond TIMSS: New Insights
Sun	PM	"Antievolutionism": What Changed?
Mon	AM	Computerized Adaptive Testing
Mon	AM	Collaboration of Scientists & Museums
Mon	PM	The Literacy Crisis in Deaf Education
Mon	PM	Bringing Space Science to Earth
Mon	PM	Historical Sciences & Science Education
Tue	AM	Genetically Modified Foods

Environment, Food and Natural Resources

Fri	AM	Prospects for Feeding 10 Billion People
Fri	PM	The Livestock Revolution
Sat	AM	Food Safety & the Tech Revolution
Sat	AM	Subglacial Lakes: Planetary Perspective
Sat	PM	Carbon Mgmt, Energy & Environment
Sat	PM	Natural Disasters Along the Pacific Rim
Sun	AM	Pre-European Landscapes of the West
Sun	PM	Advances in Wine & Cheese
Sun	PM	The Aquaculture Paradox
Mon	AM	Archaeology & Sustainable Development
Tue	AM	Science & Water Issues of Northern CA

Life Science and the Science of Life

Fri	AM	Deep-Sea Hydrothermal Vents: Life
Fri	PM	Phylogeny, Evolution & Genomics of Plants
Sat	AM	Understanding Domestication
Sat	PM	The Scientific Role of National Parks
Sun	AM	Biology Into Space: Gravity
Sun	AM	The Future of Plant and Animal Biotech
Sun	PM	Earth System Science: Quiet Revolution
Sun	PM	Life is Complex
Mon	PM	Influences on Biol Community Structure

Looking Beyond Earth

Fri	AM	Assembling the Universe: Star Formation
Sat	AM	From Gas and Gravity to Galaxies
Sat	PM	Rebuilding the Galactic Neighborhood
Sun	AM	A Telescope the Size of Earth
Mon	AM	Infrared Astronomy: Molecules of Life
Mon	PM	Human Exploration of Space
Mon	PM	Planetary Systems: Origin and Evolution

Medicine and Public Health

Fri	AM	Support During Pregnancy & Birth
Fri	AM	Bioactive Lipids & Drug Discovery
Fri	PM	Non-Injectable Insulin—A Reality?
Fri	PM	Stem Cell & Parkinson's Disease
Fri	PM	The Rebirth of Tetracyclines
Sat	AM	Malaria in Africa
Sat	AM	Screening for Inborn Diseases
Sat	PM	The Autoimmune Diseases—Why Women?
Sun	AM	Stress & Health
Sun	PM	How Long Can Humans Live?
Mon	AM	Mathematics & Medicine
Mon	PM	Obesity: Causes & Solutions

Science and Society

Fri	AM	Cultivating the Civic Scientist
Fri	AM	Language & the Criminal Law
Fri	PM	Visual Symbiosis of Art & Math
Fri	PM	Statistics & Human Rights
Sat	AM	Bio-Technology & Bio-Weapons
Sat	PM	Recruiting & Retaining Minorities
Sat	PM	Technology & Cultural Heritage Materials
Sun	AM	Native American Human Remains
Sun	AM	Music & Statistical Models
Sun	PM	Science for the Community
Sun	PM	The Return of 'Collegiality' to Science
Mon	AM	To Pledge or Not to Pledge
Mon	AM	Mathematics in Pricing & Hedging
Mon	PM	The Research Museum

Science and the Biosphere

Fri	AM	Sustainable Coasts: Counting the Costs
Sat	AM	The Scientific Theory of Marine Reserves
Sat	PM	Science & Policy of Marine Reserves
Sun	AM	Extinction Vulnerability
Sun	PM	Humans & High Altitude Environments
Mon	AM	Coral Reefs in Crisis

Science, Engineering and Public Policy

Fri	AM	The Comprehensive Test Ban Treaty
Fri	PM	Arms Control & Proliferation Concerns
Sat	AM	Standards & Rate of Technology Development
Sat	AM	Math of Apportionments
Sat	PM	Math Aspects of Intellectual Property
Sun	PM	Shaping the Genetic Future of Man
Mon	AM	Government's Role in the Commercialization
Mon	AM	Bench Scientists & Science Policy
Mon	PM	Patenting Genes & Business Methods
Tue	AM	Implications of Minimal Genomes

Technology Impacts on Society and Engineering

Sat	PM	Simulations, Complexity & Ethics
Mon	AM	Functional Genomics
Mon	PM	Networking Technologies & Research

Science Innovation

Fri	AM	Matter and Antimatter: Not Quite Opposites
Fri	PM	Accelerating Discovery: Supercomputers
Fri	PM	Coming Revolutions in Particle Physics
Sat	AM	Learning and Plasticity in the Brain
Sat	PM	Signal Transduction
Sun	PM	Mathematics & Visual Cortex
Mon	AM	Managing the Sea of Data
Mon	PM	Quantum Computing & Communication

Seminars

Thur	PM	Nanotechnology Seminar
Fri	AM	Nanotechnology Seminar
Fri	PM	Nanotechnology Seminar
Sat	AM	2001 Genome Seminar
Sat	PM	2001 Genome Seminar
Sun	AM	2001 Genome Seminar
Sun	PM	2001 Genome Seminar

See page 18 for registration form

Seminars

NANOTECHNOLOGY
A New Frontier for Science and Engineering

Thursday, February 15
12:00NOON–5:30PM

Friday, February 16
9:00AM–12:00NOON
2:30PM–5:30PM

Organized by Philip H. Abelson, AAAS, Charles W. Clark, National Institute of Standards and Technology, James Ellenbogen, Mitre Corporation, Paul Alivisatos, University of California-Berkeley and Michael S. Strauss, AAAS

The emerging field of nanotechnology provides new opportunities to transform wide areas of science and engineering. The unique behavior of nanoscale materials enables them to serve as catalysts and to take advantage of giant magnetic resistance they afford. Further, new instrumentation is providing the tools for exploration and manipulation of the nanoscale environment. As a successor to the current technology employed in silicon and other semiconductor devices, nanoscale materials promise a new "computer revolution." Laboratories and research institutes in the U.S. have been increasingly active in studies related to nanotechnology and nanoengineering. However, these face a rapidly increasing global competition. To this end, recent government initiatives provide promise of much-needed funding for this work. This seminar will examine important opportunities presented by nanotechnology for engineering, technology, science and society. It will encompass several areas where this technology promises transforming innovations showcasing the work of leading scientists and engineers in this emerging field.

Speakers include:
Paul Alivisatos, UC-Berkeley
Phaedon Avouris, IBM-Yorktown
Charles Clark, NIST
Harold G. Craighead, Cornell Univ
James Ellenbogen, MITRE
Franz J. Himpsel, Univ of WI
Phil Kuekes and Stan Williams, Hewlett-Packard
Uzi Landman, GA Tech
Neal Lane,* Asst. to President for Sci and Tech
James Meindl, GA Tech
Pierre Petroff, Univ of CA-Santa Barbara
Mara Prentiss,* Harvard Univ
Mark Reed, Yale Univ
Michael L. Roukes, Caltech
Samuel Stupp,* Northwestern Univ
George Whitesides,* Harvard Univ
Ellen Williams, Univ of MD
Bernard Yurke,* Bell Lab, Lucent

* Invited, not yet confirmed

2001 GENOME SEMINAR
Beyond the Human Genome

Saturday, February 17
9:00AM–12:00NOON
3:00PM–6:00PM

Sunday, February 18
9:00AM–12:NOON
3:00PM–6:00PM

Organized by J. Craig Venter, Celera Genomics, Claire Fraser, TIGR and Barbara Jasny, AAAS and *Science*

The 2001 Genome Seminar is cosponsored by AAAS, *Science* Magazine and The Insitute for Genomic Research (TIGR)

The recent sequencing of the human genome, although it represents an enormous landmark in the history of science, is not the end but the beginning of a new era of research. From microarray technology to DNA vaccines to taking the first steps into the new frontier of proteomics—this two-day seminar explores the new kinds of research that will be possible and the new technologies being developed.

Among the topics to be addressed are: whole genome sequencing, comparative genomics regulatory regions, proteomics, microarrays, SNPs, functional genomics, genetic networks, pharmacogenomics, artificial chromosomes, DNA patenting, and genetic discrimination.

Invited speakers include:
Adam Arkin, Stanford Univ
Pat Brown, Stanford Univ Med Cntr/HHMI
Andrew Clark, Celera Genomics
John Doll, U.S. Pat Off
Bernard Dujon, CNRS
Joe Goldstein, Univ of TX SW Med Cntr
Eric Green, NHGRI/NIH
Dennis Hochstrasser, Geneva Univ Hosp
Mike Hunkapiller, Appl Byosyst
Stuart Kim, Stanford Univ Med Cntr
Gavin Macbeath, Harvard Univ
Joe Nadeau, CWR Univ
Greg Petsko, Brandeis Univ
Gerry Rubin, U.C.-Berkeley
Wendell Weber, Univ MI
Hunt Willard, CWR Univ
Barbara Wold, Caltech
Craig Venter, Celera Genomics

Symposia

Brain, Mind and Behavior

Brain Mechanisms of Reading and Dyslexia

Friday, February 16 9:00AM–12:00NOON

Organized by Guinevere Eden, Gtown Univ Med Cntr

Guinevere Eden, Gtown Univ Med Cntr; Julie Fiez, Univ of Pitts; Albert Galaburda, Harvard Med Sch; Frank Wood, Wake Forest Univ Sch of Med; Thomas Zeffiro, Gtown Univ Med Cntr

Addiction Is a Brain Disease: How Drugs Change Your Mind

Friday, February 16 2:30PM–5:30PM

Organized by Alan I. Leshner, NIDA, NIH; Steven E. Hyman, NIMH, NIH

Alan I. Leshner and Roy A. Wise, NIDA, NIH; Charles P. O'Brien, VA Med Cntr; Eric Nestler, Yale Univ Sch of Med; Nora D. Volkow, Brookhaven Natl Lab; Steven E. Hyman, NIMH, NIH

Mathematical Statistics in Natural Language Analysis

Friday, February 16 2:30PM–5:30PM

Organized by Dick Oehrle, Ashford, CT; Lawrence S. Moss, IN Univ

Christopher Manning, Stanford Univ; Mitch Marcus, Univ of PA; Andras Kornai, Belmont Res; Mark Johnson, Brown Univ; Fernando Pereira

The Nature and Origins of Mathematical Thinking

Saturday, February 17 9:00AM–12:00NOON

Organized by Keith Devlin, St Mary's Coll

Keith Devlin, St Mary's Coll; George Lakoff, UC-Berkeley; Robert Osserman, Math Scis Res Inst; Prentice Starkey, UC-Berkeley; Anna Sfard, Univ of Haifa

Many Languages—One Grammar: Optimality and the Mathematical Structure of Human Language

Saturday, February 17 3:00PM–6:00PM

Organized by Paul Smolensky, JHU

Paul Smolensky, JHU; Alan Prince, Rutgers Univ; Robert Frank, Univ of DE; Bruce Tesar, Rutgers Univ; Mark Johnson, Brown Univ

Reprogramming the Human Brain After Injury

Sunday, February 18 9:00AM–12:00NOON

Organized by Sandra B. Chapman and Bert S. Moore, Univ of TX-Dallas

William W. Lytton, Univ of WI; Michael Kilgard, Univ of TX-Dallas; Keith R. Thulborn, Univ of IL-Chicago; Paul R. Sanberg, USFL; Sandra B. Chapman, Univ of TX-Dallas; Annette Sobel, Sandia Natl Labs

Wine and Conversation: The Semantics of Talking About Taste

Sunday, February 18 9:00AM–12:00NOON

Organized by Stephen R. Anderson, Yale Univ

Stephen R. Anderson, Yale Univ; Adrienne Lehrer, Univ of AZ; Ann Noble, UC-Davis; Linda M. Bartoshuk, Yale Univ Sch of Med

Evaluating Precursor Systems for Human Language in Apes and Children

Sunday, February 18 3:00PM–6:00PM

Organized by Merrill Garrett, Univ of AZ; Paul Bloom, Yale Univ

Ray Jackendoff, Brandeis Univ; Paul Bloom, Yale Univ; Dare Baldwin, Univ of OR; Claudia Uller,* Rutgers Univ; Daniel Povinelli, Univ of SW LA

Signs and Sounds: Modality Effects on the Architecture of Language

Monday, February 19 9:30AM–12:30PM

Organized by Diane Brentari, Purdue Univ

Richard P. Meier, Univ of TX-Austin; Diane Lillo-Martin, Univ of CT; Karen Emmorey, Salk Inst; Samuel Supalla, Univ of AZ; Diane Brentari, Purdue Univ

Tools Human Infants Might Use to Learn Language

Monday, February 19 4:30PM–6:00PM

Organized by Gary F. Marcus, NYU

Jenny Saffran, Univ of WI; Michael Brent,* Wash Univ-St. Louis; Rebecca Gomez,* JHU; Gary F. Marcus, NYU

Communicating Science

From Juggling and Magic to Combinatorics

Friday, February 16 9:00AM–12:00NOON

Organized by Joe Buhler, Math Scis Res Inst; Ronald L. Graham, UCSD

Joe Buhler, Math Scis Res Inst; Ronald L. Graham, UCSD; Persi Diaconis and Thomas Cover,* Stanford Univ

Who Should Write the Story of Science?

Friday, February 16 9:00AM–12:00NOON

Organized by Jane Maienschein and James Hathaway, AZ St Univ

Donald Johanson, AZ St Univ; Jonathan Weiner, Dolystown, PA ; Robert Lee Hotz, LA Times; Richard Borchelt, DOE; Sharon Dunwoody, Univ of WI

Communicating the Future: A Research Agenda for Understanding Public Communication of Science and Technology

Friday, February 16 2:30PM–5:30PM

Organized by Richard Borchelt, DOE; Debbie Treise, Univ of FL

Kathy Rowan, Geo Mason Univ; Michael Weigold, Univ of FL; Susanna Priest, TX A&M Univ; Sharon Dunwoody, Univ of WI; Gail Porter, NIST; Robert Logan, MO Sch of Jour

Science and the News Media

Saturday, February 17 9:00AM–12:00NOON

Organized by Stephen P. Maran, NASA, GSFC; James Trefil, Geo Mason Univ

Deborah Blum, Univ of WI; John Blackstone, CBS News; Glennda Chui, San Jose Merc News; Keay Davidson, SF Herald Examiner; Charles Petit, U.S. News & Wrld Rep

Science Is Fun!

Saturday, February 17 3:00PM–6:00PM

Organized by Bassam Z. Shakhashiri, Univ of WI

Bassam Z. Shakhashiri, Univ of WI; Denice Denton, Univ of WA; Frank Drake, SETI Inst; Bassam Z. Shakhashiri, Univ of WI; Linda Shore, Paul Doherty, Modesto Tamez and Karen Kalumuck, Exploratorium

Scientific Integrity: What to Do About Conflicts of Interests

Sunday, February 18 8:45AM–10:15AM

Organized by Ronald Collins, Cntr for Sci in the Pub Int

Mildred K. Cho, Stanford Univ; William Colglazier, NAS; Kenneth J. Rothman, Epidemiol Res Inst; Barbara M. McGarey,* NIH

Communicating Sustainability: Media Coverage of the Issues and the Science

Sunday, February 18 3:00PM–6:00PM

Organized by JoAnn M. Valenti, Brigham Young Univ; Carol L. Rogers, Univ of MD-Coll Park

Tammy L. Lewis, Denison Univ; Kai N. Lee, Williams Coll; Ray C. Anderson, Interface, Inc.; Alex Barnum, The SF Chronicle; Peter Thomson, NPR's "Living on Earth"

Biotechnology Communications: Fortune or Fiasco?

Monday, February 19 9:30AM–12:30PM

Organized by Joyce A. Nettleton, Elmhurst, IL

Joyce A. Nettleton, Elmhurst, IL; Susanne L. Huttner, UC-Berkeley; Jim Morelli, CNN Headline News; Edward Groth, Consumers Union; Terry L. Medley, DuPont/Pioneer Hi-Bred

See page 18 for registration form

What Makes a Science Book Become a Best Seller?

Monday, February 19 3:00PM–6:00PM

Organized by Julie Ann Miller, Sci News

Bruce V. Lewenstein, Cornell Univ; Laura van Dam, Hougton Mifflin Co.; Jonathan Weiner, Dolystown, PA; Timothy Ferris,* UC-Berkeley; Phil Morrison,* MIT

Cycles of Influence: The Role of Science Fiction in Science and Science Policy

Tuesday, February 20 8:00AM–11:00AM

Organized by Kate Schlegel, Newman, GA; Sanyin Siang, AAAS

Kate Schlegel, Newman, GA; Gregory Benford, UCI; W. French Anderson, USC

Doing Science Globally

Stopping the Invasions: International Scientific Efforts to Stop Invasive Species

Friday, February 16 9:00AM–12:00NOON, 2:30PM–5:30PM

Organized by Elizabeth E. Lyons, NSF; Alan H. Bornbusch, AAAS

AM — Scott Miller, Smith Inst; Helida Oyieke, Natl Mus of Kenya; Harold A. Mooney, Stanford Univ; Jamie K. Reaser, State Dept

PM — Chester Moore, CDC; Keith Hayes, Cntr for Res on Intro Mar Pests; Yousoof Mungroo,* Min of Ag, Mauritus; David Lodge, Univ of Notre Dame

Scientific Challenges in Addressing Health Disparities

Friday, February 16 2:15PM–3:45PM

Organized by Nancy E. Adler, UCSF

Richard G. Feachem, Paula A. Braveman and Nancy E. Adler, UCSF

A Scientific Frontier—Science at the Earth's Poles

Saturday, February 17 9:00AM–12:00NOON, 3:00PM–6:00PM

Organized by Rolf M. Sinclair, Chevy Chase, MD

AM — Karl Erb, NSF; William W. Fitzhugh, Natl Mus of Nat Hist, Smith Inst; John Priscu, MT St Univ; Robin Bell, Columbia Univ

PM — John Carlstrom, Univ of Chicago; Donald Perovich, USACE.; Richard B. Alley, Penn St; Dennis Peacock, NSF

Developing a Drug Abuse Research Infrastructure in Latin America

Saturday, February 17 9:00AM–12:00NOON

Organized by Patricia Needle, NIDA, NIH; Marina Ratchford, AAAS

Alan I. Leshner and Ivan D. Montoya, NIDA, NIH; Flavio Pechansky, Fed St Univ of Rio Grande du Sul; Maria Elena Medina-Mora, Mex Inst of Psych; Diana Rossi, INTERCAMBIOS

Science and Technology in Latin America: Financing and International Cooperation

Saturday, February 17 3:00PM–6:00PM

Organized by Marina Ratchford, AAAS; Mahabir Gupta, Interciencia Assn

Mario Albornoz, Natl Univ of Quilmes; Ana Maria Cetto, Natl Auton Univ, Interciencia Assn; Harold Stolberg,* NSF; Jose Anthony Cordero,* Ibero-Amer Prog for Sci & Technol Dev; Claudio de Moura Castro,* IDB

Pollutants Without Borders: Tracking the Long-Range Impact of Persistent Chemicals

Sunday, February 18 3:00PM–6:00PM

Organized by Randy Maddalena, LBNL; Donald Mackay, Trent Univ; Thomas E. McKone, UC-Berkeley

Kevin C. Jones, Lancaster Univ; Donald Mackay, Trent Univ; Thomas E. McKone, UC-Berkeley; John C. Giesy, MSU; James K. Hammitt, Harvard Sch of Pub Hlth

The Public Sector's Role in Agricultural Biotechnology

Sunday, February 18 3:00PM–6:00PM

Organized by Robert E. Evenson, Yale Univ; Douglas Gollin, Williams Coll

Douglas Gollin, Williams Coll; John Barton,* Stanford Univ; Gordon Rausser,* and Brian Wright,* UC-Berkeley; Lydia Zepeda,* Univ of WI

Globalization of Science: Who Benefits? Who Pays?

Monday, February 19 9:30AM–12:30PM

Organized by Irving A. Lerch, APS

F. Sherwood Rowland, NAS; Daljit Singh, Emb of India; Jorge Litvak, Emb of Chile; Kees Planqué,* Royal Neth Emb; Sang-Seon Kim, Emb of the Republic of Korea; Liu Zhaodong,* Emb of the People's Republic of China

Emerging Research Universities: Strategies for Achieving Research Competitiveness

Monday, February 19 3:00PM–6:00PM

Organized by J. Scott Hauger, AAAS; Boris Segerstahl, Thule Inst

Joan F. Lorden, Univ of AL-Birmingham; Boris Segerstahl, Thule Inst; Jack Lightstone, Concordia Univ; T. Norman Palmer, James Cook Univ; Frank Calzonetti, WV Univ

Venture Capital and Innovation Around the Pacific Rim: The Next Tsunami?

Monday, February 19 3:00PM–6:00PM

Organized by Michael Snyder and Suteera Nagavajara, AAAS

Bowman Cutter,* E. M. Warburg, Pincus & Co; George Hara, Alliance For; Masayoshi Son,* Softbank Corp.; Lip-Bu Tan, Walden Intl Invest Grp; Jack Fensterstock, China Capital Corp; AnnaLee Saxenian, UC-Berkeley

Education and Public Understanding of Science

When Science Teaching Is Seen as a Subversive Activity

Friday, February 16 9:00AM–12:00NOON

Organized by Noretta Koertge, IN Univ

Pervez Hoodbhoy, Quaid-e-Azam Univ; Meera Nanda, Rensselaer Polytech Inst; Adrian Melott, Univ of KS; Glynn Custred, CA St Univ

Policy for Pre-College Science Education: Who Makes It?

Friday, February 16 2:30PM–5:30PM

Organized by Ann C. Howe, NCSU; Julia Clark, NSF

James D. Wilson, Comm on Sci, US House of Rep; Julia Clark, NSF; Audrey B. Champagne, SUNY-Albany; Rebecca Garland, NC St Bd of Ed; John R. Staver,* KS St Univ; Rita Peterson, UCI

Science and Mathematics Education: California Since the End of Affirmative Action

Saturday, February 17 9:00AM–12:00NOON

Organized by Neal Finkelstein, UC; Juliet P. Shaffer, UC-Berkeley

Rodney Ogawa, UC-Riverside; Michael Aldaco,* UC-Oakland; Trish Stoddardt, UCSC; Moises Torres, UC-Oakland; Denise Quigley, UCLA

* Invited, not yet confirmed

Career Development Workshops

Providing valuable tools for any stage of your career!

Beyond the Bench-Career Options for Scientists

Saturday, February 17 9:00AM–12:00NOON

Organized by Jonghui K. Lee, University of California-Berkeley

Feeding Your Network to Feed You!

Saturday, February 17 3:00PM–4:30PM

Organized by Jaleh Daie, Women in Science and Technology Alliance

Alternative Career Paths: AAAS Fellowship Programs in Science Policy and the Mass Media

Sunday, February 18 9:00AM–12:00NOON

Organized by Claudia J. Sturges, AAAS

Beyond the Bench—Career Options for Scientists

Monday, February 19 9:30AM–12:30PM

Organized by Jonghui K. Lee, University of California-Berkeley

Managing an Effective Job Search

Monday, February 19 1:00PM–4:00PM

Organized by Robert Rich, American Chemical Society

Feeding Your Network to Feed You!

Monday, February 19 2:00PM–3:30PM

Organized by Jaleh Daie, Women in Science and Technology Alliance

Interviewing Skills for Scientists

Monday, February 19 4:00PM–5:15PM

Organized by Emily L. Klotz, *Science's* Next Wave

What Is Technological Literacy, and Why Does It Matter?

Saturday, February 17 2:45PM–4:15PM

Organized by Greg Pearson, NAE

A. Thomas Young, NAE/NRC; William A. Wulf, NAE; William E. Dugger,, Intl Technol Ed Assn

Journey Beyond TIMSS: Rethinking Professional Development

Sunday, February 18 9:00AM–12:00NOON

Organized by Patricia Wang-Iverson, Res for Better Schs

Catherine Lewis, Mills Coll; Makoto Yoshida, Columbia Univ; Lynn Liptak and Magnolia Montilla,* Paterson Sch #2; Liping Ma, Carnegie Fdn for the Adv of Teaching; James W. Stigler, UCLA

Making Active Learning Courses in Science and Mathematics Successful

Sunday, February 18 9:00AM–12:00NOON

Organized by Laurie Fathe, Occidental Coll

Laurie Fathe, Occidental Coll; Donald Paulson, CA St Univ-LA; Dan B. Walker, CA St Univ-San Jose; Lars Kjeseth, Occidental Coll

Journey Beyond TIMSS: Additional Insight from the TIMSS-R Data

Sunday, February 18 2:45PM–4:15PM

Organized by Patricia Wang-Iverson, Res for Better Schs

William H. Schmidt, MSU; Ina Mullis, Boston Coll; Patrick Gonzales, U.S. Depart of Ed

Participants in Antievolutionism: What Is Changed/Unchanged 20 Years After McLean v. Arkansas?

Sunday, February 18 3:00PM–6:00PM

Organized by Eugenie C. Scott, Natl Cntr for Sci Ed, Inc.

Michael Ruse, FL St Univ; Harold J. Morowitz, Geo Mason Univ; G. Brent Dalrymple, Corvallis, OR ; Francisco J. Ayala, UCI; Stephen Jay Gould, Harvard Univ; Eugenie C. Scott, Natl Cntr for Sci Ed, Inc.; Edward J. Larson, Univ of GA; Ronald L. Numbers, Univ of WI

Computerized Adaptive Testing in the New Millennium: Is It All Locked Up?

Monday, February 19 9:15AM–10:45AM

Organized by Snehalata Huzurbazar, Univ of WY

Daniel O. Segall, Def Manpower; Walter D. Way, Edal Testing Serv; Marcia C. Linn, UC-Berkeley

Out of the Lab: Collaborations Between Scientists and Museums

Monday, February 19 9:30AM–12:30PM

Organized by Robert Semper and Mary K. Miller, Exploratorium

Alison Gopnik, UC-Berkeley; Charles Carlson, Exploratorium; Fred Wilt, UC-Berkeley; Carol Christian, STSI; Ned Kahn, Ned Kahn Studios; Thomas Humphrey, Exploratorium

The Literacy Crisis in Deaf Education: Building Bilingual Bridges

Monday, February 19 2:45PM–4:15PM

Organized by Cecile McKee, Univ of AZ

Cecile McKee, Univ of AZ; Laura Blackburn, No IL Univ; Samuel Supalla, Univ of AZ

Bringing Space Science Down to Earth: Developments in Education and Outreach

Monday, February 19 3:00PM–6:00PM

Organized by Gregory R. Schultz, UC-Berkeley; Harry L. Shipman, Univ of DE

Andrew Fraknoi, Astron Soc of the Pacific; George D. Nelson, AAAS; Harry L. Shipman, Univ of DE; Isabel Hawkins, UC-Berkeley; Michael D. Reynolds, Chabot Spce & Sci Cntr

The Historical Sciences, Religion and Science Education

Monday, February 19 3:00PM–6:00PM

Organized by Joel R. Primack, UCSC; James B. Miller, AAAS

John O'Hara,* Univ of NC-Greensboro; Elliott Sober, Univ of WI; Joel R. Primack, UCSC; Donald Johanson, AZ St Univ; James B. Miller, AAAS

Genetically Modified Foods: Science Controversy for All

Tuesday, February 20 8:00AM–11:00AM

Organized by Marcia C. Linn, UC-Berkeley; Sheila Jasanoff, Harvard Univ

Ingo Potrykus, Swiss Fed Inst of Technol; Fred L. Gould, NCSU; Peggy G. Lemaux, Marcia C. Linn, Sherry Seethaler and James D. Slotta, UC-Berkeley; Philip Bell, Univ of WA; Sheila Jasanoff, Harvard Univ; Pamela J. Hines, AAAS & Science

Environment, Food and Natural Resources

World's Major Food Crops: Prospects for Feeding 10 Billion People

Friday, February 16 9:00AM–12:00NOON

Organized by Carroll P. Vance, USDA/ARS, Univ of MN

Carroll P. Vance, USDA/ARS, Univ of MN; Ronald L. Phillips, Univ of MN; Gurdev Khush, IRRI; P. Stephen Baenziger, Univ of NE; Randy Shoemaker, USDA/ARS, IA St Univ

The Livestock Revolution—Implications for Human Nutrition, Resource Use and Environment

Friday, February 16 2:30PM–5:30PM

Organized by G. Eric Bradford, UC-Davis; Christopher Delgado, IFPRI

Christopher Delgado, IFPRI; Charlotte Neumann, UCLA; Claire Narrod, Offc of Risk Assess & Cost-Benefit Anal; G. Eric Bradford, UC-Davis; Cornelis de Haan, Wld Bank

* Invited, not yet confirmed

Symposia

Food Safety and the Technology Revolution

Saturday, February 17 9:00AM–12:00NOON

Organized by Stuart L. Cooper, IL Inst of Technol; Gail H. Marcus, DOE; Charles Sizer, IL Inst of Technol

Robert Buchanan, FDA, Michael Doyle, Univ of GA; Charles Sizer, IL Inst of Technol; Lester M. Crawford, Gtown Univ; Christine M. Bruhn, UC-Davis; John Cherry, USDA

Subglacial Lakes: A Planetary Perspective

Saturday, February 17 9:00AM–12:00NOON

Organized by Amir Mokhtari Fard, Univ of Manitoba; Andrew J. Russell, Keele Univ

Amir Mokhtari Fard, Univ of Manitoba; Andrew J. Russell, Keele Univ; Jeffrey J. Plaut, JPL; Martin J. Siegert, Bristol Glaciology Cntr; Helgi Bjornsson, Univ of Iceland; Mary G. Chapman, USGS

Carbon Management: Energy and Environmental Solutions for the 21st Century

Saturday, February 17 3:00PM–6:00PM

Organized by Michael P. Farrell and Thomas J. Wilbanks, ORNL

Richard L. Lawson,* NMA; Mark D. Levine,* LBNL; John P. Holdren,* Harvard Univ; Gary K. Jacobs,* ORNL; Michael P. Farrell,* ORNL

Pacific Rim Natural Disasters-Social, Economic and Political Impacts

Saturday, February 17 3:00PM–6:00PM

Organized by W.G. Ernst, Stanford Univ; Richard L. Bernknopf, USGS

W.G. Ernst, Stanford Univ; Alcira Kreimer, Wld Bank; Daniel Sarewitz, Columbia Univ; Stephen Guptill, USGS; Anne Kiremidjian, Stanford Univ; Patricia Grossi, Howard Kunreuther, Univ of PA; Richard L. Bernknopf, USGS

Pre-European Landscapes of the American West: Pristine or Anthropogenic?

Sunday, February 18 9:00AM–12:00NOON

Organized by Kent Mathewson, LA St Univ

Thomas Vale, Univ of WI; Jacob Bendix, Syracuse Univ; Albert J. Parker and Kathleen C. Parker, Univ of GA; Cathy Whitlock, Univ of OR; Kat Anderson, UC-Davis

Advances in Wine and Cheese

Sunday, February 18 3:00PM–6:00PM

Organized by Albert H. Teich, AAAS; Jill H. Pace, Amer Coll of Real Est Lwyrs

Carole P. Meredith and Moshe Rosenberg, UC-Davis; Harold McGee, Freelance Writer

The Aquaculture Paradox: Does Fish Farming Supplement or Deplete World Fisheries?

Sunday, February 18 3:00PM–6:00PM

Organized by Roz Naylor, Stanford Univ; Rebecca Goldburg, EDF; Meryl Williams, ICLARM

Meryl Williams, ICLARM; Albert Tacon, Oceanic Inst; Daniel Pauly, UBC; Nils Kautsky, Stockholm Univ; Jurgenne Primavera, SEAFDEC; Jason W. Clay, Wld Wildlife Fnd

Archaeology and Sustainable Development

Monday, February 19 9:30AM–12:30PM

Organized by Donald L. Hardesty, Univ of NV-Reno

Robert L. Kelly,* Univ of WY; William F. Keegan,* Univ of FL; Vernon L. Scarborough,* Univ of Cin; Christopher Scarre,* Cambridge Univ; Donald L. Hardesty, Univ of NV-Reno

Role of Science in the Water Issues of Northern California

Tuesday, February 20 8:00AM–11:00AM

Organized by Samuel N. Luoma and Janet K. Thompson, USGS

Charles Goldman, UC-Davis; David L. Freyberg, Stanford Univ; James E. Cloern and Samuel N. Luoma, USGS; Terry Young, EDF; Donald R. Strong, UC

Life Science and the Science of Life

Deep-Sea Hydrothermal Vents: Life at the Extreme

Friday, February 16 9:00AM–12:00NOON

Organized by Richard A. Lutz, Rutgers Univ

Carl O. Wirsen, WHOI; Cindy Lee VanDover, Coll of William & Mary; Stephen Craig Cary and George Luther, Univ of DE; Richard A. Lutz, Rutgers Univ

Deep Green: Phylogeny, Evolution and Genomics of the Green Plants

Friday, February 16 2:30PM–5:30PM

Organized by Brent D. Mishler, UC-Berkeley

Brent D. Mishler, UC-Berkeley; Russell L. Chapman, LA St Univ; Melvin J. Oliver, USDA-ARS; Pamela Soltis,* Wasd St Univ; Elizabeth Zimmer, Smith Inst, Mus of Nat Hist; Michael Sanderson, UC-Davis

Understanding Domestication: New Biological and Archaeological Approaches

Saturday, February 17 9:00AM–12:00NOON

Organized by Melinda Zeder and Bruce D. Smith, Smith Inst

Bruce D. Smith, Smith Inst; John F. Doebley, Univ of WI; Melinda Zeder, Smith Inst; Daniel Bradley, Trinity Coll-Dublin; Frank Hole, Yale Univ; Paul Gepts, UC-Davis

Yosemite to Edison's Lab: The Scientific Role of National Parks

Saturday, February 17 3:00PM–6:00PM

Organized by Gary E. Machlis, NPS

Gary E. Machlis, NPS; Mark Schaefer, TNC; Shirley M. Malcom, AAAS; Andrew Suarez, UCSD; Mike Soukup, NPS

Biology Into Space: A Matter of Some Gravity

Sunday, February 18 9:00AM–12:00NOON

Organized by Nina Strömgren Allen, NCSU; Christopher Brown, Dynamac Corp & NCSU

Donald E. Ingber, Harvard Med Sch; Patrick Masson, Univ of WI; Wendy Boss, NCSU; Robert Ferl, Univ of FL; Raymond Wheeler, NASA

Will Social and Cultural Issues Derail Advances in Biotechnology for Agriculture?

Sunday, February 18 9:00AM–12:00NOON

Organized by Nicole Ballenger and Katherine R. Smith, ERS, USDA

Robert Goodman, Univ of WI; Katherine R. Smith, ERS, USDA; Lori B. Andrews, IL Inst of Technol; Gary L. Comstock, IA St Univ; Steven B. Katz, NCSU; Caird Rexroad, USDA

Earth System Science: The Quiet Revolution

Sunday, February 18 3:00PM–6:00PM

Organized by Susannah Eliott, Royal Swed Acad of Scis

Lonnie Thompson, OH St. Univ, Emilio Moran, IN Univ, Roger Pielke, CO St. Univ, Will Steffen, Royal Swed Acad of Scis

Life Is Complex

Sunday, February 18 4:30PM–6:00PM

Organized by David M. Robinson, NIH

David M. Robinson,* NIH; Ary L. Goldberger,* Harvard Med Sch; Leon M. Glass,* McGill Univ; Mark A. Peifer,* Univ of NC-Chapel Hill

External and Internal Influences on Community Structure: A New Paradigm

Monday, February 19 3:00PM–6:00PM

Organized by Alan Hastings, UC-Davis

Alan Hastings and Robert Holt, UC-Davis; Jane Lubchenco, OR St Univ; Mary E. Power, UC-Berkeley; Gary Huxel, UC-Davis

Looking Beyond Earth

Assembling the Universe: The History of Star Formation

Friday, February 16 9:00AM–12:00NOON

Organized by Virginia Trimble, UCI, Univ of MD; Martin Harwit, Cornell Univ

Rebecca Bernstein, Carnegie Observ; Douglas Richstone, Univ of MI-Ann Arbor; Lisa Storrie-Lombardi, IPAC, Caltech; Charles Steidel, Caltech; David Sanders, Univ of HI; Michael Bolte, UCSC

From Gas and Gravity to Galaxies: A Cosmic Conundrum

Saturday, February 17 9:00AM–12:00NOON

Organized by Richard F. Green, NOAO

Arjun Dey, NOAO; David Koo, UCSC; Richard F. Green, NOAO; Puragra Guhathakurta and Garth Illingworth, UCSC

Rebuilding the Galactic Neighborhood: Galaxy Collisions in Local Groups

Saturday, February 17 3:00PM–6:00PM

Organized by Curtis J. Struck and Lee Anne Willson, IA St Univ

Eva Grebel, Max Plank Inst for Astron; Douglas N. C. Lin, UCSC; Min Su Yun, NRAO; Ann Zabludoff, Univ of AZ; Curtis J. Struck, IA St Univ

A Telescope the Size of Earth: Global Astronomy Networks

Sunday, February 18 9:00AM–12:00NOON

Organized by Lee Anne Willson and Steven D. Kawaler, IA St Univ

Sidney Wolff, NOAO; Robert Craig Walker, NRAO; John W. Leibacher, Natl Solar Observ; Steven D. Kawaler, IA St Univ; Janet A. Mattei, Amer Assn of Variable Star Observers; Joe Patterson, Columbia Univ

Infrared Astronomy: In Search of the Molecules of Life

Monday, February 19 9:30AM–12:30PM

Organized by Martin Harwit, Cornell Univ; Lee Anne Willson, IA St Univ

Martin Harwit, Cornell Univ; Martin Kessler, Eur Spce Agcy; Thijs de Graauw, SRON Lab for Spce Res; Gary J. Melnick and Edwin A. Bergin, Smiths-Harvard CFA; Martin Harwit, Cornell Univ

Planetary Systems: Origin and Evolution

Monday, February 19 2:45PM–4:15PM

Organized by John Percy, Univ of Toronto

Anneila I. Sargent, Caltech; Geoffrey W. Marcy, UC-Berkeley; Norman W. Murray, CITA/Univ of Toronto

Human Exploration of Space

Monday, February 19 4:30PM–6:00PM

Organized by Kenneth A. Souza, NASA/ARC; Lauren E. Fletcher, Lockheed Martin Spce Op Co

John B. Charles, NASA/JSC; Laurence Young, MIT; Christopher P. McKay and John W. Hines, NASA/ARC

Medicine and Public Health

Consequences of Differential Support During Pregnancy and Birth

Friday, February 16 9:00AM–12:00NOON

Organized by L. S. Tighe, USFL

Charles Mahan, USFL; Judith Rooks, Portland, OR; David Olds, Univ of CO Hlth Scis; John H. Kennell, CWR Univ Sch of Med

Heads and Tails of Bioactive Lipids: Targets for Drug Discovery

Friday, February 16 9:00AM–12:00NOON

Organized by Edward J. Goetzl, UC Med Cntr

William L. Smith, MSU; Jillian Evans, Merck-Frost Can; Charles N. Serhan, Harvard Med Sch; Stephen M. Prescott, Univ of UT; Edward J. Goetzl, UC Med Cntr

The Non-Antimicrobial Properties of Tetracyclines: New Therapeutic Uses

Friday, February 16 2:15PM–3:45PM

Organized by Barry R. Rifkin, SUNY, Stony Brook

Lorne M. Golub and Maria Emanuel Ryan, SUNY-Stony Brook; Bruce Dezube, Beth Israel Deaconess Med Cntr

Non-Injectable Insulin Delivery—How Far Is It from Reality?

Friday, February 16 2:30PM–5:30PM

Organized by Vincent H. L. Lee, USC; Sung Wan Kim, Univ of UT

Vincent H. L. Lee, USC; John Patton, Inhale Ther Syst; Christopher H. Price, Nobex Corp; Robert Kotin, NHLBI, NIH; Sung Wan Kim, Univ of UT; Janet Tamada, Cygnus Inc.

Stem Cell Biology and Parkinson's Disease

Friday, February 16 4:00PM–5:30PM

Organized by Ron McKay, NIH

Ron McKay, NIH; O. Isacson, Harvard Univ; J. Langston, Parkinson's Inst; J. Martin, Shea & Gardner, Inc.

Malaria in Africa: Emerging Prevention and Control Challenges

Saturday, February 17 9:00AM–12:00NOON

Organized by John Schoneboom, AAAS

Thomas C. Tchinda,* WHO; Dave le Sueur,* NRC; Y. T. Touré, Ecole Natle Supérieure de Méd et de Pharm; Wilbur Milhous,* Walter Reed Army Inst of Res; Gerald Keusch, Fogarty Intl Cntr, NIH

Screening for Inborn Diseases: Trouble in the Postgenome Days

Saturday, February 17 9:00AM–12:00NOON

Organized by Steven E. Kern, Univ of UT

Edward R.B. McCabe,* UCLA; Edward J. Lammer,* Children's Hosp Oakland; Dallas Mize,* Tyler for Life Fdn; Norman Waitzman, Univ of UT; Philip Lee,* Inst of Hlth Pol

The Autoimmune Diseases—Why Women?

Saturday, February 17 3:00PM–6:00PM

Organized by Noel R. Rose, JHU, WHO

Noel R. Rose, JHU, WHO; J. Lee Nelson, JHU Sch of Hyg & Pub Hlth; Denise Faustman, MGH & Harvard Univ; Sara Walker, Truman Mem Vet Hosp

Stress and Health: Biology, Behavior and the Social Environment

Sunday, February 18 9:00AM–12:00NOON

Organized by Bruce S. McEwen, Rockefeller Univ

Bruce S. McEwen, Rockefeller Univ; Michael J. Meaney, Douglas Hosp Res Cntr; Robert Sapolsky, Stanford Univ; Ichiro Kawachi, Harvard Univ; Nancy E. Adler, UCSF

How Long Can Humans Live?

Sunday, February 18 3:00PM–6:00PM

Organized by S. Jay Olshansky, Univ of Chicago; Charles Nam, FL St Univ

Leonard Hayflick, UCSF; George M. Martin, UW; Eugenia Wang, Univ of Louisville; Bruce Carnes and S. Jay Olshansky, Univ of Chicago; Ronald Lee, UC-Berkeley; James Vaupel, Odennse Univ, Den

Applications of Mathematics to Problems in Medicine

Monday, February 19 9:30AM–12:30PM

Organized by Panos M. Pardalos, Cntr for Appl Optimization

Leon D. Lasemidis,* Univ of FL; Anand Rangarajan,* Yale Univ; C. A. Floudas,* Princeton Univ; Eva K. Lee,* GA Tech; Michael C. Ferris,* Univ of WI

* Invited, not yet confirmed

See page 18 for registration form

Symposia

Obesity: Multiple Causes Needing Interdisciplinary Solutions

Monday, February 19 3:00PM–6:00PM

Organized by Sarah F. Leibowitz, Rockefeller Univ

Sarah F. Leibowitz, Rockefeller Univ; Roger Cone, OR Hlth Sci Univ; Jeffrey Friedman, Rockefeller Univ; Joel K. Elmquist, Harvard Med Sch; Greg Barsh, Beckman Cntr

Science and Society

Cultivating the Civic Scientist

Friday, February 16 9:00AM–12:00NOON

Organized by Deborah L. Illman, Univ of WA; Carol L. Rogers, Univ of MD-Coll Park

M. R. C. Greenwood, UCSC; Barry D. Gold, NBS; Jitendra Khanna,* Wld Bank; Glennda Chui, San Jose Merc News; Charles Petit, U.S. News & Wrld Rep; Mary-Claire King, Univ of WA; Michael Riordan, Stanford Univ

Language and the Criminal Law

Friday, February 16 9:00AM–12:00NOON

Organized by Peter Tiersma, Loyola Law Sch

Janet Ainsworth, Seattle Univ Sch of Law; Roger Shuy, Gtown Univ; Lawrence Solan, Brooklyn Law Sch; Peter Tiersma and Laurie Levenson, Loyola Law Sch

Beauty and the Beast: Visual Symbiosis of Art and Mathematics

Friday, February 16 2:30PM–5:30PM

Organized by Michael Field, Univ of Houston

Carlo Sequin, UC-Berkeley; Brent Collins, Gower, MO; George Hart, Northport, NY; Michael Field, Univ of Houston; Nat Friedman, SUNY-Albany

Challenges in the Application of Statistical Science to Human Rights in the 21st Century

Friday, February 16 2:30PM–5:30PM

Organized by Herbert Spirer, Univ of CT

Patrick Ball, AAAS; Kate Raworth, UNHDRO; David S. Salsburg, Pfizer, Inc.; Eric Stover, UC-Berkeley; Fritz Scheuren, Urban Inst; Herbert Spirer, Univ of CT

Bio-Technology and Bio-Weapons: Weapon of the 21st Century?

Saturday, February 17 9:00AM–12:00NOON

Organized by Elizabeth J. Kirk, AAAS; Frank E. Young, Fourth Pres Ch

Matthew Meselson, Harvard Univ; Margaret Hamburg, DHHS; Edward Eitzen, U.S. Army Med Res Inst; J. Craig Venter, Celera Genomics; Mildred Donlon, DARPA; Joshua Lederberg, Rockefeller Univ

Recruiting and Retaining Minority Students in Science, Mathematics, and Engineering

Saturday, February 17 3:00PM–6:00PM

Organized by Yolanda Scott George and Shirley Malcom, AAAS

Beatriz Chu Clewell, Urban Inst; John Tsapogas, NSF; Willie Pearson, Wake Forest Univ; James Stith, Amer Inst of Physics; Sheila Browne, Mount Holyoke; Luz Claudio, Mount Sinai Med Cntr; Eugene DeLoatch, Morgan St Univ; William Valez, AZ St Univ Tucson; Richard Tapia, Rice Univ

Technology and the Protection of Cultural Heritage Materials

Saturday, February 17 3:00PM–6:00PM

Organized by Ralph Mitchell, Harvard Univ

Norbert Baer, NYU; Ross Merrill, Natl Gallery of Art; Carolyn Rose, Smith Inst, Mus of Nat Hist; Timothy Whalen, Getty Cons Inst

Repatriation of Native American Human Remains and Cultural Objects

Sunday, February 18 9:00AM–12:00NOON

Organized by Russell G. Thornton, UCLA

Karen Mudar and J. Signe Snortland, DOI; John Moore, Univ of FL; Russell G. Thornton, UCLA

Understanding Music with Statistical Models

Sunday, February 18 9:00AM–12:00NOON

Organized by David Brillinger, UC-Berkeley; David Wessel, UC-Berkeley

David Brillinger, UC-Berkeley; Rafael A. Irizarry, JHU; Andreas Weigend, ShockMarket; David Huron, OSU; David Wessel and David Steinsaltz, UC-Berkeley

Science for the Community: Participatory Research and Social Policy

Sunday, February 18 3:00PM–6:00PM

Organized by Amy Crumpton, AAAS; Douglas Taylor, Loka Inst

Madeleine Scammell and Douglas Taylor, Loka Inst; Lee Williams, Univ of OK; Beverly Brown, Jefferson Cntr; Felicia Hodge, Cntr for Amer Indian Rsrch & Edu; Beverly Rodriquez; Donna Higgins, CDC

The Return of 'Collegiality': Scientific Careers on More or Less Than Merit?

Sunday, February 18 3:00PM–6:00PM

Organized by Paul Forman, Smith Inst

Joan W. Scott, Inst for Adv St; William Clark, Univ of Cambridge; David H. DeVorkin, Natl Air & Spce Mus; David Hollinger, UC-Berkeley; David L. Goodstein, Caltech

To Pledge or Not to Pledge: An Oath for Scientists?

Monday, February 19 2:45PM–4:15PM

Organized by Irving A. Lerch, APS; Lester M. Crawford, Gtown Univ; Mark S. Frankel and Audrey R. Chapman, AAAS

Irving A. Lerch, APS; Gerard Toulouse, Laboratoire de Phsique l'Ecole Normale Superieure; Peter Blair, Sigma Xi

The Role of Mathematics in Pricing and Hedging Financial Assets

Monday, February 19 11:00AM–12:30PM

Organized by Philip Protter, Cornell Univ

Philip Protter, Cornell Univ; Darrell Duffie, Stanford Univ

The Research Museum: Why and Wherefore, Whence and Wither?

Monday, February 19 3:00PM–6:00PM

Organized by Paul Forman, Smith Inst

Robert Anderson, British Mus; Otto Mayr, Deutsches Mus; Barbara R. Stein, Mus of Vert Zool; Patrick Kociolek, CA Acad of Scis; Karl L. Hutterer, Santa Barbara Mus of Nat Hist

Science and the Biosphere

Sustainable Coasts: Counting All the Costs

Friday, February 16 9:00AM–12:00NOON

Organized by Sheila D. David, H. John Heinz III Cntr

Sheila D. David, H. John Heinz III Cntr; Stephen P. Leatherman,* Univ of MD; James W. Good,* OR St Univ; Betty Hearn Morrow,* FL Intl Univ; Karen Clark,* Appl Ins Res; Mike Buckley,* FEMA

The Scientific Theory of Marine Reserves

Saturday, February 17 9:00AM–12:00NOON

Organized by Jane Lubchenco, OR St Univ; Steven D. Gaines, UC-Santa Barbara; Stephen R. Palumbi, Harvard Univ

Jane Lubchenco, OR St Univ; Hugh Possingham, Univ of Adelaide; Loo Botsford, UC-Davis; Robert Warner, UC-Santa Barbara; Fiorenza Micheli, Universita' di Pisa; Stephen R. Palumbi, Harvard Univ; Steven D. Gaines, UC-Santa Barbara

Melding the Science and Policy of Marine Reserves

Saturday, February 17 2:45PM–4:15PM

Organized by Jane Lubchenco, OR St Univ; Steven D. Gaines, UC-Santa Barbara; Stephen R. Palumbi, Harvard Univ

Vikki Spruill, SeaWeb; Callum Roberts, Univ of York; Heather Leslie, OR St Univ; Rod Fujita, EDF; James A. Bohnsack, NMFS

Extinction Vulnerability: Modern Conservation Biology vs. Paleobiological Patterns?

Sunday, February 18 9:00AM–12:00NOON

Organized by Marjorie L. Reaka-Kudla, Univ of MD

Marjorie L. Reaka-Kudla, Univ of MD; Michael Soule,* UCSC; David Jablonski,* Univ of Chicago; Les Watling, Univ of ME; Darryl Felder, Univ of SW LA

Humans and High Altitude Mountain Environments

Sunday, February 18 3:00PM–6:00PM

Organized by Frank L. Powell, UCSD

Frank L. Powell, UCSD; Thomas F. Hornbein, UW Sch of Med; John B. West, UCSD; Cynthia M. Beall, CWR Univ; Jack Ives, Carleton Univ

Global Trade and Consumer Choices: Coral Reefs in Crisis

Monday, February 19 9:30AM–12:30PM

Organized by Barbara A. Best, USAID; Alan H. Bornbusch, AAAS

David H. Hales, USAID; Roger McManus, Cntr for Marine Cons; Vikki Spruill, SeaWeb; Marc A. Hixon,* OR St Univ; Susan Lieberman,* FWS

Science, Engineering and Public Policy

The Comprehensive Test Ban Treaty and US National Security Interests

Friday, February 16 9:00AM–12:00NOON

Organized by Elizabeth J. Kirk, AAAS; Gregory E. van der Vink, IRIS Consortium

Marshall S. Billingslea, Sen Comm on For Rel; Daryl Kimball, Cncl for a Livable Wld; Gregory E. van der Vink, IRIS Consortium; Richard Garwin, Cncl on For Rel; Ray E. Kidder, LLNL

Arms Control and Proliferation Concerns from Former Soviet Weapons Facilities

Friday, February 16 2:30PM–5:30PM

Organized by Kathleen Vogel, Cornell Univ

George Parshall, NAS; Fred Wehling, Monterey Inst of Intl Std; Todd Perry,* DOE; Kathleen Vogel, Cornell Univ; Sonia Ben Ouagrham,* Monterey Inst of Intl Std

Standard Setting and the Rate of Technology Development

Saturday, February 17 9:00AM–12:00NOON

Organized by Claude C. Gravatt, DOC; Steven W. Popper, RAND

Michael Spring,* Univ of Pitts; Raymond Kammer, NIST; Mark Hurwitz, Amer Natl Stds Inst; Francis Criqui, GM; Carl Cargill, Sun MicroSyst; Claude C. Gravatt, DOC

The Mathematics of Congressional and Other Apportionments

Saturday, February 17 9:00AM–12:00NOON

Organized by Donald G. Saari, UCI

Donald G. Saari, UCI; Katri Sieberg, Coll of William & Mary; Steven J. Brams, NYU; Bernie Grofman, UCI; H. Peyton Young,* Brookings Inst

Mathematical Aspects of Intellectual Property Management on the Internet

Saturday, February 17 3:00PM–6:00PM

Organized by Matthew Franklin, UC-Davis

Moni Naor, Weizmann Inst of Sci; Joe Kilian, Yianilos Labs; Ramarantham Venkatesan, Microsoft Res; Tomas Sander, InterTrust STAR Labs

Science Policy: The Next 50 Years

Sunday, February 18 9:00AM–12:00NOON

Organized by Eamon Kelly, NSB, Tulane Univ; Marta Cehelsky, NSF

Kathleen Peroff, OMB; Erich Bloch, WA Advisory Grp; Jane Lubchenco, OR St Univ; Jeffrey Sachs,* Harvard Univ, James J. Duderstadt, Univ of MI; Chang Lin Tien, UC-Berkeley

Shaping the Genetic Future of Man: A Framework for Policymakers

Sunday, February 18 3:00PM–6:00PM

Organized by Guido Van Steendam, Intl For for Biophil

Speakers TBA

The Government's Role in the Commercialization of Environmentally Enhancing Technologies

Monday, February 19 9:30AM–12:30PM

Organized by Vicki Norberg-Bohm, Belfer Cntr for Sci & Intl Aff

Lewis M. Branscomb, Harvard Univ JFK Sch of Govt; Marian Chertow, Yale Univ; Vicki Norberg-Bohm, Belfer Cntr for Sci & Intl Aff; David Rejeski,* Wilson Cntr; Dan Reicher,* DOE; John Gibbons,* NSTC

Why Bench Scientists Should Be Involved in Science Policy

Monday, February 19 9:30AM–12:30PM

Organized by Stephen D. Nelson, AAAS

William Wells,* UCSC; Kei Koizumi,* AAAS; Howard J. Gobstein,* MSU; Daniel S. Greenberg,* Sci & Govt Rep; Michelle Tessier,* Podesta.com

Patenting Genes and Business Methods—Is It Time for Congress to Cut Back Patent Protection?

Monday, February 19 3:00PM–6:00PM

Organized by Richard Marks, Vinson & Elkins, LLP; Sanyin Siang, AAAS

Richard Marks, Vinson & Elkins, LLP; Kate H. Murashige, Morrison & Foster, LLP; Kathy Hudson,* NHGRI, NIH; J. Craig Venter,* Celera Genomics; Brian Wright, UC-Berkeley; Jay Walker, Walker-Digital

Ethical and Policy Implications of Synthesizing "Minimal Genomes"

Tuesday, February 20 8:00AM–11:00AM

Organized by Mildred K. Cho, Stanford Univ

Clyde Hutchison, TIGR; David Magnus, Univ of PA Cntr for Bioethics; Daniel McGee, Baylor Univ; Jonathan Moreno, Univ of VA; Mildred K. Cho, Stanford Univ

Technology Impacts on Society and Engineering

Simulations, Complexity and Ethics

Saturday, February 17 3:00PM–6:00PM

Organized by Carl Mitcham, CO Sch of Mines; Sanyin Siang, AAAS

Sergio Sismondo, Queen's Univ; Stephen M. Batill, Univ of Notre Dame; Carl Mitcham, CO Sch of Mines; Wallace S. Broecker,* Columbia Univ; Bill Joy,* Sun MicroSyst.; John Ilgen,* Ilgen Simulation Technol

Advances in Functional Genomics: Rewards and Challenges

Monday, February 19 9:30AM–12:30PM

Organized by Francoise Seillier-Moiseiwitsch, Univ of NC-Chapel Hill

Edwin Southern,* Oxford Univ; Richard Simon, NCI; B. Alex Merrick, Natl Inst of Envir Hlth Scis; Francoise Seillier-Moiseiwitsch, Univ of NC-Chapel Hill; Paul Meltzer,* NHGRI, NIH

Impact of Computer Networking Technologies on Scientific Research

Monday, February 19 3:00PM–6:00PM

Organized by Edward Derrick, AAAS

John Connolly, Univ of KY; Ted Hanss, Internet2 Project; Tom Finholt, Univ of MI; Ken Bishop, Univ of KS; Leonard Krishtalka, Univ of KS

See page 18 for registration form

Symposia

Science Innovation

Matter and Antimatter: Not Quite a Mirror Image

Friday, February 16 10:30AM–12:00NOON

Organized by Chris Quigg, Fermi Natl Accel Lab

Robert N. Cahn, UC-Berkeley & LBNL; Patricia R. Burchat, Stanford Univ; Michael Dine, UCSC

Accelerating Discovery With Supercomputers

Friday, February 16 2:30PM–5:30PM

Organized by Michael D. Crisp, DOE

Warren M. Washington, NCAR; C. William McCurdy, LBNL, UC-Berkeley; Julian Borrill, UC-Berkeley, LBL; Bruce Cohen, LLNL; Adam Arkin, LBNL

The Coming Revolutions in Particle Physics

Friday, February 16 2:30PM–5:30PM

Organized by Chris Quigg, Fermi Natl Accel Lab

Chris Quigg, Fermi Natl Accel Lab; Frank Wilczek, MIT; Hitoshi Murayama, LBNL; Joseph Lykken, Fermi Natl Accel Lab; David Gross, UC-Santa Barbara

Learning and Plasticity in Adult Brains: From Synapses to Behavior

Saturday, February 17 9:00AM–12:00NOON

Organized by James L. McClelland, Carnegie Mellon Univ & Univ of Pitts

Mark R. Bear, HHMI/Brown Univ; Michael M. Merzenich, Keck Cntr for Integ NeuroSci, UC-SF; Leslie G. Ungerleider, NIMH, NIH; Edward Taub, Univ of AL-Birmingham; James L. McClelland, Carnegie Mellon Univ & Univ of Pitts

Signal Transduction

Saturday, February 17 3:00PM–6:00PM

Organized by Bryan Ray, STKE, Science

John Schlessinger,* NYU Med Cntr; John Mann,* New York St Psychiatric; John Beavo,* Univ of WA; Shaun Coughlin,* UC; Frank McCormick,* UCSF

Mathematics and the Visual Cortex

Sunday, February 18 3:00PM–6:00PM

Organized by Jack Cowan, Univ of Chicago

Gary Blasdel, Harvard Med Sch; David McLaughlin, Courant Inst; Nancy Koppel, Boston Univ; Paul Bressloff, Loughborough Univ; Jack Cowan, Univ of Chicago; Peter J. Thomas, Salk Inst; Mary Pugh, Univ of PA; G. Bard Ermentrout,* Univ of Pitts; Terrence J. Sejnowski, Salk Inst; Jennifer S. Lund, Inst of Visual Sci

Staying Afloat in a Sea of Data

Monday, February 19 9:30AM–12:30PM

Organized by Barbara Jasny, AAAS; Pamela J. Hines, AAAS & Science

William Andersen, Ontology Works; John Barton, Stanford Univ; Mark Boguski, Rosetta Inpharmatics; David Roos, Univ of PA; Stephanie Teasley, Univ of MI

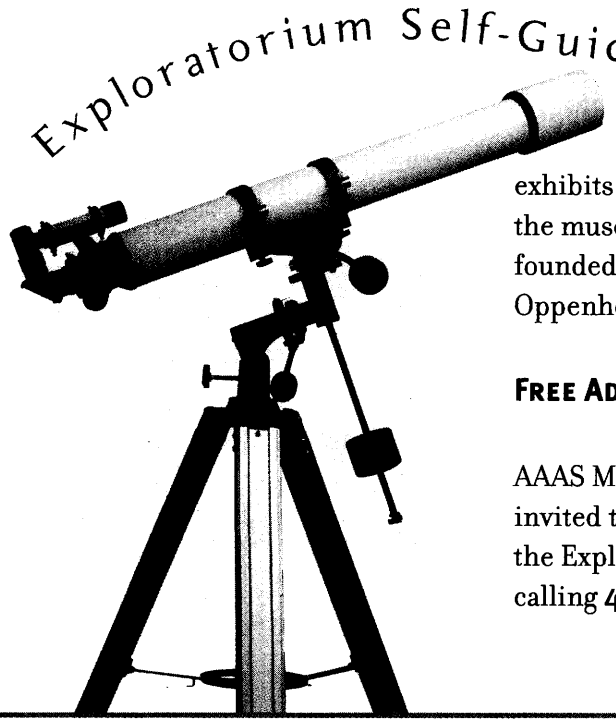
Quantum Computing and Communication: From Bit to Qubit

Monday, February 19 3:00PM–6:00PM

Organized by Charles W. Clark, NIST

Andrew M. Steane, Oxford Univ; Michael H. Freedman, Microsoft Corp; David Wineland, NIST; Dorit Aharonov, UC-Berkeley; David P. DiVincenzo, IBM T.J. Watson Res Cntr

* Invited, not yet confirmed



Housed within the walls of San Francisco's Palace of Fine Arts, the Exploratorium is a collage of 650 science, art and human perception exhibits. The Exploratorium is a leader in the movement to promote the museum as an educational center. This unique museum was founded in 1969 by noted physicist and educator, Dr. Frank Oppenheimer, who was director until his death in 1985.

FREE ADMISSION FOR AAAS MEETING ATTENDEES!

AAAS Meeting attendees who have a valid registration badge are invited to visit the Exploratorium for free. More information about the Exploratorium can be found at **www.exploratorium.edu** or by calling **415-EXP-LORE.**

Reservations

Hotel Reservation Instructions

1. Hotels and Rates:

All lectures, scientific sessions and exhibits will be in the Hilton San Francisco & Towers, which is the AAAS Meeting Headquarters hotel. Facilities for Press registrants will be in the Hotel Nikko San Francisco, which is directly across the street from the Hilton. Business meetings and special events will be in both the Hilton and the Nikko. All rates are subject to 14.05% occupancy tax.

■ Hilton San Francisco & Towers
333 O'Farrell Street, San Francisco, CA 94102

Hotel direct phone:	1-415-771-1400
Hilton Worldwide Reservations:	1-800-445-8667
Internet reservations:	www.hilton.com/groups/aos
Fax *(international reservations only)*	1-415-923-5075

*AAAS Annual Meeting Rates:**

Standard room:	$158 single/$183 double
Superior room:	$168 single/$193 double
Deluxe room:	$178 single/$203 double
Towers room:	$245 single/$265 double
Additional persons:	$20 each

*Standard rooms are on lower floors. Superior rooms are on mid-level floors with limited views. Deluxe rooms either are on high floors with excellent views or are on mid-level floors but larger in size. Towers (Concierge) rooms are on mid-level floors, are larger in size, have private check-in and checkout, have access to private lounge with complimentary breakfast and evening hors d'oeuvres and have high speed Internet access (for nominal fee) and fax machine in room.

■ Hotel Nikko San Francisco
222 Mason Street, San Francisco, CA 94102

Hotel direct phone:	1-415-394-1111
Fax *(international reservations only)*	1-415-394-1159

AAAS Annual Meeting Rates:

Standard room:	$161 single/$181 double
Nikko-floor room**	$201 single/$221 double
Additional persons:	$25 each

**Nikko-floor rooms are on top 5 guestroom floors; have access to private lounge with extensive buffet breakfast, evening hors d'oeuvres, plus private dining; and have cordless phones, bathrobes and slippers in room.

■ Villa Florence Hotel
225 Powell Street, San Francisco, CA 94102

Hotel direct phone:	1-800-553-4411
Fax *(international reservations only)*	1-415-397-0661

AAAS Annual Meeting Rates:

Standard room:	$175 single/$175 double
Additional persons:	$20 each

■ Crown Plaza San Francisco Union Square
480 Sutter Street, San Francisco, CA 94108

Hotel direct phone:	1-415-398-8900
Fax *(international reservations only)*	1-415-956-1004

AAAS Annual Meeting Rates:

Standard room:	$179 single/$179 double
Additional persons:	$20 each

2. How to Make Reservations:

Residents of the United States and Canada should make their reservations via phone or Internet.

To reserve via phone, call the hotel of your choice at the appropriate phone number indicated in Section 1. You must tell the agent that you're attending the "AAAS Annual Meeting" to get the discounted convention rates. When calling, please have available the information indicated in section 3 below.

To reserve via the Internet (Hilton only), log on to www.hilton.com/groups/aos and click on the words "Online Reservations" at the top.

Mail and fax reservations are <u>not</u> recommended for residents of the United States and Canada. However, if you live outside the United States and Canada and cannot register via phone or Internet, you may send a written reservation request to the appropriate hotel at the address or fax number indicated above. When writing, please be sure to include your fax number and to provide all of the information requested in section 3 below.

3. Information Needed for Reservation:

Please have the following information available when making your reservation:

1. Name of Convention (AAAS Annual Meeting)
2. Arrival and departure dates
3. Number of rooms required
4. Number of occupants in each room
5. Name(s) of all occupants in each room
6. Type of room (standard, superior, deluxe, etc.)
7. Type of bed (one double, two doubles, king)
8. Special accommodations (smoking/nonsmoking, handicapped accessible)
9. Credit card type, account number and expiration date
10. Address (company or home)
11. Daytime phone number

4. Deposit Required:

A deposit of one night's room charge (excluding tax) is required for all reservations. The deposit amount is payable by credit card or check.

If paying by credit card, your card will be charged immediately. All major credit cards are accepted.

If paying by check, you must send the check to the appropriate hotel within 10 days of making your reservation or the reservation will be canceled. The check should be made payable to your hotel.

5. Deadline for Reservations:

Reservation requests should be made as soon as possible, but no later than Tuesday, January 16, 2001. Rooms are assigned on a first-come, first-served basis and may sell out prior to the deadline.

6. Changes and Cancellations:

All changes and/or cancellations must be made directly with your hotel at the appropriate number in Section 1. The hotel will issue a refund of your deposit if you cancel at least 72 hours prior to your scheduled arrival. If you cancel less than 72 hours prior to arrival, your deposit will be forfeited.

See page 18 for registration form

Discount Airfare

Save up to 15% on Air Fares

United Airlines, the official airline for the 2001 AAAS Annual Meeting in San Francisco, is offering the following special discounts on travel to and from the meeting:

Save 5% off the lowest applicable discount fares (including First Class) or save 10% off unrestricted mid-week coach fares purchased 7 days in advance. Buy your ticket at least 60 days in advance and you'll save an additional 5%. If you can't meet the restrictions of promotional fares, you can still save with exclusive discounted zone fares (minimum 2-day stay, no Saturday-night requirement, 7-day advance purchase). Discounts are good for travel on United Airlines, United Express or Shuttle by United to San Francisco from within the continental U.S., Alaska, Canada or Puerto Rico during February 10–25, 2001. Mileage Plus members receive full credit for all miles flown. Seats are limited and some restrictions may apply. For details and to make reservations, you or your travel agent should call 1-800-521-4041 (7 days a week, 7am–midnight ET) and give the agent the following United Airlines Meeting ID Code: 598BY.

Discount Car Rental

AAAS MEMBERS ONLY

AAAS has negotiated special discounts on car rentals for AAAS members attending the Annual Meeting. Dollar and Hertz are pleased to provide the following rates to AAAS members:

Dollar

Dollar offers AAAS members a 15% discount off daily, weekly and weekend SENSIBLE RATES for Economy–full size vehicles and 5% discount off daily, weekly and weekend retail rates for Premium, Luxury and Minivan car classes. SENSIBLE RATES are available at all participating Dollar locations when vehicles are returned to original renting location. SENSIBLE RATES include unlimited mileage, however, geographic driving restrictions may apply. On weekends and during certain holiday periods, SENSIBLE RATES are not available in the New York metro area, New York City airports and Newark, New Jersey.

Hertz

Hertz offers AAAS members a 15% discount on Hertz Daily Member Benefit Rates (all car classes), a 10% discount on Hertz Standard Daily, Weekend, Weekly and Monthly Rates (all car classes), and a 5% or greater discount on Hertz Leisure Daily, Weekend, Weekly and Monthly Rates (all car classes).

Reservation Phone Numbers in the USA

Dollar:	1-800-800-4000
Hertz:	1-800-654-2200

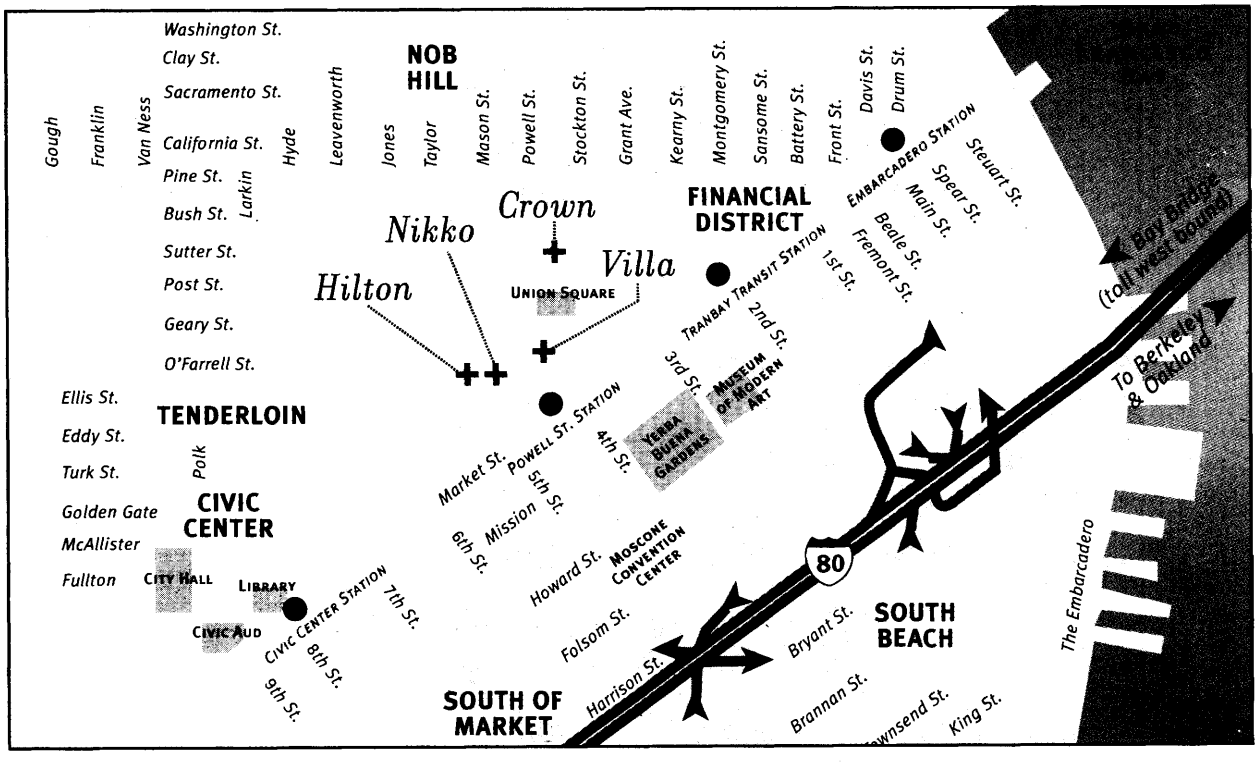
Reservations on the Internet

Members can also make reservations or view additional information on the Internet:

Dollar:	http://www.dollarcar.com
Hertz:	http://www.hertz.com

Important!

When making reservations, please make sure to use your special Dollar or Hertz AAAS Identification code provided in your membership package to get our reduced rate. If you do not have this code, please contact membership@aaas.org or (202) 326-6417 and an AAAS customer service representative will provide you with this information. Members must also present proof of AAAS membership at the time of rental.



General Information

Plan to be there!

Science Career Fair

Monday, February 19
11:00AM–4:00PM
Hilton San Francisco & Towers,
Plaza Ballroom

The AAAS Science Career Fair is **FREE** to all candidates. Employers will be on-site in San Francisco to talk with candidates about the excellent job opportunities in the biotechnology and pharmaceutical industries. Make sure to bring multiple copies of your resume and feel free to visit with as many employers as you wish. Be sure to sign up on-site for *Science's* Job Alerts Service, a free email job notification service.

Also Available

Career Development Workshops, conducted by top science development professionals, will be held Saturday-Monday, February 17–19 in the Hilton San Francisco & Towers. Passport meeting registration includes access to the workshops or you can register for just the workshops ($10 for AAAS members, $25 for nonmembers).

Employers

For information about recruiting at the *Science* Career Fair, call 202-326-6534.

Sponsored by AAAS and Science *Magazine*

Meeting Location

All lectures, scientific symposia, seminars and exhibits will be in the Hilton San Francisco & Towers (333 O'Farrell Street) which is the AAAS Meeting Headquarters hotel. Facilities for Press registrants will be in the Hotel Nikko San Francisco (222 Mason Street) which is directly across the street from the Hilton's Mason-Street entrance. Business meetings and special events will be in both the Hilton and the Nikko.

On-Site Registration

Registration will be located in the East Lounge on the Ballroom Level of the Hilton San Francisco & Towers.

Hours are as follows:

Thursday	
February 15	11:00AM–7:00PM
Friday	
February 16	7:00AM–7:00PM
Saturday–Monday	
February 17–19	7:30AM–5:00PM
Tuesday	
February 20	7:30AM–10:00AM

Exhibition

The Exhibition will be located in the Grand Ballroom of the Hilton San Francisco & Towers.

Hours are as follows:

Friday	
February 16	4:00PM–6:30PM
Grand Opening Reception	5:00PM–6:30PM
Saturday–Sunday	
February 17–18	10:00AM–3:00PM
Monday	
February 19	9:00AM–2:00PM

Internet Access Center

The Internet Access Center, located within the AAAS Exhibition, will be open during all exhibition hours. Multiple workstations will be available for attendees to check email or surf the web.

Parking

Both the Hilton San Francisco & Towers and the Hotel Nikko San Francisco have on-site parking. The parking rate for either hotel is $30 per day.

Barrier-Free Environment

Accommodations for persons with disabilities will be provided upon request at all general lectures and sessions. Services include interpreters for persons who are deaf or hearing impaired, audio taped highlights and mobility assistance within and outside the conference facilities as needed. In addition, a Resource Room for Persons with Disabilities will be available in Union Square Room 25 on the fourth floor of building 3 of the Hilton San Francisco & Towers. If you have special needs due to a disability, please be sure to check the appropriate box on the registration form.

Airport Transportation

SFO Airporter

Regularly scheduled bus service from San Francisco Airport to the downtown hotels departs from the lower level of each terminal (at the blue pillars on the traffic island just outside baggage claim) every 15 minutes from 6:15 a.m. to midnight. Return service picks up at the Mason-Street entrance of the Hilton San Francisco & Towers (directly across the street from the Hotel Nikko) every 15 minutes from 5:10 a.m. through 10:55 p.m.. The trip takes approximately 35 minutes and the cost is $11 one way. Reservations are not required. For additional information, call 415-641-3100 or visit their web site at www.sfoairporter.com.

SuperShuttle

Door-to-door van service from San Francisco Airport to downtown hotels. Transportation to your destination can be arranged by the uniformed SuperShuttle Airport Guest Coordinator located on the traffic island outside the upper level of each terminal (one level above baggage claim). The trip takes approximately 35 minutes the cost is $11.50 one way. Reservations are not required for travel from the airport but are required for the return to the airport. Reservations should be made via phone at least 24 hours prior to your return flight. For additional information and/or reservations call 415-558-9593 or visit their web site at www.supershuttle.com.

Taxi

Taxi service is available from the lower level of San Francisco Airport (just outside baggage claim). Travel to downtown takes approximately 35 minutes and the cost is approximately $36.

See page 18 for registration form

Exhibitors

Opportunities Available!

Many opportunities still remain for exhibitors at the 2001 AAAS Annual Meeting. Get your message or image across to those who attend the meeting!

- Exhibit Hall Booths
- Meeting Sponsorships
- Advertising in the 2001 Program/Abstract Book

For more information and a prospectus contact: Kathleen Feehan, AAAS Exhibit Sales Manager

Phone (202) 326-6736
E-mail kfeehan@aaas.org
Web www.aaas.org/meetings

AAAS 2001 Annual Meeting Exhibitors

Academia Book Exhibits
American Chemical Society
American Institute of Biological Sciences
American Speech-Language-Hearing Association
Arizona Collaborative for Excellence in the Preparation of Teachers (ACEPT)
Association of American University Presses
Brock Optical, Inc.
Center for Research on Population and Security (CRPS)
CIESIN at Columbia University
Columbia University Press
Council for International Exchange of Scholars
Department of Defense SBIR/STTR Program
Department of Energy, Oakland Operations Office
Double Twist
Ecumenical Roundtable on Science, Technology and the Church
Federal Laboratory Consortium for Technology Transfer
W.H. Freeman and Company
Howard Hughes Medical Institute
ISI
Island Press
Metric Program/NIST
NASA Earth Science Enterprise
NASA Human Exploration and Development of Space
National Institute of Standards and Technology
National Library of Medicine
National Science & Technology Medals Foundation
National Science Foundation
National Sea Grant College Program
Nature Publishing Group
Nature Reference Publishing
NOAA
Office of Naval Research
Perseus Books Group
RAND
The Scientific World
University Corporation for Atmospheric Research

Information as of September 18, 2000.
See updates on AAAS web page at:
www.aaas.org/meetings

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Volunteer as a Student Session Aide and receive:

- Free meeting registration: includes entrance to all symposia, seminars, topical lectures, plenary events, workshops, poster sessions and exhibition hall.
- Free admission to *Science* Career Fair and Career Development Workshops
- Free one-year subscription to *Science* Magazine *(see web for details)*

To Register as a Student Session Aide:

- *Phone* 202/326-6450
- *E-mail* aaasmeeting@aaas.org
- *Web* www.aaas.org/meetings/2001/ssaide.htm

2001 AAAS Annual Meeting and
Science Innovation Exposition
February 15–20, 2001 • San Francisco, CA

ADVANCE REGISTRATION FORM

Sign up online at www.aaas.org/meetings (Or use this form to register via mail or fax) Deadline: January 5, 2001

1. Please provide name and address.

Name _____

Affiliation _____

Address _____

City _____

State _____ Zip _____

Country _____

Phone _____

Fax _____

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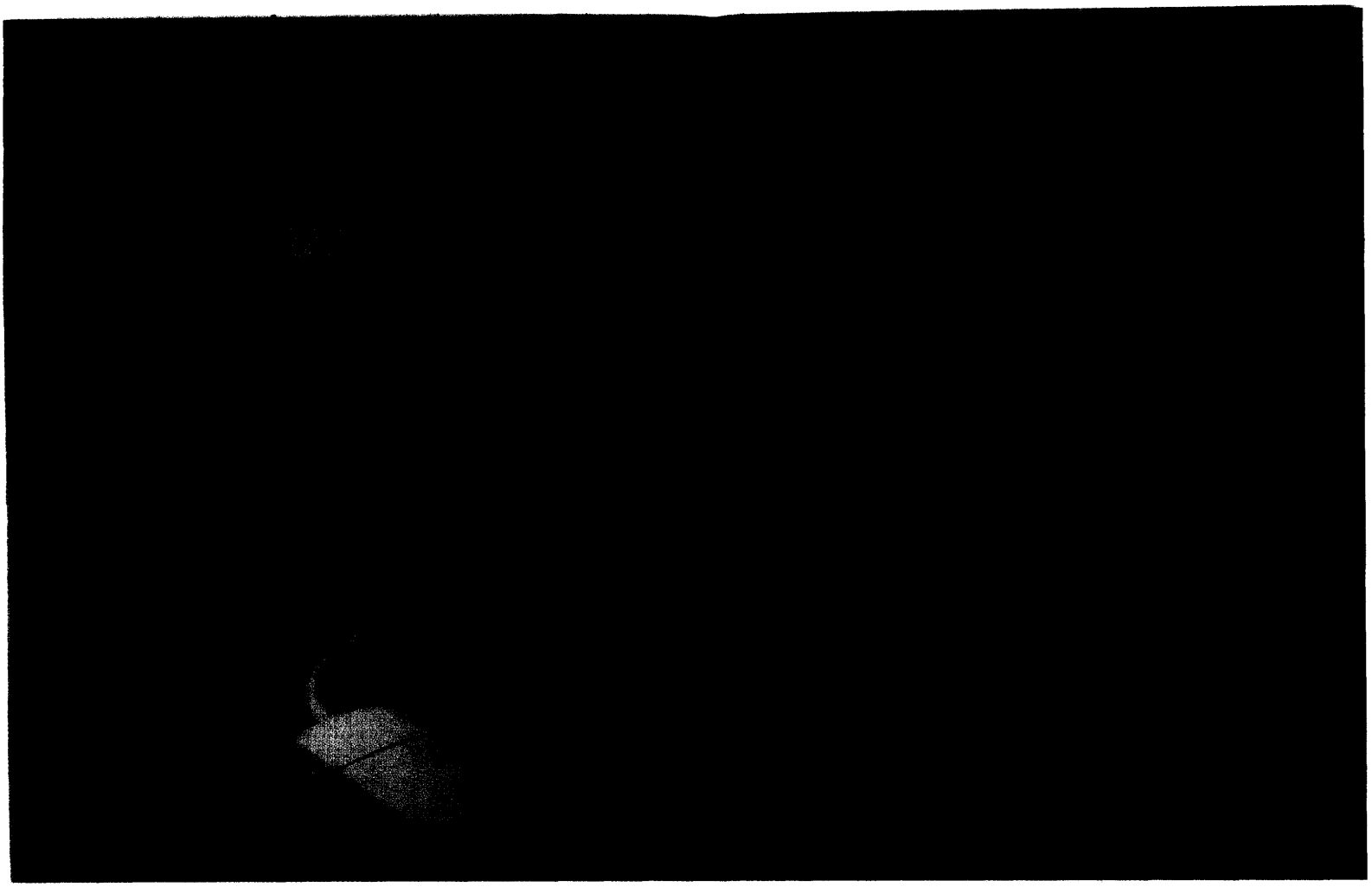

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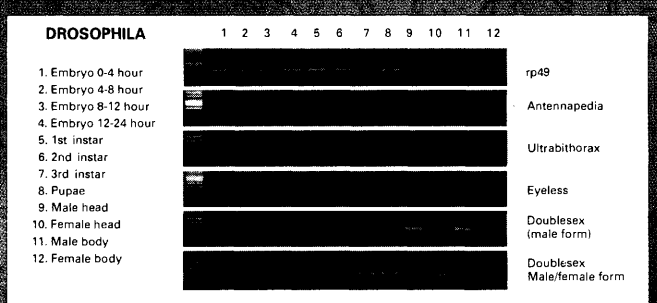

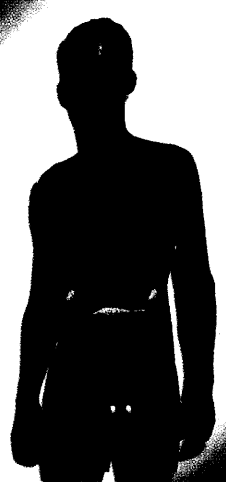

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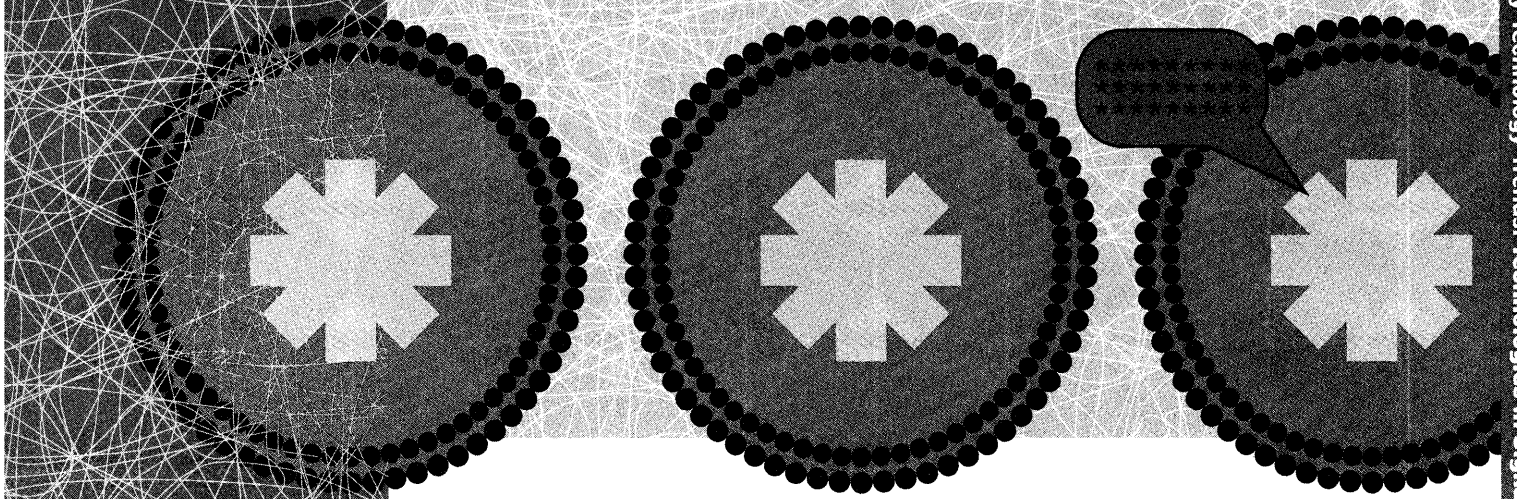

Signal Transduction: The Challenge of Clarifying Complexity

New tools and technologies, some developed as a result of genome sequencing projects, are helping scientists to unravel the mysteries of cellular communication and its role in health and disease. by Peter Gwynne and Gary Heebner

To a passenger in a jet airliner flying at 30,000 feet, a large city may seem like a quiet and static collection of buildings and highways. A closer look reveals an entirely different picture. A quick glance from the back seat of a cab traveling through the city center dispels any illusion that the city is quiet or static.

Similarly, the human body might first appear to be a collection of tissues or cells linked by a simple communication system which scientists have traditionally called the nervous system. But just like the city at ground level, living organisms are significantly more complicated than they appear to be from a distance. For a human being or any other organism to survive, every cell in its body must be able to sense and respond to external factors, and to work in harmony with its neighboring cells in an organ or tissue. To accomplish this task, each cell in our bodies possesses a system of molecular highways that allow the cell to respond appropriately to its environment. Scientists refer to this process of cellular communication as signal transduction.

Formally, signal transduction is the process whereby an external stimulus, or signal, triggers a series of chemical events within a cell to elicit a response. Signal transduction is generally initiated by the interaction of extracellular factors, such as hormones or neurotransmitters, with receptors on the cell surface. These

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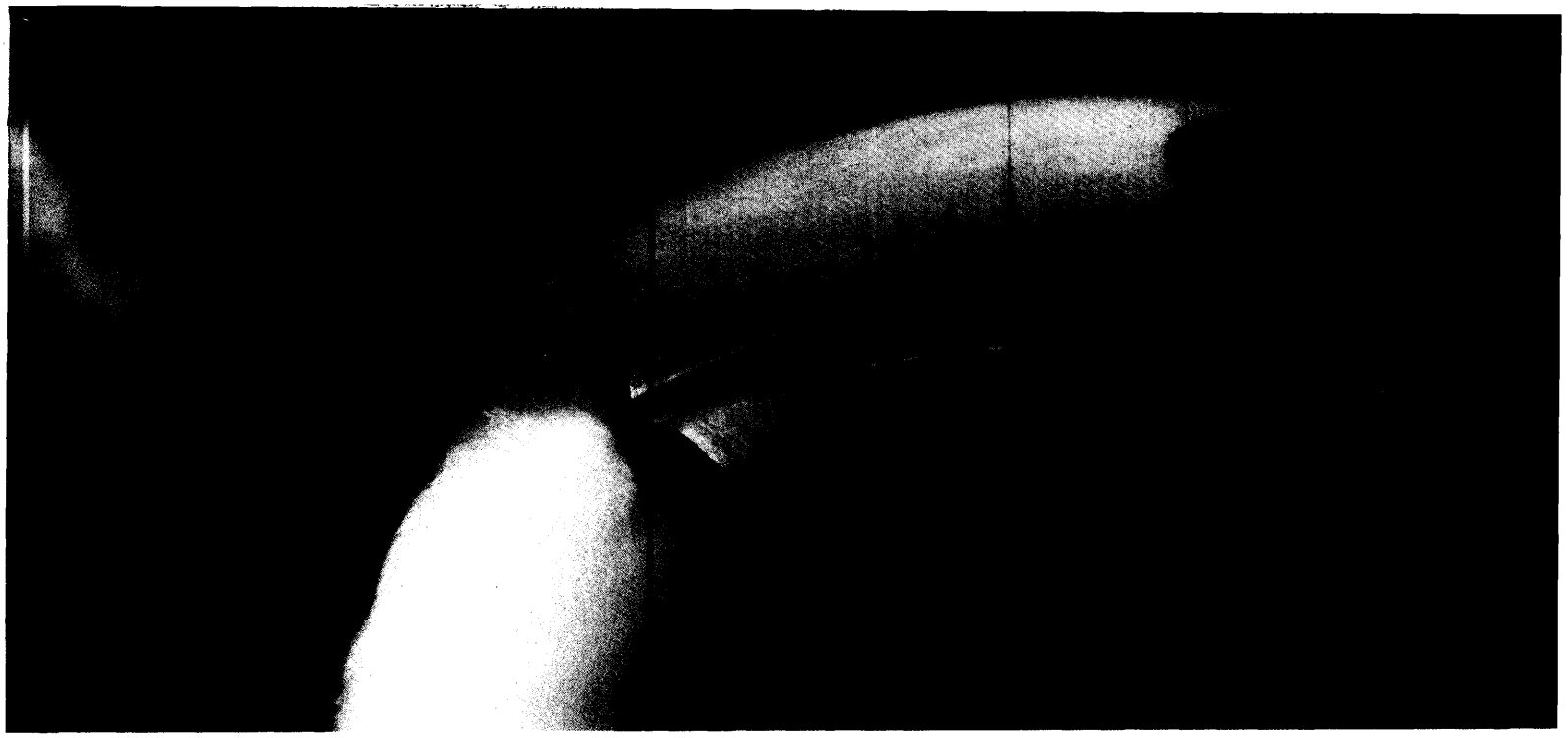

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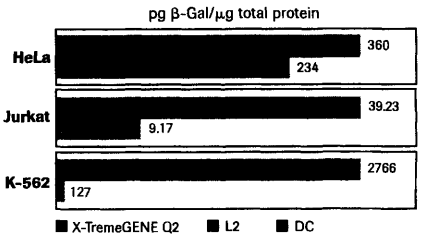

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membrane-protein receptors can include G protein-coupled receptors, tyrosine kinase receptors and ion-channel receptors. The extracellular signals are transduced to the inner surface of the cell membrane. There they cause receptor molecules in the cell to come into contact with intracellular protein targets. Those interactions in turn stimulate a cascade of additional interactions among proteins that help to send the signal throughout the cell along multiple signal transduction pathways. "Maybe it would be pompous to say that all of biology is signal transduction," says Tony Pawson, co-director of the Samuel Lunenfeld Research Institute at Toronto's Mount Sinai Hospital. "But certainly a very significant fraction of proteins encoded by mammalian genes are involved in it."

Added Urgency

Life scientists have long sought to understand how signals make their way down those pathways. In recent years their search has taken on added urgency as it has become clear that signal transduction holds a large set of keys to treating human disease. "Pathogenic organisms have learned to use the signaling pathways in human cells to their advantage," explains Pawson. "As we understand more about signaling we may learn to do the same thing and reverse the damage. If we can lay out the wiring diagram of human cells in a comprehensive way, we can play the engineer and repair the cells when things go wrong."

Tony Hunter, a professor at the Salk Institute who is another leading researcher in the field, agrees. "If you look at the proteins that are currently being developed into potential drug targets you'll see that many of them are signaling molecules," says Hunter. "Efforts are being made to develop inhibitors of specific kinases known to be associated with diseases like cancer. Enzymes involved in signaling are good targets. Protein-protein interactions are also viable targets." Indeed, adds Hunter, research in signal transduction has already led to at least one drug now undergoing tests as a therapy for chronic myelogenous leukemia.

Cancer is just one disease for which signal transduction promises treatments. "Signal transduction is really at the heart of just about all hormone action," says Alan Saltiel, distinguished research fellow and senior director of cell biology at pharmaceutical company Pfizer's Ann Arbor Laboratories. "Any therapeutic area that would involve hormones or extracellular signals centers around signal transduction. That includes areas like diabetes and inflammation as well as cancer." Indeed, Saltiel adds, existing drugs such as Viagra and asthma therapies are based on signal transduction.

In a way, signal transduction offers the prospect of a fresh step in drug discovery. "Many of the key drug targets for major diseases provide a single avenue for drug therapy; specifically, cellular receptors and their associated signaling proteins provide a good chance for single drug modalities," points out Tomi Sawyer, vice president of drug discovery and head of signaling transduction at ARIAD Pharmaceuticals, Inc. "But many diseases involve multiple pathways. If you can find the juncture points where the pathways converge, almost by definition you're going to be working on target validation and mechanisms inside the cells."

Research in signal transduction is beginning to clarify those juncture points. "Over the past 20 years we've gone from a horribly complicated black box to an understanding of the basic principles through which signal transduction is controlled," says Pawson. Certainly much research remains to be done. "What goes on downstream is a major issue. It is very complex, involving cross talk and cross signaling," says Hunter. But he believes that technology coming down the pike will provide fresh insights into those issues. "There are beginning to be single molecule methods," Hunter says. "Advances in micro-scopy have made a huge difference in looking at cells and in kinetic analysis. We certainly need more techniques but many are available already."

New Pathways and Biomolecules

The concept of receptors as sensory elements in life science research goes back to the early 1900s when Paul Erlich discovered the importance of surface receptors and formulated a lock and key theory to explain the interaction of receptors with antigenic materials and drugs. In the 1950s Ed Krebs and others discovered that the activity of an enzyme could be altered by the combined action of a protein kinase and a protein phosphatase. Other studies at about the same time revealed that the hormones adrenaline and glucagon caused increased levels of intracellular 3', 5'-cyclic AMP which is an important regulatory molecule.

Shortly after that researchers realized that the field had promise for dealing with disease. "It really got its start in diabetes research, but it got off the ground with President Richard Nixon's war on cancer," recalls Tom Jelinek, product manager of Upstate Biotechnology. "Once biochemical activities were assigned, the question became: How does information get passed on in the cell? Now people are trying to map out the sequential biochemical activities that occur and the complexes that form on the way."

Genome sequencing has added to the armamentarium of scientists studying signal transduction. "Increasingly the field is moving to a post-genomic level wherein genes are identified that are associated with any particular phenomenon in which a scientist is interested," says Jelinek. "Inevitably somebody has to study the genes involved in a regulatory process. Those genes are invariably involved in signal transduction."

Research teams using their post-genomic

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Research teams using their post-genomic tools continue to identify new pathways and biomolecules that are involved in many cellular communication processes... .

tools continue to identify new pathways and biomolecules that are involved in many cellular communication processes from cell division to apoptosis, or programmed cell death. As they have done over the past 30 years, the researchers rely on vendors in the life science community to supply the purified components and reagents that facilitate their work. "We have developed our own tools and reagents," says Saltiel. "But if they're commercially available we'll buy them."

Variety of Tools and Reagents

Several vendors provide tools and reagents for research in signal transduction. Specialized companies such as Biomol and RBI were early entrants into cell signaling and neuroscience. Biomol introduced what was probably the first catalog for signal transduction research, while RBI provided the first collection of molecules specifically targeted at neuroscientists. Both companies grouped products into the various areas of research in these fields, thereby enabling scientists entering signal transduction research to recognize the more easily related products and their relationships with each other.

RBI focused on neuroscience and made many small organic ligands available to study receptor activation and inhibition. Keith Watling, who has been associated with RBI since its early beginnings, recalls hearing from scientists who began entirely new research programs, based on the company's introduction of a novel ligand. Sigma-Aldrich Corporation acquired RBI in 1997, and Watling is director of the company's signaling and neuroscience initiative. This year the company put out its first catalog devoted to cell signaling and neuroscience that features over 4,000 life science products.

Tocris Cookson, a British company, has traditionally had a strong presence in the field of neuroscience. It is expanding its range of cell signaling tools in response to increasing demand from customers. This year it is launching some novel compounds that the compnay hopes will stimulate and promote research in new areas.

ALEXIS Corporation, headquartered in Switzerland, was one of the early suppliers in the study of nitric oxide's role in signal transduction. Now the company consistently introduces new products, both biologicals and biochemicals, as part of its full panel for the major areas of the field. "It is our goal to provide the customer a full panel of reagents for specific cascades in signal transduction research, including the most innovative and newly discovered molecules," says Frank Neumann, manager of new business development. "We have formulated an efficient new business development strategy for such products and technologies. It includes regular review of approximately 20 key scientific journals, participation at small, specialized congresses, licensing from universities and the biotechnology and pharmaceutical industries, state-of-the-art website promotion of new business development, and personal contacts and visits." ALEXIS represents about 15 small European companies in signal transduction, distributing products sold under the companies' own names.

Broader-based large companies such as Calbiochem have not historically specialized in signal transduction, but have been more general suppliers of biochemicals for research purposes. These firms provide many products for one-stop shopping in signal transduction, and tend to offer the more traditional biochemicals and reagents in this field. PharMingen also offers a wide selection of reagents for cell biology.

Two Modes of Operation

The vendors keep up with their customers' needs in two main ways. Almost all maintain close relationships with working research teams in the hope of licensing compounds that have little interest for drug discovery but may have some value to basic research. Some vendors also set up their own investigative groups to translate research results into reagents and kits that fulfill researchers' demands.

Tocris Cookson keeps in close contact with pharmaceutical researchers and the papers they produce. The company's main targets are reagents that quickly lose their value in the process of drug discovery. "Very often drug companies just want to test a hypothesis," explains Duncan Crawford, Tocris Cookson's head of scientific affairs. "If they need to, they'll synthesize a compound as a research tool only. When they have found out what they need to know and have published it, other scientists will want to do follow-up work with the same material. By then, though, the drug company's research program has moved on and the company is left in the position where it has to supply a compound to the scientific community indefinitely, which takes a lot of scientific and administrative time. That's where we come in. We have 27 chemists and can make compounds to at least the same purity as those in the literature. This is probably a superior service to that which scientists in this area have been able to expect before."

That approach, says Crawford, offers advantages to everyone involved in the process. "The

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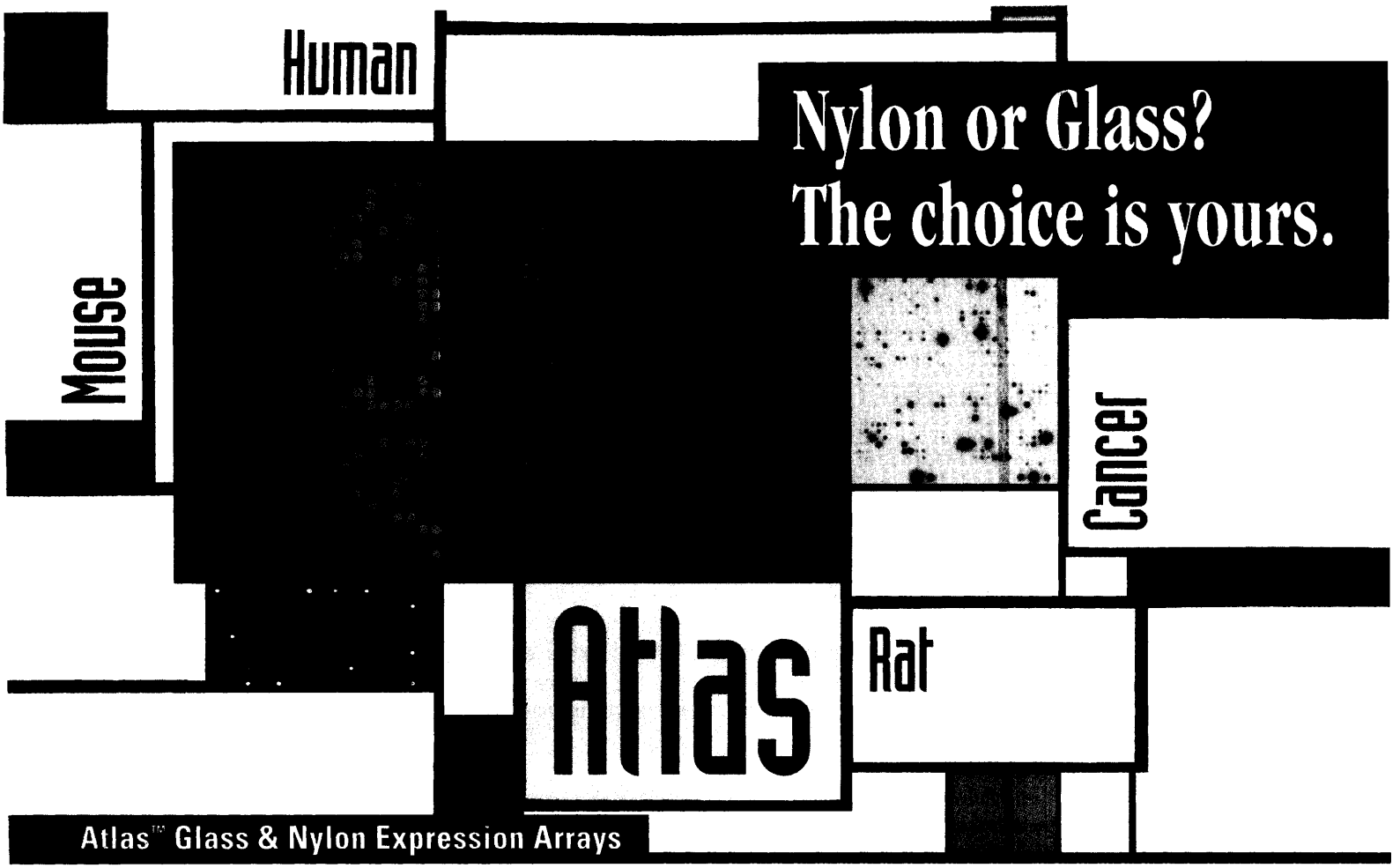

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From a research team's point of view, the main source of excitement in work on signal transduction is the sheer complexity that it involves.

scientists who developed the compounds get the kudos and the drug company doesn't have to make the compounds in large quantities," he says. "Tocris can help a research field to move along by making the reagents available. We have seen this happen many times with our neurochemicals and we would like to be able to make the same contribution in signal transduction."

Inevitably some pharmaceutical companies refuse permission. In those cases, Crawford explains, he has to tell his clients that he can't provide the molecule they want. "Tocris will not knowingly infringe patents," he says.

Sigma-RBI serves researchers in signal transduction in a similar way. "We differentiate ourselves from some of our competition in that we actively seek licenses from big pharmas to make and sell some of their castoffs," explains Watling. "We have a small team of Ph.D.-level scientists whose job it is to comb through the literature and develop contacts with pharmaceutical companies, technology transfer offices, and research institutions with a view to identifying, licensing, and procuring new cutting-edge products. We're trying to position ourselves as the major source of cell signaling products across the board. It's our hope to become the one-stop shop for cell signaling."

Some suppliers take a more active role in research on signal transduction. "Our research is generally applied," says Jelinek of Upstate Biotechnology. "The single critical element of my job is how well we stay on top of the field. We have over 200 scientists in consultant relationships to let us know what is developing in their labs and globally. Then we try to target a lot of small scientific conferences to find out what's going on."

Cell Signaling Technology, a Boston-area company recently spun off from New England Biolabs, takes the process a stage further. "We're doing our own research and developing our own technologies," says president and CEO Michael Comb. "Our goal is to provide cutting-edge tools to move research forward. We try to use the research tools we develop to provide revenue to fund our research."

That research focuses mainly on signaling through protein kinases. "These are incredibly complicated," says Comb. "Understanding how a cell works will involve understanding thousands of simultaneous reactions." The research leads directly to potentially useful reagents. "We're doing site-specific phosphorylation," Comb continues. "We produce 'smart antibodies' that tell you whether the protein is there and whether it's active or not — in other words, whether it's been phosphorylated. You can really look at activation and inhibition on the same protein."

A Picture of Complexity

From a research team's point of view, the main source of excitement in work on signal transduction is the sheer complexity that it involves. Signal transduction operates through a variety of different molecules, a range of receptors, and a plethora of signaling pathways. Here we outline the major players in the field at the molecular level.

The signals themselves can be molecules that are fairly simple in structure, like nitric oxide (NO), or extremely complex, such as neurotransmitters or growth factors. A simple molecule like NO can act as a signal as it diffuses through the cell membrane. It acts only locally because oxygen and water outside the cell rapidly degrade it. Small hydrophobic molecules, such as steroid hormones, are transported through the bloodstream bound to carrier molecules that allow them to travel through this aqueous environment; in fact they can exist in the bloodstream for many hours. They finally diffuse through the plasma membrane of their target cells. There, they bind to receptors within the cell and evoke a response. Other hydrophilic molecules, among them proteins, small peptides, and nucleotides, cannot pass through the cell membrane. Instead they must bind to receptors on the cell surface.

The same molecule or transmitter may evoke different responses in different types of cells because cells may have different kinds of receptors or different interior signal transduction pathways connected to the same receptor. For example, acetylcholine causes skeletal muscle to contract but heart muscle to relax. Different receptors are linked to different pathways in these cells. Acetylcholine also causes secretory cells to secrete by using the same receptor as heart muscle but connecting to different pathways within the cell.

These receptors or docking stations for external molecules can be sorted into three general classes. The first consists of receptors that penetrate the plasma membrane and have intrinsic enzymatic activity, like tyrosine kinases such as insulin, and endothelial growth factor receptors. Next come receptors that are coupled inside the cell to GTP-binding and hydrolyzing proteins (called G proteins). Finally there is the class of receptors found within the cell. When bound to an affector molecule, or ligand, these will migrate to the nucleus where the ligand-receptor complex directly affects gene transcription. ALEXIS, Biomol, Calbiochem-Novabiochem, Sigma-RBI, and Upstate Biotechnology, among other vendors, supply reagents for exploring this facet of signaling transduction.

From Kinases to G Protein-Coupled Receptors

Many of the key molecules in signal transduction are kinases. These are enzymes that phosphorylate another protein (and in some cases phosphorylate themselves). During the 1980s and 1990s groups working on signal transduction uncovered several basic principles of transmembrane signaling. For example, they identified a new class of protein kinases associated with the Rous sarcoma virus. Since these transforming proteins phosphorylate tyrosine, it appeared likely that tyrosine phosphorylation plays an important role in growth control. Indeed, tyrosine phosphorylation was quickly determined to be a major mechanism of transmembrane signaling.

About 1 percent of our genes are thought to code for kinases. A single mammalian cell could have more than 100 different kinases, mostly of the serine-threonine type. Serine-threonine

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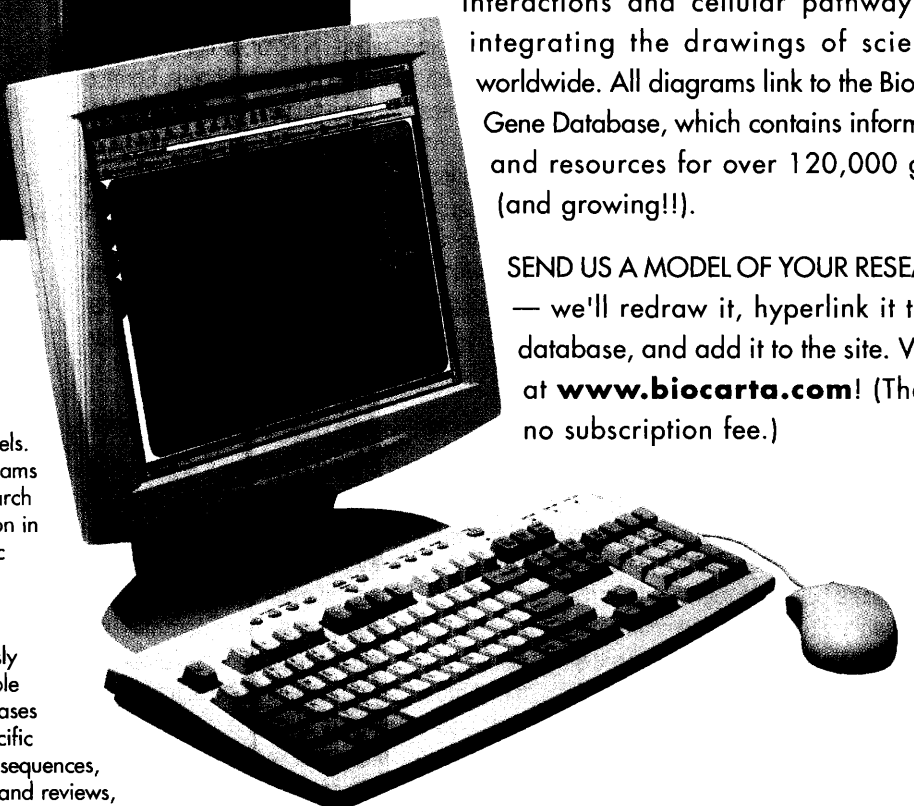

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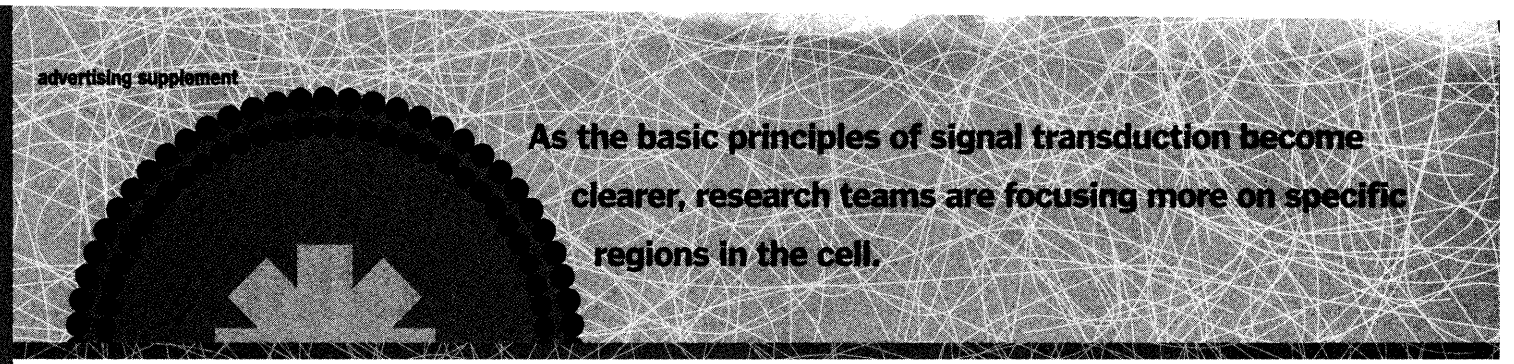

kinases phosphorylate proteins on specific serine or, at times, threonine residues. Prominent examples of serine-threonine kinases are the MAP kinases, Akt, PKA, and PKC. Suppliers of purified protein kinases include Amersham Pharmacia Biotech, Cell Signaling Technology, Promega, and Upstate Biotechnology.

Antibodies represent major research tools for signal transduction. "Antibodies are a huge tool because people want to identify the proteins, be they enzymes, receptors, or ion channels," says Watling. One of the key developments in the study of the kinases was the production of specific targeted antibodies, which identify the active form of protein kinases. These tools allowed researchers to understand better the role of kinases in the various signal transduction pathways. Several companies, among them American Qualex, BD Transduction Laboratories, Chemicon, Sigma-RBI, Upstate Biotechnology, and Zymed Laboratories, offer antibodies used to study the role of kinases in signal transduction. Without these commercially available reagents, progress in signal transduction would not have been as great as it has been.

Researchers determined that the binding of hormones to receptor tyrosine kinases at the cell surface caused the individual receptor molecules to group into pairs and to attach phosphates to each other at the tyrosine residues. In the 1990s, Pawson and others found that these activated receptors bind to a region or module that they called the SH2 domain. The domain is a short sequence of about 100 amino acids that takes on a defined three-dimensional structure within a protein and directly binds specific phosphotyrosine-containing sites on the activated receptor.

The physical interaction of the activated receptor with its SH2-containing targets facilitates the transmission of signals within the cell. In some proteins, the SH2 domain can undergo an intramolecular interaction with a phosphorylated tyrosine, thus preventing the enzyme from acting on its substrate. When the SH2 region attaches to an activated receptor, the conformation of the protein changes to allow the enzyme's active site to come into contact with its substrate. ARIAD Pharmaceuticals is focusing on developing drugs that selectively inhibit Src, a tyrosine kinase that contains both noncatalytic (SH3 and SH2) domains as well as the catalytic domain. ARIAD's signal transduction researchers have recently published a key advance in the discovery of novel nonpeptide inhibitors of the Src SH2 domain in the *Proceedings of the National Academy of Sciences.*

G protein-coupled receptors, meanwhile, form the largest family of receptors. The group contains over 1,000 receptors. G protein mediated pathways involve at least three components: a G protein-coupled receptor; a G protein; and the protein that the G protein activates. Some of these receptors modulate adenylate cyclase activity (including beta-adrenergic, glucagon and odorant receptors). G protein-coupled receptors are involved in the synthesis of cyclic AMP in response to hormonal stimulation. Suppliers in this facet of signal transduction include BioSource International, Chemicon International, Sigma-RBI, STI-Signal Transduction Products, and Upstate Biotechnology.

Second Messengers and Beyond

Fresh approaches to the nature of signal transduction continue to emerge. During the 1960s, Sutherland and others proposed the second messenger theory. An extracellular signal molecule that binds to the membrane receptor is a pathway's first messenger. A second messenger is a nonprotein molecule that participates in the intracellular transduction of a signal. Cyclic AMP was considered to be the intracellular, or second, messenger that mediated the actions of hormones involved in all aspects of cellular metabolism, growth, and differentiation. Cyclic AMP is an important second messenger because it is involved in the regulation of a large number of metabolic processes. ALEXIS, Sigma-RBI, and Stratagene, in particular, supply reagents for work in this segment of the field.

Researchers are increasingly studying the cytoplasm of cells. Scientists once regarded the cytoplasm as a predominantly fluid matrix in which the constituents of the cell floated in rather disorganized fashion. Now it has become clear that signal transduction pathways within the cell exist in very structured environments. Pathways that involve predominantly protein components may exist and function in a semisolid fashion with minimal free diffusion. Such features greatly enhance the efficiency and specificity of signal transmission.

As the basic principles of signal transduction become clearer, research teams are focusing more on specific regions in the cell. "I think the key to understanding signaling will be finding exactly where in the cell effects occur — in which microdomains — and how signals can be transmitted to the nucleus and other parts of the cell," says the Salk Institute's Hunter. "Techniques using video microscopy are becoming available to do this. They'll also look at the temporal aspects of signal transduction, helping to recognize how fast things happen and where, and whether simultaneous events are necessary."

The ability to evaluate signaling pathways *in vivo* is taking on increasing importance, says Pfizer's Saltiel. "If you have developed a kinase inhibitor you need to know that you have hit the target *in vivo,*" he explains. "So basically you require biomarkers like phospho-specific antibodies. Developing them is kind of hit or miss, although people have been pretty successful recently. The tools are now available for more of the kinase pathways."

Other exploratory tools are gaining prominence in studies of signal transduction. "We have an increasing number of tools like fluorescence resonance energy transfer for looking at protein movement into complexes in real time," notes Pawson of the Samuel Lunenfeld Research Institute. He also pinpoints another promising segment of research. "One factor becoming increasingly important is the issue of subset locations," he says. "Often we find in signaling pathways that the critical event is the association of proteins with each other or with the phospholipids in the membranes, the goal being to bring proteins together at a common

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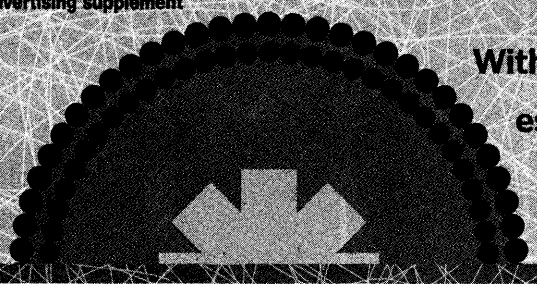

With each new answer come more questions — the very essence of science that is certainly the case in the field of signal transduction.

point where they can work on their targets. A critical way of controlling signal transduction is to keep proteins apart spatially until you want them to do something."

Cell Signaling Technology, meanwhile, is working on methods of identifying MAP kinase substrates. "We've come up with a new way to make them," says Comb. "These are very important new tools that will allow people to follow signaling events by looking at the substrates. They can be extended to acetylation and other types of modification. Our feeling is that these will be very useful in following cascades of events."

The Clinical Potential

Discerning the extraordinary subtleties of signal transduction and understanding the relationships between the many components involved in each pathway provide reason enough to convince a research scientist to devote his or her life to the study of this process. In addition to basic research, a better understanding of signal transduction pathways will be important in controlling or treating many human diseases and disorders.

The discovery that the v-Src protein was a protein tyrosine kinase led to the realization the protein kinases might play a direct role in disease. Many diseases in fact are caused by a mutation that affects protein tyrosine kinases or protein tyrosine phosphatases. This may cause the inactivation of the enzyme or lead to its over- or under-expression. Tumors, immune disorders, and several genetic diseases have been intimately linked to the alteration of these genes. Drugs now in the process of development will activate or inhibit these protein kinases and protein phosphatases. Drug design utilizes both monoclonal antibodies and modified protein ligands. These drugs will become more targeted and effective as researchers learn more about the various components and their interactions in signal transduction.

Anti-cancer drugs are a particular target for pharmaceutical research teams working on signal transduction. "Many oncogenes are merely disregulated signaling molecules," points out Saltiel. "Pathways involving phosphorylation cascades are good targets. At Pfizer we've worked on the MAP kinase pathway."

ARIAD seeks to apply signaling research to the development of drugs for treating osteoporosis, cancer inflammation, and immune-related diseases. "We're trying to pull together all the technologies we can using functional genomics, mechanism-based assays, and structure-based drug design to develop two types of related signal transduction therapies," says Sawyer. "One, downstream, is small-molecule regulated gene transcription. The other, upstream, involves small-molecule inhibitors of signal transduction. We're focusing on a pretty aggressive campaign to advance our programs in terms of clinical testing."

Several companies in addition to ARIAD have begun signal transduction drug discovery programs based on the design and development of small-molecule drugs that inhibit signal transduction pathways in cells responsible for diseases such as cancer, diabetes, inflammation, and immune disorders. The basic concept is to target intracellular proteins thought to be critical to the disease process. The small-molecule drugs would bind to specific targets on these disease-causing proteins. Companies involved in the development of signal transduction-based pharmaceutical products include Ceptyr, GPC Biotech, Kinetek, Kinetix, Lilly, Merck, Millennium, Novartis, Pfizer Pharmaceuticals, Prolifix, Signal Pharmaceuticals, Tularik, and Vertex, just to name a few organizations.

Another way to inhibit receptor tyrosine kinases is with antibodies that neutralize the receptors. In many cases these may work better than small-molecule drugs. Genentech's Herceptin was the first commercial example and C225 from ImClone neutralizes EGF receptor with very promising results.

Unanswered Questions

With all that has been revealed about signal transduction over the past 20 years, many questions still remain unanswered. Scientists want to understand how signaling specificity can occur when many of the same basic signaling pathways are activated by receptors that elicit different cellular responses. Yet to be understood is how these many pathways function within the cell and avoid cross talk with each other. Also uncertain at present is how these components are oriented spatially within the cell and what effect this orientation has on transduction of the signal and cellular response. The list of unanswered questions grows each day as scientists uncover new information on each pathway, and on the interactions and relationships between the many pathways in the cell.

Another important set of tools for signal transduction research results from failed drug development programs in the pharmaceutical industry. Several drugs have been developed that act as highly specific inhibitors and activators of protein kinases and protein phosphatases. When one of these drugs fails in clinical trials, it is sometimes made available for research use, via vendors such as Tocris Cookson or Sigma-RBI. These highly targeted drugs are often of great value in answering the many questions surrounding cellular communication.

With each new answer come more questions—the very essence of science that is certainly the case in the field of signal transduction. Researchers in laboratories worldwide are publishing new findings with astonishing frequency. One of the challenges for researchers in signal transduction is simply keeping current with developments in the many other laboratories performing related work.

We are only in the beginning phases of truly understanding how complex the human body really is. With the recent completion of the initial sequencing of the human genome, we are one step closer to linking the genetic sequences with the functional proteins which play such a crucial role in signal transduction and cellular communication. Again, we have a new starting point to advance basic science and human health care. The map of the human genome will provide a strong foundation for mapping each protein

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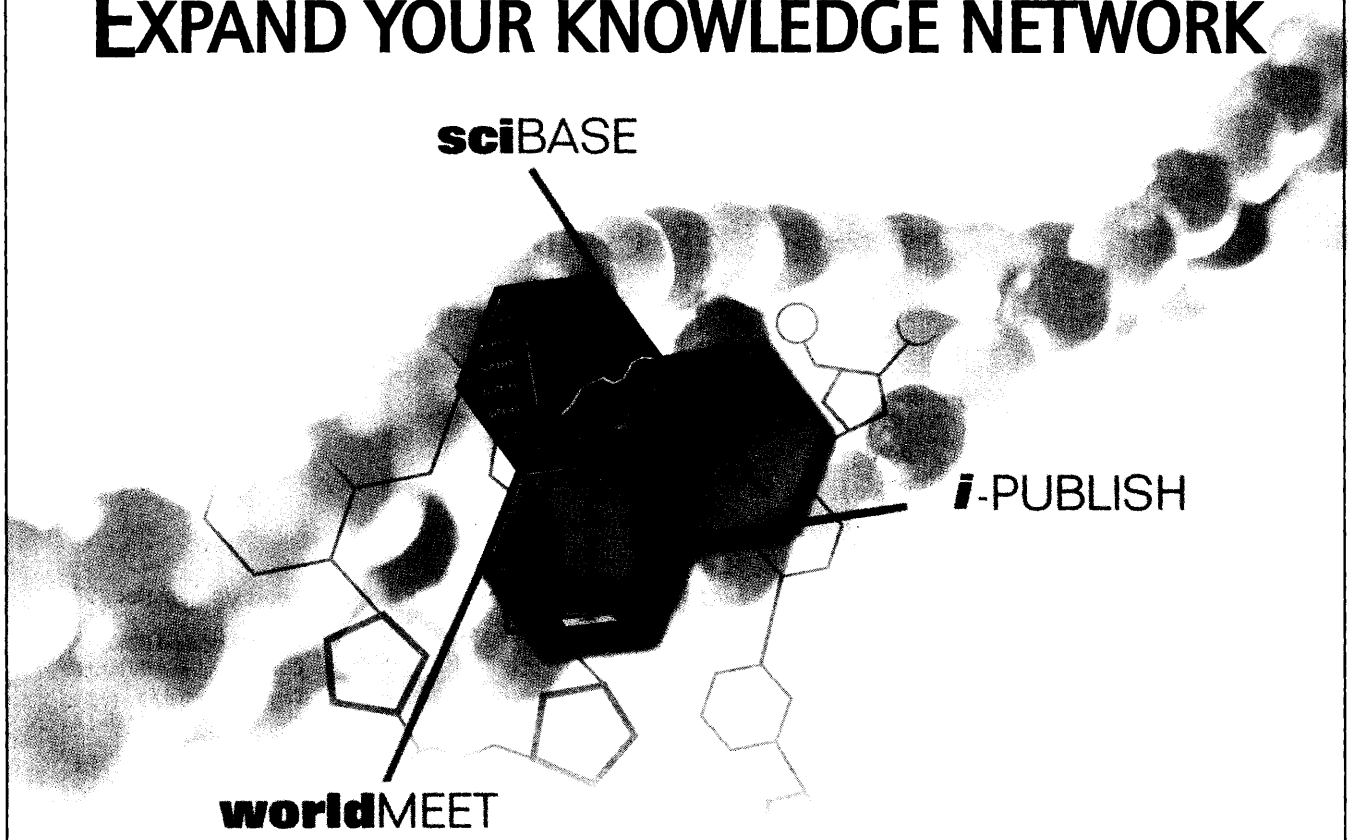

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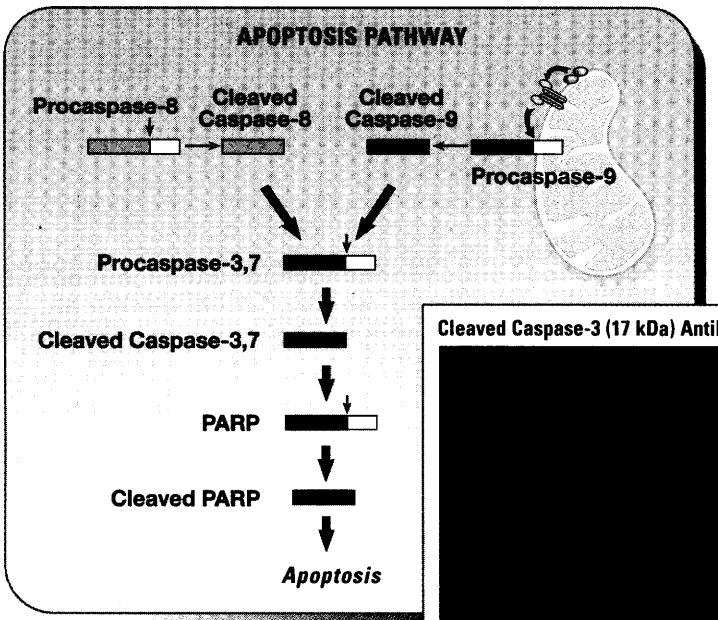

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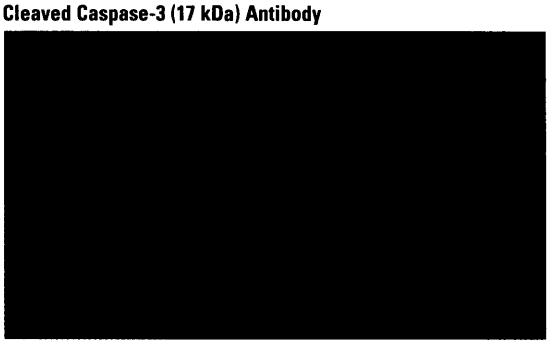

Confocal micrograph of double immunostaining for Cleaved Caspase-3 Antibody (17 kDa; green) and propidium iodide (red) in the striatum of newborn rat brain. Right side exposed to transient cerebral ischemia. (Provided by Dr. Bingren Hu, Queen's Medical Center, Hawaii).

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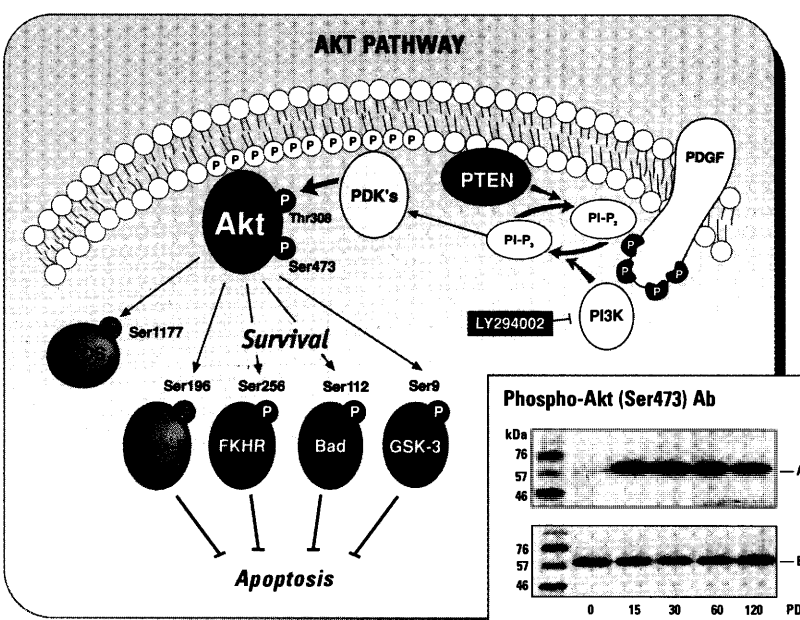

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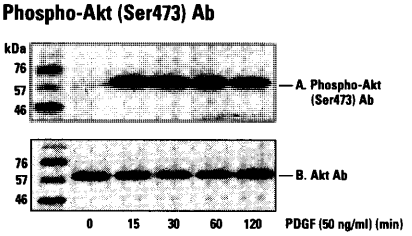

Western analysis of extracts from PDGF-treated NIH-3T3 cells using Phospho-Akt (Ser473) (A) or Akt Antibodies (B).

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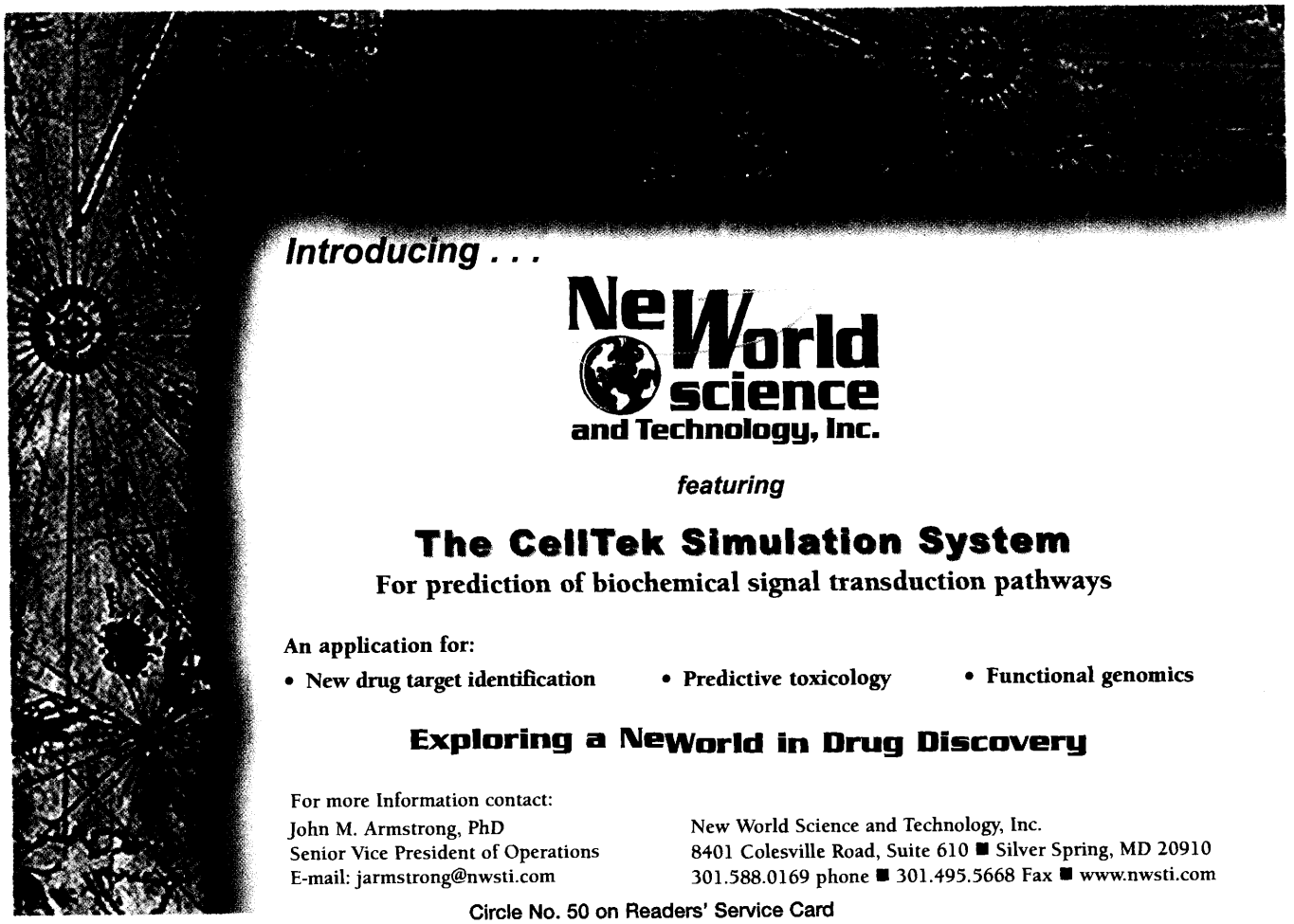

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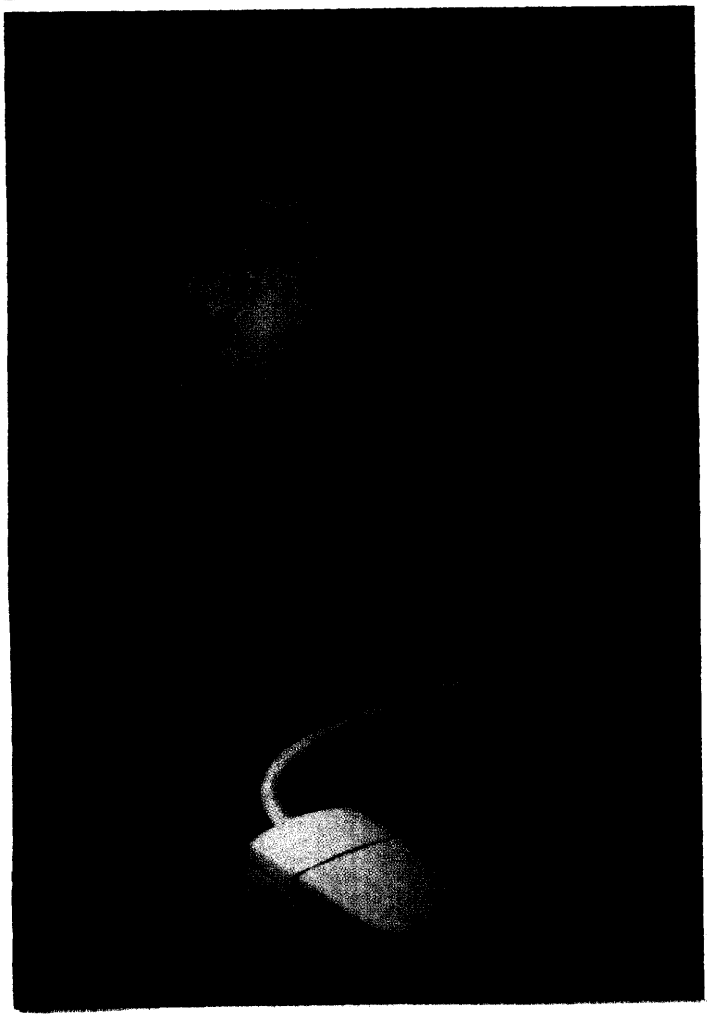

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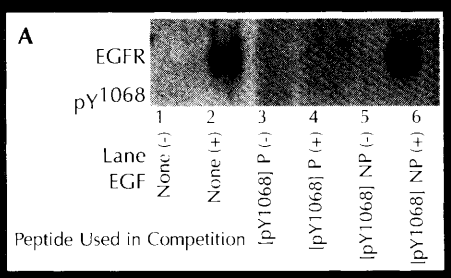

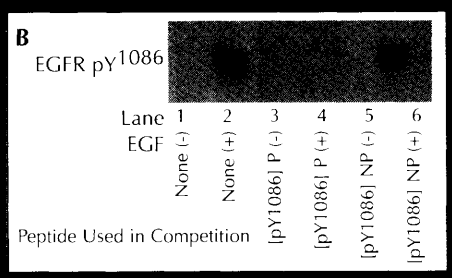

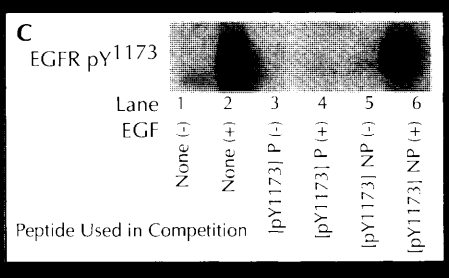

Cell extracts prepared from NIH3T3 cells expressing EGFR were starved for 30 hours, then stimulated for 10 minutes with 30 ng/mL EGF (+), or left unstimulated (-), then resolved by SDS-PAGE on a 6% Tris-glycine gel, and transferred to nitrocellulose. Membranes were incubated with (A) 0.50 µg/mL anti-EGFR [pY1068] antibody; (B) 0.50 µg/mL anti-EGFR [pY1086] antibody; (C) 0.50 µg/mL anti-EGFR [pY1173] antibody, following prior incubation in the absence (lanes 1 & 2), or presence of the peptide immunogen (lanes 3 & 4), or the non-phosphopeptide corresponding to the EGFR phosphopeptide (lanes 5 & 6). The data show that only the phosphopeptide corresponding to this site blocks the antibody signal.
We thank Dr. Paola Defilippi, Dipartimento di Genetica, Biologia e Chimica Medica, Universita di Torino, Italy, and Dr. Laura Beguinot, DIBIT, Italy for generously supplying materials used to analyze the EGFR PSSAs.

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molecule involved in signal transduction to its gene. This will be greatly facilitated by the fact that many proteins have already been sequenced. Thus it should be a relatively straightforward task to locate the genetic sequence that codes for each protein.

Georges Chappuis, CEO of ALEXIS Corporation, emphasizes that point. "As a result of the human genome project science faces a road map of genes that code for tens of thousands of proteins, many of them in the field of signal transduction," he says. "To understand the function of this immense number of proteins, technologies like proteomics and high throughput screening are developed. Such technologies require specific types of reagents from a product and packaging standpoint. To gain a better understanding of the signaling cascades and the cross talk between them, scientists develop selective inhibitors and activators for key proteins to probe substrate specificity and evaluate target proteins. This will certainly be supported by progress in rational drug design based upon available or delineated structural information. Bioinformatics will contribute to identify structural motives beyond the successful sequence homology search to be confirmed by functional terms. Over the next couple of years, tens of thousands of such molecules will be published."

Tools for the field will continue to improve. Just this month, for example, Upstate Biotechnology launched a multianalyte cytokine kit that will conduct multiple assays on single samples. It is also introducing a fluorescent bead assay that can be used to determine the activity of tyrosine and serine/threonine kinases simultaneously in a microwell based on the Luminex detection technology. Cell Signaling Technology has announced the goal of developing arrays of antibodies that will reveal activity in cells. "We should be able to pick up aberrations due to diseases such as cancer whose lesions often affect signaling pathways," explains Comb. "Advances in biological mass spectrometry coupled with the various genome projects have tremendously improved the sensitivity through which we can understand proteins and their modifications," adds Pawson.

What will be the areas of future emphasis? Research to elucidate more clearly which components are involved in the known signal transduction pathways will continue. Experts expect that a significant number of new pathways will be discovered as they further refine tools to analyze the individual signal transduction events in a single cell; methods for studying molecular events using fluorescent tags are already being developed. Real time analysis of these events will also be essential to gain a better understanding of how these molecules control the cell and how the cell responds to its environment.

Apoptosis, transcriptional control, and cytoskeletal regulation will be only a few of the emerging areas of research in the field of signal transduction. Future discoveries are likely to have a profound impact on the understanding and treatment of human disease and other cellular based disorders. Research teams have a long journey ahead, but from 30,000 feet they appear to be making great progress in understanding how little we know and how much we have to learn about life.

Peter Gwynne is a freelance writer based on Cape Cod, Massachusetts, U.S.A. Gary Heebner is president of Cell Associates, a scientific marketing firm in Chesterfield, Missouri, U.S.A.

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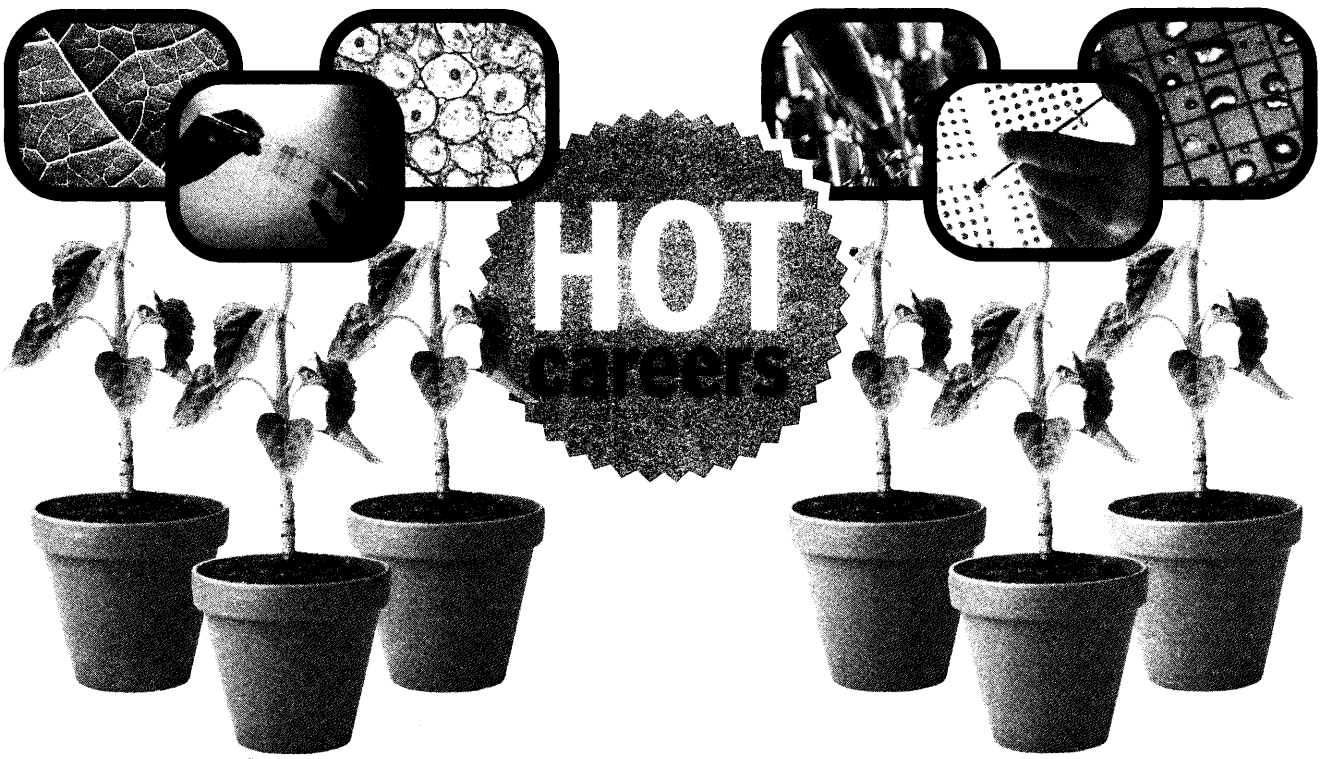
Recent advances in genome sequencing have opened up several new career possibilities for graduates in life science. Here's a selection of the possibilities, along with advice on to how to land the hot new jobs. BY PETER GWYNNE



The successful sequencings of the genomes of humans and other organisms in the past year have changed the entire landscape of life science. In the process they have created a range of hot careers for life scientists at undergraduate, graduate, and postdoctoral levels and even for those already working in industry.

Bioinformatics is emerging as the white-hot field. For pharmas and biotechnology companies, scientists able to interpret the data revealed by sequencing efforts have become as rare as ego-free professors. In the absence of formal degree-granting courses in the subject, companies seek scientists with strong backgrounds in both life science and computer science. Computer science majors without backgrounds in life science are also finding opportunities in life science laboratories to administer the hardware and software.

Chemists of all types are in great demand. Pharmaceutical houses and

3-Dimensional Pharmaceuticals, Inc. Achillion Pharmaceuticals Applied Biosystems Celera CuraGen Corporation Genzyme Hartwell Center for Bioinformatics and Biotechnology Human Genome Sciences The Institute for Systems Biology Pro Source Roche Molecular Systems

A former science editor of Newsweek, *Peter Gwynne writes about science and technology from his base on Cape Cod, Massachusetts, U.S.A.*

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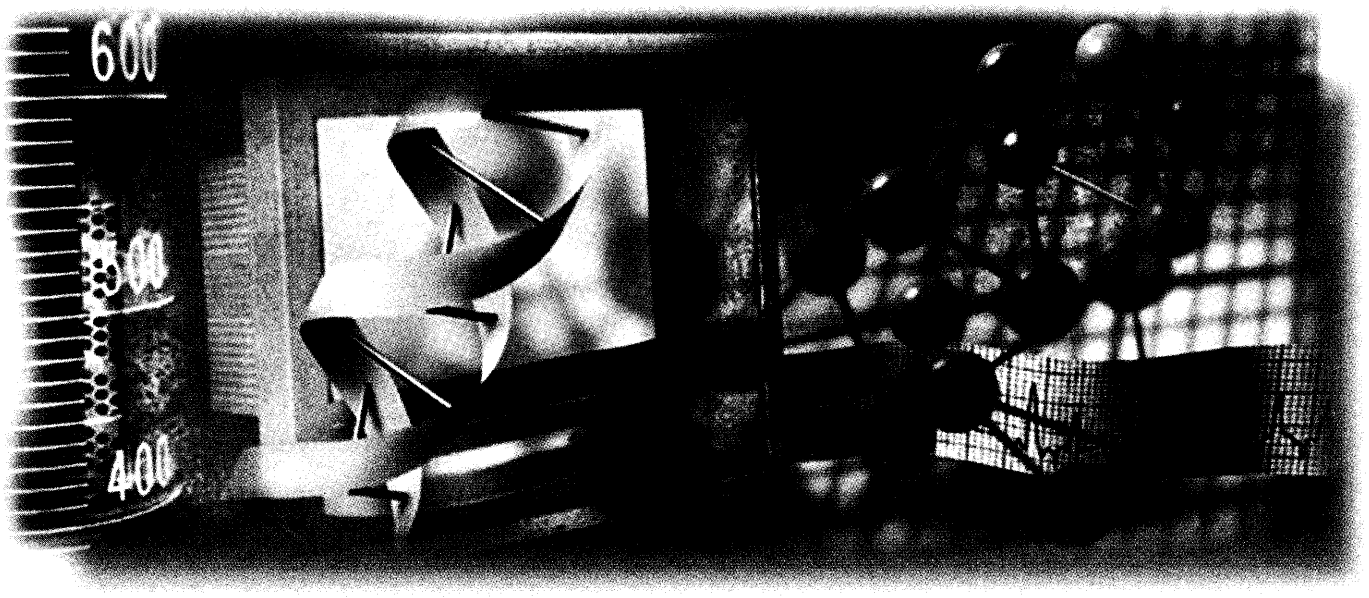

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Senior Principal Scientist – Study Director – Neuropharmacologist

Will be responsible for establishing various state-of-the-art *in vivo* models for the evaluation of new drugs for effects on central and peripheral nervous system functions. Will direct the activities of 3-5 technical staff. Requires a PhD, MD or DVM with appropriate training in the neuropharmacology field plus postdoctoral level training. Up to 10 years experience in the pharmaceutical industry and in a GLP environment is desirable. Technical ability to assess neuropharmacologic activity using *in vitro* techniques is also desirable. Supervisory experience is preferred, as are effective interpersonal, verbal and written communication skills. **Job Code: XHXDD2019**

SCIENTIFIC WRITING

Scientific Writer – Regulatory Submissions

Prepare and coordinate the review of toxicology sections of worldwide regulatory submissions (INDs, IDDs, NDAs, HRDs, BLAs and tabulated study reports) within Corporate guidelines. Requires a BS and/or MS degree in a life science plus 8-10 years experience in preclinical regulatory document preparation, and knowledge of pharmaco-toxicological regulatory guidelines. **Job Code: XHXDD2011**

GENERAL & REPRODUCTIVE TOXICOLOGY

Senior Scientist/Senior Principal Scientist – Study Director, General or Reproductive Toxicology

Will direct GLP internal studies in General or Reproductive Toxicology, monitor studies at outside contract laboratories and manage preclinical development programs. Requires Doctoral degree and Postdoctoral level training in a scientific specialty related to toxicology plus 0-10 years experience in preclinical drug safety. Desire experience in project management and regulatory submissions in the pharmaceutical industry. **Job Code: XHXDD2008**

Assistant Scientist/Scientist – Genetic and Molecular Toxicology

BS or MS in biological science with good chemistry and genetic background required. Responsible for conducting GLP mutagenicity, human lymphocyte chromosome aberration and *in vivo* micronucleus assays. Opportunity for involvement in molecular toxicology research projects. Experience in one or more of the above mentioned assays and knowledge of GLPs is preferred. **Job Code: XHXDD2021**

PATHOLOGY

Senior Associate Director – Veterinary Pathology

As a member of a multidisciplinary team, you will evaluate drug safety and develop strategies for registration of superior new therapies worldwide. This position is available for individuals with both DVM/VMD and/or PhD degrees and board eligibility/certification by the American College of Veterinary Pathologists. Successful candidates will have anatomic pathology experience in various toxicity studies, including chronic toxicity and carcinogenicity studies. A strong scientific background with demonstrated experience designing, developing and registering pharmaceutical agents as well as managing pathologists and technical personnel are requisite. **Job Code: XHXDD2006**

Senior Research Pathologist

Responsibilities include participation on a multidisciplinary team to research mechanisms of drug efficacy and toxicity and evaluate drug safety. Requires a DVM/VMD and/or PhD degree plus board eligibility/certification by the American College of Veterinary Pathologists, and anatomic pathology experience in investigative and toxicological pathology. **Job Code: XHXDD2005**

For prompt, confidential consideration on the above positions at our Lafayette campus, we invite you to apply online or forward your resume, which MUST include Job Code for position of interest, to: **E-mail: sprisc@resume.isearch.com or Mail: Human Resources-LA, Schering-Plough Research Institute, 144 Route 94, P.O. Box 32, Lafayette, NJ 07848**.

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Sr. Principal Engineer, Chemical Development Pilot Plant

Will be a key member of a team of engineers and chemists responsible for process development and scale up of synthetic organic chemical processes. Responsibilities include managing pilot plant operations and operating staff, maintaining pilot facilities, collaborating with development chemists and engineers to scale up and troubleshoot synthetic organic processes, and identifying process improvement opportunities prior to scale-up to manufacturing. Requirements include a BS or MS ChE with 12-15 years experience in bulk pharmaceutical chemicals or related industry. Experience in the introduction of synthetic organic processes into plant facilities, as well as a working knowledge of safety, environmental and cGMP regulations are requisite. Must be a team player and self-starter with strong verbal and written communication skills. **Job Code: XHXCD9943**

Principal Engineer – Biotech Development

Responsible for supervising and providing technical leadership and direction to a team of scientists, engineers and operating staff in the Biotechnology Development Group, including responsibility for development, scale up and technology transfer of purification processes. Will provide technical support to clinical manufacturing and offshore commercial manufacturing operations. Requirements are a PhD in Biochemical Engineering or related field with a minimum of 6 years of relevant experience demonstrating a fundamental understanding of protein purification and scale-up principles. Experience in GMP manufacturing and compliance is required. **Job Code: XHXBD9932**

Process Development Engineer, Chemical Development

Will be a key member of a team of engineers and scientists responsible for process and technology development of synthetic organic chemical processes. Responsibilities include hands-on process development in the laboratory and pilot plant in collaboration with development chemists, evaluation of novel processing technologies and their application to new and existing processes, as well as reaction engineering and process optimization based on thermokinetic studies and process modeling. Will support domestic and international manufacturing sites in process re-engineering projects, problem-solving and process technology transfer. Requirements include a PhD ChE with 3-6 years experience, or BS/MS ChE with 5-10 years experience, in bulk pharmaceutical chemicals development or related industry, working knowledge of cGMPs, strong verbal and written communication skills. Must be a team player and self-starter. **Job Code: XHXCD2017**

Chemical Development Engineer

Will design and perform engineering studies in the development, scale-up and production of processes used for manufacturing. Responsibilities include performing laboratory and plant experimentation, assisting in the design and implementation of appropriate equipment necessary to perform chemical unit operations, supervising production in the plant to ensure conformity with approved batch directions. Requirements include a BS or MS in ChE with 2-4 years of experience in specialty chemical or pharmaceutical manufacturing or pilot plant operations. Knowledge of cGMPs and environmental and safety regulations required. Supervisory experience preferred. **Job Code: XHXCD2022**

Associate Scientist, Chemical Development

Will provide support to the Chemical Process Research and Development Group. Requirements include a BS or MS in Organic Chemistry and 0-4 years of industry experience with demonstrated use of NMR, IR, and HPLC. Strong background in synthetic organic chemistry required. **Job Code: XHXCD9937**

Operations Manager, Regulatory Affairs

Will have direct involvement to ensure tracking of high priority drug development program, strategic planning, tracking, delivery, maintenance and reporting activities associated with worldwide SPRI drug submissions. Requirements include a BS with 6 years of pharmaceutical industry experience or MS with 4 years of pharmaceutical industry experience, a strong knowledge of health authority guidelines and regulations on submission delivery, including electronic submissions. Project planning experience preferred, but not required. **Job Code: XHXRA0025**

Regulatory Affairs Manager

Will provide regulatory guidance to technical departments throughout all phases of drug/biologic development, approval and post-approval market support to ensure quality CMC documents are provided to health authorities. Responsibilities include: reviewing and assessing all CMC documents for consistency and conformance to health authority regulations and regulatory trends; identifying content, responsibility and timing of CMC documents for all regulatory submissions; coordinating and monitoring progress of all CMC regulatory submissions; providing regulatory guidance for CMC issues to internal departments through all phases of drug/biologic development. Will also define current regulatory requirements for technical submissions (INDs, NDAs, (A)NDAs, PLAs, ELAs, DMFs), keep up on the latest regulations, guidelines and regulatory trends, and interact with regulatory agencies on issues requiring routine follow-up or clarification. Requirements include a BS, MS or PhD with 2-5 years of experience in CMC regulatory affairs or pharmaceutical experience in a CMC related area. **Job Code: XHXRA9906**

Regulatory Affairs Manager

Will ensure that all marketed products are maintained in conformance with all U.S. and International regulations by submitting all required reports and reviewing all promotional materials to ensure compliance with FDA regulations and guidelines. Responsibilities include: reviewing promotional materials and assessing the acceptability of proposed product claims based on knowledge of regulations and guidelines and data being used to support claims; obtaining required documents for marketed product reports, such as NDA annual reports, PSURs for U.S. products, PSURs and re-registration submissions for international products. Will also assist in submission to FDA of advertising time of use, aid in the maintenance of the advertising tracking system; maintain packaging components for marketed products; prepare PDRs for submissions; maintain labeling tracking systems; keep current on latest regulations, regulatory guidelines and trends. Requirements include a BS, MS or PhD with 5-7 years of pharmaceutical experience in regulatory affairs clinical research. **Job Code: XHXRA0023**

STRUCTURAL CHEMISTRY

PhD - X-ray Crystallographer

Responsible for providing expertise in protein structure determination utilizing X-ray crystallography to support structure-based drug design and structural genomic projects. Requirements include a PhD in Biochemistry, Chemistry, Biophysics or recognized equivalent discipline with 0-3 years post-PhD experience. Experience must include strong, fundamental knowledge and experience in X-ray crystallography, crystallization, data collection, MAD/MIR phasing and refinement. Good verbal and written communication skills and the ability to work in large multidisciplinary project teams are also required. Background/familiarity with protein purification, computer modeling or programming is a plus. **Job Code XHXDD0150**

BS/MS - Research Associate (Protein Purification/Characterization/Crystallization)

Responsibilities include making/preparing recombinant proteins for structure-based drug designed studies and setting up/analyzing crystallization trials. Requirements include a BS or MS in Biochemistry, Chemistry or related life science discipline with 2-4 years experience with recombinant protein purification, biochemical/biophysical characterization, and/or crystallization skills. **Job Code XHXDD0181**

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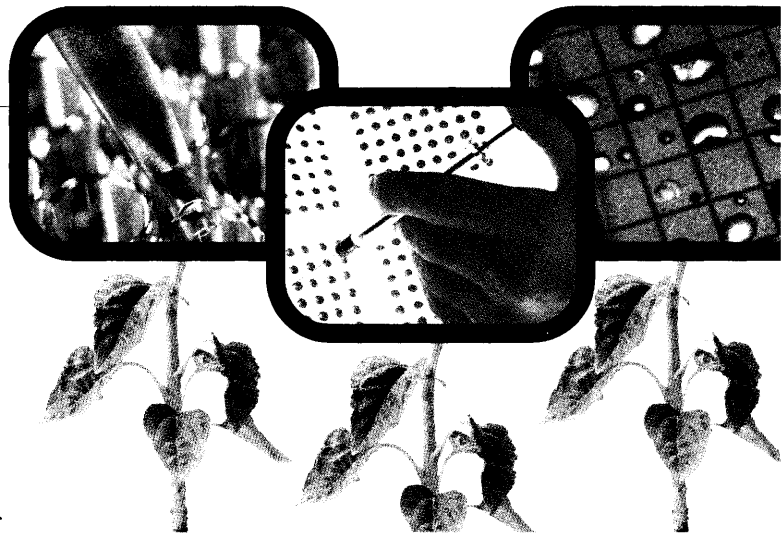
Using Science for Human Advantage

biotech firms are all competing for a small number of the true stars in fields as diverse as analytical chemistry and synthetic organic chemistry.

Equally desirable to employers are scientists with an understanding of the interdisciplinary nature of research in the modern life science industry. Some of those are needed for protection of companies' intellectual property. Others move quickly to the management track. Good management has become a highly significant factor in ensuring the success of individual laboratories and their companies. In an environment in which too many firms are chasing too few life scientists, poor management can cause companies to lose their best employees.

Even bench scientists must develop a feel for collegiality. The day of the scientist working in isolation at the industrial bench has long passed. Individual scientists have to work in multidisciplinary teams and those teams have to collaborate with other groups to ensure that products move rapidly through the corporate pipeline.

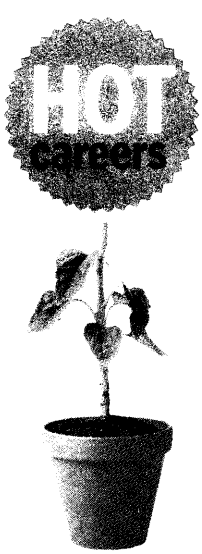


Here we discuss the hiring needs in hot disciplines of several organizations. We talk to representatives of established and start-up companies in the pharmaceutical and biotechnology industries as well as a new semicorporate, semiacademic institute and a search firm.

Katharine Giacalone

ROCKVILLE, Maryland: Having played the leading role among commercial organizations in sequencing the human genome and genomes of other organisms, Celera is now ready for the next step. "When we were setting out to sequence the human genome, we set up to staff that project," recalls vice president of human resources Katharine Giacalone. "Now we're at the second stage: getting back to research and analysis and mapping the data. We're looking for people who can bring biology and mathematics together. We want people with mathematics and software skills who can learn the biology or vice versa."

Celera generally requires scientists who will work on its research side to have Master's degrees or Ph.D.s. "But in our production facility a Bachelor's degree is a perfect qualification," Giacalone stresses. In addition, Celera hires some individuals with Bachelor's degrees in computer science to work exclusively on writing software.



Celera is unusual in having little difficulty finding the individuals it needs. "We have a tremendous number of candidates anxious to work at Celera," says Giacalone. "We're getting a lot of people applying from laboratories around the world, in universities, and even the private sector. Company identity is the best recruiting feature we have." That feature helps to attract scientists whom Giacalone calls passive job seekers. These are individuals who are happy with what they are doing and not necessarily looking for work but who might be interested in Celera."

Giacalone's main problem involves making selections from among the applicants. "We have a team interviewing approach in which candidates go on a round robin from manager to team members," she explains. "We're looking for people who want to be part of a team. They need to be flexible and ready to roll up their sleeves and do whatever it takes to get the job done and help with a project. Since we rotate and promote a lot of people to team leader positions on specific projects, we also look for leadership skills such as people management, problem-solving skills, and listening skills. We also provide extensive manager training workshops to keep new managers up to date with the latest management practices."

Celera aims to keep its new employees happy in tangible and intangible ways. "Many find that we may offer them more than they are making," says Giacalone. "However, we have a very strong compensation package including salary, stock options, and bonuses as well as medical and dental coverage, 401(k) plans, and programs under which employees can buy stock at a discount." In the workplace the company offers such perks as volleyball, ping-pong, ice cream socials, and seated massage. "We have folk here who work very long hours, Giacalone says. I think they know they are appreciated."

John Sninsky

ALAMEDA, California: "The next step in the Human Genome Project will be using the information it has revealed to understand what it means: the whole concept of functional genomics," says John Sninsky, vice president for discovery research at Roche Molecular Systems and vice president of Roche Genetics U.S. 'I think there will be greater urgency to hire in all positions for two reasons. First, with all the information coming from genome sequenc-

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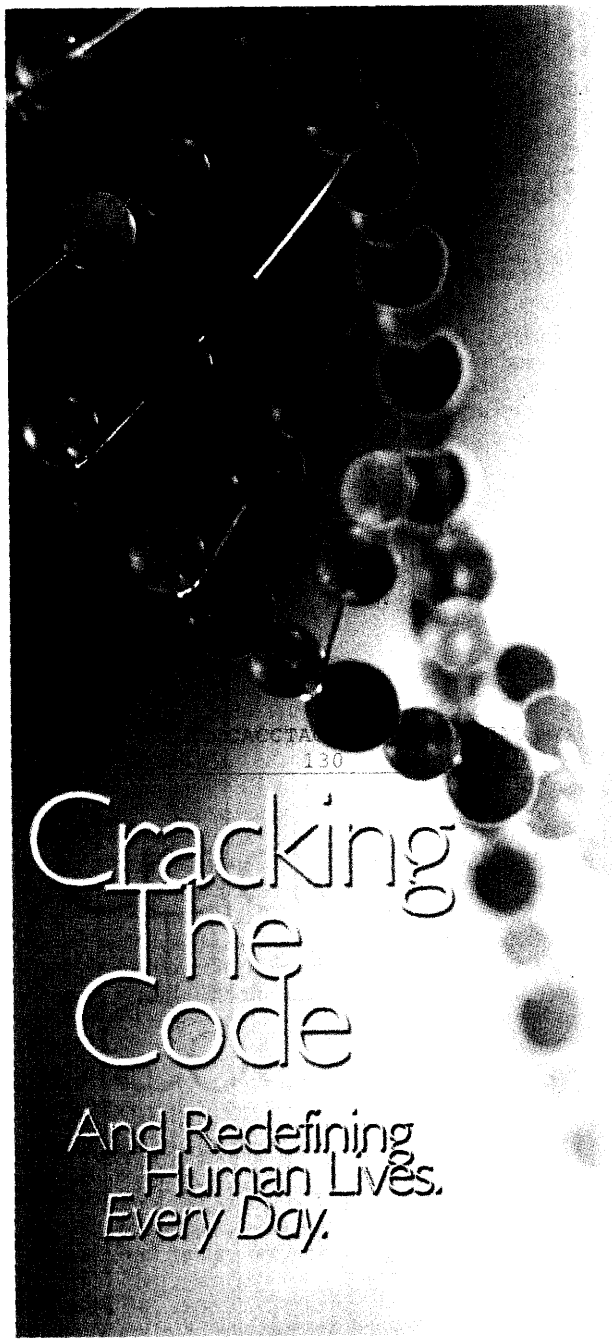

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Incumbent will manage a group of 10 doctoral level pharmacokinetics, and act as deputy to the global head of clinical pharmacokinetics. Successful candidate will implement innovative approaches with regard to PK/PD aspects of drug development, manage timely progression of these aspects to meet global requirements and contribute to management of the CP department in the US. Interaction and communication with other departments (Biostat, CRD, PCS, DRA and TRD) as well as regular and timely communication with the global head of the CPK group is also critical. Mentor CPKs with their development and training needs, provide support to Medical Affairs, Marketing and TRD groups and participate in key cross-project meetings with regulatory agencies such as FDA. A Ph.D. in Pharmacokinetics with at least 10 years' of experience in the pharmaceutical industry, specifically in the area of pharmacokinetics is required. Must possess a thorough knowledge of PK, PK/PD and drug metabolism concepts, a sound knowledge and understanding of the drug development process and regulatory requirements, specifically in terms of bioavailability, bioequivalence and pharmacokinetics/dynamic models. Please refer to **requisition #8578AD** on resume and envelope, or as the subject of your email.

CLINICAL PHARMACOLOGY PHYSICIAN/MANAGER

Incumbent will be responsible for trials in which the objectives are to establish initial safety and the pharmacokinetics of drug candidates in various populations and/or conditions. Studies elaborating the relationship between the pharmacokinetics and dynamics of these drugs candidates will be coordinated by the Physician/Manager in collaboration with PDPM and he Clinical Research Department. In addition, you will represent Clinical Pharmacology expertise to both the pre-clinical and clinical areas. Requirements include M.D. or Ph.D. with approximately 5 years' research experience in life sciences and extensive experience in the conduct of Clinical Pharmacology trials. Experience and knowledge of the drug development process and guidelines for GCP are essential. Please refer to **requisition #7011AD** on resume and envelope, or as the subject of your email

SR. CLINICAL RESEARCH SCIENTIST

Assist Clinical Trial Leader in planning, implementing, managing and reporting of Phase IV clinical trials for STI-571 and other Oncology products. Contribute in the preparation of clinical trials, protocol summaries, protocols, CRF's, clinical trial reports; assist in the monitoring of enrollment, patient eligibility and safety, data consistency and manage operational aspects of clinical trials, including CRO management. Requirements include RN, BSN or Scientific degree along with experience in clinical research as a Clinical Research Associate, Clinical Scientist, Data Manager, Study Coordinator or Clinical Research Nurse. Must possess CRO management experience. Experience in Oncology preferred. Full and Part Time positions available. Please refer to **requisition #8530AD** on resume and envelope, or as the subject of your email.

SR. CLINICAL PHARMACOLOGY SCIENTIST

Serves as Clinical Trial Leader for projects and is responsible for preparing clinical trial protocols, monitoring studies, reporting results and contributing to publications. Makes recommendations regarding safety, eligibility, enrollment and data analysis. Also prepares and implements project specific training programs and training materials for internal and external staff. Successful candidate must possess a University degree in Biological Sciences/Nursing or Pharmacy, a minimum of 5 years' clinical environment experience, and knowledge of CGP and local regulatory requirements. Position also requires medical-scientific writing skills, knowledge of clinical trial design, statistics and pharmacokinetics. Must be familiar with all aspects of the drug development process. Please refer to **requisitions #8458AD** or 8170AD on resume and envelope, or as the subject of your email.

CLINICAL RESEARCH SCIENTIST

The successful candidate will assist Clinical Trial Leader in planning, implementing and reporting clinical trials. Additionally, you will contribute in preparation of Protocol Summaries and Protocols, assist in monitoring safety, eligibility, enrollment and data consistency, prepare reports to Health Authorities and compile dossier material. Some travel required and ability to interact in a global drug development environment is essential. Requirements include a Nursing or Science degree, experience in Clinical Research, and fluency in the English language. Exposure to/experience in Psychiatry or Biological Sciences helpful. Please refer to **requisition #8490AD** on resume and envelope, or as the subject of your email.

SR. CLINICAL RESEARCH PHYSICIAN

Incumbent will serve as International Clinical Leader, Regional TA Representative to ICT, Clinical Trial Leader or medical advisor to teams. Will provide input to Clinical Protocol Summaries and Clinical Trial Protocols, make decisions regarding monitoring safety, eligibility, enrollment and data consistency and provide medical expertise/evaluation of questions regarding patient care. Additionally, you will prepare and implement project specific training programs for internal and external use and participate in multidisciplinary tasks in support of continuous improvement and other management objective. Requirements include M.D. eligibility or certified in Psychiatry. Psychiatry experience in Clinical Research preferred. Please refer to **requisition #8496AD** on resume and envelope, or as the subject of your email.

SR. CLINICAL RESEARCH SCIENTIST

As a critical member of the team, you will be responsible for the implementation of clinical projects and trials (usually non-registration) involving Transplant products. Key responsibilities include implementing and managing various trial related activities, including proactive management of CRO activities, preparation of study documents (protocols, case report forms, etc) and regulatory documents, and conducting the trial in compliance with GCP and Novartis SOPs. You will assist with annual updates to FDA and the estimation of project resources, manage budgetary activities, and ensure that all timelines are met. Requirements include a B.S. or B.A. degree in Life Sciences with 3+ years' experience in clinical trial management. Demonstrated successful CRO management along with proficiency in MS Word, Excel, and Powerpoint are preferred. Please refer to **requisition #8567AD** on resume and envelope, or as the subject of your email.

SR. CLINICAL RESEARCH SCIENTIST

Plan, organize and implement clinical projects and Phase IV studies, and select and manage CROs responsible for conduct of Phase IV studies in order to ensure timely completion. Develop regulatory documents, including IND annual reports, investigator brochure, study protocols, final study reports and briefing books. Participate in and oversee development of CRFs, estimate financial, human and drug resources required for clinical programs and assist in the development of project specifications statistical analyses plans and table displays for study reports. Requirements include a B.S. or B.A. degree in Life Sciences along with 5-7 years' industry experience in clinical trial management. Must possess demonstrated expertise in protocol and final study report generation. Experience in Dermatology/GI preferred. Please refer to **requisition #8523AD** on resume and envelope, or as the subject of your email.

CLINICAL RESEARCH ASSOCIATE

Numerous regional positions for CRA's to be responsible for screening, recommending investigators, conducting trial initiation and attending meetings. Additionally, you will perform on-site monitoring and Clinical Closeouts as well as participate in field monitoring training. A B.S./B.A. in Nursing Pharmacy along with technical business knowledge (drug development process, regulatory requirements), 3-5 years' experience monitoring clinical data/clinical trials Phase I-IV and CRA/clinical monitor experience are required. Approximately 50% travel required. Please refer to **requisition #8598AD** on resume and envelope, or as the subject of your email.

ASSISTANT DIRECTOR, MEDICAL DATA MANAGEMENT

Recruit, manage, motivate, and coach the performance of Clinical Data Managers and Assistants, support and establish the Head of MDM Support with project related coaching and training and establish a partner and customer oriented TA with line units within and outside of MIPs. Ensure provision of timely, efficient high quality data management of clinical projects and trials, evaluate and implement process improvements and provide project level data management strategy. Work closely with global counterpart to ensure consistent approach to data management. Requirements include a B.S./B.A. in Biomedical/Biological Science, or RN or equivalent relevant experience, with 6+ years' clinical data management experience, of which 1-2 should be in line management or project team work. Must possess excellent understanding of physiology, pharmacology, clinical study objectives and methodologies as well as the Novartis drug development process. Thorough knowledge of clinical research drug development process, SOP's and "Good Clinical Practices" as well as other international regulations are essential. Please refer to **requisition #7233AD** on resume and envelope, or as the subject of your email.

SR. BIOSTATISTICIAN I - REQUISITION #8515
SR. BIOSTATISTICIAN II - REQUISITION #8514
SR. STAFF BIOSTATISTICIAN I - REQUISITION #8513

Review protocols and case report forms for trial design, write statistical methodology section of the protocol and prepare analysis plan and computer programs for inferential analyses. Additionally, the successful candidate will participate in drug project related activities, including clinical development programs, provide support to new drug submission/approval and oversee CRO deliverables for trials contracted out. **Req #8515:** M.S. in Statistics with minimum 3 years' related experience or Ph.D. in Statistics with limited or no experience; **Req #8514:** M.S. in Statistics with minimum 6 years' related experience or Ph.D. in Statistics with minimum 2 years' experience; **Req #8513:** M.S. in Statistics with minimum 9 years' related experience or Ph.D. in Statistics with minimum 5 years' experience. All positions require knowledge of the SAS computer package, clinical trial methodology, FDA statistical guidelines and drug development process. Please refer to the appropriate requisition # on resume and envelope, or as the subject of your email.

We offer competitive salaries, comprehensive benefits and the excitement of having a significant impact on the programs of an international leader. Please email your resume/curriculum vitae and letter of interest to: rd@recruitmentsolutions.com, referencing appropriate requisition # in subject area and in body of email message, or mail your information to: R&D Staffing, Novartis Pharmaceuticals Corporation, 556 Morris Avenue, Building SEF 1029, Summit, NJ 0790, referencing appropriate requisition # on resume and envelope. We are an equal opportunity employer M/F/D/V. We appreciate your interest in our Company. Unfortunately, we will only be able to respond to those candidates chosen for interviews or additional follow-up. www.pharma.us.novartis.com

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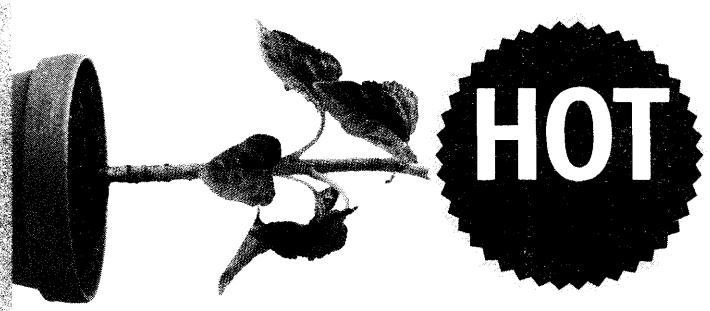
ing it behooves everyone to translate the data into dramatic benefits for health care as soon as possible. In addition, competition among companies and scientists to sort out answers will be felt sharply.'

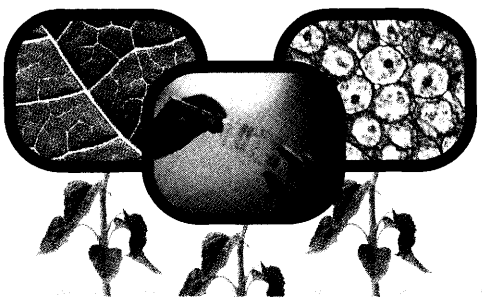
In light of that environment, Sninsky continues, "We need people who have a framework of thinking about disease to take genetic data and start prioritizing it. We're looking for everybody from entry-level people who want to carry out routine studies to individuals with a lot of experience who can carry out research consistently. We want people with skills in informatics, statistical genetics, and mathematical analysis. We also need to hire disease specialists with strong foundations in biology."

Roche Molecular Systems plans to expand all its programs related to genomics and other 'omic' sciences. "Here," says Sninsky, "we have a real need for more junior people at the B.S. and M.S. level who can do the basic lab work. The company won't consign those individuals to continual laboratory work, however. People who are thoughtful will start in the ranks and then move up, particularly if they have strong organizational skills," says Sninsky. "The day of the absent-minded professor will change to the day of the organizationally minded. Candidates will also need to be facile with electronic communications and electronic databases."

The company requires other skills in its employees. "People really have to be personable as they work on teams more than at any time in the past," Sninsky says. "The diligent postdoc who can't get on with other people is on the way out. In addition we want scientists with integrative, reflective natures who can look at different networks of genes and pathways and see how they are being put together."

Roche Molecular is looking for the right people internally as well as externally. "When we hire from inside we have scientists with a known track record. They are known quantities in terms of how they interact,"explains Sninsky. To convince qualified outsiders to join the company, he continues, "We point out that we have a very strong commitment in terms of having the tools available and providing a challenge so that employees can learn new skills as well as apply those they already have. And we are flexible in how we think about compensation."





For further valuable career features, go to sciencecareers.org, then click on Advice and Perspectives.

FRAMINGHAM, Massachusetts: "Bioinformatics is extremely important in several areas of our company," says Bernice Allitto, director of laboratory operations for the molecular diagnostic laboratory at Genzyme Corporation's Genetics division. "We also have many computer scientists here who do not necessarily have backgrounds in life science to keep the operations running. And some of our divisions are doing combinatorial chemistry to identify small molecules for effective therapeutics."

Genzyme seeks to hire both scientists with industry experience and those about to graduate from university. "We're thinking about having internships with universities," says Allitto. The company is looking for people with degrees in life science from the Bachelor's level on up.

Bernice Allitto

Allitto's own laboratory has about 60 employees at several levels of training. "They typically have degrees in biology from B.S. all the way up to doctorates," she says. "We also have a small MIS (management information systems) group that does programming for us and people without degrees who do support functions. The laboratory system is custom-designed for us and they need to be able to use it."

Allitto's toughest job in recruitment involves finding computer scientists. "It's getting harder and harder to attract computer people who are interested in life science," she says. "Many individuals with degrees in computer science tend not to know that life science has openings for them. Some are answering job advertisements without knowing what the work entails. Even when programmers and analysts join her lab," she says, "It often takes a long time for them to understand our business."

Genzyme has two advantages in recruitment. "Genzyme has a great reputation," she says. "That helps to attract good people. And our location near Boston helps." In addition, Allitto says, "We have great benefit packages. In some cases we offer incentives such as signing-on bonuses and stock options. And we have a tuition reimbursement program that is very attractive."

What qualities does Genzyme require of its recruits? "We look for people who are really committed to this area of science—people who really want to work for the benefit of science and good patient care," Allitto states. "We seek scientists who want to start from the ground up and develop. Good people skills, good teamwork ability—all those things are important."

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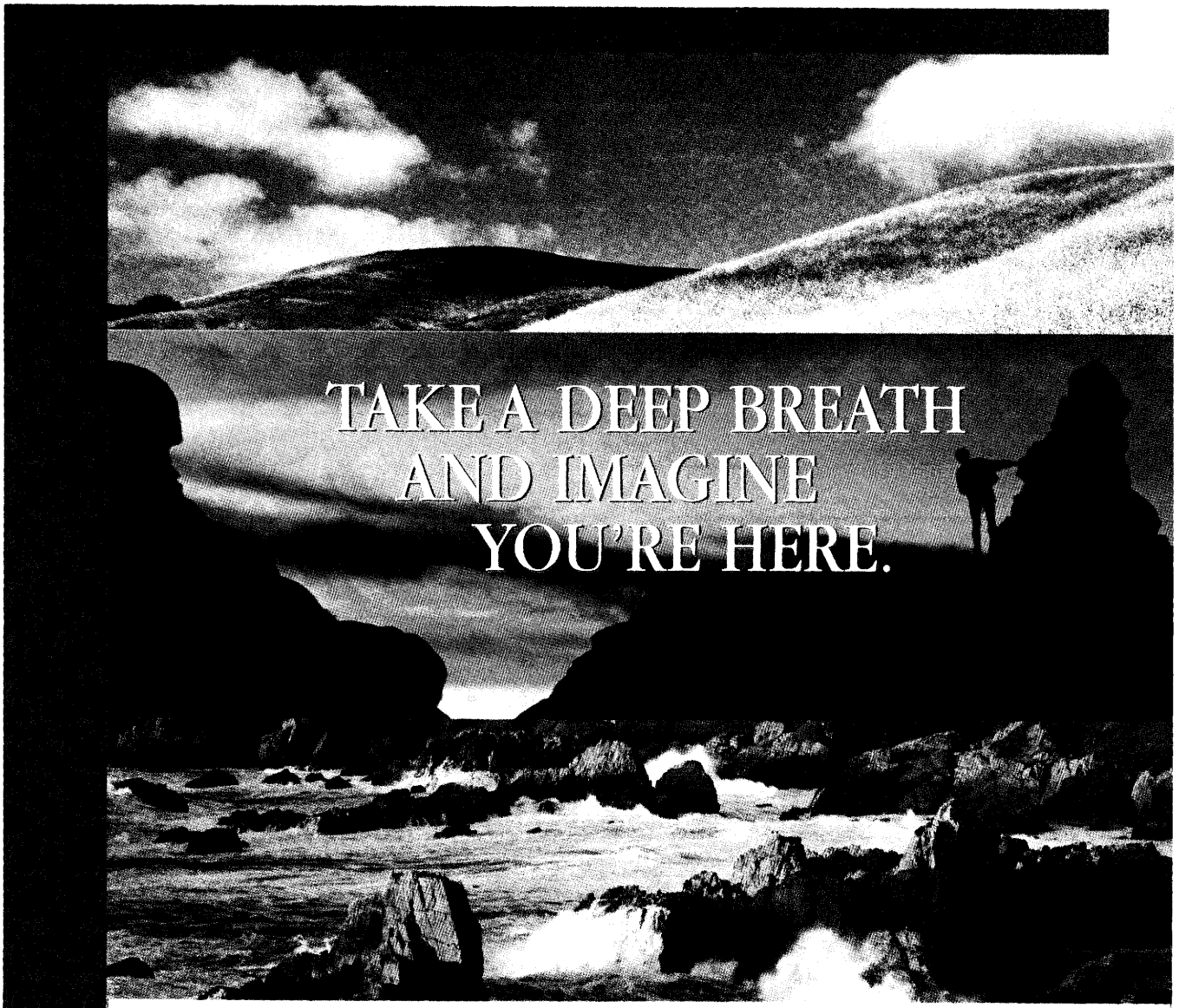

Our focused approach to discovery and development is leading to numerous opportunities. To extend our breakthrough supportive therapies for oncology and nephrology patients. To leverage advanced discovery and development resources towards therapies for oncology, nephrology, rheumatology, neurology, and metabolic disorders. To work in a culture that values results. To make a real difference at a company that has a proven track record.

Our culture has earned us a place near the top of *Fortune* magazine's list of the "100 Best Companies to Work For" three years in a row. This is complimented by our outstanding benefits including stock options. Amgen's also a place where right outside the door you'll find mountain views, open spaces, and beaches not far away.

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Tenure-Track Faculty Positions in the College of Natural and Agricultural Sciences and the Division of Biomedical Sciences

The University of California at Riverside is in a major phase of growth and development. As a result of our searches last year, we have hired 21 outstanding faculty in the College of Natural and Agricultural Sciences and the Division of Biomedical Sciences. Currently the following tenure-track positions are available in the physical, biological, biomedical, statistical, and agricultural sciences. For Open-level positions, we are looking for outstanding hires at the Professor or the Associate or Assistant Professor levels. Please contact the Web sites listed below for information about the individual positions.

BIOCHEMISTRY—1 POSITION
http://www.biochemistry.ucr.edu/about/searches.html
Molecular Biology—Open Level

BIOMEDICAL SCIENCES—2 POSITIONS
http://biomed.ucr.edu/faculty/faculty-framer.html
Neuroscience—Open Level
Medical Microbiology—Open Level

BOTANY & PLANT SCIENCES—2 POSITIONS
http://www.plantbiology.ucr.edu
Plant Ecology—Open Level
Cell Biology—Open Level

CELL BIOLOGY AND NEUROSCIENCE—1 POSITION
http://cnas.ucr.edu/~neuro/home.html
Neuroscience—Assistant Professor

CHEMISTRY/AIR POLLUTION RESEARCH CENTER—1 POSITION
http://www.chem.ucr.edu/faculty/search.html
Aqueous Phase/Environmental Analysis Chemistry—Assistant Professor

CHEMISTRY—4 POSITIONS
http://www.chem.ucr.edu/faculty/search.html
Analytical Chemistry—Assistant Professor (2 openings)
Analytical Chemistry—Open Level
Organic Chemistry—Open Level

EARTH SCIENCES—1 POSITION
http://cnas.ucr.edu/~earth/es.html
Biogeochemist—Assistant Professor

ENTOMOLOGY—1 POSITION
http://www.entomology.ucr.edu
Integrated Pest Management—Assistant Professor/Assistant Cooperative Extension Specialist

ENVIRONMENTAL SCIENCES—4 POSITIONS
http://envisci.ucr.edu/jobs/
Soil-Landscape Relations—Assistant Professor
Environmental Microbiology—Assistant Professor
Environmental Policy—Assistant Professor
Water Quality—Assistant Professor/Assistant Cooperative Extension Specialist

MICROBIOLOGY—1 POSITION
http://cnas.ucr.edu/~micro/microintro.html
Microbiology—Assistant Professor

NEMATOLOGY—1 POSITION
http://cnas.ucr.edu/~nem/index.html
Sensory Physiology—Assistant Professor

PHYSICS—1 POSITION
http://cnas.ucr.edu/~physics/physics/opsdat.html
Experimental Condensed Matter Physics—Open Level

PLANT PATHOLOGY—1 POSITION
http://cnas.ucr.edu/~ppath/plantpath.html
Fungal Cell Biology—Assistant Professor

STATISTICS—2 POSITIONS
http://cnas.ucr.edu/~stat/homepage.htm
Statistical Genomics/Bioinformatics—Assistant Professor (2 openings)

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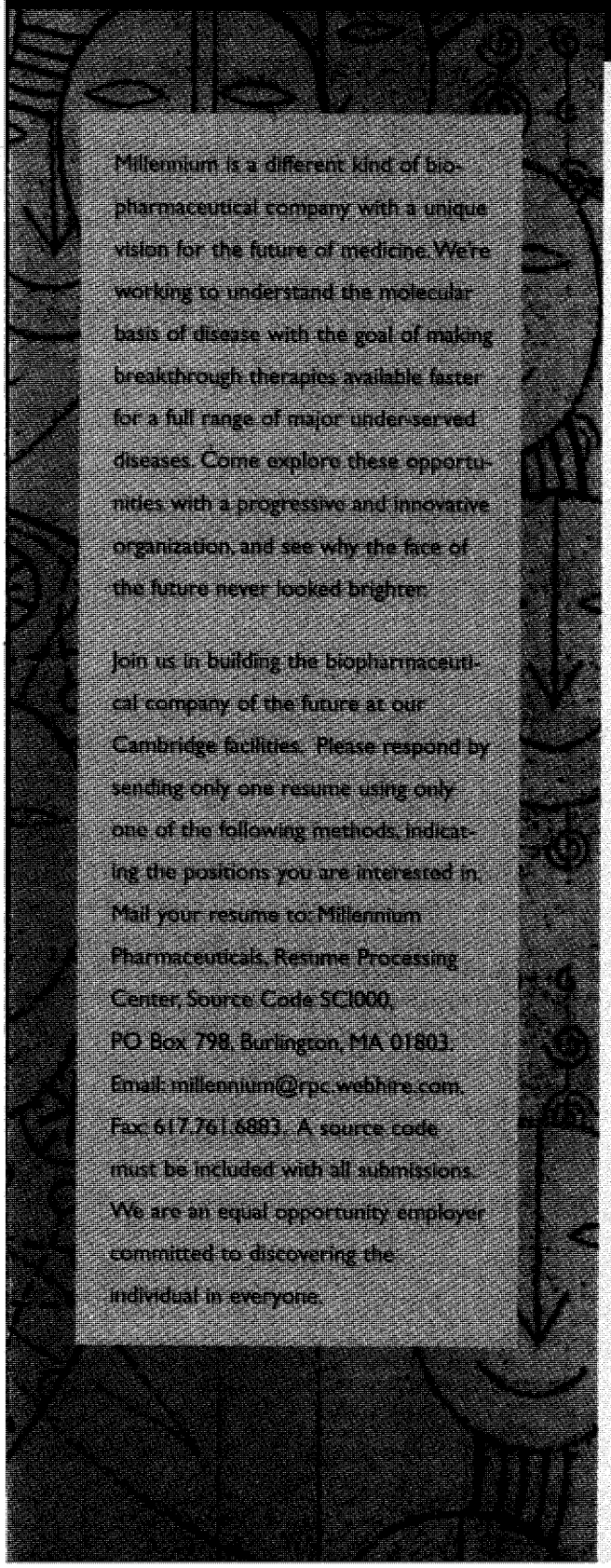

Millennium is a different kind of biopharmaceutical company with a unique vision for the future of medicine. We're working to understand the molecular basis of disease with the goal of making breakthrough therapies available faster for a full range of major underserved diseases. Come explore these opportunities with a progressive and innovative organization, and see why the face of the future never looked brighter.

Join us in building the biopharmaceutical company of the future at our Cambridge facilities. Please respond by sending only one resume using only one of the following methods, indicating the positions you are interested in. Mail your resume to: Millennium Pharmaceuticals, Resume Processing Center, Source Code SCI000, PO Box 798, Burlington, MA 01803. Email: millennium@rpc.webhire.com. Fax: 617.761.6883. A source code must be included with all submissions. We are an equal opportunity employer committed to discovering the individual in everyone.

RESEARCH ASSOCIATES

- Inflammation Receptor Pharmacology/GPCR
- Sequence Analysis
- In situ Hybridization
- QC/Materials Resource Planner
- Transcriptional Profiling
- Metabolic Disease Biology
- In vivo Pharmacology
- Synthetic Chemistry
- Chemokine Receptors
- GPCRs
- ADMET
- Molecular Biology
- Assay/Enzymes
- Histology
- Analytical Chemistry
- MAbs, Hybridoma/Cell Biology
- Assay Development, Pharmacology
- Clinical/Preclinical CRA, Preclinical Development
- Protein Biochemical Analysis and Purification, Preclinical Development
- Purification, Protein Sciences
- Expression, Protein Sciences
- Rederivation and Cryopreservation, Animal Resources Group

SR. RESEARCH ASSOCIATES

- E. coli Production, Protein Sciences
- Cell Culture
- In vivo Tumor Biology, Pharmacology

PhD SCIENTISTS

- Pathways
- Patent Analysis
- ISH/IHC
- Oncology
- Molecular/Cell Biologist

SCIENTISTS

- In vivo Pharmacology
- Enzymology
- GPCRs
- Lead Optimization
- Toxicology
- Genetic Statistics
- Computational/Structure-based Design
- Purification and Expression, Protein Sciences

BIOTHERAPEUTICS MANAGEMENT

- Director
- Sr. Director
- Sr. Manager

PHARMACOLOGY MANAGEMENT

- Associate Director, In vivo Tumor Biology

OTHER OPPORTUNITIES

- Administrative Assistants, Multiple Departments
- Monitor, Toxicology Studies
- Statistics/SAS Research Investigator, MS
- Sequence Analyst, BS/MS
- Protein Biochemist, BS/MS
- Lab Technician, Animal Resources Group
- Lab Assistant, Large-scale Lab, Protein Sciences
- Preclinical Development
- Research Investigator, Mouse Models

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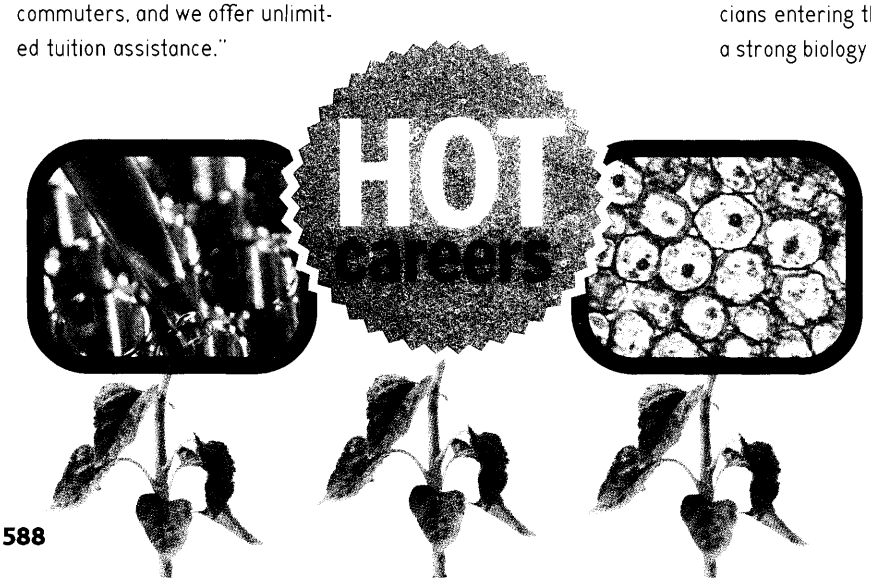
FOSTER CITY, California: Applied Biosystems, until recently known as PE Biosystems, has just opened a Proteomics Research Center in Framingham, Massachusetts, a continent away from its West coast base. "We will be looking for individuals who have been on the leading edge of proteomics research and who understand the potential markets and applications of the field," says recruiter Karen Wood. "The sequencing of the human genome has put us at the starting line rather than any finish line. We're trying to figure out which way to go."

"Beyond the new center, Applied Biosystems needs good bench scientists in several areas. We want strong organic synthesis chemists, polymer chemists, and people with good knowledge in single nucleotide polymorphisms," says Wood. "We're seeing a new need for scientists with a desire or capability to do marketing. The new tools will have to be marketed. Scientists with computer skills are much in demand. We like to see applicants with a Ph.D. in life science and a Bachelor's degree in computer science," Wood continues. "But we also need hardcore computer scientists. We have 140 people entirely involved in software development."

Like other life science companies, Applied Biosystems recruits at several academic levels. "We hire a number of Ph.D.s and we have a very strong college recruiting program," Wood says. "We are definitely Ph.D.-heavy in some areas but we have positions for entry-level individuals."

Wood's most difficult challenge is convincing good engineers to come aboard. "Some software engineers may not quite understand the excitement of life science and biotechnology yet," she says. "And we are not only competing with biotechnology and development companies for those people. We compete with the Silicon Valley companies that tend to pay higher salaries. So we do every sourcing technique possible."

How does the company persuade its best prospects to join it? "Once we get a good applicant in here we try to get together as good an offer as possible, including nonfinancial inducements," Wood says. "Those inducements range far and wide. The company's success and leadership in this industry helps," Wood adds. "Being located near Silicon Valley is also important. Having access to the Celera database is a plus. We also look at time off for family, friends, or personal hobbies. We try to be very flexible in our work hours for commuters, and we offer unlimited tuition assistance."



Clayton Naeve

MEMPHIS, Tennessee: "Bioinformatics is central," proclaims Clayton Naeve, director of The Hartwell Center for Bioinformatics and Biotechnology at St. Jude Children's Research Hospital. "You can't do large-scale biology research without having a bioinformatics facility. Here at the Hartwell Center we've built a high-performance computing facility and are increasing the size of our staff to cope with the output of our functional genomics and proteomics efforts."

Naeve's bioinformatics group currently consists of eight people with qualifications ranging from Bachelor's degrees to Ph.D.s in fields as diverse as physics, engineering, and computer science. "Recruiting these people is a real challenge to us," he says. "There's short supply and great demand and too few academic programs in the discipline."

That situation may change. Naeve expects that several universities, including those in Tennessee, will offer programs in bioinformatics within two to three years. But meanwhile, he says, "The challenge is to find people with interest and enthusiasm who can span the worlds of biology and computer science."

Even when he locates those individuals, Naeve has a hard sell to convince them to join him. "It's tougher to recruit here in the middle of the country," he says. Nevertheless, he has plenty to offer. "Memphis is a very livable city with low-cost housing," he explains. "We offer very competitive salaries and benefits. We provide an absolutely outstanding environment in terms of computational resources. The science that goes on here at St. Jude is first class and directly applicable to children's health."

Naeve himself typifies the current cadre of bioinformaticians who picked up the subject as they went along. "I came up in molecular biology and acquired the computer skills," he remembers. "I was sequencing influenza virus genes and needed the database and computing tools." Even now he believes that it's easier to provide molecular biologists with computer skills than to give computer scientists an effective feel for life science. "There's a smattering of true computational chemists and mathematically inclined scientists working on algorithms. But although there is a growing cadre of mathematicians and statisticians entering the field, I think you'll find most people in the field have a strong biology background and moved into the area because it offered some exciting challenges," he says.

Teamwork is critical to his group's success. "We have a very special group here that works incredibly well together," says Naeve. "We look for people who fit in. You have to be an effective team player. You have to communicate well, particularly with researchers. I also use enthusiasm and, above all, curiosity as criteria when I interview candidates. A person who isn't curious won't fit in well. You can't be content with the status quo. You have to be willing to change."

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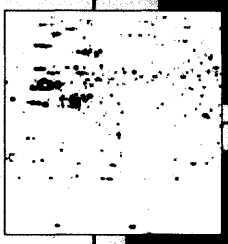
expanding the powers of research



St. Jude Children's Research Hospital is an internationally renowned research and treatment center for children with catastrophic diseases – primarily pediatric cancers. At St. Jude, we are committed to biomedical research that seeks to understand the molecular causes of disease, improve diagnosis and treatment, minimize immediate and long-term side effects, and to ultimately find a cure for those diseases.

St. Jude is located in Memphis, Tennessee, a city rich in history and culture stretching from the banks of the mighty Mississippi to the rolling green hills of eastern Shelby county.

Hartwell Center for Bioinformatics and Biotechnology

The new Hartwell Center for Bioinformatics and Biotechnology at St. Jude is one of the leading facilities of its kind in the world. Opening in a series of phases this summer, the Hartwell Center features DNA microarray technology, proteomics, mass spectrometry, and a complete bioinformatics infrastructure which supports the entire system. The center's mission is to be the best in applying modern bioinformatics and biotechnology to the study and treatment of pediatric catastrophic diseases.

The new center encompasses a broad range of protein and nucleic acid technologies as well as the computing technology needed to support them. The current expansion program includes the development or enhancement of DNA microarray laboratories, functional genomics, proteomics, mass spectrometry and clinical applications core technology.

HARTWELL FACULTY OPPORTUNITIES

To learn more about Faculty opportunities within the Hartwell Center, please contact
Dr. Clayton Naeve, Director, Hartwell Center for Bioinformatics and Biotechnology via e-mail: clayton.naeve@stjude.org
For more information go to: www.hartwellcenter.org

HARTWELL STAFF POSITIONS

To be considered for a Staff position within the Hartwell Center, please
e-mail: virgil.holder@stjude.org
Staff positions are available in the following areas:

Functional Genomics Analysts I
Functional Genomics Analysts II
Proteomics Analyst II

RESEARCH STAFF POSITIONS

To be considered for a Staff position at St. Jude, please
e-mail: virgil.holder@stjude.org
Opportunities exist in various departments and include:

Cellular Processor
Veterinary Pathologist
Research Technologists
Senior Research Technologists
Section Head, Cell Culture/Human Applications Lab
Vice President, Clinical Trials

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University of North Carolina at Chapel Hill
Genome Sciences and Bioinformatics Initiative

UNC-CH is committed to substantially expanding its research and teaching expertise in Genome Sciences and Bioinformatics. Resources currently exist to add more than 20 new faculty in these areas across the campus over the next three to five years (see URL, http://www.med.unc.edu/geneticsdept/positions/genomefacultypositions.htm for further details of other positions available this year). This commitment involves initiatives in multiple Schools. As a critical component of this initiative, we are searching for five tenure-track Bioinformatics Faculty with interests as follows **(all addresses include UNC-CH, Chapel Hill, NC 27599).**

School of Medicine:

Department of Biochemistry: The area of research for the candidate is unspecified; mechanistic studies in molecular, cellular or structural biology will be considered. Active research programs within our department include signal transduction and cell cycle regulation, DNA repair and photobiology, development and activities of the nervous system, membrane processes, mechanistic enzymology, and protein structure/function. Interested candidates should send a CV, statement of research interests, representative publications and at least 3 letters of recommendation to **Dr. David Lee, Department of Biochemistry & Biophysics, CB# 7260.**

Department of Microbiology and Immunology: We seek candidates with expertise in the development of genomic analysis tools to address biological problems. This appointment will be a joint appointment with the Department of Biomedical Engineering and can be at any level from Assistant to Full Professor. Preference will be given to candidates whose focus is on prokaryotes. Interested applicants should send a CV, statement of research interests and future plans, representative reprints and arrange to have 3 letters of recommendation sent to **Dr. Robert Bourret, Department of Microbiology & Immunology, CB# 7290.**

Department of Pharmacology: Candidates with active research programs in the areas of algorithm and database design, structural prediction, and/or data-mining, especially as applied to the broad strengths of the Department (signal transduction, structural biology, neuropharmacology, cancer chemotherapy, gene therapy), are encouraged to apply to the Department of Pharmacology. Address for applications: **Ms. Brenda Asam, CB#7365.**

The College of Arts and Sciences:

The College seeks a Bioinformatics faculty pursuing challenging problems in any area. Department affiliation could be in Biology, Chemistry, Computer Science, Mathematics, Statistics, Biostatistics, or a joint appointment. Send resume, concise research plans, and arrange for at least 4 letters of recommendation to be sent to: **Search Committee for Bioinformatics, College of Arts and Sciences, CB 3100, South Building.** Applications completed by 11/15/00 are guaranteed full consideration.

School of Pharmacy:

The Division of Medicinal Chemistry and Natural Products invites applications for a tenure track professor position in functional genomics and proteomics pertinent to medicinal chemistry for fall 2001. Applicants at all levels are encouraged to apply. The position carries a joint appointment with the Department of Genetics in the UNC-CH School of Medicine. Applicants should submit curriculum vitae, publication list, a concise description of proposed research, and arrange for four letters of recommendation to be sent to: **Professor Harold Kohn, Chair, Division of Medicinal Chemistry and Natural Products, School of Pharmacy.**

ALL applicants must have a PhD. in a relevant discipline plus demonstrated research excellence in Bioinformatics. Successful candidates are expected to develop internationally recognized, extramurally funded research programs. Teaching requirements will be determined by the relevant College, Graduate or Professional School. All positions feature competitive salary and startup packages and are available for appointments to begin on or after 7/1/01.

Genetics at UNC-Chapel Hill

The genome projects are generating immense catalogs of sequence data. Providing context, meaning, and utility to these data will be a challenge orders-of-magnitude more complex than previously faced. Yet, with these data, the potential for producing exciting bench-to-bench paradigms will be limitless.

To fuel discovery and to capitalize on these extraordinary opportunities during the post-genome era, the University of North Carolina at Chapel Hill has established a new integrated, multi-disciplinary Department of Genetics within the School of Medicine, with Terry Magnuson as the new Chair.

The Department of Genetics is continuing to expand its programs in genetics and genomics with tenure-track faculty positions in four areas:

1. Complex disorders in humans
2. Non-mammalian model genetic systems (joint with the Biology Department)
3. Bioinformatics
4. Statistical genetics (joint with the Biostatistics Department)

Each appointment will be in the Department of Genetics, with the possibility of joint appointments in relevant Departments and Centers. In addition to interactions within the University, there are many opportunities for collaborations with nearby universities, research institutes, and pharmaceutical laboratories in Durham, Raleigh, and Research Triangle Park.

Address all inquiries to **Dr. Terry Magnuson, Professor and Chair, Department of Genetics, CB #7264—Lineberger, UNC-Chapel Hill, NC 27599-7264.** Electronic submissions should be sent to trm4@med.unc.edu.

UNC is an equal opportunity/ADA employer. Women and minorities are encouraged to apply.

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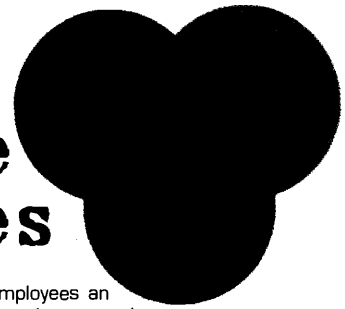

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Group Leader, Functional Genomics (Job #SC 4700)

Perform hPSC functional genomics, microarray analysis, gene discovery, and functional annotation; manage a group of 4-7 Scientists & RAs; and act as liaison for outside collaborators. Requires PhD with 4-7 years of industry experience (bioinformatics and micro expression analysis). Independence, good communication skills, and creativity are a must!

Scientist (Job #SC 4400)

Solve chemical synthesis problems using your medicinal chemistry experience.

Scientist (Job #SC 3300)

Derive neural cells from human stem cells. Requires ability to coordinate/perform in vitro studies.

Scientist (Job #SC 0600)

Identify, develop and establish appropriate animal models for in vivo proof-of-principle and pre-clinical studies focused on telomerase-based therapies for skin related diseases.

Scientist (Job #SC 4399)

Identify, develop and establish appropriate animal models for in vivo proof-of-principle and pre-clinical activities in the area of liver diseases.

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EOE

Scott Campbell

SEATTLE, Washington: When he left his position as chair of the University of Washington's department of molecular biotechnology late last year to found a new organization, prominent geneticist Leroy Hood put into practice his long-held vision of the role that computers will play in life science and medical research. The Institute for Systems Biology is pioneering a systems approach to biology that involves multidisciplinary teams of biologists, chemists, physicists, engineers, and mathematicians. The Institute will focus initially on systems approaches to the immune system, the correlation of genomic variability with physiology and predisposition to disease, the detailed analysis of a model microorganism, and the study of diseases such as cancer, heart disease, and autoimmunity.

"We are looking for people with skills to work on the next generation of DNA sequencing," says Scott Campbell, the Institute's director of human resources. "We intend to find very high-throughput ways of looking at genetic information. We'll probably develop some small spin-off companies. We have already developed one, called Cytopia, and we are associated with two other research groups that may launch in the near future."

Not surprisingly, the Institute wants to recruit a wide variety of new employees. "Most of our research associates who do the hands-on work come in with Bachelor's degrees. Some have Master's degrees and others are foreign-trained M.D.s," Campbell says. "Most of the people with Master's degrees are computer science majors; the biological scientists have Bachelor's or Ph.D. degrees. We also have seven postdocs and will have about three or four more by the end of the year."

Recruiting managers can prove more difficult than tracking down bench scientists. "Scientists tend to develop their backgrounds as technicians without focusing on management and people skills," he says. "Such skills are in particular demand in the Institute because of its commitment to cross-disciplinary research and its hiring of scientists from several parts of the world. We currently have scientists from 15 countries in addition to the United States. I encourage future scientists to take coursework in management to prepare them better to manage research projects and people. Individuals who will be working in the life sciences will also be well served by adding some liberal arts, cultural, and language skills to their personal portfolios."

According to Campbell, "The Institute is fortunate to have had inquiries from top Ph.D. scholars around the world who are interested in being part of building the vision of the Institute. Lee Hood's name is so well known that I have received a lot of résumés and CVs from postdocs and other scientists interested in working with him." Beyond that, he continues, "The Institute offers the opportunity to work in a true start-up between private industry and academe. We want to give our scientists personal freedom to develop information from whatever sources they want. More than in private industry, we give them the chance to do research that isn't necessarily designed to make money. We also offer the opportunity to work in a unique multidisciplinary environment."

Applicants must reach a high standard to qualify for positions at the Institute. "We want interest in working in a multidisciplinary environment," Campbell says. "We want collegial skills. We'll have so much cross-fertilization that we want people with interpersonal skills and the ability to deal with colleagues. Candidates should be receptive to thinking outside the box. We really will take a different approach to medicine and genetics in the next few years."

Cynthia Green

NEW HAVEN, Connecticut: Founded in 1993, CuraGen Corporation is an integrated genomics company that applies high-throughput technology to genomic issues in order to advance the discovery of pharmaceutical and life science products. "Comparative genomics is very important to us as we move across species and make comparisons to gain insights about gene function," says senior research scientist Cynthia Green. "We need people with all kinds of backgrounds, from specialists in various disease areas to biologists familiar with yeast and *Drosophila* gene functions."

The company, which has over 300 employees, seeks scientists in several other specialties. "Being able to manage and interpret the data will be very important," notes Green. "That's where bioinformatics becomes critical. We have our own in-house bioinformatics software and we have been very successful in finding great bioinformatics people. However, as we grow this area will grow as well. As our drug discovery efforts mature we'll need people able to interpret results from *in vitro* testing of potential drug candidates. Scientists who understand pharmacogenomics and toxicogenomics will be essential to triage compounds before putting them into expensive clinical trials. We are also looking for scientists in internal drug development who specialize in different disease areas, such as metabolic diseases, cancer, autoimmune and inflammatory diseases, and CNS disorders."

While CuraGen predominantly seeks scientists with Ph.D.s, "We also have a need for good Bachelor's and Master's-level people," says Green. "However, it's a kind of double-edged sword when you can attract high-achieving people at that level. They often want to get a higher-level education. A few of our best people have gone back to graduate school. We have a tuition assistance program and we're pretty flexible with our scheduling."

"Other attractions for recruits include the breadth of research that the company undertakes. Applicants are amazed at the scope of what we're doing," Green says. "Then we have them meet with our employees and they realize that the environment is friendly as well. We are competitive with salary and have a great benefits program consisting

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CuraGen's rapid growth has created new career opportunities. We currently have openings for individuals with backgrounds in molecular biology, biochemistry, biology, engineering, bioinformatics, medicine and other related fields. Successful CuraGen employees are exceptionally organized, have an entrepreneurial spirit, a passion for their work and thrive in a challenging, team-oriented environment. We are currently seeking highly driven individuals.

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CuraGen is dedicated to gene discovery, functional analysis of novel proteins and the development of new genomic-based therapeutics. We are looking for talented, energetic, and exceptionally organized scientists (PhD/MD/DVM/DSc) to join us. Currently, we are expanding our Internal Discovery and Drug Development Programs and have open positions at a number of levels in each of the following areas:

- ***Metabolic Diseases***
- ***Inflammation/Autoimmunity***
- ***Cancer***
- ***CNS Disorders***
- ***Genetics***
- ***Therapeutic Proteins***
  - ***-cDNA Analysis***
  - ***-Transcriptome Analysis***
  - ***-Genomic Analysis***

CuraGen has two locations on Connecticut's shoreline, in New Haven and Branford. Our close proximity to Yale University provides a stimulating intellectual community. In addition, there are many cultural events and activities in the area as well as in nearby NYC and Boston.

Please send cover letter, resume/CV and 3 letters of recommendation and/or references. EOE.

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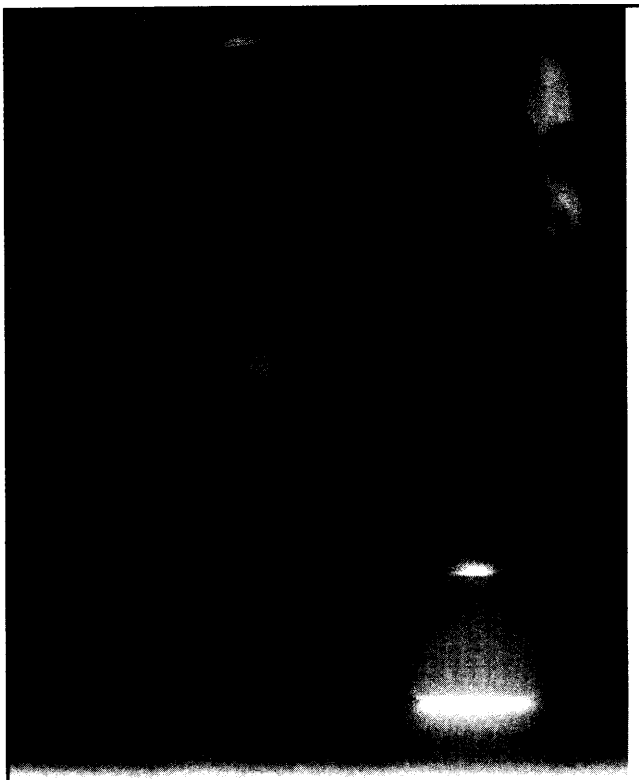

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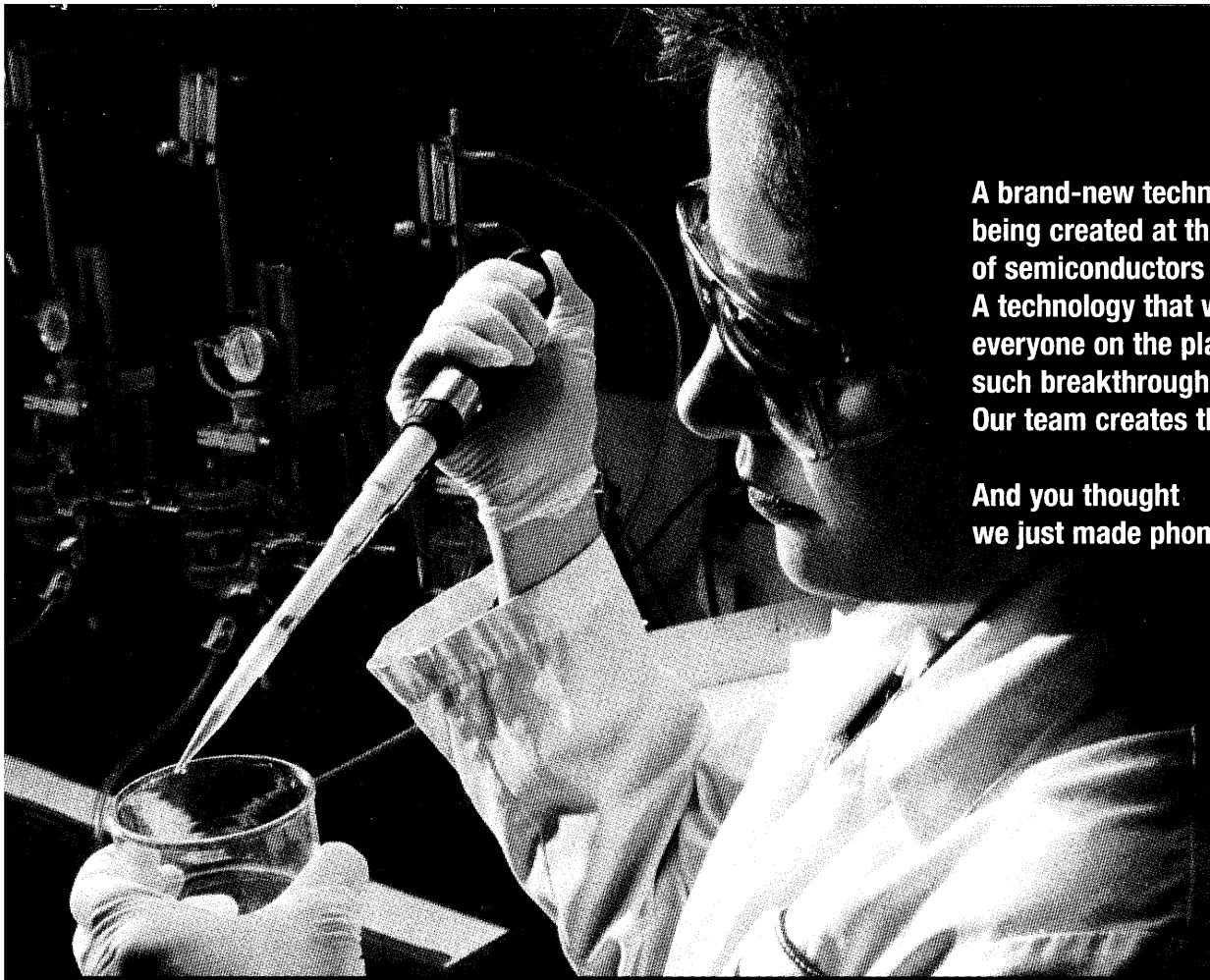

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Many life science companies find keeping their best people to be as important a human resources challenge as recruiting them in the first place. "People tend to move around in fast-paced fields like biotechnology," Green concedes. "We try to listen to what employees say and try to make them feel useful and valued. This, together with a competitive benefits package, is helping us to hang onto our people."

What does CuraGen expect of applicants? Brilliance, of course, but collegiality and flexibility are also very significant. "Trying to get a feel for how people are to work with is part of the reference checking process," says Green. "You must communicate well with people and not be abrasive or difficult. You have to have an open mind and work tactfully with your colleagues. Especially in a small company you need to be flexible enough to move from one project to another. Opportunities to move around within the company represent one of the great aspects of working in a company CuraGen's size."

David U'Prichard

EXTON, Pennsylvania: 3-Dimensional Pharmaceuticals, Inc. integrates high-throughput screening, combinatorial chemistry, and structure-based design for efficient drug discovery using targets from genome sequencing. "We like to think we have a lot of expertise in protein biophysics that will help us to understand the three-dimensional structural information that we generate from X-ray crystallography," says CEO David U'Prichard. "Ideally we want scientists who have done their Ph.D.s at very good synthetic organic chemistry departments and have chosen to do their postdoctoral fellowships at very good combinatorial chemistry departments."

U'Prichard has found that not all Ph.D.s are equal. "More and more I see the Ph.D.s dividing into two populations," he says. "The high fliers take on the management of laboratories and advanced research and the second tier do the kind of lab work that outside the United States you would expect to see scientists with Master's and even Bachelor's degrees do."

U'Prichard points out that several small biotechnology firms put Ph.D.s from East Asia and South Asia into the second tier because of their lack of communications skills. He is following suit. "We deliberately go out to recruit a lot of foreign nationals," he says. "We are quite happy to have a very favorable balance of Ph.D.s to scientists with lower degrees." U'Prichard, who was head of R&D at pharmaceutical company SmithKline Beecham before moving to 3-Dimensional Pharmaceuticals, notes that several large companies have taken the process a stage further by setting up labs in Asia.

Attracting scientists to 3-Dimensional's home base presents a difficult challenge because the company must tussle with the large pharmas for the best and the brightest. "We compete head-to-head with the big companies, particularly in the chemistry area," U'Prichard says. "We do a lot of strategic university recruiting, setting our sights on the country's top 20 university biology and chemistry departments. Our human resources department is much smaller than the pharmas' in the absolute, although I try to keep a 1:100 ratio of human resources to scientific resources like the big pharmas. We incentivize our staff with a scheme that will pay current employees $1,000 if they instigate a successful hire for us. We also take advantages of opportunities created in the marketplace by mergers and acquisitions."

One attraction for recruits is the company's location. "The Philadelphia region is the nexus of academic centers and big pharmas," U'Prichard explains. "We bring candidates in to persuade them that the very exciting science we are doing is worth it. And we try to persuade them that our salaries and total compensation are very competitive."

NEW HAVEN, Connecticut: "We are a fully integrated pharmaceutical company," says Doug Buechter, director of molecular biology and biochemistry for Achillion Pharmaceuticals. "Our mission is to work on the discovery and development of novel drugs at every stage from very early in discovery through to clinical use at the bedside. Because of our particular needs to discover, develop, and commercialize innovative anti-infective agents, our discovery effort relies on scientists skilled in bioinformatics, computational biology, and computational genomics."

Doug Buechter

The company, set up in spring of this year, currently has 16 employees. "We hope to ramp up the number to 25 to 30 by the end of the year and then continue to grow," says Lisa Dunkle, senior vice president of drug development.

That growth will include scientists skilled in all areas. "We need scientists skilled in molecular biology and assay technology," Buechter says. "We are also looking for medicinal and computational chemists who can design and synthesize libraries of compounds for screening and for biochemists who can do the screening." Adds Dunkle, "As we move our product through clinical development, M.D.s become an important part of the process as well. We're interested in physicians who have clinical experience and clinical knowledge and a clear understanding of the nature of scientific development. Specifically," adds Buechter, "M.D.s and M.D.-Ph.D.s who possess skills in virology or chemistry would be attractive to us because of the breadth of their appreciation of the process."

Achillion has several advantages in its recruiting. "There's a lot of meat in the science and a lot of potential in terms of being able to develop drugs from our technology that will make a difference in the clinic and in people's lives," says Buechter. "It encourages people

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You will design, perform and analyze experiments involving Drosophila microarray technology in coordination with various research groups. You will also help develop additional technologies that accelerate gene function analysis in Drosophila. You should have a PhD or equivalent with 3+ years experience in Drosophila molecular genetics. A strong background in molecular biological techniques is required. Experience with microarray technology is preferred. Job #: 00-244

Research Scientist
Angiogenesis
You will determine the function of novel human homologs identified in model system genetic screens as potential drug targets. You should have a PhD or equivalent with 2+ years experience in cell biology, molecular biology, or biochemistry. Hands-on experience with mammalian tissue culture, vertebrate angiogenesis and/or endothelial cell biology is desired. Job #: 00-141

Laboratory Automation & Robotics Engineer
Leading the effort to build a genomics automation platform, you will design and implement laboratory automation and robotics systems involving microfluidics and precision robotics. You will integrate software through development of links to databases and LIMS and interface with scientific staff to determine needs and opportunities for automation. You should have an MS or PhD or equivalent experience in molecular biology and/or engineering. Industry experience is preferred, including a comprehensive understanding of molecular biology and production environment. Job #: 00-186

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You will purify and characterize recombinant proteins from various expression systems (10-100 mg scale). You will support assay development, high throughput screening and crystallography efforts in our Molecular Target Research department. You should have a PhD or equivalent with 2+ years experience in biochemistry, molecular biology or biochemical engineering. Experience with multiple chromatographic separation techniques in protein purification and working knowledge of FPLC, HPLC and other related analytical techniques is essential. A strong publication record is preferred. Job #: 00-131

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Research Scientist

Successful candidate will participate in our oncology antiangiogenesis program & vector platform technology. Will be responsible for research efforts including construction of vectors, characterization of novel genes as well as optimization of gene expression. Position requires a Ph.D. in molecular biology with 2-3 yrs. industrial or academic postdoctoral training. Must be an expert in molecular biology techniques including DNA/RNA manipulation; vector construction; PCR; automated DNA sequencing. Other skills are mammalian tissure culture; gene expression; strong computer skills for DNA/RNA analyses & protein analysis. Knowledge in related cell biology, virology & biochemistry fields are preferred. **Job Code: QW2**

Research Scientist

Successful candidate will design & perform in vitro experiments to elucidate the mechanism of action of novel antiangiogenic factors to further understanding of intracellular signalling pathways & transcriptional activation of endothelial cells. Position requires an M.D. or Ph.D. in Cancer Biology, Biochemistry, Molecular Biology, or related field, knowledge & experience with in vitro assays & protocols for angiogenesis, signal transduction, and/or gene expression & familiarity with viral & non-viral gene therapy vectors. 2-4 yrs. postdoctoral exp. in a related field prefered. Experience with tumor modeling in rodents or animal surgical techniques a plus. **Job Code: TF1**

Scientist/Sr.Scientist

Successful candidate will perform small animal experiments, routine operations of tissue culture & screen Mycoplasma contanmination of cell lines & maintain accurate records of documents for Mycoplasma-free cell bank. Will also assist in performing phenotyping of cell lines by using FACS analysis. Positions are available at the Ph.D. level to contribute to discovery & pre-clinical research projects in the Oncology Group. Qualified candidates will have a background in Cancer Biology, Immunology, Virology, Molecular Biology, or related field. Expertise & exp. in the areas of in vivo tumor modeling, anti-angiogenesis, tumor suppressor genes, apoptosis, viral and/or non-viral systemic gene delivery systems are highly desirable. Familiarity with in vivo/in vitro immunological assays, immuno-histochemistry analysis, histo-pathology study, tissue culture techniques, & rodent surgical procedures are also desirable. Successful candidates will have direct exp. in applied gene therapy, in vivo tumor modeling, and/or pharmacological drug profiling. **Job Code: GC1**

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Protein Biochemistry/Cell Biology

Synthetic Organic Chemistry

Sr. Associate Scientists

Molecular Biology

Protein Biochemistry/Cell Biology

Analytical Chemistry

In Vivo Pharmacology

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Process Chemistry

Mass Spectroscopy

Find it for yourself at **www.founditatbayer.com.** Please forward your resume and research summary, including **Job Code #ASM1000,** to our resume response center at: **Bayer Corporation, Pharmaceutical Division, P.O. Box 3238, Scranton, PA 18505-0238. Fax: 1-888-805-7474; email: bayerpharma@alexus.com.** We are an equal opportunity employer. Bayer Corporation is committed to enhancing and maintaining cultural diversity within our work environment.

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Lisa Dunkle

attracted to the basic science who want to see it applied in an important manner. We feel that we offer an exciting environment in which to do the basic science and the clinical work, and we offer individual scientists opportunities they would not have in big pharmas. We're looking for people excited by that environment. Achillion certainly relies on a team effort. So we need individuals able to work closely in a team situation, interfacing with different groups and helping to integrate inputs from a variety of multidisciplinary teams into goals of their groups and of the company."

Adds Dunkle, "The robustness of our discovery portfolio compares very favorably with that of any company you can name of any size. We clearly respect our employees and prospective employees by offering a highly competitive compensation package. This is not a situation in which one can lowball people."

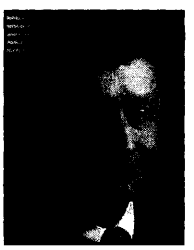
WALTHAM, Massachusetts: As a resource specialist at staffing and contract services company Pro Source, Mary Beth Blanchard aims to find scientists for pharmaceutical and biotechnology companies in Massachusetts, New Hampshire, and Rhode Island. "There is strong demand on the chemistry side including synthetic organic chemists, analytical chemists, protein chemists, formulation chemists, and even 'chemical chemists' who make nonpharmaceutical compounds," she reports. "On the biological side, my clients want molecular biologists, biostatisticians, gene therapists, and bioinformaticians. I also see a need for scientists qualified in pharmacokinetics. While it's not much talked about there is a high demand for people with experience in animal experiments and toxicity studies."

"Pro Source's clients typically call for hires with specific skills. "That," says Blanchard, "means industry experience." Because of industry's high demand for chemists, however, companies are willing to be flexible in their requirements. You can't turn a molecular biologist into a microbiologist," Blanchard says. "But for some chemists the skills are fairly transferable. With the market so tight some companies have been a little more forgiving in their descriptions of their ideal candidates."

Surprisingly, perhaps, the highest demand is for scientists with lower degrees. "Bachelors of Science with two to five years of industry experience are the most marketable," Blanchard says. "Holders of Master's degrees would come a very close second, followed by Ph.D.s with industry experience." Blanchard sees an increasing tendency for life scientists to do postdoctoral fellowships in industry rather than on the campus. "For many people the best idea is to find a postdoc in industry," she recommends. "Once they have completed their projects, postdocs become relatively easy hires."

Blanchard's clients offer several perks to the most promising candidates. "Salary is, of course, important," she says. "So are benefit plans including good medical and dental coverage and decent vacation and personal time. Companies offer flexible hours so that scientists can avoid problem commutes; family life is so important now. Also a good project to work on and a good manager are critical to attract and keep candidates. A manager who is a hothead or someone who doesn't treat people with respect is often the reason that people leave jobs. That's different from 10 years ago."

"To put themselves in line for the choice jobs, Blanchard recommends that young scientists make early career decisions." As an undergraduate, you should decide as soon as possible what avenue in the sciences you want to pursue," she suggests. "Then try to find internships or temporary positions in summers and Christmas breaks or find a research project in your academic lab. Do a research project even if one isn't required. Find a way to show that you've done more than just showing up for class and going to required labs."



Jim Davis

ROCKVILLE, Maryland: Not every scientist is destined to end up at the laboratory bench. Human Genome Sciences, a company that aims to develop gene-based drugs, is looking for a few good scientists to help handle its intellectual property. "Intellectual property protection is an extremely hot area right now," says Jim Davis, the company's senior vice president and general counsel. "The science has become so complicated that we have a tremendous need for people with advanced science degrees and the ability to analyze complex scientific issues and recast them into the legal framework and a form that's understandable to people with less scientific training."

Davis and his counterparts in other life science firms have a hard job finding the right hires to deal with patents, licensing, collaborative research agreements, and other transfers of intellectual property. "Right now there's a tremendous scarcity of people with both the scientific experience and the innate capability to translate it into several areas," he continues. "We have about 20 people in our department. The number is growing as rapidly as we can find qualified scientists."

He concentrates his search on Ph.D.s. "They need a solid molecular biology background but they can have focused on pharmacology, genetics, molecular biology, or immunology," he says. "They need excellent communication skills and the ability to work well in research teams. All our lawyers and technical specialists are members of our research teams. They talk to the researchers daily and they are integrated into the science of the company."

One skill that candidates don't need is a legal background. "We are hiring scientists with no legal or business training and teaching them the legal aspects of their jobs," Davis explains. "Many end up going to law school but they do not need to. We need the excellent scientific backgrounds. We can teach law to scientists but we can't do the reverse."

What does a career in intellectual property offer that bench work doesn't? "The diversity of the science you get to deal with is important," Davis says. "Your focus will be much broader than in any single research project. If you're coming out of academic life you get freedom from research grants. You get to deal with the science rather than the grant writing. As a company we are taking the very theoretical and making it real."

Postdoctoral Positions Available

National Institute on Deafness and Other Communication Disorders
National Institutes of Health

Postdoctoral positions are immediately available for candidates (US citizens or non US citizens) with Ph.D. and/or M.D. degrees and five or fewer years of relevant postdoctoral experience. Candidates should send application materials to one or more of the principal investigators whose research interests are described below. Required materials include curriculum vitae with bibliography, statement of research interests, and the names, telephone numbers, and email and postal addresses of three references.

Developmental Biology of the Organ of Corti

Postdoctoral fellowships are available in the Unit on Developmental Neuroscience to study the mechanisms that control the development and patterning of the mammalian sensory epithelium. Ongoing studies utilize a combination of molecular, cellular and genetic techniques to examine the determination of specific cell fates and the production of cellular patterns within the mammalian inner ear. Visit the unit website at http://www.nih.gov/nidcd/intram/labs/neuro.htm. Recent publications include: Nature Genetics (1999) 21:289-292, Developmental Biology (1999) 213:180-193, P.N.A.S. USA (2000) 97:1287-1292, Current Biology (2000) 10:659-662.

Matthew W. Kelley, Ph.D., NIDCD/NIH,
5 Research Ct., Rockville, Maryland 20850,
(kelleymt@nidcd.nih.gov).

Genetics of Communication Disorders and Chemosensation

Position available immediately for linkage analysis and positional cloning studies of communication and chemosensory disorders in humans. Current projects include genetics of stuttering (see Drayna et al. Am. J. Hum. Genet. 65:1473-1475,1999) and genetics of deficits in pitch recognition, both complex traits with major genetic contributions. Also ongoing are studies in deficits in the sense of bitter taste, a Mendelian disorder. Additional information can be obtained at: http://www.nih.gov/nidcd/intram/scientists/draynad. Experience in genetics and molecular biology is required.

Contact: Dennis Drayna, Ph.D. NIDCD/NIH,
5 Research Court, Room 2B-46,
Rockville, MD 20850,
Tel. 301-402-4930, e-mail: drayna@nidcd.nih.gov

Functional Neuroimaging of Speech and Language

A postdoctoral position is available in the Language Section to conduct functional neuroimaging studies of brain-language relationships in controls and patients with aphasia, deafness and neruodegenerative disorders affecting speech, voice and language. Some experience with PET, fMRI or EEG/ERP methods, or with mathematical modeling, computer programming or statistics is required. Please contact:

Allen Braun, M.D., NIDCD/NIH
Building 10, Room 5N118A, Bethesda, MD 20892
Tel. 301-402-1497, email: brauna@nidcd.nih.gov

Morphogenesis of the Inner Ear

A postdoctoral position is available to identify and characterize genes important in inner ear development using avian retroviral vectors in chicken and gene targeting approach in mice (See Development 126:2335; 125:11). Applicants should have a strong background in molecular biology and/or developmental biology. Experience in cDNA library screening, designing and constructing vectors for gene targeting preferred. Please contact

Doris Wu, Ph.D.,
Laboratory of Molecular Biology, NIDCD/NIH,
5 Research Court, Room 2B34, Rockville, Maryland 20850,
email: wud@nidcd.nih.gov

Molecular Mechanisms of Genetic Deafness

Postdoctoral fellowship positions are available in the Section on Gene Structure and Function, Laboratory of Molecular Genetics, for the identification of novel genes and mutations underlying hereditary deafness, and characterization of the structure, function and expression of these genes in the auditory system. Experience in molecular biology or genetics is desirable. Visit the section website at http://www.nih.gov/nidcd/intram/labs/bas_mg.htm#structure. References include Nature Genet. (1999) 21: 347-349; Nature Genet. (1999) 23: 413-419; and Am. J. Hum. Genet. (2000) 67: 745-749. Please contact :

Andrew J. Griffith, M.D., Ph.D., NIDCD/NIH,
5 Research Court, Room 2A02, Rockville, MD 20850;
Tel. 301-496-1960; FAX 301-402-7580;
email griffita@nidcd.nih.gov

Molecular Genetics of Hereditary Hearing Impairment

Postdoctoral positions are available in the Section on Human Genetics, Laboratory of Molecular Genetics (LMG), to conduct genetic linkage analyses on families with hearing impairment, as well as positional cloning and functional analyses of genes crucial for development and maintenance of the auditory system. Visit our web site at http://www.nih.gov/nidcd/intram/labs/bas_mg.htm. Recent papers from the LMG include: Am J Hum Genet (2000) 67: 745-749; Hum Mol Genet (2000) 9:1729-1738; Am J Med Genet (1999) 89:147-157; Science (1998) 280:1444-1447; Science (1998) 280:447-1451; Nature Genetics (1998) 18:215-217; N Eng J Med (1998) 339:1500-1505. Send the above described materials to:

Thomas B. Friedman, Ph.D. Laboratory of Molecular Genetics,
National Institute on Deafness and Other Communication Disorders,
National Institutes of Health,
5 Research Court, Rockville, Maryland 20850
(email: friedman@nidcd.nih.gov)

Molecular Mechanisms of G Protein Signaling

Positions are available in the Section on Signal Transduction, Laboratory of Cellular Biology, to examine the molecular interactions of G-proteins with receptors and effector enzymes and to identify the signaling mechanism(s) of the chemical senses. The laboratory utilizes a combination of in vitro biochemical, biophysical and in vivo molecular approaches to study G protein signaling. Individuals with interest in signal transduction and a strong background in molecular research are encouraged to apply. (see 1999, J. Biol. Chem. 274:11573-11581; 1998, Proc. Natl. Acad. Sci. 95:12878-12883) Contact:

John Northup, Ph.D., NIDCD/NIH
5 Research Court, Room 2A-03, Rockville, MD 20850
Tel. 301-496-9167; email: drjohn@codon.nih.gov

Molecular Characterization of Mechanosensory Transduction

Postdoctoral fellowship positions are available in the Section on Structural Cell Biology, Laboratory of Cellular Biology, for the identification and characterization of proteins involved in mechanosensory transduction in auditory and vestibular hair cells. Experience in molecular biology is desirable. References include: Mol. Biol. Cell, 9: 1961-8, 1998; J. Neurosc. 19: 6918-29, 1999; J. Neurosc. 20: 5940-8, 2000. Human Molecular Genetics, 9:1729-38, 2000. Please submit materials described above to

Bechara Kachar, M.D., NIDCD/NIH,
Building 36, Rm 5D-08, Bethesda, MD 20892;
Tel. 301-402-1600; FAX 301-402-1765;
email kacharb@nidcd.nih.gov

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PHARMACEUTICAL RESEARCH INSTITUTE

The R.W. Johnson Pharmaceutical Research Institute, located in Raritan, New Jersey, is a multisite research and development company committed to scientific excellence and innovation. RWJPRI performs global research and development work for the pharmaceutical business units of Johnson & Johnson worldwide. RWJPRI conducts pharmaceutical research in therapeutic areas including anti-infectives, central nervous system, immunology/inflammation, dermatology and oncology. At RWJPRI we foster a rich, scientifically oriented culture that encourages all employees to reach their full potential.

Post Doctoral Scientist — Physical Chemistry

The Post Doctoral Scientist we seek will have a strong background in Physical Chemistry. In this position, the selected candidate will be expected to develop theoretical methods of predicting the values of various physical properties such as solubility, partition coefficients and permeability of potential new drugs and also for running experimental programs to compare calculated and measured values of these parameters. Additionally, the ideal candidate will work closely with other scientists to identify critical physiochemical properties which will be useful in ranking the potential of lead candidates. To qualify, a recent Ph.D. in Physical Chemistry, Physical Organic Chemistry, Chemical Engineering or a related discipline will be required. Experience in the application of physiochemical descriptors to liquid and solid phases, preferably including the building of structure/physiochemical property databases would be a definite asset. Excellent computer, communication and interpersonal skills and the ability to work in a team environment are essential.

As a valued team member, you'll receive a competitive salary and great benefits including medical/dental, a 401(k), a pension plan and a comprehensive wellness program. Please apply directly on-line at our web site **www.jnj.com** or forward a scannable resume, noting operating company as **The R.W. Johnson Pharmaceutical Research Institute** and **Req. Code 003160SCI, to: Johnson & Johnson Recruiting, P.O. Box 16597, New Brunswick, NJ 08906-6597.** Please note: resumes received electronically via jnj.com are reviewed within 24 hours. Mailed resumes are reviewed within 3 business days after receipt. We are an equal opportunity employer totally committed to diversity.

www.jnj.com

Faculty Positions in Cancer Research LSU Health Sciences Center

The Stanley S. Scott Cancer Center at LSU Health Sciences Center in New Orleans invites applications for tenure-track or tenured positions at the Associate Professor or Professor level. Candidates should possess a Ph.D. or M.D. degree and have demonstrated excellence in their research as indicated by both publications and a track record of externally funded research grants. The successful applicants will be expected to pursue an independent yet collaborative approach, addressing broad issues that relate to oncologic science. Research interests in prostate and/or lung cancer are encouraged but not required.

The search will give full consideration to applications that include curriculum vitae (including funding grant history), four representative publications, and the names of three individuals that may be contacted for letters of reference.

Joint appointments in the Cancer Center and an appropriate Department at the LSU Medical School are anticipated. The individual Departments will be dependent on the successful applicants' expertise and interests. Laboratory space will be provided in a new state-of-the-art facility in the heart of the Medical School complex.

Interested candidates should submit their curriculum vitae to:

Dr. Oliver Sartor, Director
Stanley S. Scott Cancer Center
533 Bolivar Street, Box CSB-4-17
New Orleans, Louisiana 70112

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Leading the Genomic Revolution

On the leading edge of genomic-based drug discovery, Isis Pharmaceuticals is focused on RNA. We've created important new drug discovery technology platforms to identify the function of genes and their importance in drug discovery, and to design highly specific drugs that are less toxic for patients. Our technologies have the potential to improve the productivity of the pharmaceutical industry and are already generating an exciting and renewable product pipeline for Isis. Through advances of this caliber, we seek to change the landscape of disease treatment and patient quality of life.

Drug Discovery

Scientist/Senior Scientist to contribute to the success of our metabolic disease program. The individual will conduct in vivo proof of principle studies aimed at validating novel gene candidates for diabetes and obesity. Experience in examining glucose metabolism in rodent models of diabetes is required. Candidates with additional expertise in molecular biology and biochemistry are especially encouraged to apply. The successful candidate will have a BS/MS or Ph.D. in Pharmacology, Physiology or related; 2+ years' experience conducting in vivo pharmacology studies; and excellent written/verbal communication skills. **(CODE: 384)**

Drug Screening

BS/MS level Scientists to join a dynamic group responsible for high-throughput screening, applying real-time RT-PCR for measuring antisense drug effectiveness. Experience with basic cell culture and robotic sample handling required. Experience with molecular biology techniques and databases highly desired. **(CODE: 385)**

Cell Biology

Scientist (BS/MS) or Senior Scientist (Ph.D./equivalent) with expertise in primary cell isolation/culture to join a group participating in the application of antisense technology for functional genomics and therapeutics. Qualified applicants will have a degree in Life Sciences, experience with molecular biology techniques, primary cell isolation and cell culture techniques. Experience with development of in vitro bioassays, molecular pharmacology and signal transduction desired. **(CODE: 386)**

Isis offers competitive salaries and excellent benefits. Please send resumes to: **Isis Pharmaceuticals, Job Code: ___, 2292 Faraday Ave., Carlsbad, CA 92008; Fax: (760) 603-2700; E-mail: info@isisph.com.** Principals only. No phone calls please. EOE.

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Biotechnology

The Novartis Institute for Functional Genomics (also known as Genomics Institute of the Novartis Research Foundation - GNF), located in the Torrey Pines area of San Diego, CA is developing and applying novel technologies for genomewide functional characterization. GNF seeks the following:

Post Doctoral Positions

Several post-doctoral positions are available immediately at the Genomics Institute of the Novartis Research Foundation (GNF) for the structure determination of proteins of biomedical importance. The successful candidate should have experience in molecular biology and protein purification. Knowledge of crystallization and crystal structure solution would be an advantage but is not strictly required.

GNF has an ongoing Structural Genomics program and is dedicated to the development and application of novel technologies for high-throughput X-ray crystal structure solution and is well equipped with state-of-the-art equipment including protein purification and crystallization robots. In addition, GNF has access to a dedicated synchrotron beamline at the Advanced Light Source (ALS) in Berkeley.

For additional Information **email spraggon@gnf.org Please send C.V. and 2 references to Human Resources (c.o. Structural Genomics Positions)**
Genomics Institute of the Novartis Research Foundation, 3115 Merryfield Row, San Diego, CA 92121

G N F

www.gnf.org

OPPORTUNITIES ARE WIDE OPEN...

ANALYTICAL CHEMIST AND PLANT SCIENTIST POSITIONS

Cargill is a global leader in the processing and distribution of agriculture-based renewable resources, and an emerging leader in the conversion of these resources to new products. Cargill seeks to create long term value by developing and commercializing a wide variety of technology-based specialty food, feed, and plant growth enhancement products.

Cargill has immediate openings for two new full-time research positions that will be based in the Minneapolis area. Both positions will be dedicated to helping build the new Specialized Agronomic Products Business Unit.

For the Analytical Chemist position (job number:R0001-024), the successful candidate will be expected to provide scientific expertise and strong laboratory skills towards the development of analytical chemistry techniques (e.g., GC, HPLC) and validated methods (e.g., BOPs, SCPs) required to support a portfolio of various plant growth enhancement products. This position requires a self-starter with a Ph.D. degree in Analytical Chemistry or a closely related scientific discipline and MUST have significant experience and familiarity working with plant tissue systems or matrices. Formal training in plant biochemistry, statistics, and GLP guidelines would be a definite plus. Excellent written and oral communication skills, computer proficiency, and the ability to work in a cross-functional team environment also required.

For the Plant Scientist position (job number:R0001-025), the successful candidate will be expected to provide scientific expertise and leadership in the management of research projects required to (further) build a world-class portfolio of plant growth enhancement products. This position requires a highly motivated, well organized individual with a Ph.D. degree in Plant Physiology, Agronomy, or a closely related scientific discipline and MUST have meaningful research experience in the area of plant growth and development. Demonstrable prior experience in managing multiple R&D projects strongly recommended. Excellent written and oral communication skills, computer proficiency, and the ability to work in a cross-functional team environment also required.

If you would like to be part of a company that is raising the standard of living worldwide, consider Cargill. Please submit resume online by visiting our resume builder at www.cargill.com/jobs/index. Candidates MUST specify job number (R0001-024 for the Analytical Chemist position, R0001-025 for the Plant Scientist position) in the area titled "Job Number". The Internet is the preferred method for receiving resumes. If this is not an option for you, please forward your resume to PO Box 5697, MS#10, Attn: JTS, Minneapolis, MN 55440-5697. Equal Opportunity Employer.

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Postdoctoral Fellows
Genome Sciences Department
E. O. Lawrence Berkeley National Laboratory
University of California

Major efforts within the department are focused on converting data coming from various aspects of the genome program into biological insights. Departmental laboratories are developing computational, biochemical, and genetic methods to decipher the complex sequence motifs that control RNA transcription and DNA replication, as well as studying from a genomic perspective, the basis of human disease, the control of animal development, and complex macromolecular processes such as meiosis.

Faculty Mentors:
Mark Biggin: Analysis of transcriptional networks controlling Drosophilia development.

Jim Bristow: Regulation of cardiac development in mice and humans.

Matt Callow: Expression profiling and mutagenesis to explore cholesterol metabolism in ES cells and mice.

Sue Celniker: Analysis of the regulatory networks controlling Drosophilia development using comparative genomics.

Jan-Fang Cheng: Production, mapping and sequencing. Comparative genomics of the cardiovascular system.

Abby Dernburg: Dissecting meiosis in *C. Elegans* using digital imaging, fluorescent transgene expression, and molecular genetic analysis.

Inna Dubchak: Development of algorithms and computational tools for DNA sequence analysis. Specialized biological databases.

Mike Eisen: DNA microarrays for the analysis of mammalian expression in yeast and humans.

Eddy Rubin: Studies of expression array and inter-species sequence datasets related to vascular biology. Hypotheses testing in genetically manipulated mice.

Please submit one copy of your CV, list of publications and three references to: Lawrence Berkeley National Laboratory, One Cyclotron Road, Biosciences HR Center, MS Donner, Berkeley, CA 94720. Please cite Job# LJS012692/JS in your cover letter. Berkeley Lab is an AA/EEO employer.

PENN
UNIVERSITY of PENNSYLVANIA

Tenure-Track Faculty Position
Department of Genetics

The Genetics Department of the University of Pennsylvania School of Medicine plans to make a faculty appointment in the area of human genetics and/or genomics. Attractive laboratory space and resources are available, and the new Penn Genomics Institute will enhance the intellectual environment in these fields.

The deadline for applications is February 1, 2001. Applications should include a curriculum vitae and a statement of research interests. In addition, candidates should arrange for three letters of recommendation to be sent to:

Chair, Search Committee
Department of Genetics
University of Pennsylvania
475 Clinical Research Building
415 Curie Boulevard
Philadelphia, PA 19104-6145

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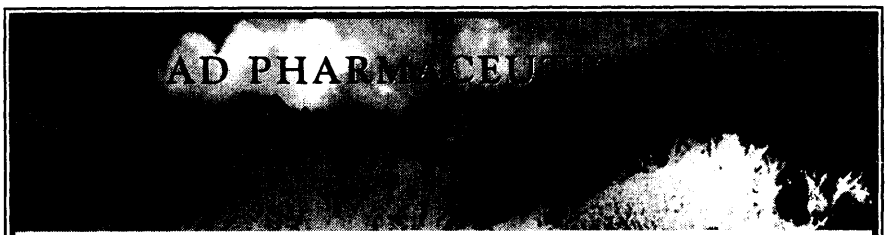

Myriad Pharmaceuticals, Inc. is an established, wholly-owned subsidiary of Myriad Genetics, Inc. to create novel therapeutic products for the treatment of human diseases.

Drug Development

RESEARCH SCIENTIST

We are seeking a protein biochemist to join our growing Pharmaceuticals group. Candidates will have a strong background in protein expression, purification, and characterization (milligram scale). You must have a Ph.D. and at least 2 years of postdoctoral experience. Excellent communication and organizational skills are essential.

RESEARCH ASSOCIATE

Qualified applicants will possess a mastery of mammalian cell tissue culture and transfection techniques. The position also requires familiarity with recombinant DNA technologies, protein purification techniques including FPLC, Western blot analysis, ELISA, RIA, and colorimetric and fluorescent enzymatic assays. BS or MS in a relevant scientific discipline with at least 3 years experience.

Myriad offers an attractive compensation package and a stimulating, interactive research environment. Please mail or fax your letter of interest and include a complete resume and the names of three references to: Human Resources Department, Myriad Genetics, Inc., 320 Wakara Way, Salt Lake City, UT 84108. Fax: 801-584-1144. You may also e-mail us at: hr@myriad.com

We are an equal opportunity employer. To learn more about Myriad Genetics, visit our corporate web site at http://www.myriad.com/

MYRIAD

FACULTY POSITIONS

Pharmacology & Cell Biophysics
University of Cincinnati
College of Medicine

The Department of Pharmacology & Cell Biophysics invites applications or nominations for tenure-track faculty positions in the areas of **Cancer Pharmacology**, **Neuropharmacology**, **Cardiovascular Pharmacology** and **Signal Transduction**. Applications from candidates in other areas of modern pharmacology are welcomed. Outstanding candidates at all levels will be considered.

Selected candidates are expected to bring or establish independent research programs and contribute to medical and graduate educational programs. For information on current faculty and programs see. **http://www.med.uc.edu/pharmacology**

Generous start-up resources and laboratory space are available. Institutional core facilities include transgenic and knockout mice production, DNA synthesis and sequencing, mouse physiology/ pharmacology, histopathology, imaging, structural biology/NMR, genomics, proteomics and bioinformatics. For details see: **http://www.med.research.uc.edu/toc.cfm**.

Applicants should send curriculum vitae, statements of research accomplishments and future plans, and the names and addresses of at least three references to: **Faculty Search Committee, Department of Pharmacology & Cell Biophysics, University of Cincinnati College of Medicine, P.O. Box 670575, Cincinnati, OH 45267-0575 USA.** Review of applications will begin upon receipt and continue until the available positions are filled.

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Creating innovative human therapeutics with a primary focus on controlling apoptosis.

Idun Pharmaceuticals is a rapidly growing, early stage biopharmaceutical company with an exciting patent portfolio. We are currently recruiting in the following areas:

Section Manager – Discovery - As a leader on our discovery team, you will develop methodology and HTS formatting for new assays while profiling lead compounds and designing assays. Must have a proven ability with hardware and software required for new lead identification, assay design, data interpretation, tissue culturing and automation literacy. Excellent communication and demonstrated supervisory skills are required. This position typically requires a Ph.D. in biology, pharmacology, chemistry or biochemistry with at least 5 years pharmaceutical experience and a focus on lead discovery/HTS. Research experience in apoptosis or inflammation is advantageous. Reference: **ENZ-091800SCI**

Senior Research Scientist – Cellular Pharmacology - This cellular pharmacologist will experimentally address the roles of specific drug targets in cell types and to elucidate the mechanism(s) of action of drug leads at the molecular level. The position requires experience in the identification, characterization and validation of intracellular drug targets and the proven ability to contribute to multiple pharmaceutical projects in a team environment. The successful candidate will be capable of taking a multi-faceted experimental approach to studying cellular physiology, including FACS analysis, light microscopy (confocal, fluorescence, phase contrast), immunocytochemistry, cell microinjection, cell fractionation and basic molecular biological and biochemical techniques. This position typically requires a Ph.D. in cell biology with a focus on intracellular signal transduction, plus 2-5 years of postdoctoral experience, preferably in an industry setting. Reference: **CPH-082200SCI**

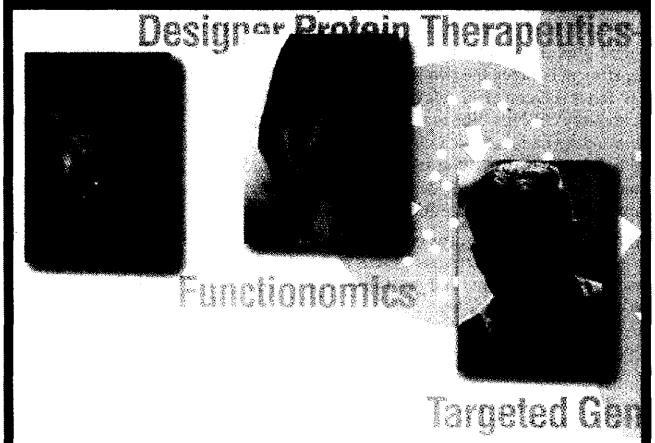
Research Scientist – Pharmacology - As part of a development team, this scientist will set up and carry out experiments to determine pharmacokinetic parameters, protein binding, metabolism, and tissue levels of drug and excretion of novel agents. Excellent verbal and written communication skills are required. Must have experience with in vivo models for evaluating the pharmacokinetics and ADME properties of novel compounds. This position typically requires an MS or PhD in Pharmacology with 2-4 years related experience. Strong analytical skills using HPLC and/or LC/MS are a plus. Reference: **Pharm 021800-02SCI**

Idun Pharmaceuticals offers an attractive compensation and benefits package including equity participation. Resumes should include a reference code and be sent to:

Human Resources Department
11085 N. Torrey Pines Rd, Ste 300
La Jolla, CA 92037
Email: hr@idun.com
Fax: (858) 623-2765.

Please see **www.idun.com** for additional openings and information. *EOE.*

The Science of Innovation



Regeneron *is a biopharmaceutical company that discovers, develops, and intends to commercialize therapeutic drugs for the treatment of serious medical conditions. Our platform technologies include Targeted Genomics™, Functionomics™, and Designer Protein Therapeutics™. We have drugs in clinical and pre-clinical development for the potential treatment of obesity, rheumatoid arthritis, cancer, allergies, asthma, amyotrophic lateral sclerosis, constipating conditions, ischemia, and other diseases and disorders.*

Regeneron *is a company founded on the belief that talented scientists with the right resources can achieve* ***outstanding results.*** *We are dedicated to finding the most highly qualified individuals and providing them with a creative, energetic environment where new ideas and innovation can flourish.*

Take your next step toward creating a ***successful*** *future. To learn more about* ***Regeneron****, our* ***remarkable*** *projects, and* ***extraordinary*** *opportunities, visit* ***www.regeneron.com.***

We currently have career opportunities in the following areas:

RESEARCH & PRE-CLINICAL DEVELOPMENT
(BS/MS/Ph.D.)

PROCESS DEVELOPMENT

PROGRAM MANAGEMENT

LICENSING/TECHNOLOGY TRANSFER

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INVESTOR RELATIONS

Please send your resume to: Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, NY 10591; Fax: (914) 345-7790; E-mail (text or .pdf format only): jobs@regpha.com. EOE, M/F/D/V.

REGENERON
Pharmaceuticals, Inc.

For complete job descriptions visit:
www.regeneron.com

FACULTY POSITION: COMPUTATIONAL BIOLOGY & BIOINFORMATICS

The Department of Bioengineering at the University of California, Berkeley invites applications for a tenure-track or tenured position at the assistant, associate, or full professor level starting July 1, 2001. The new Department of Bioengineering on the Berkeley campus has a joint graduate program at Berkeley and UCSF and plans a joint, inter-campus department between the two UC campuses. The position also includes opportunities for involvement in relevant programs at the Lawrence Berkeley National Laboratory (LBNL). The juxtaposition of two major research universities and an outstanding national research institute provides an exceptional environment for both research and training in these areas. The successful candidate will have a unique opportunity to provide intellectual and technological leadership in complex biology and facilitate programmatic interactions across the University of California.

Applicants should have (or be about to receive) a doctoral degree or equivalent in a related field and a research focus in the broad area of computational biology. Such areas include but are not limited to:

- comparative genomics
- biomolecular sequence or structure analysis
- biomolecular expression research and proteomics
- intracellular and intercellular modeling and network analysis
- computational cell and tissue biology
- applications of mathematics or algorithms to biological problems

We seek individuals with demonstrated excellence in research, and the potential for excellence in teaching and leadership. Successful applicants will be expected to establish a pre-eminent research and educational program, and develop and teach courses in their general area of specialty.

Applicants should send a complete curriculum vitae, a selection of publication reprints (five or less), a brief statement of future research plans and interests, and the names of at least three references to: Professor Richard Karp, Chair, Computational Biology & Bioinformatics Search Committee, Department of Bioengineering, 459 Evans Hall MC 1762, University of California, Berkeley, CA 94720-1762. **The review of applications will commence December 1, 2000; all applications must be received by February 1, 2001 for consideration in this year's recruitment cycle.**

The University of California is an equal opportunity employer, committed to excellence through diversity

HUMAN GENOME SCIENCES

The Art and Science of Discovery

The mission of Human Genome Sciences is to treat and cure disease by bringing new gene-based medicines to patients around the world. We are dedicated to discovery for health. We believe that our genomics-based drugs will usher in a new generation of healthcare products. Our medicines will use the human body's natural substances — genes, proteins and antibodies — to repair, rebuild and restore to normal health damaged, diseased and aged tissues. We are currently looking for the following professionals:

Patent Attorneys/Agents

Individuals will develop and implement comprehensive strategies to protect HGS' intellectual property. This includes developing and implementing patent strategy for inventions, preparing, filing, and prosecuting U.S. and foreign applications, providing non-infringement analysis, and the handling of appeals, interferences, and foreign oppositions. Individual will work closely with HGS scientists. Qualified candidate will have a JD and 0-3 years of experience in patent prosecution. Patent Bar member preferred. MS degree or equivalent; Ph.D. preferred.

Technical Specialists

Individual will work with scientific staff preparing, filing, and processing patent applications for HGS. This includes working closely with scientific teams to define new inventions, providing scientific advice in patent prosecution matters, and preparing patent applications for filing. Individual will handle patent prosecution, research patent applications and assist with appeal and interference proceedings. Qualified candidate will have a minimum of master's degree or equivalent; Ph.D. is a plus. Excellent communication skills essential.

HGS encourages the pursuit of excellence and offers a competitive benefits package, including educational reimbursement, subsidized health club membership, and a 401(k) with employer match. Look for us on the Internet at www.hgsi.com for additional information. For immediate consideration, please send/fax your resume to: **Human Resources Department, Human Genome Sciences, Inc., Job Code # JD-10/20, 9410 Key West Avenue, Rockville, MD 20850; fax: (301) 309-1845.**

Our preferred method for receiving resumes is via our Web page or via e-mail: resume@hgsi.com. EOE, M/F/D/V.

Visit our Web site to learn more about us:
http://www.hgsi.com

MODELING OF BIOLOGICAL SYSTEMS

AN INTERDISCIPLINARY COURSE FOR BIOLOGISTS AND NON-BIOLOGISTS

MARCH 24 – MAY 3, 2001

Modeling of Biological Systems (MOBS) is an intensive, multi-disciplinary, residential lecture & laboratory course designed to train biologists and non-biologists to apply and adapt successful modeling approaches in biology to their own research. MOBS is for students in the biological, chemical and physical sciences, mathematics and engineering. The course is organized into thematic cassettes that focus on particular broad areas of biology.

The MOBS curriculum is geared to advanced graduate students and above. Students will require at least a working knowledge of calculus. Successful applicants will receive pre-course assignments to help with their course activities. The course represents an innovative approach to education of modeling of biological systems in its thematic organization, modularity of content, interdisciplinary teaming, and multi-year involvement by both students and faculty.

The faculty will introduce students to successful approaches to modeling used to address contemporary biological questions in a quantitative fashion. With faculty tutelage, students will have hands-on opportunity to work with these models and to learn to apply these approaches to their own scientific questions.

Additional information is available at **http://courses.mbl.edu**.

The Burroughs Wellcome Fund and the National Science Foundation provide funding support for the MOBS Course.

Course Director: Robert B. Silver, *Marine Biological Laboratory*

Faculty: Thomas E. Cheatham III, *Univ. of Utah*; Robert Eisenberg, *Rush University*; Judith Herzfield, *Brandeis University*; John R. Hummel, *Argonne National Laboratory*; Peter A. Kollman, *UCSF*; John E. Pearson, *Los Alamos National Laboratory*; Silvina Ponce-Dawson, *Univ. of Buenos Aires*; Gregory Petsko, *Brandeis University*; and others to be announced.

Application Deadline: December 29, 2000.

Course Fee: $3,750 (room & board is additional).
Scholarship assistance is available.

MARINE BIOLOGICAL LABORATORY

For More Information or Application Contact:
Admissions Coordinator, Marine Biological Laboratory
7 MBL Street, Woods Hole, MA 02543
(508) 289-7401 / email: admissions@mbl.edu

The MBL is an EEO Affirmative Action Institution

Biotechnology

Have you considered a genomics institute?

Novartis Agricultural Discovery Institute Inc. (NADII), is one of the largest single fully funded research endeavors dedicated to agricultural genomics. We apply cutting-edge biotechnology to match genes with traits and provide advanced technologies that can be used widely in agribusiness research for the development of gene-based products. We currently seek the following exceptional individual to join NADII's growing team:

Bioinformatics Scientist

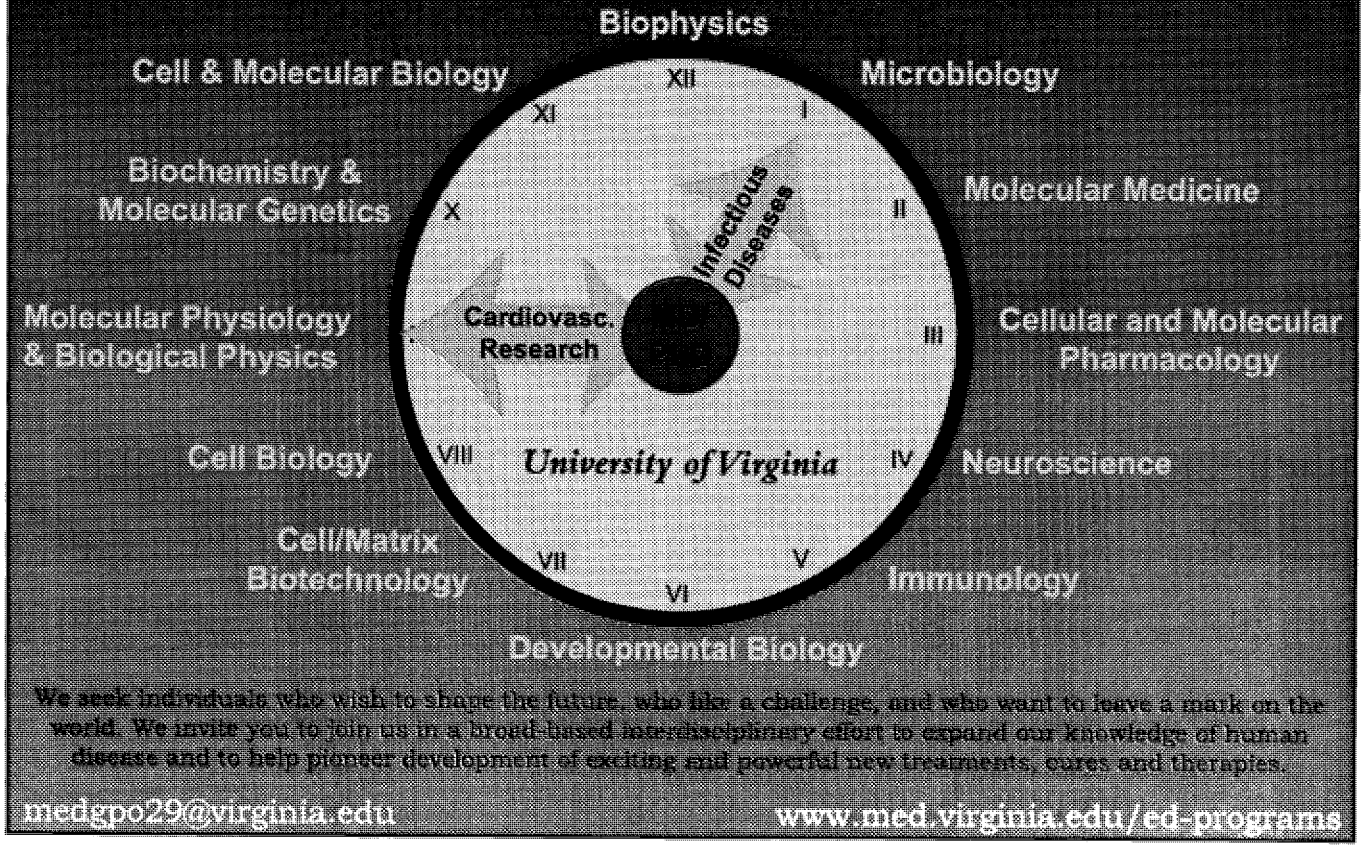
You will work with a team to develop algorithms and software for data visualization, pattern recognition, and data mining in large-scale gene expression databases and micro-array data. You must have an advanced degree in Computer Science, Physics, Mathematics, Statistics or related field with at least two years programming experience. You need to have an in-depth knowledge of C++ and Java. The ideal candidate will also have a background in molecular biology with experience in developing algorithms around data analysis, signal processing and pattern recognition. **Job Code: BS/JZ-SCI**

NADII offers excellent compensation and a great benefits package. For immediate and confidential consideration, please send resume including salary history and expectations to: **Novartis Agricultural Discovery Institute, Inc., HR Dept./Job Code, 3115 Merryfield Row, Suite 100, San Diego, CA 92121-1102. Fax: (858) 812-1096.** EOE

NOVARTIS

www.nadii.com

If You've Got the Time, We've Got the Science



We seek individuals who wish to shape the future, who like a challenge, and who want to leave a mark on the world. We invite you to join us in a broad-based interdisciplinary effort to expand our knowledge of human disease and to help pioneer development of exciting and powerful new treatments, cures and therapies.

medgpo29@virginia.edu

www.med.virginia.edu/ed-programs

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PRAECIS' mission is to discover, develop and commercialize pharmaceuticals through integration of proprietary combinatorial technologies and high-throughput screening capabilities. We are a biopharmaceutical company involved in innovative research in Prostate Cancer, Endometriosis, Alzheimer's Disease and Growth Factor Biology. Phase III trials for Prostate Cancer and Phase II trials for Endometriosis are ongoing.

Research Associates Pharmacology

We are currently seeking Research Associates to participate in the Alzheimer's Disease transgenics program. Your responsibilities will include *in vivo* and related techniques, PCR genotyping, cryosectioning, immunohistochemistry, and image analysis. Experience in these techniques preferred but not essential. Bachelor's or Master's degree in a scientific discipline preferred as well as previous laboratory experience.

Scientist/Pharmacology

We are looking for a motivated Ph.D. level scientist with experience in pharmacology and histology and 2+ years' postdoctoral experience to participate in our drug discovery programs. Experience with *in vivo* rodent models, transgenics, histology, immunohistochemistry, and image analysis is highly desirable, as well as supervisory experience. The selected candidate will be involved in aggressively promoting drug candidates into clinical development.

Please send your resume to:
Human Resources
PRAECIS Pharmaceuticals, Inc.
One Hampshire Street
Cambridge, MA 02139

Fax: 617-621-8679

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PRAECIS

The Future in Drug Development

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Dean, College of Veterinary Medicine

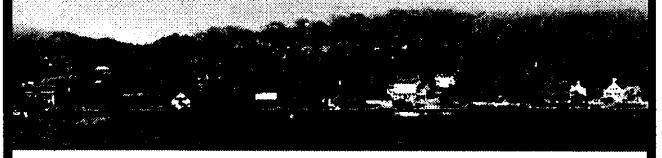
The University of Illinois at Urbana-Champaign invites nominations and applications for Dean of the College of Veterinary Medicine. Position requirements include a DVM or equivalent veterinary degree and demonstrated accomplishments that qualify the individual for tenure in a department within the College. Preferred qualifications include academic and research experience; excellence in administrative leadership; a commitment to equal opportunity; ability to lead the College in its academic responsibility as part of a nationally and internationally recognized land-grant university; and ability to relate to livestock, equine, companion animal and biotech industries. The Dean works closely with Campus and University administration; interacts with students, professional organizations, and leaders at local, state, and national levels; and plays a critical role in development of well-funded campus biotechnology initiatives. Full-time, 12-month appointment; salary and starting date are negotiable.

To insure full consideration, nominations and letters of interest (including vita) should be postmarked by November 15, 2000, and sent to:

Professor Robert Easter, Search Committee Chair
University of Illinois at Urbana-Champaign
601 East John Street
Champaign, IL 61820
Attention: Shirley Apperson
(Phone: 217 / 244-9483; Fax: 217 / 244-5639)

Affirmative Action/Equal Opportunity Employer

Faculty Position Theoretical Neuroscience



Cold Spring Harbor Laboratory will appoint a faculty position in Theoretical Neuroscience, preferably at the Assistant Professor level.

Applicants should be interested in systems neurobiology research and have strong background in quantitative methods.

Cold Spring Harbor Laboratory has recently expanded its neuroscience program by hiring five new faculty, including two in theoretical neuroscience.

Applicants should submit a CV, summary of research accomplishments, a research proposal, and names of 3 references to: **Dr. Bruce Stillman, Director**

Cold Spring Harbor Laboratory

CSH

1 Bungtown Road
Cold Spring Harbor, NY 11724
www.cshl.org

Cold Spring Harbor Laboratory is an equal opportunity employer and encourages applications from women and minorities.

THE UNIVERSITY OF MAINE

Freshwater Vertebrate Biologist

The **Department of Biological Sciences, University of Maine**, seeks applicants for a teaching and research position in the **biology of vertebrates** of freshwater environments. This is a tenure-track, academic-year position at the **Assistant Professor** level, and involves joint appointment in the Maine Agricultural and Forest Experiment Station. Research areas may include, but are not confined to, population or behavioral ecology, predator-prey interactions, or analysis of food webs. Demonstrated ability to integrate basic research with applied issues is desirable. The appointee is expected to establish a vigorous, externally-funded research program. We are particularly interested in candidates whose research will support and enhance the fisheries program of the Maine Cooperative Fish and Wildlife Research Unit. Ph.D. in an appropriate discipline is required, teaching and postdoctoral experiences are preferred, and a strong commitment to undergraduate and graduate education is expected. Teaching load will be approximately one course per semester, and will include an undergraduate course in vertebrate biology each year, and, in alternate years, participation in an introductory course in organismal biology, and an advanced course either in the ecology and behavior of aquatic vertebrates or in a related area. Duties will also include assisting in the curation of a major collection of vertebrates used in teaching and research. Review of completed applications will begin 1 December 2000 and will continue until a suitable candidate is hired. Applicants should submit *curriculum vitae*, statement of research and teaching interests, representative published papers, record of successful proposals, and evidence of teaching skills. Applicants should also request three references to send letters addressing the applicant's suitability and particular strengths for this position. Applications and supporting letters should be addressed to: **Chairperson, Vertebrate Biology Search, Department of Biological Sciences, University of Maine, 5751 Murray Hall, Orono, ME 04469-5751.** Information about the Department is available at: www.umesci.maine.edu/biology/

The University of Maine is an EO/AA Employer. We strongly encourage women and minorities to apply.

A Member of the University of Maine System

Group Leader
Molecular Instrumentation Applications Development

GeneMachines is seeking a senior scientist with a strong interest in new instrument applications and process automation to lead our Molecular Instrumentation Applications Development Group. This is a strategic position intended to focus the applications of GeneMachines' cutting-edge technology and develop useful reagents and consumables appropriate to a user's need. The appropriate candidate will have significant experience in two or more of the following areas:

- Innovative instrumentation and/or consumables development
- Development of novel procedures/protocols relevant to the field of genomics (sequencing, microarraying, or genotyping)
- Consensus-based management of research and development personnel
- Oversight of biological protocols from conception through release as a marketed product
- Creation of novel protocols and techniques in the fields of biochemistry, molecular genetics, or proteomics

The candidate will lead a multi-disciplinary team of biologists, chemists, and engineers which works with other company groups in both leading and supporting roles. Responsibilities will include: input on instrumentation product decisions, identification and in-licensing of new technologies, support of applications on released products and development and execution of a consumables research and revenue plan.

Candidates must have Ph.D. in biochemistry, molecular biology, or genetics plus 5-7 years of relevant experience. The candidate should possess excellent communication (oral and written) and problem solving skills and the ability to work effectively on a multi-disciplinary team.

GeneMachines' fast-paced environment supports innovation, creativity, and customer-centered processes at all levels. We offer a friendly atmosphere, competitive compensation including participation in stock option plans, health and dental benefits, and participation in the Company's 401(k) plan. EOE.

Please send resumes/C.V. to jobs@genemachines.com. JOB CODE: AP-014-SCI

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Applied Molecular Evolution (AME) is a rapidly growing public company and a leader in the application of directed evolution to the development of biotherapeutics.

AME seeks scientists who can work independently while applying problem solving skills to achieve critical project goals. AME provides a high level of responsibility in a dynamic working environment with the opportunity to develop and implement leading-edge protein engineering technologies. Additionally, AME scientists receive excellent benefits and compensation, including equity participation and generous performance-linked incentives.

Our strategic growth has created an immediate need for scientists with the following qualifications:

Senior Scientists (Ph.D.) with expertise in:

- Protein chemistry
- Antibody engineering
- Reporter assays
- Animal models

Research Associates (B.S. or M.S.) with expertise in:

- Molecular biology
- Biochemistry
- Cell culture
- ELISAs and other *in vitro* assays

AME APPLIED MOLECULAR EVOLUTION

Send cover letter and resume to:
HR Department
Applied Molecular Evolution, Inc.
3520 Dunhill Street, San Diego, CA 92121
careers@AMEvolution.com

TENURE-TRACK FACULTY POSITIONS
DEPARTMENT OF PATHOLOGY
UC IRVINE COLLEGE OF MEDICINE

The UC Irvine Department of Pathology seeks to expand selected clinical and investigative programs with the recruitment of four state-funded (tenure-track) positions at the Assistant, Associate, or Full Professor level. The department seeks to identify outstanding candidates with innovative research programs in the areas of immunology/immunopathology, cancer/cancer genetics, infectious diseases, stem cell biology, and lipidology. Applicants for the positions listed should have a demonstrated commitment to teaching, scholarly investigation, and clinical service. Candidates for Associate or Full Professor appointments must have a strong record of extramurally funded research.

Successful candidates for each of the listed positions will be afforded adequate time to devote to a vigorous research program. M.D. applicants should be board eligible or certified by the American Board of Pathology and must be eligible within 12 months for a California medical license.

The Division of Anatomic Pathology seeks a **NEUROPATHOLOGIST** with a research emphasis in neuroimmunology, stem cell biology, infectious disease, neurodegenerative diseases, or cancer.

The Division of Diagnostic Molecular Pathology seeks a **MOLECULAR PATHOLOGIST** with a research program in cancer/cancer genetics, other genetic diseases, or immunopathology. Individuals with expertise in diagnostic molecular pathology and/or HLA typing are encouraged to apply.

The Division of Hematology seeks a **HEMATOPATHOLOGIST** with a research focus in stem cell biology, immunopathology, or leukemia/lymphoma biology.

The Division of Chemical Pathology seeks a **CLINICAL CHEMIST** or **CLINICAL TOXICOLOGIST**. Individuals with research programs in lipidology are encouraged to apply.

Applicants should submit curriculum vitae, a statement of research interests, and names of three references to:

Michael E. Selsted, M.D., Ph.D.
Professor and Chair
Department of Pathology, D440 Med Sci
UC Irvine College of Medicine
Irvine, CA 92697-4800

UCI is an equal opportunity employer committed to excellence through diversity.

THE HENRY SAMUELI SCHOOL OF ENGINEERING AT THE UNIVERSITY OF CALIFORNIA, IRVINE invites applications for three faculty positions in **BIOMEDICAL ENGINEERING** beginning July 1, 2001. These three positions are part of a Development Award from the Whitaker Foundation, and represent the first phase of new faculty that UCI will be recruiting in biomedical engineering. All academic ranks will be considered. The successful candidate(s) will have evidence of developing a rigorous extramurally funded research program in computational engineering technologies related specifically to biomedical problems. Research areas that are of particular interest include novel approaches to:

- bio-optoelectronics
- modeling, simulation, and software engineering of complex biological systems
- neurologic, cardiovascular, and/or ophthalmologic systems
- parallel and/or distributed biomedical computational systems
- biomedical information management systems
- quantitative optical image analysis

All candidates will initially be hired in the Biomedical Engineering Program within The Henry Samueli School of Engineering, but will move to the planned Department of Biomedical Engineering by 2002. In addition, the candidate(s) will participate in the teaching and research activities of both undergraduate and graduate programs in biomedical engineering. The University of California, Irvine is situated in Orange County's rapidly growing high technology sector that includes more than 150 biomedical device companies.

For full consideration, candidates should send their curriculum vitae, a brief (no more than 2 pages) description of current and future research and teaching interests, and at least three letters of reference by January 1, 2001 to:

Search Committee Chair
Center for Biomedical Engineering
204 Rockwell Engineering Center
The Henry Samueli School of Engineering
University of California, Irvine
Irvine, CA 92697-2715

Submission via electronic mail can be made to: lrehbaum@uci.edu
You can visit our website at: http://soeweb.eng.uci.edu/bme/

The University of California is an Equal Opportunity Employer committed to excellence through diversity.

TENURE TRACK POSITION IN
COMPUTATIONAL BIOLOGY AND BIOINFORMATICS

We are seeking applicants at all ranks for an interdisciplinary tenure track position in computational biology. The applicant should have a very strong background in computer science, and should also have a strong background and research interest in computational aspects of biology.

Research may include such topics as development of genomic databases, bioinformatics, and structural biology. We are looking for candidates with outstanding research accomplishments and who are committed to excellence in teaching computer science.

Further information about the department is available on the World Wide Web at URL: http://www.cs.cornell.edu/

Applicants should submit a vita and the names of at least three references to:

Chair, Faculty Recruiting Committee
Department of Computer Science
4130 Upson Hall
Cornell University
Ithaca, NY 14853-7501

Please include reference number CB#2 with application.

CORNELL
UNIVERSITY

Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator and welcomes applications from women and ethnic minorities.

http://www.cornell.edu

The evolution of the healthcare industry has created a demand for multifaceted individuals capable of communicating scientific and technical material to a wide range of audiences.

Now accepting applications for the position of

SCIENTIFIC COMMUNICATIONS WRITER

We are currently seeking qualified individuals to fill a position as a Scientific Communications Writer within the Strategic Communications Group. Strategic Communications is responsible for worldwide market development activities that support product introductions and life cycle optimization.

Scientific Communications Writers are responsible for communicating the findings of clinical and developmental research studies to the medical and scientific community. They write, research, and review articles for publication in peer-reviewed literature and prepare slide and poster presentations for professional meetings. They also write product monographs, professional education materials, and product backgrounders for use both by the medical community and their colleagues within the pharmaceutical industry.

Scientific Communications Writers also develop and maintain scientific expertise in targeted therapeutic areas and function as important liaisons between scientific and marketing professionals.

The position requires an advanced degree in biological science or medicine (eg, PhD, PharmD, MD). Excellent written and oral communication skills and the ability to communicate technical material to both technical and nontechnical audiences are also required. The qualified candidate should demonstrate strong planning and organizational skills, high energy, and the ability to take initiative within a team framework.

With sales of approximately $1.2 billion, Allergan is a technology-driven, global healthcare company focused on specialty pharmaceutical products that satisfy unmet medical needs and improve patients' lives. Allergan offers a competitive salary, excellent benefits, and a stimulating working environment.

FOR CONSIDERATION, send your resume, two writing samples demonstrating the breadth of your skills, and a cover letter describing your career objectives to: Amy Lindsay, PhD, Manager, Program Development, Strategic Communications, 575 Anton Blvd, Suite 900, Costa Mesa, CA 92626. *Resumes without writing samples will not be considered.*

ALLERGAN

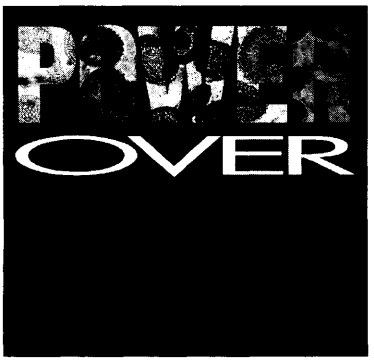
The Endowment for
SCHOLARS
in
Biomedical Research
at
The University of Texas Southwestern Medical Center

UT Southwestern is pleased to announce the continuation of the Endowed Program for Scholars in Biomedical Research. The Program, which is fully funded from private endowment, will provide $600,000 over four years to support the research activities of each new **Assistant Professor** (tenure track) appointed to the Program; five will be appointed annually. In addition, regular funding for salary, as well as research space, will be provided by the medical school department or research center offering the appointment. Positions in both **basic science** and **clinical departments** are available. The goal of the program is to assure a successful beginning of the research careers of an ever-growing cadre of outstanding young investigators at UT Southwestern.

For detailed information about currently available faculty positions, please access our web page: **http://www.swmed.edu.**

SOUTHWESTERN
The University of Texas
Southwestern Medical Center
At Dallas

UT Southwestern is an equal opportunity institution.



WE ARE A VITAL GLOBAL FORCE. A cogent synergy of science, technology and commercial minds focused on one thing—controlling disease. Our broad expertise with biopharmaceuticals, vaccines, and blood testing enables us to target cancer, cardiovascular and infectious diseases and create powerful new opportunities for the future. Currently, we seek enthusiastic professionals to join us at our San Francisco Bay Area location in Emeryville, California.

RESEARCH SPECIALIST, LEAD DISCOVERY

You will be responsible for the characterization, optimization, automation and implementation of high throughput screening assays for small molecule drug discovery. In this role you will select the technology, such as time-resolved fluorescence, SPA or fluorescence polarization, to develop assays optimized for the high throughput screening of our compound libraries. Candidates must have a BS degree and at least 3-6 years experience or MS degree and 2-5 years experience developing and performing biochemical and/or cellular assays. Familiarity with screening laboratory equipment, robotics or data analysis software would be extremely helpful. Req. #4649

RESEARCH SPECIALIST, LEAD OPTIMIZATION

As part of an aggressive program within our Small Molecule Drug Discovery program, you will assist with identifying and characterizing kinase inhibitors as potential cancer treatments. In this role, you will perform *in vitro* kinase assays and cell-based assays to evaluate novel compounds, particularly within the area of angiogenic receptor tyrosine kinases. Requires a BS in Biology/Biochemistry with 5-8 years experience or MS with 2-5 years experience in assay development and cell culture; strong computer skills (Excel, curvefit software); and a basic understanding of chemical structures. Req. #4389

To join our global team, send your resume with salary requirements, indicating Req. #, to: Chiron, Human Resources, 4560 Horton Street, Emeryville, CA 94608. Or email to jobs@cc.chiron.com (please reference Req. #). As an equal opportunity employer, Chiron honors diversity in every respect.

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CHIRON

STONY BROOK
STATE UNIVERSITY OF NEW YORK

POSTDOCTORAL POSITIONS

The following postdoctoral positions are anticipated to be available for the Winter 2000/Spring 2001.

Interactions of the Tularemia Agent with Vascular Cells;
Jorge L. Benach, Center for Infectious Diseases

Sphingolipid and Cholesterol-Rich Membrane Rafts and Caveolae;
Deborah A. Brown, Biochemistry and Cell Biology

Plant Biology: Intercellular Communication and Nuclear Import During Plant-Pathogen Interactions;
Vitaly Citovsky, Biochemistry and Cell Biology

Mineral Physics: Cation Ordering at High Pressure and Temperature;
Jiuhua Chen, Center for High Pressure Research

Polyelectrolyte Surfactant Complexes, Protein Folding, Gene Therapy, Nanostructure of Polymers, Colloids and Fibers;
Ben Chu, Chemistry

Sequential Signal Processing in Wideband CDMA Communications;
Petar M. Djuric, Electrical and Computer Engineering

Signal Transduction Pathways in Meiosis;
JoAnne Engebrecht, Pharmacology

Regulated Control of Exocytosis and Cell Morphology by Phospholipase D;
Michael A. Frohman, Pharmacology

Computational Applied Mathematics: Fluid Dynamics;
James Glimm, Applied Mathematics and Statistics

Alzheimer's Disease: Molecular and Cellular Biology of APP; Dmitry Goldgaber, Psychiatry

Chemical Biology: Molecular Carcinogenesis, Mutagenesis, DNA repair; *www.pharm.sunysb.edu/faculty/grollman;* Arthur Grollman, Pharmacology

Role of Glycosylation in Regulation of Notch Signaling Pathway;
Robert S. Haltiwanger, Biochemistry

Mouse Genetics: Establishing Polarity in the Embryo;
Bernadette Holdener, Biochemistry and Cell Biology

Flow-induced Polymer Crystallization, Nanocomposites, Nanoparticles, and Biodegradable Polymers;
Benjamin S. Hsiao, Chemistry

Chemical Biology, DNA Damage and Repair, Organic Synthesis;
Francis Johnson, Pharmacology

Developing Virtual Colonoscopy for Cancer Screening;
Arie E. Kaufman, Computer Science

Nuclear Reactions: Emphasis on Experiments at RHIC and Their Interpretation;
Roy A. Lacey and John M. Alexander, Nuclear Chemistry

Glycoproteins: Biosynthesis, Folding and Catabolism in Yeast;
William J. Lennarz, Biochemistry and Cell Biology

Studies of Lipid Raft Structure, Membrane Protein Folding, Toxin Translocation Across Membranes;
Erwin London, Biochemistry and Cell Biology/Chemistry

Viral Pathogenesis: DNA Array Analysis of Hantavirus and Rotavirus Directed Cellular Responses;
Erich R. Mackow, Medicine and Molecular Genetics and Microbiology

Viral Signaling: Analysis of Hantavirus Directed Cell Signaling;
Erich R. Mackow, Medicine and Molecular Genetics and Microbiology

Three-Dimensional Structure Determination of Proteins and Complexes by High Resolution Solution NMR;
Smita Mohanty, Biochemistry

Molecular Biology: Cloning, Expression, and Purification of Odorant Binding Proteins;
Smita Mohanty, Biochemistry

Circadian Visual System: Functional and Basic Neuroanatomy;
L.P. Morin, Psychiatry

Molecular Biology of Chemical Mutagenesis with a Single DNA Lesion;
Masaaki Moriya, Pharmacology

Developmental Regulation of the Secretory Pathway;
Aaron Neiman, Biochemistry and Cell Biology

Ca^{2+} Signaling in the Physiology of Smooth Muscle Relaxation;
Srinivas N. Pentyala, Anesthesiology

Molecular Pharmacology of G-Protein Coupled Signaling Pathways;
Mario J. Rebecchi, Anesthesiology

Computational Structural Biology: Development and Application of Computer Simulation Algorithms;
Carlos L. Simmerling, Chemistry/Center for Structural Biology

Weak Interaction Measurements in Francium with Laser Trapping Methods;
Gene Sprouse, Physics and Astronomy

Yeast Genes and Mutants Affecting Nuclear Structure and Function;
Rolf Sternglanz, Biochemistry and Cell Biology

Imaging Studies of Chemical Reaction Dynamics;
Arthur Suits, Chemistry

Regulation of Vertebrate Development by Growth Factors and Selective Ubiquitination; Gerald H. Thomsen, Biochemistry and Cell Biology

Gauge Field Theory, Elementary Particle Theory, Statistical Mechanics, Supersymmetry, and Superstrings;
P. van Nieuwenhuizen, C.N. Yang Institute for Theoretical Physics

High Energy Astrophysics: Theory and Observations of Neutron Stars;
F. M. Walter and J. M. Lattimer, Physics and Astronomy

Cell Biology of Lipoprotein Receptors/ Atherosclerosis/Aortic Gene Expression Profiling; David L. Williams, Pharmacology

Nanotechnology: The Science and Applications of Nanotubes and Nanocrystals;
Stanislaus S. Wong, Chemistry

Molecular Mechanism of Tissue Remodeling: Extracellular Matrix Signaling;
Jiahua Xu, Dermatology

Submit resumes, indicating the name of the researcher, by November 1, 2000 to: George Meyer, Office of the President, University at Stony Brook, Stony Brook, NY 11794-0701; e-mail: *postdocads6@notes.cc.sunysb.edu*
The University at Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer

Ground-breaking Research. Advanced Technology. Dedicated People.

At Axys Pharmaceuticals, our scientific staff employs state-of-the-art techniques to develop therapeutic treatments for cancer. We currently have opportunities for dedicated professionals to join our interdisciplinary team. If you are committed to quality and excellence, bring your skills and expertise to Axys Pharmaceuticals and play an integral role in our success.

Group Leader, Protein Expression

You will direct the activities of a group of 5-7 scientists who are responsible for providing fermentation and protein production support for internal & partnered programs. Candidates must possess a Ph.D. in biochemistry or related field with 2+ years' post-doctoral experience and 5+ years' industry experience in protein purification & characterization (10 -100 mg scale). (Job# 00-009-SCI)

Scientist, Tumor Biology

As a Tumor Biology Scientist at Axys, you will develop, characterize, and implement in vivo tumor and angiogenesis models for profiling drug candidates evolving from ongoing oncology drug discovery programs. You will evaluate proprietary compounds from our oncology chemistry efforts in established in-house models and/or in collaboration with academic and contract organizations. To be successful in this position, you need 2 to 5 years' post-Ph.D. experience involving the development, implementation, and utilization of cell and animal oncology models. This would include experience working with standard tumor models in rats and mice, xenograft models, and more sophisticated models to evaluate various phases of the processes of tumor progression and angiogenesis. We prefer candidates experienced with flow cytometry, gel electrophoresis, Western blotting, PCR, cell culture, ELISA, pathology, and histology. Significant experience with in vivo tumor models is a must, and a significant publication record is expected. (Job# 99-076-SCI)

Scientist, Target ID & Validation

As part of our oncology program, you will work with a group to identify and validate novel anti-angiogenic drug targets. You will use a combination of genomic, molecular biological, cell biological and in vivo approaches to identify key genes in the angiogenic process. You must have a PhD in the biological sciences and 5+ years' experience using molecular approaches to study the regulation of gene expression and function in mammalian cells. Experience with endothelial cells and in vivo models of endothelial cell function is desirable. Experience with bioinformatic tools and microarrays is a plus. (Job# 00-058-SCI)

Besides attractive salaries and outstanding benefits, we offer the opportunity to be part of a dynamic environment that fosters professional & personal growth. Please forward your resume/cv to:

Axys Pharmaceuticals
HR Department, Attn: (Job#)
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MOUNT SINAI SCHOOL OF MEDICINE

POSTDOCTORAL TRAINING
Cellular and Molecular Endocrinology

Mount Sinai School of Medicine, in conjunction with a distinguished faculty of principal investigators, is offering M.D. and Ph.D. training in cellular and molecular endocrinology. Fellowships are provided by an NIH-supported training program in its 12th year. Research areas include:

- Physiological roles of a novel transcription factor - Terry Davies, M.D.
- Nuclear receptors and neurodevelopment - Douglas Forrest, Ph.D.
- Signal transduction/G protein characterization - Ravi Iyengar, Ph.D.
- Modeling of hormone receptor binding sites - Roman Osman, Ph.D.
- GnRH receptors: signaling and transcriptional program - Stuart Sealfon, M.D.
- Pituitary peptidases - Sherwin Wilk, M.D.
- Glycated end products in diabetes and aging - Helen Vlassara, M.D.
- Molecular and Cell biology of osteoporosis - Mone Zaidi, M.D., Ph. D.

Mount Sinai School of Medicine, located on the Upper East Side of Manhattan, overlooking Central Park, provides excellent modern research facilities and an outstanding scientific environment for postdoctoral training. Applicants must be US citizens or permanent residents. Applications from women and minorities are encouraged. Please forward curriculum vitae, along with names and addresses of three references to: **Dr. T.F. Davies, Endocrinology Training Program, Box 1055, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574.** We are an equal opportunity employer fostering diversity in the workplace.

Faculty Positions in Cell and Molecular Biology
Department of Biological Science
Florida State University

As a component of a major expansion, the Department of Biological Science seeks to fill three (3) tenure-track faculty positions in the broadly defined area of cell and molecular biology. Applicants at the Assistant, Associate, and Full Professor level will be considered. Candidates' research should be problem-oriented and use contemporary cellular and/or molecular tools to probe fundamental questions. It is anticipated that new faculty will interface with major strengths in the Department, which include cellular and molecular neuroscience, cellular dynamics and contractility/motility, developmental biology and gene expression, structural biology and biophysics, and molecular evolution.

The research and graduate training efforts of the Department of Biological Science are strongly complemented by interdisciplinary programs in Neuroscience, Molecular Biophysics/Structural Biology, Computational Science and Information Technology, Materials Research Technology and the National High Magnetic Field Laboratory. Florida State University also is establishing a new medical school that will further enhance the basic biomedical sciences. The Department of Biological Science and allied units maintain fully staffed, state-of-the-art core facilities that include molecular cloning, monoclonal antibody, bioanalytical, DNA sequencing, microarray, imaging and microscopy (including cryoEM), eukaryotic cell culture, X-ray crystallography, molecular modeling and physical biochemistry laboratories.

Applicants for entry-level positions must have significant postdoctoral training and a record of productivity that demonstrates promise in terms of developing an independent and externally funded research program. Middle and senior level applicants must have a distinguished track record with respect to research, graduate training and recognition by his/her peers. Salary is competitive and commensurate with training and experience. A generous start-up package is provided for new faculty.

Send a letter of application, a description of research with two selected reprints, and a curriculum vitae to: **Cell and Molecular Biology Search Committee, Department of Biological Science, Florida State University, Tallahassee, FL 32306-1100**. Applicants are encouraged to arrange for three (3) letters of recommendation to arrive coincident with application materials. Applications will be evaluated on a rolling basis and should arrive no later than December 1, 2000 for full consideration. For more information: http://www.bio.fsu.edu or cmbsearch@bio.fsu.edu.

Florida State University is an Equal Opportunity/Affirmative Action employer, committed to diversity in hiring, and a Public Records Agency.

A rapidly growing public biopharmaceuticals company located in the heart of Silicon Valley is looking for aggressive and enthusiastic professionals who can make immediate and substantial contributions and who thrive in a fast-paced environment. The employees of Hyseq are among our most valuable assets. Our employees provide tremendous energy, talent and expertise in all areas of the company. Be a part of the Hyseq culture that encourages professional and personal growth objectives. Immediate openings exist for qualified candidates interested in research on the cutting edge of biotech industry. We offer competitive salaries, benefits and significant opportunities for professional growth.

HYSEQ INC.

Research Scientist — Job Code # 31-0001

We are looking for an experienced scientist to direct a research group within the Department of Cell Biology and Cell Screening. The scientist will be responsible for design and implementation of cellular assays to Elucidate function and clinical importance of candidate genes/proteins at HYSEQ INC. Multidisciplinary approaches including molecular, cellular and biochemical examinations are encouraged. This group will operate within an exciting collaborative environment within the division of Functional Genomics and Bioinformatics in researching candidate gene function. The candidate should have a Ph.D. in molecular and cellular biology, physiology, biochemistry or related fields, with postdoctoral experience and a strong publication record. Solid background in standard molecular and cell biological techniques and functional live-cell assays is preferable. Quantitative, live-cell techniques such as FACS and fluorescent imaging will be used heavily. Industry experience and/or adaptation of cell-based assays to screening environments are beneficial, as well as a broad background including basic knowledge of immunology, neurobiology and cell physiology

Scientist — Job Code # 30-0001

Hyseq is looking for an individual to fill a key position in our efforts to integrate current technology into new platforms. As a member of Hyseq's Chemical Technologies Department, you will be responsible for implementing novel research and developing strategies for new SBH technologies. The candidate will work closely with several departments, and must be able to communicate with personnel from different backgrounds. This position provides a unique opportunity to develop cutting edge technology in a dynamic work environment. The individual must have experience with polymer and/or surface chemistry. Although an MS in Chemistry is preferred, we will also consider BS with sufficient experience. Material scientists with hands-on laboratory experience are also welcome to apply.

Research Scientist — Job Code # 16-0010

We are looking for a scientist to direct a research group within the Department of Functional Genomics. The scientist will be responsible to determine and/or define function of candidate genes/proteins. Multidisciplinary approaches including molecular, cellular and biochemical examination are encouraged. The candidate should have a Ph.D. in biochemistry, physiology and/or molecular biology with 1 or 2 years of postdoctoral experience. Required is also a strong publication record. The candidate should be familiar with the basic cellular and molecular techniques and have demonstrated a high degree of independence and critical thinking. Basic knowledge of immunology, neuro biology or developmental biology is preferable.

Scientist — Job Code 33-0001

We have an opening for a Molecular Biologist to carry out protein expression from Hyseq's many novel genes. You will be responsible for cloning and expressing new target genes to produce recombinant proteins for assay development and high throughput screening. You may also be required to carry out small-scale purification of affinity-tagged proteins.We are looking for an individual with a Ph.D. in Molecular Biology or Biochemistry. 2 or more years post-doctoral research experience (academic or industrial). Substantial molecular biology research experience and bacterial expression. Proficiency in molecular biology techniques including: PCR, DNA and RNA purification, gel electrophoresis. Excellent communication and teamwork skills.

Send, fax or e-mail (Doc file) resume with cover letter and salary history to: Hyseq, Inc. Attn: H.R. Dept. 670 Almanor Ave., Sunnyvale, California 94085 Fax: (408) 524-8129; E-mail: hr@sbh.com
Please indicate job title on all correspondence. For further information on our company and for a complete listing of our current job openings, please visit our website at: www.hyseq.com no calls please. EOE

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Associate Scientist

Job Code: 400-6U

Process Chemistry

Investigator

Job Code: 210-5

Enzymology

Assistant/Associate Scientist

Job Code: 300-25U

Investigator

Job Code: 300-26U

Staff Investigator

Job Code: 300-38

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VERTEX

ANTICIPATED ASSISTANT PROFESSOR DEPARTMENT OF CHEMISTRY (Environmental Chemistry/Two Positions)

Two new tenure-track faculty positions in environmental chemistry are available for the fall of 2001 as joint appointments within the Departments of Chemistry at Louisiana State University and Southern University. The ideal candidate for one position (Reference Log Number 0531) will possess an intimate knowledge and understanding of advanced optical spectroscopic techniques and their application to atmospheric chemical/physical processes. The desired research emphasis for the second position (Reference Log Number 0532) is the biochemistry/toxicology of human exposure to air pollution to support the new Ph.D. program in environmental toxicology at Southern University. However, outstanding candidates whose research emphasizes other environmental areas will be considered. Other areas under consideration include novel biosensors and organic free radical chemistry. In addition, new and projected research capabilities include synchrotron protein crystallography, high-field NMR spectroscopy, and a combustion research facility; accordingly, research efforts associated with these tools and the objectives of the Environmental Chemistry program will be considered. Joint appointments at a rank commensurate with capabilities and experience will be made at both Southern and Louisiana State Universities. The successful applicants will be expected to establish vigorous research programs and collaborate with other faculty/staff in the environmental program. In addition to establishing successful joint research programs, responsibilities will include teaching chemistry at both the undergraduate and graduate levels alternately at Southern University and at LSU. In the Louisiana Joint Faculty Appointment Program (JFAP), 18 positions are funded with 13 faculty now in place. The five-year-old program is a large and significant effort of the Louisiana State Board of Regents. Application deadline is December 15, 2000, or until candidates are selected. Please submit letter of application indicating reference number of position, résumé, and arrange for three letters of recommendation to be sent to:

Dr. William Moore
Department of Chemistry
Southern University
Reference Log Number 0531
and Number 0532
Baton Rouge, LA 70813

LSU and Southern University Are Equal Opportunity/Equal Access Employers. Women and minority candidates are especially encouraged to apply.

DIVISION CHIEF ONCOLOGY

The Department of Medicine at the University of Massachusetts and UMass Memorial Health is seeking a Clinician-Scientist to lead the Division of Oncology. The Division is an integral group within the Department of Medicine and includes both Clinicians and Clinician Scientists. Prospective candidates should have demonstrated excellence in teaching and clinical activities, as well as a significant record of accomplishment in the area of original research with a consistent record of extramural funding. Space in a new research building is available for laboratories for the Division Chief, as well as space and funds for recruitment of junior faculty. A generous start-up package and appointment at the level of **ASSOCIATE** or **FULL PROFESSOR** with tenure is available for qualified candidates. For confidential consideration, please submit current curriculum vitae, bibliography, and statement of research interests to: **Robert Finberg, M.D., Chair, Department of Medicine, UMass Memorial Health System, 55 Lake Avenue North, Worcester, MA 01655.**

The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer with a strong commitment to fairness and diversity; accordingly, UMass actively seeks and encourages applications from all individuals independent of gender, race, ethnicity, culture, sexual orientation, age, or disability.

POSITIONS OPEN

WRIGHT STATE
UNIVERSITY

PHARMACOLOGY AND TOXICOLOGY FACULTY POSITIONS

Department of Pharmacology and Toxicology of Wright State University School of Medicine invites applications for faculty positions to participate in a programmatic effort to study the interaction of chemical toxicity and environmental stress. Successful applicants will become part of a dynamic research team focused on the application of neuropharmacological, behavioral, cardiovascular, and molecular genetic approaches. Faculty positions are available from the **ASSISTANT** to **PROFESSOR** level in the area of toxicogenomics. All applicants must have a Ph.D. with research program in toxicology/molecular genetics with preference given to applicants with experience using gene-array technology. Candidates for **ASSOCIATE** or **FULL PROFESSOR** level must have extramural funding and administrative experience. Review of applications begins November 3, 2000. Send brief description of research experience, curriculum vitae, and contact information for three references to: **Wright State University, Department of Pharmacology/Toxicology, 3640 Colonel Glenn Highway, Dayton, OH 45435-0001.** *Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR IN ENVIRONMENTAL SCIENCE AND POLICY UNIVERSITY OF SOUTH FLORIDA

The Department of Environmental Science and Policy at the University of South Florida (USF) in Tampa invites applications for a tenure-track Assistant Professor position in environmental science (nine-month appointment) to begin fall 2001 contingent upon funding. The successful candidate must possess a Ph.D. from either an interdisciplinary environmental studies program or an environmentally oriented natural science discipline at the time of appointment in August 2001. The applicant should be able to teach graduate and undergraduate courses in the environmental sciences and must have an active research agenda. Demonstrated teaching effectiveness and potential for external funding are preferred. Salary negotiable. Send a letter of application, curriculum vitae, evidence of teaching effectiveness, and three names of references to: **Chair, ESP Search Committee, Department of Environmental Science and Policy, University of South Florida, 4202 East Fowler Avenue, SCA 238, Tampa, FL 33620.** Applications must be received by November 9, 2000. *USF is an Equal Opportunity/Affirmative Action/EA institution. For disability accommodations, call* **Telephone: 813-974-2739**. *According to Florida law, applications and meetings regarding them are open to the public.*

ASSISTANT, ASSOCIATE, OR FULL PROFESSOR POSITIONS IN CHEMICAL BIOLOGY The University of Wisconsin–Madison

The University of Wisconsin–Madison is seeking to fill two faculty positions in chemical biology, which are part of a new campuswide initiative involving Chemists, Biologists, and Engineers. The successful candidates will develop independent research programs that integrate chemical and biological approaches to address fundamental problems. Further information about these positions and the chemical biology initiative at UW–Madison can be obtained from **website: http://www.plantpath.wisc.edu/chembio**. Review of applications will begin December 1, 2000. Candidates should send a letter of interest, curriculum vitae, and names and addresses of three references to: **Chemical Biology Positions, c/o Professor Laura Kiessling, Department of Chemistry, 1101 University Avenue, Madison, WI 53706.** *The University of Wisconsin–Madison is an Equal Opportunity Employer; women and minorities are especially encouraged to apply.*

POSITIONS OPEN

ASSISTANT PROFESSOR BIOINFORMATICS, GENOMICS, OR COMPUTATIONAL BIOLOGY

The Department of Biological Sciences, University of Maryland, Baltimore County (UMBC) invites applications for a tenure-track position in any area of bioinformatics, genomics, or computational biology. Applicants must hold a Ph.D. and have at least two years of postdoctoral experience. The successful candidate is expected to establish a strong extramurally funded research program and to contribute to the Department's teaching program. Our 33 current faculty members have expertise in molecular, cell, and developmental biology; biochemistry; neurobiology; evolution; and ecology (see our **website: http://www.umbc.edu/biosci**). Additional faculty interested in bioinformatics, computational biology, and genomics are in the Departments of Mathematics and Statistics and Chemistry and Biochemistry. The Department has several undergraduate and graduate programs and occupies 100,000 square feet of modern, well-equipped research space. Salaries, start-up funds, and facilities are competitive.

UMBC is a medium-sized research university with a doctoral/research university-extensive Carnegie classification. It is located in the Baltimore–Washington corridor in convenient proximity to NIH, NCBI, TIGR, Celera, Human Genome Science, and other biotechnology companies as well as other excellent research universities. The university has a long tradition for combining excellence in research with strong teaching programs. The student population is very diverse (33% minorities) and the institution enjoys a collaborative atmosphere hospitable to students and faculty of any background.

Submit application including curriculum vitae, summary of current and future research interests, and contact information for three references by January 1, 2001, to: **Philip Farabaugh, Ph.D., Chair, Search Committee, Department of Biological Sciences, UMBC, 1000 Hilltop Circle, Baltimore, MD 21250.** *UMBC is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS UNIVERSITY OF WISCONSIN GENOMICS INITIATIVE

The University of Wisconsin–Madison seeks **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** tenure-track faculty in genomics. Candidates should demonstrate the ability to conduct a vigorous research program and teach.

A genome center is being established at Madison as a center of excellence in the study of genomes as a whole, to be housed in modern facilities in a new building. Faculty will hold joint appointments in relevant academic departments in physical, biological, computational, and engineering sciences. The institute seeks faculty in: (1) genome sequence determination and mapping with expertise in the biology of a targeted model organism; (2) functional genomics, including parallel strategies for interpreting the biochemical function, 3-D structure, and/or biological role of unknown genes found in genome data; (3) comparative evolutionary genomics with stress on whole genome analyses; and (4) bioinformatics, including the interpretation, analysis, and distribution of information on genomes being sequenced at Wisconsin.

Include curriculum vitae and a one-page statement relating your research and teaching interests to the points above, up to five reprints, up to five letters of reference, and any other (brief) information you wish to provide. Specific inquiries may be mailed to **e-mail: fred@genome.wisc.edu**. Send applications to: **Deborah Faupel, University of Wisconsin Biotechnology Center, 425 Henry Mall, Madison, WI 53706.**

Associated faculty of the University of Wisconsin Genome Initiative at Madison: **Thomas Anantharaman, Frederick Blattner, John Doebley, Sally Leong, Nicole Perna, David Schwartz, Jude Shavlik, Lloyd Smith, Michael Sussman.**

Bristol-Myers Squibb Company

Bristol-Myers Squibb, an internationally recognized leader in the research, marketing and manufacturing of innovative pharmaceuticals, has excellent opportunities available for Scientists in our Fermentation and Biocatalysis Development division in Syracuse, New York.

SCIENTISTS

POSITION ONE: We are seeking a scientist to develop microbial fermentation processes for production of enzymes, antibiotics, and other secondary metabolites. The candidate will design and execute experiments ranging from shake flasks to 250-L fermentors, as well as prepare seed culture for manufacturing; write, review and execute SOPs/MBRs.

The successful candidate will have a B.S. degree with minimum of 5 years or an M.S. degree with 2 years industrial experience in microbiology, biochemical engineering or related life science field. Good aseptic techniques and firsthand experience with fermentor operations are required. Demonstrated problem-solving ability, interpersonal and oral/written communication skills are essential. Ability to work with minimum supervision is preferred. Relocation Assistance. **Ad Code: # 00-0003118.**

POSITION TWO: As a strain improvement, media and fermentation development scientist, you will work with a team of scientists to evaluate new bacterial and fungal strains for the manufacture of therapeutics, and to optimize media and inocula build-up processes for large-scale fermentation. Responsibilities will encompass the maintenance, propagation and scale-up of microorganisms in various culture systems; performing classical mutation and genetic engineering approaches to improve the productivity of secondary metabolites; strain evaluation and optimization of fermentation media and processes in shake flasks and 14-liter fermentors. Duties also include data analysis, writing technical reports, oral presentation and interaction with other groups.

Candidates should have B.S. or M.S. in microbiology or a related discipline with a minimum of 2-4 years post-graduate experience for B.S. level candidates. Experience in microbial strain improvement and operation of computer controlled bench-top fermentors is preferred. Excellent aseptic techniques are required. Relocation Assistance. **Ad Code: #00-0002145.**

Bristol-Myers Squibb offers competitive salaries, excellent benefits and opportunity for professional growth. Please forward your resume including ad code, to: **Bristol-Myers Squibb, Manager Human Resources, P.O.Box 4755, Syracuse, NY 13221.**

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Head, Instrumentation Service, Bioanalytical Services Department

You will be responsible for implementing and supporting the Department's Program, and ensuring, on a 24/7 basis, full system capacity and minimal downtime for over 30 million dollars of laboratory instrumentation. At least five years of experience in direct maintenance of laboratory instrumentation (including GC, GCMS, HPLC, LCMS) and robotics is required.

Team Leader, Immunochemistry

You will supervise a scientific team assigned to specific immunochemistry projects and be accountable for the approving, reviewing and overall quality of the scientific data.

Research Chemist, Organic Synthesis

You will carry out the synthesis and characterization of known drugs, metabolites, as well as process impurities and custom-designed internal standards for use in our analytical labs and those of our clients.

If you are interested in one of these positions, please submit your resume to: **Staffing, Human Resources, MDS Pharma Services, 2350 Cohen, St.Laurent, Quebec, Canada, H4R 2N6. Fax: (514) 335-8340. Email: employee_recruiting@mdsps.com**

If you want to know more about these opportunities and others, visit our website at **www.mdsps.com**. If you want to find out more about our parent company, MDS Inc. which employs more than 11,000 highly skilled people at its global operations on 5 continents, visit our website at **www.mdsintl.com** or call **1-888-MDS-7222**, 24 hours a day.

MDS Pharma Services

We thank all applicants for their interest, however, only those selected for an interview will be contacted.

POSITIONS OPEN

DIRECTOR
SCIENCE AND PUBLIC POLICY PROGRAM
UNIVERSITY OF OKLAHOMA

The Science and Public Policy (S&PP) Program at the University of Oklahoma invites applications for the position of Director. This is a tenured position with a joint appointment in an appropriate department in the Colleges of Engineering, Geosciences, or Arts and Science. S&PP is an interdisciplinary research unit in the Sarkeys Energy Center that is concerned with energy, environmental, and technology policy issues. The Director is expected to foster the role of S&PP as a catalyst for interdisciplinary research at the University of Oklahoma. Preference will be given to candidates who can integrate their scholarly endeavors with ongoing University initiatives. The Director is expected to have a vigorous and extramurally funded research program and to develop and contribute to an instructional curriculum. In addition, the successful candidate will take the lead in representing the S&PP program to both internal and external constituencies. The rank of the position will be commensurate with accomplishment, but appointment at **ASSOCIATE/FULL PROFESSOR** is anticipated. Candidates should have a demonstrated ability to organize and lead interdisciplinary research teams. Candidates must have an earned Doctorate or appropriate alternative experience and a record of funded research in energy, science, or technology policy with an academic background in an appropriate field of natural science, social science, or engineering. Salary will be commensurate with qualifications. A letter of application; curriculum vitae; copies of representative publications; and names, addresses, telephone numbers, and e-mail addresses of three references should be sent to: **Professor Robert Anex, S&PP Search Chair, 100 East Boyd Street, Room 510, Norman, OK 73019-1006**. Review of applications will begin December 1, 2000, and continue until the position is filled. *The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer. The University of Oklahoma is responsive to dual-career couples.*

FACULTY POSITION
COMPUTATIONAL BIOLOGIST/ GENETICIST
University of New Mexico School of Medicine

The University of New Mexico School of Medicine (SOM) invites applications for one or more tenure-track positions at the rank of **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR**.

The successful applicant will develop an independent research program focused on the development and application of computational methods that complement and support institutional interests in functional genomics; proteomics; structure-activity relationships and drug design; cell signaling; or modeling of complex biological processes, systems, and networks. Areas of emphasis include cancer, diabetes, asthma, cardiovascular physiology, and neuroscience. Participation in graduate teaching activities also will be expected.

Ongoing collaborations with the UNM–Albuquerque High-Performance Computing Center, Sandia National Laboratory, and Los Alamos National Laboratory provide a multidisciplinary environment with state-of-the-art resources and capabilities. The position also will be supported by a full-time systems analyst.

Requirements of the position include a Ph.D., M.D., or equivalent degree and postdoctoral research experience. Demonstrated productivity as evidenced by peer-reviewed publications, teaching, and extramural research support is highly desirable. For best consideration, applicants should submit the following before November 20, 2000: curriculum vitae, the names of three references, and a concise description of their research program or plan to: **Dr. Jeffrey Griffith, Computational Biologist Search Committee, Department of Biochemistry and Molecular Biology, University of New Mexico School of Medicine, Albuquerque, NM 87131-5221**. *UNM School of Medicine is an Equal Opportunity/Affirmative Action Employer and Educator.*

POSITIONS OPEN

NEUROBIOLOGY
TENURE-TRACK FACULTY POSITIONS
UNIVERSITY OF MARYLAND
SCHOOL OF MEDICINE

The Department of Anatomy and Neurobiology is recruiting new tenure-track/tenured faculty in neuroscience. Appointments will be made at **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** ranks.

We are especially seeking applications from synaptic and cellular physiologists, cellular and molecular developmental neurobiologists, and systems neuroscientists.

Our facilities include state-of-the-art core laboratories in molecular neurobiology, imaging, neurophysiology, and neuroanatomy. We offer an outstanding intellectual and collaborative environment with highly competitive salary and start-up packages. The department has NIH Program Project and Training Grants. Departmental faculty are members of the interdisciplinary Program in Neuroscience (**website: http://neuroscience.umaryland.edu**).

Successful candidates must have a Ph.D. or equivalent, evidence of productivity and innovation, and the potential to establish an independently funded research program. For best consideration, applications should be received before October 30, 2000. Candidates should submit detailed curriculum vitae, a statement of research interests and goals, and the names and addresses of three to five references. Electronic submission of all application materials (including supporting letters), as Microsoft Word file attachments to **e-mail: facsearch@umaryland.edu** is preferred. Paper applications may be mailed to:

Dr. Linda J. Richards, Ph.D.
Chair, Faculty Search Committee
Department of Anatomy and Neurobiology
University of Maryland School of Medicine
685 West Baltimore Street
Baltimore, MD 21201
Website: http://neurobiology.umaryland.edu

The University of Maryland is an Affirmative Action/Equal Opportunity Employment/Americans With Disabilities Act Employer. We are eager to diversify our faculty. Women and minorities are encouraged to apply.

DIRECTOR
MOLECULAR BIOLOGY PROGRAM

Pomona College, founding member of The Claremont Colleges, has a staff position with possible coterminous faculty appointment (a nontenure-track continuing position) open for the Director of the Molecular Biology Program, sponsored by the Biology and Chemistry Departments. The Director will supervise, set up, and teach the senior laboratory course in molecular biology and will organize and meet with the senior seminar in molecular biology as well as set up, supervise, and teach one upper-division course in the interface of chemistry and biology each year. The Director will supervise and keep track of all aspects of the senior thesis program, maintain data on the fates of graduates, and work with the program's faculty to develop budget proposals. The successful candidate will be expected to establish an active research program involving undergraduates for which start-up funds are available. Research experience, teaching and supervising experience, and a Ph.D. in either molecular biology or biochemistry required; experience with a variety of techniques in molecular biology also needed. Submit curriculum vitae, a statement of teaching experience and philosophy, a statement of research plans and ideas, and three letters of recommendation to: **Professor Laura Hoopes, Molecular Biology Program, Pomona College, 609 North College Avenue, Claremont, CA 91711**. Consideration will begin November 15, 2000, and continue until the position is filled. For questions, **e-mail: lhoopes@pomona.edu**. *Pomona College is an Equal Opportunity Employer and encourages applications from women and members of underrepresented groups.*

POSITIONS OPEN

FACULTY RECRUITMENT IN BIOINFORMATICS
Section of Cell and Developmental Biology
University of California, San Diego

The Section of Cell and Developmental Biology at University of California, San Diego, is recruiting a faculty member in the broad area of bioinformatics/functional genomics. The Section of Cell and Developmental Biology, one of four sections within the newly established Division of Biology, has a diverse faculty whose research is directed at understanding basic mechanisms controlling cellular and developmental processes. Section faculty participate in one of the largest and most diverse graduate programs in the country.

We invite applications for a tenure-track/tenured **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** in the area of bioinformatics/functional genomics effective summer 2001 dependent on availability of resources. Exceptional candidates with strong research programs in this area are encouraged to apply. The successful candidate will be a regular UCSD faculty member and is expected to develop or continue a vigorous research program and participate in the undergraduate and graduate teaching curriculum at UCSD. Candidates must have a Ph.D. or equivalent degree. Salary will be commensurate with level of appointment and based on University of California salary scale.

The UCSD Section of Cell and Developmental Biology is part of the Division of Biology, which has extensive interactions and collaborations with the Novartis Agricultural Discovery Institute, Inc., and the Salk Institute.

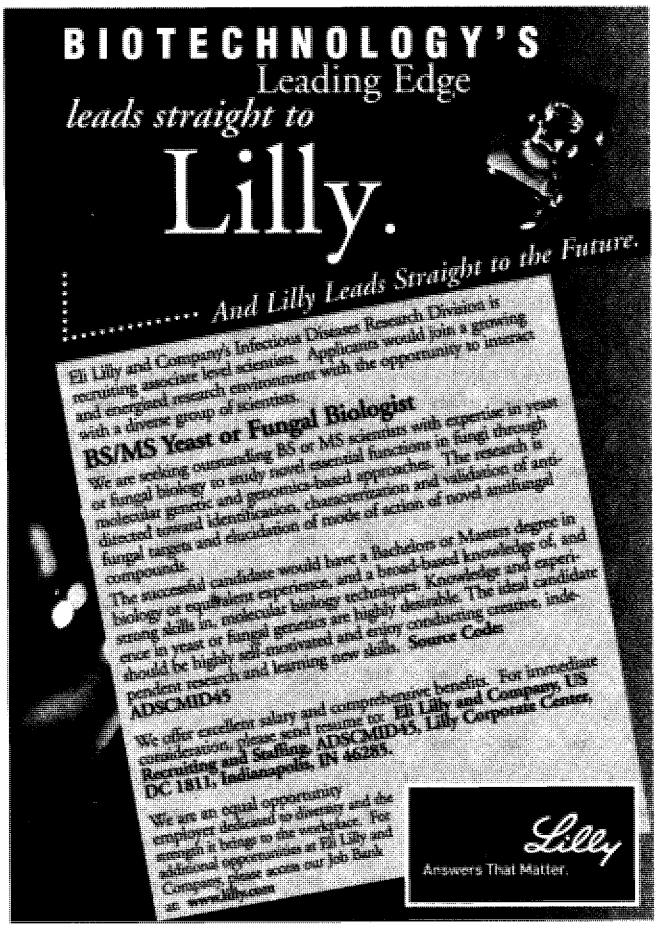
Applications received by November 15, 2000, will be assured of consideration. Send a letter of application, including curriculum vitae; a complete list of publications; a brief description of research interests and professional goals; and the names, addresses, e-mail addresses, and telephone and FAX numbers of five references to: **Cell and Development Search Committee, Center for Molecular Genetics, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0634**.

UCSD is an Equal Opportunity/Affirmative Action Employer with a strong institutional commitment to the achievement of diversity among its faculty and staff.

FACULTY POSITION IN BIOPHYSICS
INDIANA UNIVERSITY

The Department of Physics at Indiana University invites applications for a **TENURE-TRACK FACULTY POSITION** in the area of biophysics beginning in the fall of 2001. Applications to lead an innovative program in any area of interdisciplinary research at the interface of physics and biology are encouraged. The successful candidate should also have demonstrated ability and desire to teach physics at the undergraduate and graduate levels. Current areas of emphasis in the biophysics program at Indiana University include protein biophysics and biomaterial studies. This opening is part of an expansion of the Biophysics program that is expected to include additional tenure-track positions during the next few years. Related programs on the IU campus include The Indiana Molecular Biology Institute, which offers extensive facilities and a membership whose research interests span a wide range of topics in molecular biology, biophysics, and biochemistry. An appointment at a senior level, including an Endowed Chair, could be considered for a truly exceptional candidate with an established record of leadership in forefront instrumentation development. Review of applications will begin after December 31, 2000. Further information can be found at **website: http://www.physics.indiana.edu**. Applications consisting of curriculum vitae, list of publications, a brief research plan, and at least three letters of reference should be sent to: **Faculty Search Committee, c/o Professor Steve Vigdor, Chairman, Department of Physics, Swain Hall West 117, Indiana University, Bloomington, IN 47405 U.S.A.**

Indiana University is an Equal Opportunity/Affirmative Action Employer.



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AA/EOE

SYMPOSIA

This course will bring together cardiologists, cardiothoracic and vascular surgeons, medical device engineers, researchers, and BioMEMS experts in order to stimulate the cross-fertilization of ideas to match technology to clinical needs.

Who Should Attend?
Medical device engineers, Cardiovascular researchers, Corporate Executives, and Clinicians. Enrollment for this course is limited. Early registration is suggested.

Course registration deadline: October 20, 2000.
To register online go to www.clevelandclinicmeded.com. For further information regarding registration and/or brochure please call 216-444-5800.

THE CLEVELAND CLINIC FOUNDATION

CHAIR, DEPARTMENT OF TROPICAL MEDICINE AND MEDICAL MICROBIOLOGY
John A. Burns School of Medicine
University of Hawaii at Manoa

Duties: To serve as Department Chair (dependent on annual review), to expand the Department with a strong research emphasis on fundamental and applied aspects of tropical and infectious diseases, to collaborate with faculty of the Cancer Research Center and the Pacific Biomedical Research Center to foster complementary areas of research and academic endeavor, and to support and train medical students and develop graduate instruction in medical microbiology and immunology. Level of appointment: **ASSOCIATE/FULL PROFESSOR**; general funds; full-time; 11-month; tenure track; to begin July 2001 pending position clearance and availability of funds. Minimum qualifications: Associate: Ph.D. or M.D. degree, Board certified (if M.D.); eligible for Hawaii license (if M.D.); proven ability in research, teaching, and program administration at the Associate Professor level in an internationally recognized program of research in a complementary field to position. Professor: Same as Associate Professor plus four years at rank of Associate Professor or equivalent and evidence of leadership and research. Desirable qualifications: Experience in medical and graduate education in infectious disease and immunology. Minimum annual salary: Associate: $51,264 (Ph.D.); $92,340 (M.D.). Professor: $62,376 (Ph.D.); $99,876 (M.D.). Salary commensurate with qualifications and experience. To apply: send curriculum vitae, cover letter, and five names of references to: **Dr. Martin Rayner, Chair of Search Committee, University of Hawaii, School of Medicine, 1960 East West Road, T-101, Honolulu, HI 96822**. Inquiries: **Dr. Martin Rayner; e-mail: martin@pbrc.hawaii.edu**. Closing date: February 28, 2001. *An Equal Employment Opportunity/Affirmative Action Institution.*

ASSISTANT PROFESSOR OF BIOLOGY: Holy Family College invites applications for a full-time faculty position beginning August 2001. A Ph.D. (or A.B.D.) is required. The successful candidate must have a strong background in cell biology (developmental and biochemical), broad training in biology/chemistry, and a commitment to quality liberal arts undergraduate education. Teaching responsibilities may include a two-semester biochemistry course, nonmajors courses, and other majors courses appropriate to the interests and training of the candidate. Holy Family College is a small, coeducational Catholic college. The application deadline is November 17, 2000. Send a cover letter, statement of teaching philosophy, curriculum vitae, transcripts, and three letters of recommendation to: **Joseph Michalewicz, Ph.D., Search Committee Chair, School of Natural Sciences and Mathematics, Holy Family College, Grant and Frankford Avenue, Philadelphia, PA 19114-2094**. For additional information, explore Holy Family College's **website: http://www.hfc.edu**. *Equal Opportunity Employer.*

The Anthropology Department at Indiana University–Bloomington is seeking applicants for a junior-rank, **TENURE-TRACK POSITION** with a research specialty in anthropological/molecular genetics. Send letter of application, curriculum vitae, and names of three references by December 15, 2000, to: **Chair, Search Committee, Anthropology Department, Indiana University, 701 East Kirkwood, SB 130, Bloomington, IN 47405-7100.** For more information, see: **website: http://www.indiana.edu/~anthro/home.html**. *Minority group members, women, and disabled individuals are encouraged to apply.*

POSITIONS OPEN

The Biology Department at Grand Valley State University is searching to fill **THREE TENURE-TRACK POSITIONS**. GVSU is committed to providing a broadly based liberal undergraduate education. The Biology Department has experienced steady enrollment growth for 12 years, adding new faculty in most years. We are now in the process of initiating an M.S. program. For all of the following positions, a Ph.D. in biology completed before fall 2001 is required. All successful candidates will be involved in advising majors, continued scholarly development, serving on committees, and community service. Research involving undergraduates is encouraged.

The Department requires an individual with a Ph.D. in biology or **SCIENCE EDUCATION** with an emphasis in biology whose responsibilities include teaching in multisectional introductory biology courses and science education courses for preservice teachers. Preference will be given to candidates with demonstrated success in teaching and scholarly activities in biology and science education. Knowledge of or experience with national science standards and benchmarks is highly desirable. Excellent communication skills are required. A complete application consists of a letter of application, curriculum vitae, unofficial transcripts, a statement outlining your expectations and goals as an undergraduate teacher, a statement of research interests, and three letters of recommendation. Applications must be postmarked by November 24, 2000. Submit materials to: **Professor Paul A. Huizenga, Chair, Biology/Science Education Search Committee, Department of Biology, Grand Valley State University, Allendale, MI 49401**.

The Biology Department is seeking a **DEVELOPMENTAL BIOLOGIST** to join a rapidly growing group of faculty with interests in cellular and molecular biology. Teaching responsibilities will include animal embryology and introductory biology. Successful candidates will be broadly trained Biologists with a Ph.D. in developmental biology or a related area. Preference will be given to candidates who have demonstrated success in teaching and research involving undergraduates. A complete application consists of an application letter; curriculum vitae; copies of all transcripts; three letters of recommendation; a statement of teaching interests, goals, and expectations; a statement of research interests, goals, and expectations. Submit materials, postmarked by November 24, 2000, to: **Mark Staves, Chair, Developmental Biology Search Committee, Biology Department, 218 Padnos, Grand Valley State University, Allendale, MI 49401-9403**.

We need an individual whose responsibilities include teaching in multisection upper-level courses in **HUMAN GENETICS** and **INTRODUCTORY BIOMEDICAL ETHICS**. Teaching introductory biology is also expected. Preference will be given to candidates with a broad-based biology background, experience/interest in teaching human genetics and/or biomedical ethics, and who have demonstrated success in teaching and research involving undergraduate students. Excellent communication skills are required. A complete application consists of a letter of application, curriculum vitae, unofficial transcripts, a statement outlining your expectations and goals as an undergraduate teacher, a statement of research interests, and three letters of recommendation. Applications must be postmarked by November 24, 2000. Submit materials to: **Dr. Nancy Shontz, Chair, Genetics/Bioethics Search Committee, Department of Biology, Grand Valley State University, Allendale, MI 49401**. *Grand Valley State University is an Affirmative Action/Americans With Disabilities Act and Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR
ATMOSPHERIC OR CLIMATE SCIENCE

The Department of Earth Sciences at the University of California, Santa Cruz, seeks applicants for a tenure-track position effective July 1, 2001. The application deadline is November 17, 2000. For the full ad, see our **website: http://www.es.ucsc.edu/recruit.html** or contact: **Roxanne Woodling; e-mail: roxanne@es.ucsc.edu; Telephone: 831-459-4478.**

POSITIONS OPEN

CHAIR, DEPARTMENT OF PHARMACOLOGY
John A. Burns School of Medicine
University of Hawaii at Manoa

To serve as Department Chair (dependent on annual review), to redevelop the Department with a strong research emphasis at the molecular level, to include a specific focus on natural products in cancer biology as well as additional focus areas in infectious disease and neurobiology. The applicant should be prepared to collaborate with faculty of the Cancer Research Center and Pacific Biomedical Research Center to foster complementary areas of research and academic endeavor, oversee the training of medical students using the problem-based learning approach, and coordinate graduate and undergraduate instruction. Level of appointment: **ASSOCIATE/FULL PROFESSOR**; general funds; full-time; 11-month; tenure track; to begin July 2001 pending position clearance and availability of funds. Minimum qualifications: Associate: Ph.D. or M.D. degree, proven ability in research, teaching and program administration at the Associate Professor level. Professor: Same as Associate Professor plus four years at rank of Associate Professor or equivalent and evidence of leadership and research. Desirable qualifications: Experience in medical and graduate education in pharmacology. Minimum annual salary: Associate: $51,264; Professor: $62,376. Salary commensurate with qualifications and experience. To apply: Send curriculum vitae, cover letter, and five names of references to: **Dr. Martin Rayner, Chair of Pharmacology Search Committee, University of Hawaii, School of Medicine, 1960 East West Road, T-101, Honolulu, HI 96822**. Inquiries: **Dr. Martin Rayner; e-mail: martin@pbrc.hawaii.edu**. Closing date: February 28, 2001. *An Equal Employment Opportunity/Affirmative Action Institution.*

INSECT SYSTEMATIST

The University of California at Berkeley invites applications for a tenure-track **ASSISTANT PROFESSOR** position in arthropod systematics with concurrent appointment in the Agricultural Experiment Station. The position will be based in the Division of Insect Biology within the Department of Environmental Science, Policy, and Management. The appointment will be for nine months with salary and step within rank dependent on experience and qualifications. The position will be available July 1, 2001.

Applicants must have earned a Doctoral degree in a field appropriate for arthropod systematics and will be expected to develop a strong, funded research program; direct student research; and teach graduate and undergraduate courses. Responsibilities will include significant participation in activities of the Essig Museum, which is part of a strong consortium of natural history museums at the University of California at Berkeley.

Interested persons should apply by submitting a résumé, statement of research interests, list of publications, and the names and addresses of three references to:

Professor Rosemary Gillespie
Chair of Search Committee
University of California
Department of Environmental Science, Policy, and Management (ESPM)
Division of Insect Biology
201 Wellman Hall
Berkeley, CA 94720-3112

The closing date for applications is December 15, 2000. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

University of California

Lawrence Livermore National Laboratory

Science in the National Interest

Associate Director for Physics and Advanced Technologies (PAT)

The Lawrence Livermore National Laboratory, one of the nation's premier scientific research and development laboratories, is seeking an Associate Director to lead the Laboratory's newly formed Physics and Advanced Technologies Directorate. Will be responsible for leading, developing and managing an organization with a diverse portfolio of highly interdisciplinary research and technology development programs in basic and applied physical sciences research. This new organization was established in July, 2000 through the merger of the former Physics Directorate and elements of the former Laser Programs. Will manage a budget of approximately $140M and a staff of about 400 employees. Core capabilities in the organization include high energy density experimental and computational plasma physics, nuclear and elementary particle physics, accelerator and beam physics and technology, medical physics and technology, optics and imaging, photonics, solid state physics, materials science and micro-technology, advanced sensing, astronomy and astrophysics, and communication and information processing.

The Associate Director will have nationally recognized research accomplishments in the physical sciences; broad and deep technical background in basic or applied physics research; experience in institutional-level program development and management of basic or applied physics research programs; demonstrated senior-level leadership and management skills; and knowledge of basic and applied physics research activities within the federal government, especially the Department of Energy complex and/or other federal, state, local and industrial organizations.

LLNL offers a challenging environment and competitive salary/ benefits package. Located in the scenic Livermore Valley, we are within easy driving distance to San Jose, San Francisco, and the surrounding Bay Area communities. To be considered, reference Dept. **AJSCAKODO**. E-mail resume to **adpatsc1@llnl.gov**; or mail resume to **Kristine Kansa, L-725, Recruiting and Employment, Lawrence Livermore National Laboratory, PO Box 5510, Livermore, CA 94551-5510**. US Citizenship is required.
We are proud to be an equal opportunity employer with a commitment to workforce diversity.

For more information about the Physics and Advanced Technologies Directorate and this position, visit our web sites at:

www-pat.llnl.gov **www.llnl.gov/jobs**

FRED HUTCHINSON CANCER RESEARCH CENTER

Faculty Position in Biostatistics / Bioinformatics

The Biostatistics Program at the Fred Hutchinson Cancer Research Center's Division of Public Health Sciences is recruiting one or more faculty members at Assistant to Full Member level (equivalent to the Assistant to Full Professor levels at a university) in the areas of bioinformatics, statistical genetics and structural / functional genomics. A corresponding faculty appointment at the University of Washington is possible depending on interests and qualifications. This portion may include teaching, mentoring graduate students and collaborative research activities with University colleagues.

Successful candidates are expected to establish a dynamic research program at the interface of biology and quantitative sciences. Specifically, we are seeking candidates who will conduct a strong independent research program developing novel statistical and / or computational methods for the design and analysis of data from studies using microarray measurement technologies, and other emerging genomic technologies, and collaborate closely with clinical and basic as well as other quantitative scientists at the Center on a variety of such studies. Applicants should have a Ph.D. or equivalent advanced degree in a discipline that has a strong quantitative emphasis, such as statistics, applied mathematics, computer sciences, physics or computational biology.

Please send applications including curriculum vitae, a letter describing research interests, and the names of four references by closing date of February 1, 2001 to:

Steven Self, Ph.D. (Search Chair)
Fred Hutchinson Cancer Research Center
Division of Public Health Sciences
1100 Fairview Ave N. - MW-500
Box 19024
Seattle, Washington 98109-1024

The Fred Hutchinson Cancer Research Center and the University of Washington are equal opportunity / affirmative action employers. Both institutions are building culturally diverse faculty and strongly encourage applications from female and minority candidates.

POSTDOCTORAL POSITIONS

Genome Technology Branch
National Human Genome Research Institute
National Institutes of Health

Postdoctoral research positions are available for individuals interested in vertebrate genetics and genome analysis at the National Human Genome Research Institute (NHGRI).

- **Identification and Characterization of Genes Associated with Ear Development in Zebrafish and Their Relationship to Human Diseases**
- **Establishing Technologies for Using Retroviruses as a Tool to Study Vertebrate Development**
- **Sequence and Structure Analysis Using Computational Techniques**

Candidates should possess an MD and/or PhD and have less than five years of postdoctoral experience. Please send a letter, CV, and three letters of reference to: **Dr. Shawn Burgess c/o Ms. Dana Jordan, NHGRI/NIH, 49 Convent Dr., Bldg. 49, Rm. 2C-72, MSC 4431, Bethesda, MD 20892 (or gtbapply@nhgri.nih.gov).**

The NIH is an Equal Opportunity Employer and applications by women and minorities are strongly encouraged.

POSITIONS OPEN

CENTER FOR BIOINFORMATICS AND COMPUTATIONAL BIOLOGY
University of Maryland, College Park

The University of Maryland invites **FACULTY APPLICATIONS** at all levels for the newly established Center for Bioinformatics and Computational Biology. The campus has substantial resources committed to the Center, including funds for the recruitment of six new faculty with research interests in focused areas of computational genomics such as functional genomics and proteomics. It is anticipated that the primary backgrounds of the new faculty will span computer science, mathematics and statistics, molecular biology, and biochemistry. The primary responsibility of the new faculty will be to lead a focused, nationally visible research program in computational genomics. All the new faculty will be housed in the University of Maryland Institute for Advanced Computer Studies (UMIACS) and will have access to significant high-end computing infrastructure. The new faculty will also be affiliated with at least one of the academic units on campus depending on their interests, with the potential of pursuing research collaborations with nearby outstanding research groups in organizations such as NIH, Celera, TIGR, UMBI, and the Smithsonian. To apply, send a letter of application, curriculum vitae, and a list of suggested names and addresses for letters of recommendation to:

Dr. Joseph JaJa, Chair of Search Committee
Center for Bioinformatics and Computational Biology
Institute for Advanced Computer Studies
University of Maryland
College Park, MD 20742

For more information, please contact: **Dr. Joseph JaJa; Telephone: 301-405-6722; e-mail: joseph@umiacs.umd.edu.** Applications will be accepted until the positions are filled. *The University of Maryland is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

FACULTY POSITION IN BIOLOGICAL SCIENCES AND EDUCATION

The Department of Biological Sciences, University of Northern Colorado, is continuing a search for a faculty position in biological sciences and education at the **ASSISTANT/ASSOCIATE PROFESSOR** rank available August 2000. For additional information, visit out **website: http://asweb.unco.edu** or contact: **Dr. Curt M. Peterson; Telephone: 970-351-2923; e-mail: cmpeter@bentley.unco.edu.** The position is contingent upon funding. Applicants should submit curriculum vitae, statements of teaching philosophy and research experience/interests, selected publications, contact information for three to five references, and transcripts to: **Chair, Search and Screen Committee, Department of Biological Sciences, University of Northern Colorado, 501 20th Street, Greeley, CO 80639.** Review of applications will begin November 15, 2000, and continue until filled. *University of Northern Colorado is an Affirmative Action/Equal Opportunity Employer. Affirmative Action/Equal Opportunity office: Carter Hall 2011.*

The Department of Anatomy and Cell Biology and Division of Obstetrics/Gynecology invite applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. Applicants should have a Ph.D., M.D., or equivalent degree with demonstrated ability to conduct independent research. Individuals with prior experience in angiogenesis research will be preferred. The successful applicant will be expected to teach in the medical school, participate in graduate education, and support his/her laboratory efforts through extramural grants. Attractive start-up funds and excellent research facilties are available. Curriculum vitae, a brief description of previous and anticipated research, and the names of three references should be submitted to: **Dr. M.A.Q. Siddiqui, Professor and Chairman, Department of Anatomy and Cell Biology, State University of New York Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, NY 11203.**

POSITIONS OPEN

WASHINGTON & JEFFERSON COLLEGE

Washington and Jefferson College is pleased to announce searches for the following tenure-track positions in the Biology Department available fall 2001.
ASSISTANT PROFESSOR: Area of specialization: botany/plant ecology.
ASSISTANT PROFESSOR: Area of specialization: neuroscience.
For complete descriptions of these positions and information on applying, please visit Washington and Jefferson College at **website: www.washjeff.edu/campus_services_jobs.asp.**

The Biology Department has seven full-time faculty members and a department assistant. Department members work cooperatively to offer a two-track program in general biology and cell/molecular biology. Excellent facilities include a field station near campus. A Howard Hughes Medical Institute grant has greatly expanded opportunities for student research, faculty development, and outreach to area schools.

Washington and Jefferson College is a private, coeducational national liberal arts college which takes pride in its teaching and learning environment. Washington, Pennsylvania, is a medium-sized city 30 miles south of Pittsburgh. Visit us at **website: www.washjeff.edu.** *The College is an Affirmative Action/Equal Opportunity Employer.*

BIOCHEMISTRY. The Department of Chemistry at John Carroll University (**website: http://chemistry.jcu.edu**) invites applications for a tenure-track **ASSISTANT PROFESSOR** position beginning August 2001. A Ph.D. in biochemistry is required. Some previous teaching experience is preferred. The successful candidate is expected to teach biochemistry courses and laboratories as well as introductory-level chemistry courses. The candidate is also expected to conduct publishable research with undergraduates. The Department has received a NSF–REU award. Research specialization is expected to complement that of current faculty. The Department has a strong biochemistry/molecular biology program, an emerging environmental studies concentration, and a small M.S. program. The Department is well equipped with instrumentation and will occupy a new science building soon to be under construction. John Carroll University is a privately controlled, coeducational Catholic and Jesuit university located in the eastern suburbs of Cleveland. A résumé, undergraduate and graduate transcripts, three letters of recommendation, a statement of teaching philosophy, a description of proposed research, and equipment needs should be sent to: **Dr. Robert C. Bohinski, Chair, Department of Chemistry, John Carroll University, The Jesuit University in Cleveland, University Heights, OH 44118.** Review of applicants will begin December 15, 2000. *John Carroll University is an Equal Opportunity/Affirmative Action Employer.*

Two **FACULTY POSITIONS** in bacteriology. The Department of Microbiology and Immunology invites applications for two tenure-track faculty positions for which rank and salary are negotiable. Both positions are for Scientists with a Ph.D., M.D., or M.D./Ph.D. and at least two years of postdoctoral research in prokaryotic molecular biology/pathogenesis. One position, supported by the Feist–Weiller Cancer Center and with a joint appointment in the Cancer Center, is for a person whose research is directly cancer-related, e.g., *Helicobacter*-associated lymphomas. Both positions involve teaching graduate and medical students and directing a nationally competitive research program. Applicants should send complete curriculum vitae, brief statement of research goals and funding, and four letters of reference to: **Dr. Dennis J. O'Callaghan, Professor and Head, Department of Microbiology and Immunology, Louisiana State University Health Sciences Center, 1501 Kings Highway, Shreveport, LA 71103.** *Louisiana State University Health Sciences Center is an Affirmative Action Employer.*

POSITIONS OPEN

ANIMAL BEHAVIOR/BIOLOGY
Bucknell University

Applications are invited for a tenure-track position at the **ASSISTANT PROFESSOR** level (a maximum of three years may count toward tenure) beginning August 2001. Ph.D. required. Applicants should be working in the area of vertebrate behavior and have expertise in population, quantitative, and evolutionary genetics. Teaching responsibilties will include introductory and advanced courses in animal behavior/biology, an upper-division course in the area of expertise, and supervising undergraduate research. Cover letter addressing teaching philosophy and research goals, curriculum vitae, and three letters of recommendation should be submitted to:

Dr. Wayne McDiffett, Chair
Biology Department
Bucknell University
Lewisburg, PA 17837
E-mail: mcdifftt@bucknell.edu
Telephone: 570-577-1124
FAX: 570-577-3537
Website: http://www.bucknell.edu/department/biology

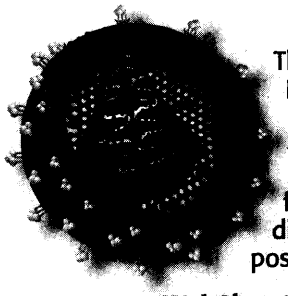
Review of applications will begin on November 27, 2000. The search will remain open until the position is filled. *Equal Employment Opportunity/Affirmative Action. Bucknell University encourages applications from women and members of minority groups.*

The Department of Biological Sciences at The University of Alabama invites applications for a tenure-track **ASSISTANT PROFESSOR** position in microbial diversity/molecular microbial ecology to begin August 2001. Teaching includes graduate courses in area of specialty and participation in core undergraduate offerings including general ecology. Candidates, who must have a Ph.D. and postdoctoral experience, should be interested in participating in research applying molecular phylogenetic methods to studies of aquatic microbial ecosystems. The appointee will be expected to develop an active, externally funded research program and to work closely with undergraduate and graduate students as advisor and director of research. We are especially seeking individuals interested in vigorously interacting with our growing interdisciplinary research groups, such as the Center for Freshwater Studies and the Coalition for Biomolecular Products.

Each application should include curriculum vitae, a letter of application indicating teaching philosophy and research goals, and at least three letters of reference sent to: **Dr. Amy Ward, Department of Biological Sciences, Box 870344, The University of Alabama, Tuscaloosa, AL 35487.** Review of applications begins December 15, 2000, and continues until position is filled. For more information, visit our **website: http://www.as.ua.edu/biology/index.html.** *Equal Opportunity/Affirmative Action Employer.*

California Institute of Technology invites applications for one faculty position at the interface of chemistry with the biological sciences. Appointment in the Division of Chemistry and Chemical Engineering is anticipated. Candidates proposing interdisciplinary research programs are of particular interest, and strong interactions with other divisions of the Institute are expected. Joint appointments in other divisions will be arranged as appropriate. Exceptionally well-qualified applicants will be considered for a tenure-track appointment at the **ASSISTANT, ASSOCIATE,** and **FULL PROFESSOR** levels. Initial appointment at the Assistant Professor level will be for four years. Outstanding candidates who have completed their Ph.D. and have a strong commitment to research and teaching are encouraged to apply. Submit by November 15, 2000, curriculum vitae; publication list; a concise description of proposed research; and three letters of recommendation to: **Professor John H. Richards, Chair, Faculty Search Committee, Braun Laboratory, 147-75, California Institute of Technology, Pasadena, CA 91125.** *The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

Postdoctoral Positions



The National Cancer Institute is paving the way for new programs and discoveries at the Frederick Cancer Research and Development Center (NCI-FCRDC), National Institutes of Health. Under the direction of ***John M. Coffin, Ph.D.***, the ***HIV Drug Resistance Program (DRP)*** is creating a world-class center for retrovirology research in a highly collaborative environment dedicated purely to research and supported by a wide spectrum of state-of-the-art core facilities. The emphasis of the DRP is on basic and translational research related to genetic diversity and drug resistance. As a component of its ongoing recruitment efforts, postdoctoral positions are currently available in laboratories headed by the following investigators:

Wei-Shau Hu, Ph.D.	Mechanisms of reverse transcription and recombination; RNA packaging and virus assembly; interactions between distinct viruses
Stephen H. Hughes, Ph.D.	Retroviral replication; structure and function of HIV reverse transcriptase; retroviral vectors
Vineet N. KewalRamani, Ph.D.	Virus-host interactions; co-factors in HIV infection; development of murine models for HIV infection
Stuart F.J. Le Grice, Ph.D.	DNA/protein and RNA/protein interactions controlling reverse transcription; comparative analysis of retroviral enzymes
Vinay K. Pathak, Ph.D.	Retroviral replication; RT structure, fidelity, and template switching; development of gene therapy vectors; viral drug resistance
Alan Rein, Ph.D.	Molecular mechanisms of retroviral replication; interactions of retroviral proteins with nucleic acids; viral pathogenicity

Applicants must possess a Ph.D. and/or an M.D. Appointment duration is for 5 years, renewed on a yearly basis. Stipend is commensurate with education and experience, with a range of $31,500 – $49,430. Please submit a cover letter, CV including bibliography, and contact information for 3 references to Ms. Susan Beth Jordan, HIV Drug Resistance Program, NCI-FCRDC, P.O. Box B, Building 535, Room 309, Frederick, MD 21702-1201. In addition to postdoctoral positions, the DRP periodically recruits for **technical positions**. For further recruitment information, please visit our web site at www.ncifcrf.gov/hivdrp.

NATIONAL® CANCER INSTITUTE

The National Cancer Institute is an Equal Employment Opportunity and Affirmative Action employer that values and fosters diversity throughout the entire organization.

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nature
biotechnology

seeks an **ASSISTANT EDITOR**

This is a full-time position within an established editorial team based in New York City.

Applicants should have a strong research background in either commercial or academic research, a keen critical and analytical sensibility, excellent writing and editing skills, and an appreciation of the history and evolution of molecular biology into bio-technology. As the journal publishes across a number of disciplines, candidates must show a willingness and demonstrated ability to learn new fields.

We offer a competitive salary and excellent working conditions within a dynamic editing and publishing group that is also responsible for *Nature*, *Nature Cell Biology*, *Nature Genetics*, *Nature Immunology*, *Nature Medicine*, *Nature Structural Biology*, and *Nature Neuroscience*.

Please submit a CV (with names of three references), a concise letter outlining your credentials and suitability for the position, and a 500-word News & Views style article on a recent exciting and newsworthy development in any area of biotechnology to:

The Editor, *Nature Biotechnology*, 345 Park Avenue South, New York, NY 10010-1707 (Fax: 212 696 6935; e-mail: biotech@natureny.com) to arrive as soon as possible and **no later than 6th November 2000**.

UNIVERSITY OF MICHIGAN COMPREHENSIVE CANCER CENTER & DEPARTMENT OF DERMATOLOGY

TENURE-TRACK FACULTY POSITION

The University of Michigan Comprehensive Cancer Center and Department of Dermatology invite applications from creative scientists with diverse backgrounds who are interested in applying their skills to the study of melanoma. Candidates should possess an MD, PhD, or MD/PhD, and a solid track-record in basic research. Abundant clinical material representing multiple stages in melanoma progression will be available. We especially encourage inquiries from individuals interested in employing state-of-the-art molecular and genetic approaches aimed at defining mechanisms underlying melanoma initiation, progression, and metastasis. Joint appointments with a basic science department will be encouraged. We are seeking a highly-interactive individual to interface with scientists in our outstanding clinical, translational, and genetics melanoma research programs. Applicants should send a CV, one-page summary of research interests, and three letters of reference to:

John J. Voorhees, MD, Professor and Chairman, U-M Department of Dermatology, 1910 Taubman Center, Ann Arbor, MI 48109-0314

We encourage applications from candidates who will enrich and contribute to the cultural diversity of our University community.

TWO FACULTY POSITIONS IN COMPUTER SCIENCE UNIVERSITY OF VERMONT

The Department of Computer Science at the University of Vermont invites applications for two tenure-track **ASSISTANT PROFESSORS,** commencing with the 2001-2002 academic year. Position One seeks candidates in networking, database systems, programming environments, and/or artificial intelligence, although exceptional candidates in any area of computer science will be seriously considered. Position Two seeks candidates in computational biology or bioinformatics to participate in a major development grant in computational and structural biology recently awarded by the U.S. Department of Energy. More information about the Department and both positions may be obtained from **website: http://e-mail: www.cs.uvm.edu**, or **e-mail: cssearch@cs.uvm.edu**.

Candidates for either position should have a strong research record, hold a Doctorate in computer science or a closely related field, and have broad teaching abilities and interests. Please have a letter of interest indicating the position sought, curriculum vitae, a short statement of teaching interests, a short statement of research interests, and arrange for at least three letters of reference to be sent to: **Chair, Faculty Search, Position (One or Two), Department of Computer Science, University of Vermont, Burlington, VT 05405 U.S.A.** Complete applications received by January 22, 2001, will be fully considered. *The University of Vermont is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and members of minority groups.*

TENURE-TRACK FACULTY POSITIONS

The Chemistry Department of the U.S. Naval Academy invites applications for tenure-track positions in biochemistry and/or biochemically related fields (e.g., molecular/cellular biology) at the **ASSISTANT PROFESSOR** level to begin no later than August 2001. The Department consists of 34 full-time faculty members and is equipped with a wide array of modern chemical instrumentation and computer facilities and supports an ACS-approved undergraduate chemistry major, with planning underway for the biochemistry option. In addition, the Department contributes to the technical education of over 1,000 students per year through a required two-semester general chemistry course. The successful candidate must be strongly committed to teaching at an undergraduate level and will be expected to teach (on a rotating basis) general chemistry and biochemistry-related courses. The successful candidate will also be expected to develop and maintain a vigorous research effort. Candidates should send curriculum vitae, statement of teaching philosophy, concise description of research/scholarly interests, and arrange for three letters of recommendation (at least one of which addresses teaching) to be sent by November 20, 2000, to: **Search Committee, Chemistry Department, U.S. Naval Academy, 572 Holloway Road, Annapolis, MD 21402-5026.** *The U.S. Naval Academy is committed to identifying minority persons and women with the appropriate qualifications and is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE PROFESSOR MOLECULAR GENETICS

Position available immediately in molecular genetics research. Projects include linkage, mapping, and identification of candidate genes for bone density and soft- and hard-tissue regeneration in animal and human studies. Candidates must have Ph.D. in molecular biology/genetics with experience in state-of-the-art molecular biology techniques to identify candidate genes and evaluate their functions. A strong performance in terms of scientific publications in molecular genetics and successful external grant competition is essential. Salary and benefits are competitive. The possibility exists for a long-term position. Please send cover letter, curriculum vitae, and names of three references to: **Ms. P. Boyer, Loma Linda University, P.O. Box 7210, Loma Linda, CA 92354.**

POSITIONS OPEN

ICP-MS LABORATORY MANAGER. Old Dominion University and the Laboratory for Isotope and Trace Element Research (LITER) invite applications for the position of Laboratory Manager. This position involves the management and operation of our Finnigan-MAT Element 2 LA-ICP-MS facility and associated clean laboratory. Additionally, the appointee is expected to develop analytical techniques to more effectively use this instrument. The candidate should have expertise in mass spectrometry and isotope techniques as applied to oceanographic, biological, geologic, and environmental problems. Recent research at LITER has centered on the development of analytical techniques to study biogenic aragonite. Preference will be given to candidates who have experience with the Finnigan-MAT Element (first or second generation) and have familiarity with laser-ablation technology. Experience with interfacing ICP-MS to peripherals such as HPLC is desirable. The successful candidate will be working with a diverse group of Scientists from the natural and physical sciences both within and outside of the University. ODU has recently expanded its program in biogeochemistry through the addition of five faculty positions and is committed to the development of a nationally recognized program.

Requirements: Minimum qualifications include a Master's or Ph.D. degree in geochemistry, analytical chemistry, or chemical oceanography. Outstanding candidates with a Ph.D. may be able to conduct independent research, teach a graduate class, and cochair graduate student committees. Salary will be commensurate with experience and qualifications and is comparable to that at other leading institutions.

Applications including curriculum vitae, a statement describing research and technical experience, and names and contact information of three references (telephone numbers and e-mail addresses) should be sent to:

Chair, LITER Search Committee
Old Dominion University Research Foundation
P.O. Box 6369
Norfolk, VA 23508 U.S.A.
Telephone: 1+757-683-4497
E-mail: cjones@odu.edu

Review of applications will begin November 1, 2000. The appointment is expected to begin January 1, 2001. Please specify Job Number 00039. *Old Dominion University Research Foundation is an Equal Employment Opportunity/Affirmative Action Employer.*

GENE THERAPY FACULTY POSITIONS UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL

We invite candidates with an M.D. or Ph.D. degree who have experience in basic and/or translational research in gene therapy to apply for faculty positions at the level of **ASSISTANT PROFESSOR** in the Division of Gene Therapy, Department of Medicine, University of Massachusetts Medical School/UMass Memorial Medical Center. The goals of this division are to develop innovative gene transfer procedures and applications and to bring new protocols to clinical trial. The selected candidates will join and collaborate with a dynamic team of basic and clinical investigators at the medical school studying viral and nonviral gene transfer approaches for a broad range of clinical disorders. The targeted areas of interest for this division include cancer, cardiovascular disease, and genetic disorders. Laboratory space in a new, state-of-the-art research building and an excellent start-up package will be provided. Applicants should send curriculum vitae, a letter describing research objectives, and three letters of reference to:

Pamela S. Becker, M.D., Ph.D.
Chief, Division of Gene Therapy
Department of Medicine
UMass Memorial Medical Center
55 Lake Avenue North H8-527
Worcester, MA 01655

UMass Memorial is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

The Crop Biotechnology Center at Texas A&M University invites applications for the position of Director, Laboratory for Plant Genome Technologies (LPGT). This position will be a 100% research appointment at the **ASSISTANT/ASSOCIATE PROFESSOR** level. The successful candidate will be expected to establish an externally funded research program in the area of plant genomics. In addition, as the Director for the LPGT, the candidate will be responsible for developing the laboratory into a state-of-the-art genomics facility for use by the TAMU research and plant breeding communities.

The Crop Biotechnology Center (CBC) is home to faculty members from seven academic departments as well as the U.S. Department of Agriculture. As part of the CBC, the Laboratory for Plant Genome Technologies consists of 3,000 square feet of laboratory space containing over $1,000,000 of research equipment including automated DNA sequencers, a robotic system for high-throughput PCR, a DNA arrayer and scanner for microarray studies, as well as numerous other instruments for plant genomics. The Crop Biotechnology Center offers a competitive salary commensurate with experience and level of appointment. For more information about the Crop Biotechnology Center, see **website: http://cbc.tamu.edu**.

Applicants should send curriculum vitae, reprints of significant publications, statement of research interests, and names and addresses of three references to:

Chair, LPGT Director Search Committee
Norman E. Borlaug Center for
Southern Crop Improvement
2123 TAMU
College Station, TX 77843-2123

Review of applications will continue until the position is filled. *Texas A&M University is an Affirmative Action/Equal Opportunity Employer committed to diversity.*

DIRECTOR MOUSE CARDIOVASCULAR IMAGING AND PHYSIOLOGY LABORATORY

We are seeking a professional to provide scientific leadership skills in mouse imaging and physiology to complement a variety of basic research programs involving genetically or surgically altered animals. A Ph.D. in physiology, molecular biology, or pharmacology as well as two or more years of research experience in cardiac physiology and molecular biology required. You will function as an independent **INVESTIGATOR** to identify research problems and to design research methodologies and new approaches to solving research problems in how genotype is related to phenotype. You will also create and supervise the operation of a cardiovascular mouse imaging and physiology laboratory and conduct independent research in ventricular function, heart failure, or related areas and be expected to pursue independent funding. Please send résumé and letter of interest to: **Dr. Pamela S. Douglas, Head of Cardiovascular Medicine, University of Wisconsin–Madison, Department of Medicine, H6/352 CSC–3248, 600 Highland Avenue, Madison, WI 53792.** *The University of Wisconsin–Madison is an Equal Employment/Affirmative Action Employer and Wisconsin Caregiver Law applies.*

ASSISTANT PROFESSORSHIPS IN INORGANIC, ORGANIC, AND PHYSICAL CHEMISTRY
Department of Chemistry and Chemical Biology
Harvard University

Applicants are invited to apply for Assistant Professorships in inorganic, organic, and physical chemistry. Applicants should arrange to have three letters of recommendation sent independently and should provide curriculum vitae, a list of publications, and outlines of two future research projects. Applications and supporting materials should be sent to: **Professor James Anderson, Chairman, Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138-2902.** *Harvard University is an Affirmative Action/Equal Opportunity Employer and welcomes applications from women and minority group members.*

Molecular/Cellular Biologist

SmithKline Beecham, a world-class leader in Research and Development, continues to pioneer innovative pharmaceutical and healthcare products and services. We have the following opportunity available at our state-of-the-art suburban Philadelphia, PA facility.

The selected candidate will employ molecular and cell biology techniques as part of multidiscipline drug discovery teams investigating novel therapeutic strategies for infectious diseases. You will be responsible for planning and executing experiments, analyzing and discussing results, and for interacting with other scientists on your own as well as other groups.

You must have a BS/MS in a biological science or in molecular biology, with 1-5 years of post-graduate experience in molecular biology, cell biology, biochemistry or immunology. Skill in RNA manipulation and analysis, and applications of PCR is required. Experience in analyzing differential gene expression and in cell culture is preferred.

SmithKline Beecham is dedicated to an innovative workplace and supports you with career long opportunities and learning. We offer a competitive benefits and compensation package. For immediate consideration, please apply online at www.sb.com/careers, indicating Ad Code: 2K1171A (ASCII text required). You may also send your scannable resume, which must include Ad Code, to: SmithKline Beecham, c/o National Resume Processing, Ad Code: 2K1171A, P.O. Box 1070, Burlington, MA 01803. Principals only, no agencies, please.

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Realize your potential

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SmithKline Beecham
Pharmaceuticals

Faculty Position In Plant Community/Landscape Ecology
University of California, Riverside

The Department of Botany and Plant Sciences invites applications for an open-level position (ASSISTANT, ASSOCIATE or FULL PROFESSOR) in plant community/landscape ecology. Individuals should work at the forefront of contemporary plant ecology in areas that would bridge our existing research strengths at the evolutionary/population level with those at the regional/ecosystems level. Potential areas include, but are not limited to, multispecies interactions, ecological processes (such as fragmentation) at the landscape scale, community responses to disturbance (such as invasive spread), and conservation or restoration of biodiversity at the landscape scale. The successful candidate will join an active and collegial department with broad interests in plant biology; opportunities for collaboration also exist in our interdepartmental Evolution and Ecology Graduate Research Unit and our Center for Conservation Biology. The successful candidate would be expected to establish and maintain a vigorous, innovative research program, to have a strong commitment to excellence in teaching at the undergraduate and graduate levels, and to participate in departmental and interdepartmental graduate programs. The position will be available July 1, 2001. Applicants must hold a Ph.D. and postdoctoral experience is essential for candidates at the assistant level.

Evaluation of applications will begin December 15, 2000 and continue until the position is filled. Interested individuals should submit: (1) a curriculum vitae, (2) a statement of research interests, and (3) a list of names and addresses of three references to:

Dr. Elizabeth M. Lord, Chair, Department of Botany and Plant Sciences, University of California, Riverside, CA 92521-0124.Fax (909) 787-4437, Voice (909) 787-4401, Web Site: http://cnas.ucr.edu.

For additional information on the Department and campus visit **http://cnas.ucr.edu.**

The University of California is an Equal Opportunity/Affirmative Action Employer.

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Employment opportunities in West Point, PA

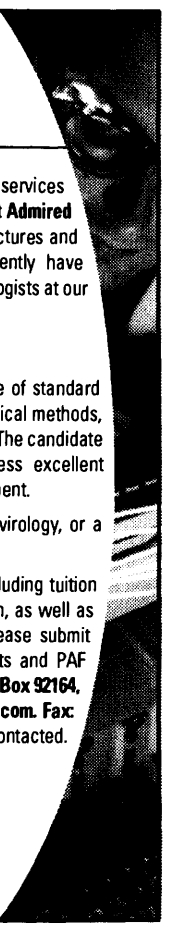
As a leading research driven pharmaceutical products and services company recently ranked by *Fortune* among **"America's Most Admired Companies,"** Merck & Co., Inc. discovers, develops, manufactures and markets a broad range of innovative products. We currently have exceptional career opportunities available for Molecular Virologists at our modern **West Point, PA** facility 25 miles NW of Philadelphia.

Molecular Virologists

The successful candidate should have a working knowledge of standard biochemical, immunological, molecular biological, and virological methods, as well as experience with assay development and validation. The candidate will be expected to solve problems independently, possess excellent communication skills, and work effectively in a team environment.

A BS/MS or equivalent in biochemistry, molecular biology, virology, or a related field is required. GMP/GLP experience is preferred.

We offer a comprehensive salary and benefits package, including tuition reimbursement and one of the best 401(k) plans in the nation, as well as opportunities for professional growth. To be considered, please submit your resume and cover letter, indicating salary requirements and PAF Code, to: **Merck Positions, PAF Code: XHXMRSMKH08010, PO Box 92164, Los Angeles, CA 90009-2164. E-mail: merck@resume.isearch.com. Fax: (310) 337-3393.** Candidates selected for interviews will be contacted. We are an Equal Opportunity Employer, M/F/D/V.



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PATHOLOGY AND LABORATORY MEDICINE

Clinical Immunology/Histocompatibility Testing

The Department of Pathology and Laboratory Medicine of the University of Pennsylvania is seeking a faculty member in the tenure track at the **ASSISTANT PROFESSOR** level with clinical duties in the Clinical Immunology Laboratory available July 1, 2001, or later.

In addition to autoimmune and infectious disease diagnostic testing, the Clinical Immunology Laboratory has an active histocompatibility testing service to support the multiorgan and allogeneic bone marrow transplantation programs. Flow cytometry is integrated within this laboratory with a busy immunophenotyping of leukemia/lymphoma and immunodeficiency services. Ample opportunities exist to participate in the development of immune assays to support the needs of the Cellular Therapeutics program, which include lymphocyte-based immunotherapy and stem cell transplantation. It is anticipated that this will be a joint effort with the Blood Bank and the Abramson Family Cancer Research Institute. Additional responsibilities include teaching in the medical school and training of residents and fellows. The successful candidate will be expected to have strong academic credentials and have demonstrated accomplishment in and commitment to independent research. The candidate must have an M.D. or M.D./Ph.D. along with Board certification/Board eligibility in clinical pathology. Applicants should submit curriculum vitae with a cover letter describing their research interests together with the names and contact information of three references to: **Malek Kamoun, M.D., Ph.D, Chair Immunology Search Committee, Department of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104-4283.** *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

ASSOCIATE/FULL PROFESSOR PSYCHOLOGY

University of Delaware

The Department of Psychology at the University of Delaware is searching for a Scientist at the Associate or Full Professor level in behavioral and/or cognitive neuroscience. Our future growth will emphasize early experience and developmental processes, which represent the strengths in the four formal areas of the Department: behavioral neuroscience, clinical, cognitive, and social. We anticipate several searches in all areas at all levels starting in September 2001. We are seeking a person whose interests would fit within this niche and who will interact with other members of the Department and the University. Areas of interest include but are not limited to genetic markers for psychopathology, plasticity, and learning; development of language or other communication systems (e.g., bird song); cognitive alterations with aging or after brain damage; and early substance abuse. Ample start-up funds are available and the individual will have a strong input into future hires and the course of Neuroscience and Cognitive Science programs. We are close to two strong pharmaceutical companies, AstraZeneca and DuPont; a research-oriented children's hospital; and A.I. DuPont, in all of which there are several potential collaborations. The University is situated in a lovely small college town with easy access to large cities from Washington, D.C., to New York City. The prime criteria for the successful candidate will be excellence in research and teaching. Evidence of external funding is required. Review of applications will begin on February 1, 2001, and will continue until the position is filled. Send curriculum vitae, a statement of research and teaching interests, reprints, and the names of three references to: **Behavioral Neuroscience Search Committee, Department of Psychology, University of Delaware, Newark, DE 19732.** Our **website** is: **www.psych.udel.edu.** *The University of Delaware is an Equal Opportunity Employer that encourages applications from minority group members and women.*

ASSISTANT/ASSOCIATE PROFESSOR MICROBIAL BIOLOGIST

Tenure-track opening at the Assistant or Associate Professor level for Microbial Biologist in the Department of Biological Sciences at DePaul University starting September 2001. Successful candidate will be broadly trained in microbial biology with a strong commitment to undergraduate education. All subdisciplines in microbial biology will be considered including microbiology, virology, microbial ecology/population biology, environmental science, genomics, and evolution. Ph.D. required; postdoctoral and previous teaching experience preferred. Teaching responsibilities to include some combination of introductory biology with laboratory for nonmajors, one quarter of introductory biology sequence for majors, introductory and/or intermediate-level undergraduate course(s) in microbial biology, and graduate/advanced undergraduate course in candidate's area of expertise. Applicant's teaching should contribute to the Department's developing concentrations in biotechnology and/or ecology/population biology/evolution; candidate should also exhibit willingness to participate in interdisciplinary programs. Research support and start-up funds available. A spacious new Biology and Environmental Sciences building provides modern and well-equipped teaching and research laboratories and support facilities. Applications will be accepted until position is filled; review will begin December 15, 2000. More information about position is available at **website: http://diversity.depaul.edu/fjobs_las.html**. Please send curriculum vitae; three letters of reference; statement of research and teaching interests, including your educational philosophy; and list of equipment and supply needs to: **Microbial Biology Search Committee, Department of Biological Sciences, DePaul University, 2325 North Clifton Avenue, Chicago, IL 60614.** Additional inquiries to above address or **FAX: 773-325-7596; e-mail: pfunk@wppost.depaul.edu.**

The Department is committed to effectively teaching a diverse undergraduate student body; increasing the number of people from underrepresented groups entering science professions is an important part of our mission. Therefore, we encourage applications from women, people of color, and the members of other historically underrepresented groups.

CHAIR DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS

Finch University of Health Sciences/ The Chicago Medical School

Finch University of Health Sciences/The Chicago Medical School invites applications for the position of Chair, Department of Physiology and Biophysics. Candidates should possess a Ph.D. and/or M.D. degree in physiology or related sciences. We seek an individual with a distinguished record of performance in research, teaching, and administration with demonstrated abilities to provide dynamic and successful leadership of the Department and to facilitate collaborative research with current faculty at the University. Ongoing areas of research in the Department include membrane biophysics, neuroendocrinology, and cell volume regulation. Additional information regarding the Department may be obtained at **website: www.finchcms.edu/gps/physiology.htm.**

The University is a private nonprofit institution offering M.D. and Ph.D. degrees in basic medical sciences and clinical psychology and degrees in selected allied health disciplines.

Applicants should submit current curriculum vitae and a statement addressing research interests and the names and addresses of three references to:

Francis J. White, Ph.D.
Professor and Chair
Department of Cellular and Molecular Pharmacology
FUHS/Chicago Medical School
3333 Green Bay Road
North Chicago, IL 60064

Applications will be accepted until December 20, 2000. *FUHS/CMS is an Equal Opportunity/Affirmative Action Employer.*

LIMNOLOGIST SOUTHERN ILLINOIS UNIVERITY CARBONDALE

The Department of Zoology at Southern Illinois University Carbondale invites applications for a tenure-track **ASSISTANT PROFESSOR** in Limnology. The Department seeks to complement its strengths in aquatic ecology with an individual whose research combines lentic+/or lotic ecology with strong theoretical and quantitative skills. Possible research areas include (but are not limited to) food web interactions, ecosystem dynamics, and watershed effects. Modern research facilities and start-up funds are available. The successful candidate will be expected to develop an externally funded research program and supervise M.S. and Ph.D. students. Teaching duties will include undergraduate courses in limnology, general zoology, and a graduate-level course in the area of specialization. Candidates must have a Ph.D. in an appropriate field and a record of peer-reviewed publications and scholarly accomplishments commensurate with experience. Candidates with postdoctoral training and external funding are preferred. Position begins 16 August 2001. Applicants should provide curriculum vitae, statement of research and teaching interests, copies of undergraduate and graduate transcripts, and have three letters of reference sent to: **Dr. Robert Sheehan, Search Committee Chair, Department of Zoology, Southern Illinois University, Carbondale, IL 62901-6501.** Review of applications will begin on 15 November 2000. Information about the Department and University can be found at **website: http://www.siu.edu/zoology** and e-mail inquiries should be directed to the Search Committee Chair (**e-mail: bsheehan@siu.edu**). *Southern Illinois University Carbondale is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSORSHIPS PLANT CELL BIOLOGY AND MOLECULAR GENETICS

The Department of Botany, Oklahoma State University, seeks a Plant Cell Biologist and a Molecular Geneticist for two tenure-track appointments to complement existing plant biotechnology programs (**website: http://plantbionet.okstate.edu**). Applicants should have at least one year of postdoctoral experience and will be expected to establish a productive research program with external funding. Excellence in teaching is required.

Cell Biologist: Emphasis on investigating structural or developmental phenomena using emerging research techniques. Course responsibilities include plant anatomy and microtechniques as well as a graduate course in area of expertise.

Molecular Geneticist: Emphasis on work in molecular genetics, genomics, or bioinformatics. Course responsibilities include cellular and molecular biology and one other course (possibly genetics) as well as a graduate course in area of expertise.

To assure full consideration, submit curriculum vitae, statements of teaching philosophy and research goals, and names of three references by December 10, 2000, to: **Head Department of Botany, Oklahoma State University, Stillwater, OK 74078. E-mail: bjohnso@okstate.edu.** *Equal Opportunity/Affirmative Action Employer. The Department desires to increase representation of women and minorities.*

NEUROSCIENCE/BIOPSYCHOLOGY. The Psychology Department at Bowling Green State University seeks two tenure-track **ASSISTANT PROFESSORS** in behavioral neuroscience for fall 2001. Persons in any area of neuroscience are encouraged to apply. Candidates must have a Ph.D. To apply, send curriculum vitae, three letters of reference, and a statement of research interests to: **Kevin Pang, Neuroscience Search, Psychology Department, Bowling Green State University, Bowling Green, OH 43403.** Applications must be postmarked by December 8, 2000. Electronic and FAX applications will not be accepted. *Bowling Green State University is an Affirmative Action/Equal Opportunity Employer Institution.*

National Institutes of Health

Developmental Therapeutics Program
National Cancer Institute

Postdoctoral Research Positions Available to Study New Molecular Targets Related to Angiogenesis and Cancer

Postdoctoral fellowships for candidates with three years or less experience are available to work within a multidisciplinary program to develop and study new targeted therapeutics for angiogenesis and cancer. Applicants should have backgrounds in molecular and cellular biology or proteomics. Experience with DNA shuffling and phage display would be a strong asset. Salaries begin at $31,500 plus health insurance depending on years of postdoctoral experience. Please send curriculum vitae and three references to:

Ms. Lisa Gray
Screening Technologies Branch,
DTP, DCTD, NCI
431 A - Frederick Cancer Research
and Development Center
National Cancer Institute
Frederick, MD 21702

E-mail: lgray@mail.ncifcrf.gov

NIC/NIH is an Equal Opportunity Employer

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The University of Tennessee–Oak Ridge National Laboratory

Graduate School of Genome Science and Technology

The new Genome Science and Technology (***GST***) Graduate School is designed to focus on developments in the biological and computational sciences that stem from genome sequencing efforts. The knowledge of complete genomes is revolutionizing the biological sciences, leading to new discoveries in the health sciences and biology. ***GST*** students will be trained in emerging areas of genomics, structural biology, proteomics, computational biology/ bioinformatics, and bioanalytical technologies.

GST takes advantage of the faculty, facilities, and research programs at The University of Tennessee and the Oak Ridge National Laboratory. This novel program combines an academic environment with the team-oriented approach to large research initiatives at the national laboratory. Faculty members have expertise in cutting-edge research utilizing mammalian genetics and mutagenesis, spectroscopy, high field NMR, x-ray crystallography, computational modeling, mass spectrometry, neutron scattering, and microarray technology. Various biological model systems are investigated, featuring the Oak Ridge National Laboratory Mouse Genetics Research Facility, one of the world's largest resources for studies in mouse genetics and mutagenesis for functional genomics.

We are seeking outstanding students with backgrounds in the biological, physical or computational sciences. Graduate student stipends are $18,000 with full tuition waiver.

To apply, visit: http://lsd.ornl.gov/gst/
Graduate School in Genome Science and Technology
Dr. Jeffrey M. Becker, Director
(jbecker@utk.edu)
1060 Commerce Park
Oak Ridge, TN 37830-8026

UTK is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA Employer. ORNL, a multipurpose research facility managed by UT/Battelle, LLC, for the U.S. Department of Energy, is an equal opportunity employer committed to building and maintaining a diverse work force.

Postdoctoral Positions

Cold Spring Harbor Laboratory is a world renowned research facility on the beautiful North Shore of Long Island.

Stem Cell Biology

We currently have Postdoctoral positions available to study **neural stem cells and the role of nitric oxide in cell differentiation and organism development.** Applicants should have a strong background in neurobiology or developmental biology.

For these positions only, please send curriculum vitae, summary of research interests and names of three references to: **Dr. Grigori Enikolopov,**

Cancer Genomics

Require highly creative and motivated individual to use mouse models of human cancer and the powerful DNA microarray technology to study genome-wide changes in human cancer initiation and progression.

My laboratory is currently making high density human and mouse expression arrays to understand functions of tumor suppressor genes. Informatics tools are also being developed for data analysis. ***Qualifications:*** A doctorate degree in Biological Science. Experience in molecular biology. Computer skills are preferred.

For this position only, please direct inquiries with complete CV and names and address of three references to: **Vivek Mittal, Ph.D, Assistant Professor,**

CSH

Cold Spring Harbor Laboratory
1 Bungtown Road
Cold Spring Harbor, NY 11724
www.cshl.org

Cold Spring Harbor Laboratory is an equal opportunity employer.

TEXAS TECH UNIVERSITY

Applications are invited for two tenure-track faculty positions available beginning September 2001. Requirements include a doctoral degree, post-doctoral experience, and a commitment to excellence in teaching and research. The strongest candidates will be enthusiastic, interactive scientists. They will be expected to develop research programs, train graduate students, and compete successfully for extramural funds.

Molecular Genetics

Open Rank. The successful candidate is expected to establish a program aimed at understanding gene function using molecular genetic approaches and model organisms. The area of research is open and could range from particular genes to entire genomes. Teaching responsibilities will include introductory genetics and advanced specialty courses. Academic rank and salary will depend on qualifications and experience.

Population Ecology

Assistant Professor. We seek a broadly trained ecologist with theoretical or empirical research interests in population dynamics, biology of invasive species, meta-population analysis, or analysis of life history strategies. The successful candidate will be expected to participate in multidisciplinary research. Teaching responsibilities will include introductory ecology and upper level and graduate courses.

Review of completed applications will begin on November 27, 2000. Applicants must submit a letter indicating the position sought, description of teaching interests and philosophy, research goals, curriculum vitae, three representative reprints, and arrange to have three letters of recommendation sent to: **Dr. Carleton J. Phillips, Chairman, Department of Biological Sciences, Texas Tech University, PO Box 43131, Lubbock, Texas 79409-3131**. Women and members of underrepresented groups are encouraged to apply.

Visit our website at: **http://www.biol.ttu.edu**.
An Affirmative Action Institution

CHEMISTRY FACULTY POSITION

The University of Alabama in Huntsville (UAH) Chemistry Department invites applications for a tenure-track position in either biophysical chemistry/biotechnology or physical chemistry/materials science. The appointment is at the rank of **ASSISTANT** or **ASSOCIATE PROFESSOR** depending on qualifications. Teaching duties will include undergraduate physical or biophysical chemistry courses and graduate materials science, biotechnology, or chemistry courses. We are interested in applicants who will interface well with current research programs in the Department and research centers at UAH (**websites: http://chemistry.uah.edu/; http://matsci.uah.edu/; http://www.uah.edu/HTML/Research/centers.html**).

Candidates must hold a Ph.D. in chemistry or a chemistry-related discipline with postdoctoral experience desirable. They must be able to develop and maintain externally funded research programs that support M.S. and Ph.D. students in chemistry, biotechnology, or materials science graduate programs. Applicants should submit curriculum vitae, a one-page statement of their teaching philosophy, a brief research plan, a discussion of how their work may relate to that of others in the Department and University, and the names of three references to: **Dr. John Gregory, Interim Chair of Chemistry, The University of Alabama in Huntsville, Huntsville, AL 35899**. Review of applications will begin November 1, 2000, for a starting date of August 15, 2001. *UAH is an Equal Opportunity/Affirmative Action Employer.*

Biology Department, Biochemist: tenure-track position at the **ASSISTANT PROFESSOR** level for a Biochemist. Candidates should be committed to excellence in undergraduate education both in the classroom and in their research program. Teaching responsibilities include biochemistry, introductory biology, and advanced course in area of expertise. Research interests may be in plant metabolism, structural biology, bioinformatics, or other emerging areas of biology at the interface with the physical sciences.

Founded in 1848, Muhlenberg is a highly selective, private liberal arts college of more than 2,000 students. Located in the scenic Lehigh Valley, the college is within easy reach of New York City, Philadelphia, and Washington, D.C., as well as coastal and mountain recreation areas. We offer a comprehensive benefits package including tuition scholarship programs for dependents after two years of service.

To apply, send current curriculum vitae, letter of interest, statement of teaching philosophy, and three reference letters to: **Dr. Paul Meier, Head, Department of Biology, Muhlenberg College, Allentown, PA 18104**. Application review begins December 1, 2000, and will continue until the position is filled. Visit our **website: www.muhlenberg.edu**.

Muhlenberg College is an Equal Opportunity Employer.

FACULTY POSITION
MICROBIAL PATHOGENESIS
Boston University School of Medicine

The Department of Microbiology is seeking applicants for a faculty position in microbial pathogenesis. Applications in any area of viral or bacterial pathogenesis will be considered. We are seeking candidates with strong research records and a commitment to develop independent, innovative research programs and who have interest in graduate and medical education. Applications at any faculty rank will be considered, but preference will be given to candidates at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Interested individuals should submit applications by December 15, 2000, including curriculum vitae, a summary of research accomplishments and future research plans, and the names of three persons who can provide letters of recommendation to: **Pathogenesis Search Committee, Department of Microbiology, Boston University School of Medicine, 715 Albany Street, Boston, MA 02118-2394**.

Boston University School of Medicine is an Equal Opportunity/Affirmative Action Employer. Women and underrepresented minority candidates are especially encouraged to apply.

POSITIONS OPEN

ASSISTANT PROFESSOR OF ENVIRONMENTAL SCIENCE

The Program in Environmental Science and Regional Planning at Washington State University invites applications for a tenure-track teaching and research faculty position at the Assistant Professor level to begin August 2001. Teaching assignment will include an introductory environmental science course in the general education curriculum and upper-division and/or graduate courses in the candidate's research and teaching specialization within the environmental sciences. The research area is open, but we are particularly interested in individuals focused on environmental problems and issues such as environmental assessment or global change. Candidates will be evaluated in part on their fit with the curriculum and with other colleagues on an interdisciplinary environmental science faculty.

The successful candidate must have a Ph.D. in environmental or natural science at the time of employment and will necessarily (1) develop an externally funded research program, (2) teach courses as specified in the above paragraph, (3) advise graduate and undergraduate students, and (4) work collaboratively with faculty across the Washington State University system.

Additional information on the program and WSU can be found at the **website: http://www.sci.wsu.edu/envsci**.

Interested candidates should submit (1) a letter of application, which specifies how their instructional and research goals relate to an interdisciplinary environmental science program; (2) curriculum vitae; (3) reprints; and (4) at least three letters of recommendation to:

Dr. Gerald Young, Chair
Faculty Search Committee
Program in Environmental Science
and Regional Planning
Washington State University
P.O. Box 644430
Pullman, WA 99164-4430

The review process of completed applicant files will begin February 2, 2001, and will continue until the position is filled.

Washington State University is an Equal Opportunity/Affirmative Action Educator and Employer. People of color, women, Vietnam-era or disabled veterans, persons of disability, and/or persons over the age of 40 are encouraged to apply.

POSTDOCTORAL/RESEARCH POSITIONS

The Oxidant Injury Program of the Pathology and Physiology Research Branch, Health Effects Laboratory Division, National Institute for Occupational Safety and Health (NIOSH), is a basic and applied research unit consisting of several faculty: **Drs. Vince Castranova, Val Vallyathan, Min Ding, Murali Rao,** and **Xianglin Shi**. The faculty are committed to an interdisciplinary approach using established and newly emerging biochemical, genetic, molecular, structural biological, and biophysical tools to elucidate mechanisms of toxicity and carcinogenesis induced by merals and other hazardous substances. We are particularly interested in free radical reactions, expression of oncogenes, activation of nuclear transcription factors, activation and mutation of p53, apoptosis, induction of cytokines and antioxidants enzymes, and effects of carcinogens on cell growth regulation. Outstanding individuals with a Ph.D. degree in these or related areas are encouraged to apply. Experience in free radical biology will be given special consideration. The minimum stipend is $38,000. Interested candidates should send their curriculum vitae along with the names of three professional references to:

Xianglin Shi, Ph.D.
CDC/NIOSH/HELD/PPRB
1095 Willowdale Road, Mail Stop 2015
Morgantown, WV 26505
Telephone: 304-285-6158; FAX: 304-285-5938
E-mail: xshi@cdc.gov

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POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR POSITIONS
DEPARTMENT OF PHARMACOLOGY
UNIVERSITY OF ILLINOIS, CHICAGO

The Department of Pharmacology at the University of Illinois (Chicago) invites applications for tenure-track positions at the level of Assistant Professor and tenured positions at the Associate Professor and **FULL PROFESSOR** level. This recruitment will complement ongoing areas of research and is part of the significant expansion that includes the new Basic Medical Science Building to be completed in 2003 that will house the Department of Pharmacology. Current areas of research in the Department comprise signal transduction, vascular and lung biology, neuroscience, peptidases, and receptor biology. We are seeking highly motivated faculty in the areas of neurosciences, signal transduction, cardiovascular biology, cancer biology, and genomics/proteomics. Our start-up packages are highly competitive. The University of Illinois provides an outstanding intellectual environment as well as state-of-the-art research facilities including DNA/protein synthesis and sequencing, confocal microscopy, NMR, and transgenic/knockout facilities. Applicants should possess a Ph.D. or M.D. For fullest consideration, submit curriculum vitae, description of research interests and goals, grant support, and the names of three references by November 30, 2000, to: **Dr. Oscar Colamonici (SC001), Pharmacology Search Committee, Department of Pharmacology, University of Illinois, 835 South Wolcott Avenue (M/C868), Room E403, Chicago, IL 60612. Website: www.uic.edu/depts/mcph/**. *The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.*

MICROBIOLOGY FACULTY POSITIONS
UNIVERSITY OF UTAH

The Department of Biology at the University of Utah seeks applicants for two tenure-track faculty positions at the **ASSISTANT PROFESSOR** level in the general area of microbiology. We hope to appoint individuals who can contribute to both the research and teaching activities of a department with unusually broad interests ranging from biochemistry to ecology. Research areas of interest for this appointment include but are not limited to enzymology, metabolism, physiology, genetics, cell biology, pathogenesis, evolution, or ecology. In addition to developing strong research programs in microbial biology, the successful candidates will contribute to teaching at the undergraduate and graduate levels, including courses in microbiology. Please submit curriculum vitae, descriptions of research interests and teaching interests, and three letters of reference to: **Microbiology Search Committee, Department of Biology, University of Utah, 257 South 1400 East, Salt Lake City, UT 84112-0840**. Review of applications will begin January 16, 2001. *The University of Utah is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minorities and provides reasonable accommodation to the known disabilities of applicants and employees.*

PROFESSOR OF PHARMACOLOGY: The Department of Pharmacology at the University of Pennsylvania is inviting applications from qualified Scientists for a tenured position on the standing faculty. Successful candidates should possess the experience to develop a strong, extramurally funded research program. We are particularly interested in individuals whose research program focuses on the chemistry of bioactive lipids and who have an established international reputation in this area. A focus of particular interest in the Department is in the role of bioactive lipids in oxidant stress, and we seek a Synthetic Chemist to complement this effort. We offer an excellent salary/benefits package and outstanding laboratory facilities. Qualified individuals should send their curriculum vitae to: **Garret A. FitzGerald, M.D., Chair, Department of Pharmacology, 153 Johnson Pavilion, University of Pennsylvania, Philadelphia, PA 19104-6084**. *Equal Opportunity/Affirmative Action/Minority/Female/Disabled/Veteran.*

Staff Scientist

NIMH National Institute of Mental Health

Laboratory of Genetics
National Institutes of Health

A staff scientist is being sought to manage the Transgenic/Knockout Mouse Facility of the Laboratory of Genetics within the National Institute of Mental Health Intramural Research Program. The incumbent will be expected to participate in designing the facility, purchasing equipment, training and supervising technicians, organizing work schedules, advising/training "clients", and managing databases. In addition, the successful candidate will perform independent technical development work and collaborative scientific studies. Starting salary is $65,000-$70,000 per annum. Candidates must have a Ph.D. and/or M.D. and an established record of scientific accomplishments as well as demonstrated organizational, managerial, and teaching skills. Preference will be given to applicants with 1) five or more years of experience in making and studying transgenic and knockout mice, 2) a strong background in molecular biology, 3) familiarity with laboratory information systems. Applicants should send a curriculum vitae and three letters of recommendations to: **Michael J. Brownstein, Transgenic/Knockout Facility Search Committee, NIMH, NIH,** Bldg. 36, Rm. 3D-06, 9000 Rockville Pike, Bethesda MD 20892-4094, (301) 496-5351, by October 31, 2000.

The National Institutes of Health is an equal opportunity employer

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Advanced Engineering & Sciences, a division of ITT Industries, located in Alexandria, VA, has exciting employment opportunities available for you! We are a Leading Information Technology Company. We offer a competitive salary, great benefits, educational assistance and a working environment that fosters creativity. We are seeking qualified candidates with the following expertise:

BIOLOGIST/ENGINEER (KM 21/00W): Develop technologies for detection of nuclear, biological and chemical agents under arms control treaties. Experience in sensor technologies (chemical and biological), biological laboratory procedures; knowledge of cell culture practices and molecular biology. Must have 2-4 yrs related experience w/a MS/MA Degree in Biology, Biotechnology, Biochemistry or Biochemical Engineering.

ANALYTICAL CHEMIST (JB 75/00W): Support sample collection and handling efforts involving multiple and mixed media. Work directly on-site w/customer on QA/QC tasks for analytical chemistry program. Travel is required to laboratories to audit analyses programs. Experience in production environmental lab, Purge & Trap techniques, GC/MS, GC/Multiple Detectors, plus a strong background in QA/QC and organic analysis. Must have 5 yrs related experience w/a BS/BA Degree in Chemistry. MS or PhD will be considered.

SR. SCIENTIST (BL 57/00W): Provide technical advice to the Defense Threat Reduction Agency (DTRA) On-Site Technology (OST) directorate in the area of seismology and geophysical research. Experience in research in one or more of the following areas: Seismology, Infrasound, and/or Hydro Acoustics. Knowledge in seismic, infrasound and/or hydro acoustical sensors. Good oral and written communication skills. Must have 5-10 yrs related experience w/a MS/MA Degree in Geophysical Science or Seismology.

Send resume w/salary requirements and job code to: **Advanced Engineering & Sciences, a Division of ITT Industries, 2560 Huntington Ave., Alexandria, VA 22303, Email: jobs.alex@itt.com, Fax (703) 960-0512.** All applicants must be able to obtain appropriate level Security Clearance.

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HARVARD MEDICAL SCHOOL

BIOINFORMATICS AND COMPUTATIONAL BIOLOGY
Assistant or Associate Professor
Department of Biological Chemistry and Molecular Pharmacology

As part of a campus-wide initiative, Harvard Medical School is continuing to expand our research community in the area of bioinformatics and computational biology. We wish to establish a new tenure-track faculty position at the Assistant or Associate Professor level in this area. The appointing department will be the Biological Chemistry and Molecular Pharmacology Department. Qualifications include a strong potential for imaginative research in the areas of bioinformatics, genetic epidemiology, computational functional genomics, biological network modeling, and/or computational research in chemical biology. This position offers remarkable scholarly and scientific resources for independent research and collaboration, as well as the opportunity to teach graduate and medical students with a strong interest in modern bioinformatics research.

BIOLOGIST
Assistant Professor
Department of Biological Chemistry and Molecular Pharmacology

The Department of Biological Chemistry and Molecular Pharmacology invites applications for a tenure-track faculty position at the Assistant Professor level. We invite individuals with a strong research background in any aspect of biological research that relates to modern biochemistry, cell biology, molecular biology, developmental biology, and/or pharmacology to apply. The successful applicant should be interested in establishing a vibrant research laboratory and will have the opportunity to participate in teaching of both medical and graduate school students.

Applicants for either position should submit, by December 1, 2000, a curriculum vitae, bibliography, and a brief description of research interests and arrange to have four letters of recommendation sent. These materials should be directed to:

Ed Harlow
c/o Ms. Roberta Montgomery
BCMP, Harvard Medical School
240 Longwood Avenue, C-213
Boston, MA 02115

ASSISTANT PROFESSOR POSITION DEPARTMENT OF BIOCHEMISTRY UNIVERSITY OF WISCONSIN–MADISON

The Department of Biochemistry at the University of Wisconsin–Madison invites applications for a position at the Assistant Professor level. We are especially interested in applications from individuals whose research deals with the molecular basis of physiological responses in animals, but applications in other areas of biochemical research will also be considered. The University and Department provide an excellent environment for the development of an outstanding research program.

The successful candidate will be expected to pursue a vigorous independent research program and participate enthusiastically in the undergraduate and graduate teaching programs of the Department. Applications, including curriculum vitae, list of publications, and a brief summary of accomplishments and direction of future research, should be sent to: **Professor H. F. DeLuca, Chair, Department of Biochemistry, University of Wisconsin–Madison, 433 Babcock Drive, Madison, WI 53706-1544**. Please reference PVL 38301 in all correspondence. Review of applications will begin on December 1, 2000, but the search will continue until a suitable applicant is identified.

The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minorities. Under Wisconsin statutes, names, titles, and addresses of applicants may be subject to public release upon request.

The Department of Pharmacology and Toxicology on the Medical College of Virginia campus of Virginia Commonwealth University invites applications for a **TENURE-TRACK FACULTY POSITION**, the rank of which is open and will be determined by applicant experience, potential, and extramural support. Applicant must have an M.D. or Ph.D. in pharmacology or relevant discipline with at least three years of related postdoctoral experience and will be expected to establish and maintain a state-of-the-art, nationally funded research program as well as contribute to the teaching and mentoring of graduate and professional students. The Department has consistently ranked in the top 10 NIH-funded pharmacology departments and is composed of over 40 faculty and a graduate program of over 45 Ph.D. and M.S. students. Current departmental strengths include neuropharmacology of substance abuse, signal transduction, immunotoxicology, carcinogenesis, and pharmacology of antineoplastic drugs. Submit curriculum vitae; names and e-mail addresses of three references; and a summary of research interests and goals by December 31, 2000, although the search will remain open until the position is filled. Submit materials to: **Search Committee (F5271), P.O. Box 980613, Virginia Commonwealth University, Richmond, VA 23298-0613**. *Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Employer and encourages women, minorities, and persons with disabilities to apply.*

ENVIRONMENTAL BIOLOGY

The Department of Biology invites applicants for a tenure-track **ASSISTANT PROFESSOR** position beginning in August 2001. The successful candidate (Ph.D./A.B.D.) will have a strong commitment to teaching at the undergraduate level and to the development of a research program for mentoring undergraduates. Teaching assignments include environmental biology of plants, introductory environmental science, and general biology. Preference given to applicant with interests in environmental biology of plants. A specialty area in freshwater systems is desirable. Saint Anselm College is a Catholic undergraduate institution in the Benedictine tradition. Send curriculum vitae, statement of teaching and research interests, and three letters of recommendation no later than December 24, 2000, to: **Dr. Daniel J. Lavoie, Chairperson, Biology Department, Saint Anselm, College, 100 Saint Anselm Drive, Manchester, NH 03102-1310.**

POSITIONS OPEN

FACULTY POSITION IN BIOLOGY JOINT SCIENCE DEPARTMENT THE CLAREMONT COLLEGES

The Joint Science Department of Claremont McKenna, Pitzer, and Scripps Colleges seeks a broadly trained Cell/Molecular Biologist for a tenure-track position. Appointments will be made at the **ASSISTANT PROFESSOR** level to begin July 2001. Teaching responsibilities will include participation in our introductory biology sequence, a course for non-science majors, and advanced undergraduate courses. Preference will be given to candidates with research interests in neurobiology, but other areas will also be considered. The successful candidate will be expected to sustain an active research program involving undergraduates. A Ph.D. degree, prior teaching experience, and a record of scholarly publication are required. Postdoctoral experience is preferred.

The Biology program is part of the Joint Science Department (**website: http://www.jsd.claremont.edu**), an interdisciplinary department that serves three selective liberal arts colleges in The Claremont Colleges consortium. The Joint Science faculty consists of 11 Biologists, seven Chemists, and four Physicists. The Department offers major programs in these fields and various interdisciplinary topics.

Send curriculum vitae and statements outlining teaching interests and philosophy and research interests to: **Dr. David Sadava, W. M. Keck Science Center, 925 North Mills Avenue, Claremont, CA 91711. E-mail: dsadava@jsd.claremont.edu**. Arrange to have three letters of recommendation sent to the same address. Review of applications will begin on November 20, 2000, and continue until the position is filled.

In a continuing effort to enrich its academic environment and provide Equal Educational and Employment Opportunities, The Claremont Colleges actively encourage applications from women and members of historically underrepresented social groups in higher education.

The Department of Pathology and Laboratory Medicine, in conjunction with the University of Pennsylvania Cancer Center, invites applications for the **DIRECTOR** of a newly organized microarray facility. As a core laboratory of the University of Pennsylvania Cancer Center, this facility will provide a centralized resource for the application of both high-density and low-density microarray screening strategies to a wide variety of research programs in the University of Pennsylvania Cancer Center. The microarray facility Director will be responsible for the organization, staffing, and operation of the microarray facility and will work closely with the researchers on campus to design, execute, and interpret a variety of experiments utilizing the expanding microarray technology. The details of this position are sufficiently flexible to accommodate a range of research activities in addition to the direction of this core facility. Depending on the qualifications and experience of the candidate, a faculty position (tenure or research track) or a nonfaculty technical/administrative position will be considered.

The requirements for the position are a Ph.D., M.D., or other appropriate doctoral degree; a strong background in molecular biology; and familiarity with microarray technology. Applicants should send curriculum vitae, a summary of research background and interests, and the names and contact information of three professorial references to:

Chair, Microarray Search Committee
c/o Ms. Carolyn Stout
Department of Pathology and Laboratory Medicine
University of Pennsylvania Medical Center
3400 Spruce Street, 6 Gates Pavilion
Philadelphia, PA 19104-4283
FAX: 215-662-4063
E-mail: crstout@mail.med.upenn.edu

The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer; women and minority candidates are encouraged to apply.

POSITIONS OPEN

FACULTY POSITION IN BIOINFORMATICS
University of North Carolina at Chapel Hill
Department of Pharmacology School of Medicine

The Department of Pharmacology at the University of North Carolina, Chapel Hill, is a top-ranked pharmacology department with research strengths in signal transduction, structural biology, neuropharmacology, cancer chemotherapy, and gene therapy. As part of an ongoing Universitywide initiative in genome sciences, the Department of Pharmacology invites applications for a **TENURE-TRACK FACULTY POSITION** in bioinformatics. A competitive salary and start-up package are available for an appointment to begin on or after July 1, 2001.

Requirements include a Ph.D. in biological, physical, or computational science or related discipline along with demonstrated research excellence in bioinformatics. Candidates with active research programs in the areas of algorithm and database design, structural prediction, and/or data mining, especially as applied to the broad strengths of the Department, are highly desired.

Send résumé, concise research plans, and arrange for at least three letters of reference to be sent to:

Ms. Brenda Asam
Department of Pharmacology
CB 7365, M.E. Jones Building, Room 1106
University of North Carolina
Chapel Hill, NC 27599-7365

Applications completed by December 15, 2000, are guaranteed full consideration. *The University of North Carolina at Chapel Hill is an Equal Opportunity/Americans With Disabilities Act Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR/MOLECULAR BIOLOGIST

The Department of Biology and the Program in Biochemistry and Molecular Biology at Dickinson College seek applicants for a tenure-track position in molecular biology with expertise in genomics/bioinformatics. A Ph.D. is required; postdoctoral experience is preferred. Teaching responsibilities include courses in genetics, molecular developmental biology, and genomics/bioinformatics as well as participation in introductory courses. The successful candidate will have access to start-up and institutional research funds and will be expected to develop a vigorous research program involving undergraduates. Dickinson is a highly selective national liberal arts college with an emphasis on innovative science teaching and student/faculty research. This position is being supported by a grant from the Howard Hughes Medical Institute. Review of applicants will begin on December 15, 2000. Send curriculum vitae, statement of teaching and research interests, and the contact information (including e-mail addresses) for three references to: **Dr. John Henson, Molecular Biologist Search, Department of Biology, Dickinson College, Carlisle, PA 17013**. *The College is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

The Department of Pharmacology and Toxicology at the Medical College of Virginia, Virginia Commonwealth University, seeks a collateral **ASSISTANT PROFESSOR** to implement an independent, high-quality research program in the area of immunotoxicology and tumor immunology. The research will involve elucidating the mechanisms by which environmental contaminants induce apoptosis and the role of tumor-derived Fas ligand in immunotoxicity. The successful applicant must have a Ph.D. or equivalent in a related field, two or more years of relevant postdoctoral research experience, and an outstanding record of research accomplishments. Applicants should submit curriculum vitae and three letters of reference by December 1, 2000, to: **Search Committee (F0716), Virginia Commonwealth University, P.O. Box 980613, Richmond, VA 23298-0613**. Position description available. *VCU is an Equal Opportunity/Affirmative Action Employer and encourages women, minorities, and persons with disabilities to apply.*

Georgia Institute of Technology

The School of Earth and Atmospheric Sciences (EAS) at Georgia Tech is entering a period of unprecedented growth. A new 265,000-square-foot Environmental Science and Technology Building that will house the School and related disciplines is under construction. The School now seeks to fill several tenure-track faculty positions. Exceptional candidates with research interests in

Climate Dynamics and Global Change
Atmospheric Chemistry
Geochemistry
Geophysics

are encouraged to apply. Candidates at the entry level should send an application letter, curriculum vitae, and a summary of research plans and should arrange for three letters of reference to be sent on their behalf. Outstanding candidates for advanced rank positions are strongly encouraged to apply by submitting a curriculum vitae and the names of three references. Interdisciplinary candidates will be considered for joint appointments with other Schools. All application materials and requests for information should be directed to: **Faculty Search Committee, School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA 30332-0340.**

Applications will be considered beginning November 1, 2000, but applications past that date will be considered until the positions are filled. Further information is available on the EAS web site (www.eas.gatech.edu). *Georgia Tech is a unit of the University System of Georgia and an equal education/employment opportunity institution.*

POST-DOCTORAL POSITIONS

Roche

Our Research Center in Indianapolis is the Roche Global Center of Excellence for Drug Monitoring. Our continuing success is based upon the strength of our innovative research, through the study of fundamental biochemical, physical, and chemical processes. The leverage provided by Roche allows us to aggressively pursue novel ideas in a manner that ensures the greatest possibility for success. Currently, we have several positions available for Post-Doctoral Scientists comprising research in

- **Molecular Modeling and Structure Determination**
- **Protein Structure-Function Analysis and Engineering**
- **Synthetic and Designed Enzymatic Catalysis**
- **Polymer Chemistry**

Our strong committment to interdisciplinary relationships provides a diverse environment in which concepts and ideas come to fruition, yielding broad opportunity to publish scientific discoveries. These positions are available for Ph.D. scientists who have received their degree in Biochemistry, Chemistry, Chemical Engineering, Material Sciences or a related field, and are seeking a challenging program in the context of a growing industrial sector.

Roche is a world leading research-based health care organization with principal businesses in pharmaceuticals, diagnostics, vitamins, fragrances and flavors. Roche products and services address prevention, diagnosis and treatment of diseases, thus helping people live better lives.

At Roche Diagnostics Corporation we're using our Vision and Values to make a difference. Based in Indianapolis, we are the North American headquarters for Roche's diagnostics business. We are comprised of a dynamic force of individuals who together are enhancing the well being of people and their quality of life. Those with a competitive spirit and commitment to Roche and its customers will find an unmatched environment offering development opportunities and personal rewards.

Who to contact
For immediate consideration, please send your CV and three letters of recommendation to: **Roche Diagnostics Corporation, 45PDRC, 9115 Hague Road, Indianapolis, IN 46250-0457. For more information on the scope and objectives of these positions, please contact A.R. Shanafelt, Ph.D., Director, Drug Monitoring Research, at: armen.shanafelt@roche.com. Roche is committed to providing equal opportunity to a diverse workforce.**

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to speed, growth and Innovation
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Postdoctoral Opportunities In Cancer Research At The Wistar Institute

The Wistar Institute, an independent research organization located on the University of Pennsylvania campus, has National Cancer Institute Training Grant-supported postdoctoral positions available immediately in "Basic Cancer Research." Selected candidates will take interdisciplinary approaches to understand the cell and molecular basis of cancer including regulation of gene expression and genome structure and function, the cellular and molecular basis of tumor development and progression and immunology and immuno therapy.

Applicants will have the opportunity to identify one of twenty participating faculty members in whose laboratory they choose to conduct their postdoctoral research. Candidates must be U.S. citizens or permanent residents with a maximum of three years of postdoctoral training. Minority applicants are strongly encouraged to apply. If interested, please forward your C.V. and three letters of recommendation to the **Human Resources Department (indicating research of interest), The Wistar Institute, 3601 Spruce Street, Philadelphia, PA 19104-4268.** For more information about The Wistar Institute, visit our Web site at www.wistar.upenn.edu. EOE/AA/M/F/D/V.

THE WISTAR INSTITUTE 1892

PENNSTATE Altoona

1855

BIOLOGY
(Tenure Track)

The Pennsylvania State University, the Altoona College invites applications for a tenure-track position in invertebrate zoology at the rank of Assistant Professor of Biology. Applicants with a research focus in biology, physiology, behavior, ecology, conservation, or systematics of invertebrates are preferred. Primary teaching responsibilities include introductory biology courses and an upper level course in the candidate's area of expertise. Interest in contributing to our new interdisciplinary Environmental Studies program desirable.

Penn State Altoona is located in a suburban setting forty-five miles from the University Park Campus. The approximately 3800 undergraduate students can complete one of ten baccalaureate majors or nine associate degrees at Altoona. The college
also offers the first two years of 160 Penn State baccalaureate degrees. Degree offerings at Penn State Altoona will continue
to expand.

The position requires an earned doctorate and is a tenure-track appointment at the level of assistant professor or a rank commensurate with qualifications beginning in Fall 2001. Applicants should present a record of evidence and potential effectiveness in teaching, research, and service. Candidates with a commitment to undergraduate education, interest in undergraduate research, and/or experience in program development will be given strong consideration.

Applicants should send a letter of application establishing their qualifications; a current vita; a description of teaching philosophy and evidence of teaching effectiveness; a statement of research interests; transcripts (official transcripts required at the time of an interview); and a minimum of three letters of reference. Review of applications will begin the week of November 1, 2000, and continue until the position is filled. All inquiries and applications should be sent to: **Chair Search Committee for Biology, Penn State Altoona, Box SCI, 3000 Ivyside Park, Altoona, PA 16601-3760**

For additional information about Penn State Altoona, please visit our web page at **http://www.aa.psu.edu**

Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce.

POSITIONS OPEN

TENURE-TRACK POSITION available in plant developmental biology. The Department of Biological Sciences at California State University, Chico, invites applications for an **ASSISTANT PROFESSOR** position beginning fall 2001. Candidates must have a Ph.D., a specialization in plant developmental biology, experience with cellular and molecular genetic techniques, a demonstrated knowledge of genetics and plant anatomy, a demonstrated ability or potential to establish an externally funded research program that will involve undergraduate and graduate students, teaching experience at the undergraduate level, and a strong interest in teaching excellence. Postdoctoral experience is preferred. Responsibilities will include participation in lower-division majors/nonmajors biology courses, and upper-division and/or graduate courses in area of specialization. Normal faculty duties include undergraduate advising and committees in addition to teaching duties. Applicants should submit a letter of application, curriculum vitae, a statement of teaching philosophy, representative reprints, complete academic transcripts (student copy acceptable), and three letters of reference to: **Dr. Michael Abruzzo, Chair, Department of Biological Sciences, California State University, Chico, Chico, CA 95929-0515, Attention: Plant Developmental Biology. Telephone: 530-898-5356.** Review will begin December 1, 2000, and continue until position is filled. *As a University that educates students of various ethnic and cultural backgrounds, we seek to create as diverse a pool of candidates as possible. CSU, Chico, is an Equal Opportunity Employer/Affirmative Action/Americans With Disabilities Act Employer. California State University, Chico, employs only individuals lawfully authorized to work in the United States.*

FACULTY POSITION
MOLECULAR AND CELLULAR PHARMACOLOGY
School of Medicine
University of Miami

The Department of Molecular and Cellular Pharmacology at the University of Miami School of Medicine is seeking applications for a **TENURE-TRACK FACULTY POSITION** (rank open). The position will be available in 2001; rank and salary will be commensurate with experience. Excellent laboratory space and start-up funds are available. Candidates must have a Ph.D. and/or M.D. degree and have an established record of research excellence. Applicants from all areas of molecular/cellular biology and biomedical research are welcome. The new faculty member will complement existing research efforts in the Department, which include regulation of cardiac and skeletal muscle function, ion channels, receptors and signal transduction, function and development of the nervous system, and steroid hormone action.

Applicants should send curriculum vitae, description of current and future research interests, and the names and addresses of three references to: **Dr. James D. Potter, Chairman, Department of Molecular and Cellular Pharmacology, University of Miami School of Medicine, P.O. Box 016189, Miami, FL 33101.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR

The Department of Biology at Marquette University has a tenure-track position available August 16, 2001, for a Ph.D. with outstanding postdoctoral experience. Preference will be given to candidates whose research strengthens departmental programs in the areas of protein biochemistry, cell and development, or microbiology. The successful candidate is expected to develop a vigorous, extramurally funded research program and to teach a one-semester undergraduate course in immunology annually and a graduate course or seminar each year. Review of completed applications will begin December 18, 2000. Send curriculum vitae, statement of research interests, and three letters of recommendation to: **Dr. Brian Unsworth, Chair, Department of Biology, WLS 112A, P.O. Box 1881, Milwaukee, WI 53201-1881. Website: http://biology.marquette.edu.**

POSITIONS OPEN

ASSISTANT PROFESSOR
TENURE-TRACK POSITIONS
DEPARTMENT OF BIOLOGY

Positions for two Biologists available to begin in August 2001:

Entomologist: We seek a broadly trained Entomologist with research interests in the general areas of ecology, evolution, physiology, systematics, or vector biology. The successful candidate's teaching responsibilities will include entomology and some of the following courses: evolutionary biology, ecological modeling, conservation, graduate-level seminars, and basic biology courses.

Geneticist: We seek a broadly trained Geneticist with research interests in one of the following general areas: human genetics, biochemical genetics, or human population genetics. In addition to developing a strong research program, the successful candidate is expected to become involved in some supervision of theses in California State Northridge's Genetic Counseling program. Teaching responsibilities may include one or more of the following: medical genetics, human genetics, human biochemical genetics, molecular diagnostics, or molecular genetics of eukaryotes.

For both positions, a Ph.D. in the biological sciences or related field is required and postdoctoral experience is preferred. A successful candidate is expected to develop a strong research program involving undergraduate and graduate (M.S.) students, seek external funding for his or her research program, and exhibit potential for excellence in teaching.

Applicants should send curriculum vitae, a summary of teaching experience, statements of teaching philosophy and research interests, reprints of up to five publications, and three letters of recommendation to: **Dr. Jim W. Dole, Chair, Department of Biology, California State University, Northridge, CA 91330-8303.** Applications must be received by 15 December 2000.

California State University, Northridge, is an Equal Opportunity Employer committed to excellence through diversity.

ASSISTANT PROFESSOR: eukaryotic genetic control. The School of Biological Sciences invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. Qualifications include at least two years of postdoctoral experience. Preference will be given to candidates with expertise in the study of genetic control of metabolic regulation in any organism model except warm-blooded vertebrates. Bioinformatics expertise highly desirable. The successful candidate is expected to develop an independent, extramurally funded research program in this field and to participate in teaching at the graduate and undergraduate levels in courses adopted by the School.

We offer competitive salary and start-up packages as well as state-of-the-art facilities (see **website: http://sgi.bls.umkc.edu**). Applications for this position are due by November 3, 2000, but will be considered until the position is filled. Send curriculum vitae, statement of future research, and three letters of recommendation to: **Search Committee, Position EGC, School of Biological Sciences, University of Missouri–Kansas City, 5007 Rockhill Road, Room 114 BSB, Kansas City, MO 64110.** *An Affirmative Action/Equal Opportunity Employer.*

Cabrini College, a Catholic coeducational residential institution, offers Bachelor's and Master's degrees to approximately 2,000 students in the Philadelphia suburb of Radnor, Pennsylvania. The College is seeking a full-time **ASSISTANT PROFESSOR** of biology to teach developmental biology, general biology, and genetics. Ability to teach in at least one of the following areas is desirable: evolution, plant physiology, cell and molecular biology, environmental studies, and animal behavior. Ph.D., college teaching, and postdoctoral research experience required. Send letter of application, curriculum vitae, statement of teaching philosophy, and three current letters of recommendation by December 8, 2000, to: **Mary Theresa Fosko, Director of Human Resources, Cabrini College, 610 King of Prussia Road, Radnor, PA 19087.** *Equal Employment Opportunity/Affirmative Action.*

POSITIONS OPEN

AQUATIC BIOLOGIST
STETSON UNIVERSITY

Applications are invited for a tenure-track **ASSISTANT PROFESSOR OF BIOLOGY** position. Stetson University is a selective, indepdendent liberal arts university serving 2,000 undergraduates. The successful candidate will teach an introductory biology course and two upper-level courses in an area of expertise. We are particularly seeking people whose research involves molecular techniques. The successful candidate will guide undergraduate research and contribute to our growing Aquatic and Marine Biology and Environmental Sciences programs. Please send curriculum vitae, letter of application that addresses your philosophy of teaching and undertaking research at a primarily undergraduate liberal arts university, graduate and undergraduate transcripts (photocopies acceptable for initial review), and three letters of recommendation to: **Dr. Terry Farrell, Chair, Biology Department, Stetson University, 421 North Woodland Boulevard, Unit 8270, DeLand, FL 32720. E-mail: tfarrell@stetson.edu.** This position and our program are described in more detail at **website: www.stetson.edu/departments/biology/amb.** We will accept applications until December 11, 2000. Starting date is August 20, 2001. *Stetson University, an Equal Opportunity Employer, affirms the values and goals of diversity and strongly encourages applications from women and groups historically underrepresented in higher education.*

FACULTY POSITION
DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

A tenure-track faculty position is available in the Department of Biochemistry and Molecular Biology at Baylor College of Medicine. As part of the Texas Medical Center, Baylor is a focal point for outstanding basic research and clinical science and actively encourages interinstitutional and cross-departmental collaboration. The Department of Biochemistry and Molecular Biology maintains research strengths in molecular genetics, biochemistry, genomics, developmental biology, cell biology, signal transduction, and structural biology. We are seeking outstanding candidates in all areas of biology. Candidates should send their curriculum vitae, preprints and reprints of significant work, a statement of present and future research activities, and arrange to have three letters of recommendation forwarded by December 1, 2000, to:

Stephen J. Elledge, Ph.D.
Search Committee Chair
c/o Sylvia Ledesma
Department of Biochemistry and Molecular Biology
BCM 125, Baylor College of Medicine
One Baylor Plaza
Houston, TX 77030

Baylor College of Medicine is an Equal Opportunity/Affirmative Action/Equal Access Employer.

FACULTY POSITION
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY
University of California Santa Barbara

The Department of Chemistry and Biochemistry seeks outstanding Physical Chemists to fill a tenure-track **ASSISTANT PROFESSOR** position in theoretical biophysical chemistry. Potential areas of research include macromolecular recognition, folding and assembly, kinetic and dynamic studies of enzyme mechanisms, and genetic and metabolic pathway regulation. Applications are encouraged from candidates with outstanding potential in both research and teaching. Please send curriculum vitae, five selected reprints, a two-to-three-page research plan, and three letters of recommendation to: **Chair, Theoretical/Biophysical Search Committee, Department of Chemistry and Biochemistry, University of California at Santa Barbara, Santa Barbara, CA 93106-9510.** Position open until filled; however, completed applications received by December 1, 2000, will receive preference. *UCSB is An Equal Opportunity/Affirmative Action Employer.*

Harvard Medical School

Department of Microbiology and Molecular Genetics

Postdoctoral Research Fellow

Applications are invited from suitable candidates to join studies on aerobic/anaerobic regulation of gene expression in *Escherichia coli*. The applicants should have a significant background in bacterial genetics and physiology. Additional experience in biochemistry or enzymology would be desirable. The stipend will be commensurate with experience. Harvard University is an equal opportunity employer.

Applicants should submit a curriculum vitae, brief statement of research interests, and names of three references with addresses to:

Prof. E.C.C. Lin
Department of Microbiology and Molecular Genetics
Harvard Medical School
200 Longwood Avenue
Boston, MA 02115
Fax: (617) 738-7664.
E-mail: elin@hms.harvard.edu

IMMUNOLOGY & TRANSLATIONAL TUMOR IMMUNOLOGY

Department Of Microbiology and Immunology Dartmouth Medical School

The Department of Microbiology and Immunology at **Dartmouth Medical School (DMS)** invites applications to fill two tenure-track faculty positions in the Immunology Program at **Dartmouth Medical School**. The successful applicants will hold the MD and/or PhD degree and will join a dynamic and interactive faculty that has strong research and teaching credentials in immunology. Although targeted primarily at the Assistant/Associate Professor level, senior candidates with particularly strong records of research accomplishment and sustained program growth and funding are welcome to apply.

Candidates will be expected to develop or expand upon a strong, independent yet collaborative, research program. Teaching opportunities include participation in courses in medical microbiology/immunology, undergraduate immunology, and/or graduate courses in the Molecular and Cellular Biology (MCB) PhD Program.

The **Norris Cotton Cancer Center (NCCC)**, an NCI-funded, comprehensive center, and the Department of Microbiology & Immunology are actively developing translational studies in cancer immunotherapy. We encourage applicants whose work focuses on the interface of immunology and cancer immunobiology to apply for either position. One of these openings is for a translational immunologist. For the second position, the Department of Microbiology & Immunology will recruit an immunologist whose background and area will complement the expertise of the immunological community.

These positions afford the opportunity to utilize state-of-the-art facilities and resources associated with a major research and teaching institution and cancer center, and benefit from an established graduate program, while enjoying the quality of life characteristic of the area of Northern New England surrounding the Dartmouth community. For further information on the various programs at **DMS** and the **NCCC**, see the listings at **www.dartmouth.edu/~dms/** and **NCCC.hitchcock.org**

Applications should consist of a curriculum vitae, a brief statement of research interest and plans, and three letters of reference to: **Dr. Randolph J. Noelle, Department of Microbiology and Immunology, Dartmouth Medical School, 640 W. Borwell Building, 1 Medical Center Drive, Lebanon, NH 03756.** Applications will be reviewed beginning November 1, 2000 and continue until the positions are filled. Dartmouth Medical School is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and members of minority groups.

NORRIS COTTON CANCER CENTER
DARTMOUTH-HITCHCOCK MEDICAL CENTER

STAFF SCIENTIST POSITION MACROMOLECULAR NMR SPECTROSCOPY

NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES
NATIONAL INSTITUTES OF HEALTH
RESEARCH TRIANGLE PARK, NORTH CAROLINA

The National Institute of Environmental Health Sciences, National Institutes of Health, in Research Triangle Park, North Carolina, is recruiting a chemist in the Laboratory of Structural Biology to serve as the technical authority for the preparation of isotopically labeled proteins suitable for structural analysis using nuclear magnetic resonance (NMR) techniques, and for the structural analysis of these proteins by NMR spectroscopy.

Minimum qualifications include a Ph.D., D.V.M., M.D. or equivalent in chemistry, molecular biology, biochemistry, microbiology or a related discipline with an emphasis on NMR spectroscopy as it relates to the determination of protein structure. Experience in the preparation, isolation, purification and concentration of biological macromolecules and in the application of modern NMR spectroscopic methods for structural analysis is essential.

For additional information, contact Dr. Elizabeth Murphy, Search Committee Chair, at 919-541-3873, e-mail: murphy1@niehs.nih.gov, FAX 919-542-3385, or Dr. Robert London at e-mail: london@niehs.nih.gov or FAX 919-541-5707. Applications from women and minority groups are particularly encouraged. The initial appointment is for five years and is renewable every five years indefinitely. Federal leave, retirement, health and life insurance and savings plan benefits apply. Salary commensurate with background. Interested parties should submit curriculum vitae, bibliography, and brief statement of research interests, and arrange for the submission of three letters of recommendation to be sent by November 15, 2000 to:

Ms. Carolyn London, (HNV-00-24)
NIEHS Human Resource Management Branch
P.O. Box 12233, Maildrop EC-11
Research Triangle Park, NC 27709
919-541-7513, e-mail: london4@niehs.nih.gov

NIEHS/NIH IS AN EQUAL OPPORTUNITY EMPLOYER

National Institute on Aging
Intramural Research Program

The National Institute on Aging (NIA), Intramural Research Program, Laboratory of Clinical Investigation is recruiting a staff scientist in the area of bioanalytical chemistry. The candidate should hold an M.D. or M.D., Ph.D. from any subdiscipline of the Life Sciences and relevant postdoctoral experience. The candidate will be part of a research program addressing the role, function, and pharmacological interactions of ABC transporters. We are particularly interested in individuals who have experience in cell culture, cell and molecular biology, and analysis of dose-response and ligand binding data and with analysis of drug interaction. Familiarity with affinity chromatography techniques and previous collaboration with synthetic and analytical chemists preferred.

Interested candidates should send curriculum vitae and bibliography, summary of current research, and 3-4 letters of recommendation postmarked by November 17, 2000 to:

Mrs. Theresa Stachowiak
Personnel Office
National Institute on Aging
Gerontology Research Center
5600 Nathan Shock Drive
Baltimore, MD 21224-6825

NIA is an Equal Employment Opportunity Employer

POSITIONS OPEN

The Department of Earth, Ecological, and Environmental Sciences, University of Toledo, invites applications for a **TENURE-TRACK FACULTY POSITION** in physiological plant ecology. Rank and salary are open depending on experience, and start-up funds are negotiable. The position will begin August 2001. The committee will begin evaluating applications December 1, 2000, and continue until the position is filled. The faculty currently consists of seven Geologists and six Ecologists. However, in addition to the position advertised here, the Department is also adding new positions in geology and ecology as well as three positions in GIS and remote sensing to be shared with the Department of Geography and Planning. The Department currently offers the B.S. in environmental sciences, the B.S. and M.S. in geology, and the M.S. and Ph.D. in biology (ecology track). Additional degrees in environmental sciences at the M.S. and Ph.D. levels are currently being sought.

Candidates must have a Ph.D. in an appropriate discipline and a strong research agenda. Candidates should be interested in becoming active members of an interdisciplinary team of Scientists focused on Lake Erie Basin research utilizing the University's new Lake Erie Research Center facility and the Plant Science Research Center. Candidates should have experience in plant-soil interactions and responses to environmental contaminants such as heavy metals. Opportunities exist for research involving wetlands and oak savanna communities. Candidates should also be dedicated to quality teaching at the graduate and undergraduate levels in their areas of interest and to directing graduate research. Applicants should submit curriculum vitae, descriptions of teaching and research interests, and the names and addresses of three references to: **Dr. Robert Sinsabaugh, Chair, Search Committee, Department of Earth, Ecological, and Environmental Sciences, University of Toledo, Toledo, OH 43606-3390**. To learn more about us, please visit our **website: www.eeescience.utoledo.edu**. *The University of Toledo is an Equal Opportunity/Equal Access/Affirmative Action Employer and Educator. Minorities/Females/Veterans/Disabled are encouraged to apply.*

BIOMECHANICS
DEPARTMENT OF INTEGRATIVE BIOLOGY
University of California at Berkeley

Applications are invited for a tenure-track position as **ASSISTANT PROFESSOR** (Identification Number 556) starting July 1, 2001. Candidates should have demonstrated excellence, originality, and productivity in research using biomechanics as a tool to address basic questions in functional biology, ecology, or evolution. We are particularly interested in candidates using solid and/or fluid mechanics to study mechanisms of organism function and whose work integrates across several levels of organization, which could include molecular, cell/tissue, organismal, and ecological levels. Candidates working on unicellular organisms or multicellular organisms (including humans) are urged to apply. The appointee will join a department with a strong multidisciplinary emphasis. We seek an individual whose interdisciplinary approach could contribute to interactions with the newly formed Bioengineering Department and to our Health Sciences Initiative and Center for Neuroscience.

Candidates should have a strong commitment to undergraduate and graduate teaching. Teaching responsibilities will include participation in an upper-division course in the candidate's specialty and in a core course in organismal form and function.

Applications including curriculum vitae, a list of publications, reprints of the three most significant publications, a brief (two-page maximum) statement of research and teaching objectives, and names of three references should be sent to: **Chair, Biomechanics Search Committee, Department of Integrative Biology, University of California at Berkeley, Berkeley, CA 94720-3140.** Applications must be postmarked by November 20, 2000. Early applications are encouraged.

The University of California, Berkeley, is an Equal Opportunity Employer committed to excellence through diversity.

POSITIONS OPEN

POSTDOCTORAL POSITION
HARVARD MEDICAL SCHOOL
MASSACHUSETTS GENERAL HOSPITAL

Innovative laboratory positions in molecular biology and immunology in the setting of NF-κB activation and proteasome biology are available as they apply to autoimmune disease. Proficiency in advanced molecular biology required as well as motivation and high scientific competence. Preference is extended to Ph.D. candidates. Please submit a cover letter and curriculum vitae, a statement of your goals, and three contact people with telephone numbers for recommendations.

Send the above materials to:

Denise Faustman, M.D., Ph.D.
Director, Immunobiology Laboratory
Massachusetts General Hospital
Building 149, 13th Street, Room 3601
Charlestown, MA 02129
E-mail:LMurphy1@partners.org

ASSISTANT/ASSOCIATE PROFESSOR
PHARMACOLOGY AND TOXICOLOGY
The University of Kansas

Applications are invited for a tenure-track position as an Assistant/Associate Professor of Pharmacology and Toxicology in the School of Pharmacy. The Pharmacy School at the University of Kansas ranks fourth nationally in NIH research funding among all such schools. The Department is recruiting a faculty member possessing a Ph.D., M.D., or equivalent degree and experience in transgenics, pharmacogenomics, or proteomics. All applicants should have expertise in developing transgenic animal models and experience in establishing/operating a transgenic animal facility or some aspect of functional genomics, i.e., microarray analysis, proteomics, genome scanning. Applicants for an Associate Professor should have an externally funded research program. All faculty are expected to participate in collaborative research projects and teach at the graduate and undergraduate levels. Excellent core facilities exist including those for DNA sequencing; protein analysis, peptide synthesis; fermentation cell culture; hybridoma production; confocal and electron microscopy; molecular modeling; NMR; mass spectroscopy; X-ray crystallography; and an excellent, spacious, low-cost animal care facility conveniently located in the basement floors of Malott Hall. Send curriculum vitae, a description of research plans, and the names of three references to: **Dr. Rick T. Dobrowsky, Department of Pharmacology and Toxicology, University of Kansas, 5064 Malott Hall, Lawrence, KS 66045-2505. E-mail: dobrowsky@ukans.edu**. Review of applications begins November 15, 2000, and will continue until the position is filled. *The University of Kansas is an Equal Opportunity Employer. Underrepresented minorities and women are encouraged to apply.*

ASSOCIATE PROFESSOR or **PROFESSOR** of pharmacology or clinical pharmacology (tenured and state funded). Experience directing a team-taught medical pharmacology or clinical pharmacology course desirable. A strong publication record and potential for acquiring extramural funds is expected. Position available February 1, 2001. For fullest consideration, curriculum vitae along with the names and addresses of three references should be submitted by December 27, 2000, to: **John W. Dailey, Ph.D., Department of Biomedical and Therapeutic Sciences, University of Illinois College of Medicine at Peoria, P.O. Box 1649, Peoria, IL 61656**. For additional information, **e-mail: jwd@uic.edu**. *The University of Illinois is an Equal Opportunity Employer and welcomes applications from minority and female candidates.*

POSITIONS OPEN

FACULTY POSITION IN NUTRITIONAL GENOMICS

The Department of Nutritional Sciences and Toxicology, University of California at Berkeley, is seeking an **ASSOCIATE/FULL PROFESSOR** of Nutritional Sciences for a nine-month tenured position starting July 1, 2001. The appointee is expected to have a well-developed research program in the application of genomics methodology to human nutrition and/or toxicology. Areas of interest include but are not limited to genomic analysis of the influences of nutrients and toxins on reproduction, development and aging; the interaction of diet and genetic polymorphisms on susceptibility to chronic disease; and the identification of genomic markers of individual nutrient requirements and susceptibility to toxic agents. The appointee may work with graduate students seeking advanced degrees in nutrition, molecular toxicology, comparative biochemistry, endocrinology, and related fields. The applicant should hold a Ph.D. or equivalent degree with training and experience in nutritional science, genetics, genomics, computational biology, or related biological science. The applicant should have experience in effective classroom teaching and possess a well-established research program of demonstrated excellence, preferably in an area of genomics. Molecular Scientists with training in dietetics are encouraged to apply. Teaching assignments will include contributions to an undergraduate course in the area of nutrition or toxicology and to a graduate course in the appointee's area of expertise. Applications should be sent to: **Barry Shane, Chair, Nutritional Genomics Search Committee, Department of Nutritional Sciences and Toxicology, 119 Morgan Hall, University of California, Berkeley, CA 94720-3104** and should include curriculum vitae, a statement of research interests, copies of up to three publications related to current research interests, and a brief description of teaching and professional experience. Applicants should submit the names of at least three references who are able to evaluate their research and teaching potential. Application deadline: December 31, 2000. Applications submitted after the deadline will not be considered. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

ANTICIPATED ASSOCIATE PROFESSOR
Fisheries Oceanography

The Coastal Fisheries Institute (CFI) and the Department of Oceanography and Coastal Sciences (DOCS) at Louisiana State University's Center for Coastal, Energy, and Environmental Resources invites applications for a tenure-track position at the rank of Associate Professor. Required qualifications: Ph.D. in oceanography, fisheries, or marine/ocean sciences; an extensive record of research excellence; level of scholarly achievement commensurate with an Associate Professor position. We seek a senior Scientist with at least seven years of postgraduate experience who will have an immediate impact on our research and academic program; must be familiar with biological and fisheries oceanography, early life history of fishes, food chain dynamics, estimation of growth, mortality and predation rates, bioenergetics, mesocosms, fisheries-habitat relationships at the ecosystem level, and fisheries management; a strong analytical background and an established record of leading multidisciplinary/integrative teams; must be familiar with fish population dynamics and management issues. This position includes a joint academic appointment within DOCS where tenure resides and where candidates will teach specialty courses and other service courses at the graduate and undergraduate level. Application review will begin November 10, 2000. Applicants should send curriculum vitae, statement of future goals in research and teaching, and arrange for the delivery of five letters of recommendation to: **Richard F. Shaw, Director, CFI, Wetland Resources Building, Louisiana State University, Reference Log Number 0541, Baton Rouge, LA 70803-7503.**

Louisiana State University is an Equal Opportunity/Equal Access Employer.

THE UNIVERSITY OF
ARIZONA®
HEALTH SCIENCES CENTER

Faculty Position
Department of Pharmacology and Toxicology
College of Pharmacy
The University of Arizona

The Division of Medicinal Chemistry, College of Pharmacy, The University of Arizona, invites applications for two junior tenure track faculty positions for the 2001 academic year (Assistant Professor/Associate Professor). Applicants must have a Ph.D. and post-doctoral experience. Individuals with interests in any area of Medicinal Chemistry will be considered, but the following and related areas are of particular interest during this phase of our expansion: proteomics, functional genomics, chemical biology, enzymology, and structure based drug design. Successful candidates will be expected to develop an independent research program, obtain extramural funding and actively participate in professional and graduate teaching responsibilities. The Medicinal Chemistry Division has undergone a dynamic period of growth in the last year with the addition of five new faculty members. An excellent opportunity exists for participation in the Center for Toxicology, the Arizona Cancer Center and other centers of excellence at the U of A. Applications will be reviewed beginning December 1, 2000 and will continue until the positions are filled. Applicants should submit an application letter, curriculum vitae, copies of two publications, a statement of research interests and the names (and contact information) of 3-5 references to: **Medicinal Chemistry Division Faculty Search Committee, Job # 994394, Attn: Dr. Karl Schram, College of Pharmacy, University of Arizona, Tucson, AZ 85721-0207**. The University of Arizona is an EEO/AA-Employer M/W/D/V. We offer excellent benefits and competitive salaries.

ILSI
International Life Sciences INSTITUTE

The International Life Sciences Institute, a worldwide nonprofit scientific foundation, has immediate **Senior Scientist** openings in two of its institutes. In addition to excellent academic credentials and relevant experience, each position requires the ability to work well with international scientists, as well as excellent oral and written communication skills.

The ILSI Human Nutrition Institute (HNI) was established in 1989 to improve understanding about nutrition and its impact on health, and to resolve scientific issues involving food metabolism and the relationship between diet and disease. Collaborating with scientists from academia, government and industry, HNI supports research and the exchange of state-of-the-art scientific information among nutrition professionals. HNI seeks a **Nutritional Epidemiologist** experienced in food consumption data analysis to carry out nutrient and food pattern analysis. Self-motivated individuals with a Ph.D. or equivalent degree in nutrition, public health, epidemiology, biochemistry or related field are encouraged to apply. The successful candidate will demonstrate in-depth knowledge of large food consumption database manipulation, including the use of appropriate food composition data, and statistics as well as clear hypothesis generating and testing skills for nutrition and risk assessment issues related to food intake.

The ILSI Risk Science Institute (RSI) was established in 1985 to improve the scientific basis of risk assessment, the process by which scientists evaluate the risks to human health posed by man-made and natural substances in our living and working environments. RSI works toward this goal through an international program of working groups, conferences and workshops, publications, and seminars. Since its inception, RSI has made timely and important contributions to the evolving science of risk assessment. RSI seeks a broadly trained **Toxicologist** with expertise in neurotoxicology and/or reproductive/developmental toxicology. The position requires a Ph.D. in toxicology or related science plus 5 – 10 years of postdoctoral experience. Familiarity with toxicity testing guidelines and regulations would be a plus. The successful applicant will work with scientists from diverse disciplines on a wide range of scientific issues related to human health risk assessment. Responsibilities include conceptualizing and developing projects, organizing and staffing technical workgroups, evaluating and analyzing scientific data, drafting and editing manuscripts, and identifying and soliciting funding support for projects.

Applicants should send detailed resume, publication list, names and addresses of three references, and salary history to resumes@ilsi.org, ILSI Human Resources, 1126 16th St., NW, Washington, DC 20036, or by fax to 202-659-3859. EOE-M/F.

www.ilsi.org

Molecular Biologist for Lipid Metabolism & Function
Western Human Nutrition Research Center
USDA/Agricultural Research Service
University of California, Davis

The Western Human Nutrition Research Center invites applications for a permanent, full-time Research Scientist to conduct research on the role of dietary lipids in metabolic functions, gene expression, and signal transduction. The candidate is expected to be able to use human, animal, and cell culture studies to investigate the role of polyunsaturated fatty acids in modulating molecular pathways.

A Ph.D. or equivalent degree in molecular or cell biology, biochemistry, nutrition, or related field is desired. The candidate is expected to develop a vigorous, independent research program and have demonstrated an ability to conduct research through publications in peer-reviewed journals. Base funding is available for a core research program and technical support. Opportunities exist for adjunct faculty appointments at the University of California at Davis. **US citizenship is required**. Salary is commensurate with experience in the range of $61,142 to $110,482, plus benefits.

Applicants must address and meet specific placement factors defined in official vacancy announcement #ARS-X0W-0449. The vacancy announcement and application forms can be obtained by calling 301-504-1484 or through the web at **www.ars.usda.gov**. Specific questions regarding the position may be directed to Dr. Darshan Kelley at 530-752-5138.

Applicants should include a description of research interest, curriculum vitae, and names of 3 professional references. All applications must be **postmarked** by December 29, 2000.

USDA is an Equal Opportunity Provider and Employer

RNA Biologists

The Department of Biological Sciences at Wayne State University invites applications from individuals seeking to join a vibrant group of scientists studying fundamental mechanisms of gene expression and regulation involving RNA. We seek to fill two tenure-track positions at the Assistant/Associate Professor level, and are looking for individuals with suitable post-doctoral experience in the study of RNA who would complement and extend our research strengths in protein synthesis, RNA processing, post-transcriptional regulation, and RNA structure and function. Successful candidates will be expected to establish vigorous, externally funded research programs, and participate in teaching at the graduate and undergraduate levels. Generous start-up packages and salaries will be provided. Excellent research space and facilities are available in the Biological Sciences Building, which was completed in 1991 and houses the WSU Biotechnology research core and Genomics hub of the Michigan Life Sciences Research Corridor. State-of-the-art support facilities are available, including confocal and electron microscopes, phosphorimager, high-throughput DNA sequencers, and DNA microarray instrumentation. A bioinformatics suite, greenhouses, and small-mammal and insect facilities are also available. Wayne State University is a Carnegie I research university. Interdisciplinary interactions with nucleic acid structural biologists, biochemists, the Institute for Scientific Computing and with medical school faculty and research programs afford outstanding opportunities for multi-faceted approaches to biological problems. Applicants should submit a curriculum vitae, a summary of research plans, and have three letters of recommendation sent to:

Chair, Faculty Search Committee
Department of Biological Sciences
Wayne State University
5047 Gullen Mall
Detroit, MI 48202

WAYNE STATE UNIVERSITY

Equal Opportunity Employer

http://bio.wayne.edu/ribo

FACULTY POSITIONS COMPUTATIONAL STRUCTURAL BIOLOGY

Jointly with several academic departments, a new School of Computational Science and Information Technology (CSIT) is recruiting more than 20 faculty with interests involving application of high-performance computing to life and physical sciences. Computational biology will be one of the primary foci. Experimental structural biology has been a strength at Florida State University with its Institute of Molecular Biophysics and various biomolecular programs at the National High-Field Magnetic Laboratory. The University is developing a major new emphasis at the interface of these areas and is accepting applications for the first of an anticipated three coordinated faculty positions in computational structural biology. This position can be at any level and is in addition to a current allied opening of an **ENDOWED PROFESSORSHIP** in biocomputational chemistry.

Current members of the Structural Biology program probe the structure and function of biomolecular complexes using crystallography, magnetic resonance, electron microscopy, mass spectroscopy, and other techniques. Faculty have affiliations in one of several departments including Biological Sciences, Chemistry, Physics, and Mathematics. Candidates for the current position might represent any of a number of fields including but not limited to computational molecular mechanics, protein folding, structure prediction, and analysis of biophysical data.

Interested candidates should arrange for curriculum vitae, a research plan, and three letters of reference to be sent to: **Dr. Michael S. Chapman, Chair, Computational Structural Biology Search, Institute of Molecular Biophysics, Florida State University, Tallahassee, FL 32306-4380. E-mail: chapman@sb.fsu.edu**. Initial review of applications will begin December 1, 2000, and continue until January 31, 2001. *Florida State University is an Equal Opportunity/Affirmative Action Employer.*

TENURE-TRACK FACULTY POSITION DEVELOPMENTAL NEUROSCIENCE
Louisiana State University Health Sciences Center New Orleans

The Department of Cell Biology and Anatomy invites applications for a faculty position at the **ASSISTANT, ASSOCIATE,** or **FULL PROFESSOR** level commensurate with credentials and experience. We are seeking an individual with strong molecular and genetics expertise and research interests in neurogenesis, neurotrophins, signal transduction, axon-guidance, neuron-glia interactions, synaptic plasticity, or regeneration. Applicants are expected to have a strong potential or established record of extramural funding. To apply, please send curriculum vitae, statement of research interests, and the names of three references to: **Dr. Reha Erzurumlu, Chair of the Faculty Search Committee, Department of Cell Biology and Anatomy, Louisiana State University Health Sciences Center, 1901 Perdido Street, New Orleans, LA 70112-1393.** *LSUHSC is an Equal Opportunity/Affirmative Action Employer.*

BIOLOGY/BOTANY: Elmira College is seeking an excellent teacher and productive scholar beginning August 15, 2001, to fill a full-time, **TENURE-TRACK POSITION** in biology with specialization in botany. Rank open. Doctorate required; college teaching experience highly desirable. Courses regularly offered would include biological concepts I, general botany, plant physiology, and at least two of the following: genetics, evolution, molecular biology, cell biology. An active research program involving undergraduates is expected. Review of applications is expected to end November 3, 2000. Send (1) a letter with salary history or expectations, (2) résumé, and (3) three current letters of recommendation to: **Biology Search, Dr. Bryan D. Reddick, Dean of Faculty, Elmira College, One Park Place, Elmira, NY 14901.** Inquiries to: **Dr. Larry Stephens, Chair, Division of Math and Natural Sciences; e-mail: lstephens@elmira.edu.**

POSITIONS OPEN

ASSISTANT/ASSOCIATE/FULL PROFESSOR TENURE-TRACK FACULTY POSITIONS
Lung Cancer Program West Virginia University Robert C. Byrd Health Sciences Center

The Mary Babb Randolph Cancer Center of West Virginia University and the Sara Crile Allen and James Frederick Allen Comprehensive Lung Cancer Program invite applications for tenure-track positions in the area of lung cancer. We seek Cell/Molecular Biologists with research interests in genetics and signal transduction. Candidates are expected to maintain a vigorous, independent research program and participate in the teaching mission of the School of Medicine. Successful candidates will receive a generous start-up package, competitive salary commensurate with experience, recently renovated laboratory space, institutional support, and an academic appointment in an appropriate department. Applicants should have a Ph.D. and/or M.D., two years minimum of postdoctoral training, and evidence of significant research accomplishments and scholarly promise. Applicants should send curriculum vitae, a brief summary of their research plans, teaching interests, and the names and addresses of three references to: **John S. Rogers II, M.D., Search Committee Chair, Mary Babb Randolph Cancer Center, P.O. Box 9162, West Virginia University, Morgantown, WV 26506-9162.** Review of applicants will begin by December 15, 2000, and will continue until the positions are filled.

West Virginia University is an Equal Opportunity/Affirmative Action Employer.

TERRESTRIAL VERTEBRATE BIOLOGIST

ASSISTANT PROFESSOR, tenure-track. Furman University seeks a broadly trained Biologist specializing in the conservation or management of terrestrial vertebrates. Teaching duties include field zoology, resource management and/or conservation biology, and introductory biology. Candidates must have the Ph.D. by September 2001, evidence of interest and excellence in teaching, and a commitment to involving undergraduates in an active research program. Furman is a selective, independent liberal arts university of 2,600 students with a strong emphasis on engaged learning and undergraduate research. For further information, see **website: http://www.furman.edu/academics/dept/biology/job/.**

Submit curriculum vitae, statement of teaching interests and philosophy, a description of research interests, copies of transcripts, and arrange to have three letters of recommendation sent to: **Dr. Wade B. Worthen, Chair, Search Committee, Department of Biology, Furman University, 3300 Poinsett Highway, Greenville, SC 29613.** Complete applications should be received by December 4, 2000. Employment begins in September 2001. *Furman University is an Equal Opportunity/Affirmative Action Employer with a strong commitment to achieving diversity among faculty. Women and people of color are particularly encouraged to apply.*

BIOLOGY POSITION. The Department of Biology, University of Tampa, invites applications for a **TENURE-TRACK APPOINTMENT** in vertebrate zoology beginning in late August 2001. Teaching responsibilities include introductory biology for majors, comparative vertebrate anatomy, and possibly an upper-level course in the Department. Review of applications will begin in January of 2001. Additional information about the University, the Department of Biology, and the application procedure can be found at **website: www.utampa.edu (directory/employment).** Please address all correspondence to: **Biology Search (Vertebrate Zoologist), c/o Office of Human Resources, The University of Tampa, 401 West Kennedy Boulevard, Tampa, FL 33606-1490.** *The University of Tampa is an Equal Opportunity/Affirmative Action Employer and welcomes the applications of minorities and women.*

POSITIONS OPEN

CHAIR, DEPARTMENT OF NEUROLOGY

The University of Pittsburgh School of Medicine seeks candidates for the Chair, Department of Neurology. The Department includes 35 full-time faculty members as well as volunteer faculty who provide services at three major teaching hospitals and six community hospitals. Responsibilities of the Chair include directing the clinical, educational, research, and outreach programs of the Department. Candidates must have an outstanding record of performance in academic neurology, demonstrated leadership abilities, and a firm commitment to the education of residents, fellows, and medical students. Candidates must qualify for the academic rank of **PROFESSOR.**

The Department has well-funded basic science research programs in gene therapy, movement disorders, neuronal cell death, and other disorders that complement its strong clinical programs in stroke, muscle disease, headache, multiple sclerosis, and epilepsy. Active collaborations with the Department of Psychiatry, particularly in clinical neuroscience and aging, are well established. Such efforts will continue to be further encouraged. World-class imaging research facilities include a state-of-the-art PET Facility and MR Research Center, which comprise the Functional Imaging Research Program (FIRP). The Center for the Neural Basis of Cognition (CNBC), a large collaborative effort between Carnegie–Mellon University and the University of Pittsburgh, has many active research protocols using functional MR for cognitive mapping. The neuroscience research community, extending across the School of Medicine and the Faculty of Arts and Sciences, is large and diverse, with major strengths in the molecular basis of cellular communication, neural development, psychiatric and neurological disorders, cognitive neurosciences, information processing in brain circuits, and homeostatic regulatory systems. A cross-campus Ph.D. training program includes 70 faculty and an equivalent number of students. The School seeks to further develop and expand the Neurology Department's research programs to complement its clinical and teaching missions.

Nominations and/or letters of interest from prospective candidates should include the candidate's current curriculum vitae. Address correspondence to: **Steven L. Kanter, M.D., Chair, Neurology Search Committee, University of Pittsburgh School of Medicine, M–246 Scaife Hall, 3550 Terrace Street, Pittsburgh, PA 15261. FAX: 412-648-1813.** *The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer.*

COORDINATOR ENVIRONMENTAL TOXICOLOGY

RESEARCH ASSOCIATE/FULL PROFESSOR. Environmental Toxicology Research program. Coordinator will manage the state-supported research program; generate extramurally funded research; and promote and coordinate the activities of the faculty, staff, and students. Applicants must have a Ph.D. in toxicology or a related field, postdoctoral experience, and a minimum of five years of professional experience. Letter of application, statement of research interests and administrative philosophy, curriculum vitae, and names of three references should be sent to: **Administrative Manager, School of Pharmacy, Thad Cochran NCNPR, Room 1026, The University of Mississippi, University, MS 38677. Website: www.olemiss.edu/depts/pharmacology.** Evaluations begin December 1, 2000. *Equal Employment Opportunity/Affiramative Action/Title VI/Title IX/Section 504/Americans With Disabilities Act/Age Discrimination in Employment Act Employer.*

Alfred University, Alfred, New York, seeks **ASSISTANT PROFESSOR** in tenure-track position in cell and molecular biology beginning fall semester 2001. Primary teaching responsibilities include sophomore cell biology, microbiology, biochemistry, and other courses in the individual's area of expertise compatible with the Division curriculum. See **website: http://bio.alfred.edu** for details and application requirements: *Affirmative Action/Equal Opportunity Employer.*

Diagnostics Company, located in the outskirts of Barcelona (Spain), seeks:

R&D Manager
Molecular Biology

Position, reporting to R & D Director, requires Ph.D. in Molecular Biology, Biochemistry or related field, with at least 10 years' professional experience in the Biotech/Diagnostics field, including 5 years' managing scientists and projects, and fluent in both Spanish and English languages. Candidates must have proven expertise in the most modern recombinant DNA technologies, especially in heterologous gene expression systems and fermentation, preferably in an industrial setting. The selected person will be in charge of the newly created Molecular Biology Laboratory with direct responsibility in project management and senior scientists' supervision. The candidate must be knowledgeable of the most up-to-date Molecular Biology technologies, since he/she will be the senior scientific advisor to the company for business opportunities, patents and license evaluations in this subject. Also, the candidate will be responsible for establishing and coordinating collaborations with other companies and external Research Centers in his/her area of responsibility.

Send curriculum vitae to:
Apartado de Correos 24075,
Barcelona 08080, Spain.
Ref: Molecular Biology

Postdoctoral Position
Maine Medical Center Research Institute, Thrombosis Research Program

A Postdoctoral position is available on October 1st, 2000 in the Thrombosis Research Program, laboratory of Dr. Yale S. Arkel, to study the mechanism of thrombosis and investigation tests used to detect patients prone to thrombosis. Experiences with techniques of molecular biology and protein biochemistry are required. Salary is commensurate with experience, and a generous benefit package is provided. Send curriculum vitae, brief statement of research experience, and names of three references to: **Dr. Wayne Ku, Maine Medical Center Research Institute, 125 John Roberts Road, Suite #8, South Portland, Maine 04106; E-mail: kuw@mail.mmc.org; Fax: 207-761-2130.**

www.mmc.org

Maine Medical Center

Maine Medical Center is part of the MaineHealth Family.

We are an equal opportunity employer strengthened by the diversity of our professional community.

Children's Hospital Medical Center
Cincinnati

Developmental Biology
Assistant/Associate/Full Professor

The Developmental Biology Division of the Cincinnati Children's Hospital Research Foundation is continuing its expansion. Following the success of last year's search and hiring of three new faculty, Dr. Christopher Wylie is anticipating that at least five additional tenured or tenure track faculty positions will be filled over the next four years. Applicants at all levels will be considered. Organogenesis, stem cell differentiation, and pattern formation are major interests, but innovative, high quality research in any aspect of vertebrate and/or invertebrate developmental biology will be the prime consideration. Attractions include outstanding start up packages, new research facilities, an excellent graduate program and modest teaching responsibilities. This search will continue until all positions have been filled.

Please provide curriculum vitae, names and addresses of three references, and a description of research interests to:

Dr. Janet Heasman, Chair, Search Committee
Division of Developmental Biology
Children's Hospital Research Foundation
TCHRF 3014 • 3333 Burnet Avenue
Cincinnati, OH 45229

Children's Hospital Medical Center is an Affirmative Action/Equal Opportunity Institution. Women and minorities are encouraged to apply.

Pioneering Mitochondrial Medicine

MitoKor, a unique biotechnology company based on mitochondria, the biochemical power plants of cells, is involved in the diagnoses and treatment of late onset degenerative and metabolic diseases. We are actively seeking an enthusiastic and creative individual who enjoys working in a team environment and offer the following career opportunity:

Scientist/Senior Scientist

Your primary duties will include fluorescence imaging of individual cells to probe for changes in intracellular ions, mitochondrial membrane potential, and reactive oxygen species. Evaluation of the effects of potential new drugs or the expression of genes of interest on these endpoint measurements will be an important responsibility.

The ideal candidate for this position has a Ph.D. in a biomedical science and at least two years of post-doctoral experience. Specific expertise in fluorescence imaging of intracellular Ca^{2+}, mitochondrial membrane potential, and reactive oxygen in intact cells (preferably neurons) is required. Training in mitochondrial physiology and pathology, familiarity with imaging software, and experience with immunocytochemistry is preferred. Knowledge of pharmacology would be a plus.

In addition to an excellent compensation and benefits package, including 401(k) and stock options, we offer an exceptional work environment and the opportunity to work with a team of people dedicated to making MitoKor a great place to work. For immediate consideration, please e-mail, send or fax your resume (Job Code 2000-025) to: **11494 Sorrento Valley Road, San Diego, CA 92121, Fax (858) 672-3429, e-mail hr@mitokor.com.**

MitoKor

EOE/M/F/D/V

POSITIONS OPEN

EVOLUTIONARY DEVELOPMENTAL BIOLOGY

The Department of Biological Sciences, State University of New York at Buffalo, invites applications for a tenure-track position at the level of **ASSISTANT PROFESSOR** starting in September 2001. We seek an individual who is using molecular approaches to study the evolution of development in multicellular organisms. The Department is an integrative biology department with active research groups in molecular biology and molecular ecology. The successful candidate will be expected to develop an active, externally funded research program and have the ability to teach an advanced course in evolutionary genetics and contribute to undergraduate teaching in their area of specialty. Candidate should have a Ph.D. and at least two years of postdoctoral experience.

To apply, please submit curriculum vitae, a description of current and future research interest, and up to three recent or in-press publications. Please include the names, telephone numbers, and e-mail addresses of three persons who will provide letters of reference and arrange to have the letters sent to the Search Committee. Submit the applications and letters to: **Evolution-Development Search Committee, 109 Cooke Hall, University at Buffalo, Buffalo, NY 14260**. Application review will begin December 15, 2000, and continue until the position is filled. Information about the Department and University can be viewed at **website: http://www.biology.buffalo.edu**.

The State University of New York is an Equal Opportunity Employer/Recruiter.

FACULTY SYSTEMS NEUROSCIENCE

ASSISTANT/ASSOCIATE PROFESSOR (grant funded, leading to tenure track). The City College, City University of New York, Department of Biology, seeks a Neuroscientist, preferably working at the systems level with a strong independent research program and postdoctoral experience. Successful applicants should have research interests that complement those of our neurobiology faculty (visual cortical neurophysiology, neuroanatomy, visual system development, molecular genetics, oculomotor system) and will be expected to participate in teaching doctoral and undergraduate courses. Start-up funds, core facilities, and abundant space are available. Application review begins December 1, 2000. Additional details at **websites: www.ccny.cuny.edu/positions** or **www.rfcuny.org/hr/pvn/**. To apply, send curriculum vitae, statement of research interests, and the names of three references to: **Dr. Josh Wallman, Chair, Neuroscience Search Committee, Biology Department, City College, CUNY, Convent Avenue at 138th Street, New York, NY 10031. E-mail: wallman@sci.ccny.cuny.edu**. *An Affirmative Action/Equal Opportunity/Americans With Disabilities Act Employer.*

ILLINOIS STATE UNIVERSITY NORMAL/BLOOMINGTON

Tenure-track **ASSISTANT PROFESSOR** of Molecular Biology to contribute to the new undergraduate biochemistry and molecular biology (BMB) program (**website: www.bmb.ilstu.edu**) offered by the Departments of Biological Sciences and Chemistry. Interest in the following areas is desirable: virology, developmental biology, bioinformatics, or cell biology. Preferred starting date: August 16, 2001. The successful applicant will be expected to develop an independent, high-quality, and extramurally funded research program and contribute to training of B.S., M.S., and Ph.D. students. Teaching responsibilities will include undergraduate and graduate courses in molecular biology. Ph.D. and postdoctoral experience required. To assure full consideration, please send applications consisting of curriculum vitae, three publications, three recommendation letters, and brief statements of research and teaching goals by December 7, 2000, to: **BMB Search Committee, Campus Box 4160, Illinois State University, Normal, IL 61790-4160**. *Illinois State University is an Equal Opportunity University encouraging diversity.*

DEPARTMENT CHAIR

The University of North Florida seeks applications and nominations for the position of **PROFESSOR** and **CHAIR** of the Department of Biology. The successful candidate will have the responsibility of leading a growing biology program currently composed of 10 faculty and approximately 300 undergraduate majors. He/she will have the opportunity to provide visionary leadership for a newly structured department of biology in a dynamic urban environment. Candidates should have a Ph.D. in biology and should have experience in and a strong commitment to excellence in undergraduate education, scholarship, and external funding. A strong desire to lead the development of faculty is also essential. The successful candidate will have the opportunity to implement a new Bachelor's program in environmental science related to biology during the first year and develop a Master's degree program within the next five years. **FULL PROFESSORS** with experience in the above areas or **ASSOCIATE PROFESSORS** with credentials to be appointed as Full Professors with demonstrated potential in the above areas will be considered. This is a 12-month position with a starting date of August 8, 2001. Competitive salary commensurate with experience will be offered. A letter of application, curriculum vitae, and three letters of reference should be sent to: **Biology Chair Search Committee, Department of Natural Sciences, University of North Florida, Jacksonville, FL 32224-2661** by postmark deadline December 1, 2000. For more information, visit our **website: http://www.unf.edu/dept.humanres/**. *UNF is an Equal Opportunity/Equal Access/Affirmative Action Institution.*

DEPARTMENT OF CELLULAR AND STRUCTURAL BIOLOGY and the Program in Biomolecular Structure University of Colorado Health Sciences Center

Seek an innovative Protein Scientist and expert in mass spectrometry at the **ASSISTANT PROFESSOR** level. Qualified candidates have a Doctoral degree and a significant research record. The faculty member is expected to establish an independent research program in protein science/proteomics in the context of fundamental cell biology, to collaborate with other faculty, and to participate in educational programs. A state-of-the-art mass spectrometry facility is available in the Health Sciences Center.

The review of applicants will begin November 1, 2000. Candidates should submit their curriculum vitae and a one-page statement of their research goals to:

Dr. Karl H. Pfenninger, Professor and Chair
Department of Cellular and Structural Biology, Box B-111/MS
University of Colorado School of Medicine
4200 East Ninth Avenue
Denver, CO 80262

Candidates also should arrange to have three letters of recommendation sent to the same address. *The University of Colorado Health Sciences Center is committed to Equal Opportunity and Affirmative Action.*

BIOLOGY POSITION. The Department of Biology, University of Tampa, invites applications for a **TWO-YEAR APPOINTMENT** beginning in late August 2001 to teach introductory biology for majors, biological science and marine biology for nonmajors, and possibly an upper-level course in the Department. The position will be reevaluated prior to the end of the two-year term and may be renewed or converted to tenure track pending administrative approval. Review of applications will begin in January of 2001. Additional information about the University, the Department of Biology, and the application procedure can be found at **website: www.utampa.edu (directory/employment).** Please address all correspondence to: **Biology Search (Vertebrate Zoologist), c/o Office of Human Resources, The University of Tampa, 401 West Kennedy Boulevard, Tampa, FL 33606-1490.** *The University of Tampa is an Equal Opportunity/Affirmative Action Employer and welcomes the applications of minorities and women.*

RESEARCH FACULTY POSITION STUDY OF STEM CELL BIOLOGY Coriell Institute for Medical Research

The Coriell Institute for Medical Research invites applications for appointment as a member of its research faculty at either the **JUNIOR OR SENIOR LEVEL**. Candidates must have training and experience of the highest quality and an exciting research program addressing fundamental questions in the area of the biology of stem cells. Desirable programs might include those in the regulation of differentiation, the role of growth factors in stem cell replication, the biology of growth factor receptors, or the molecular genetics of hematopoietic precursors. The research program must be funded or, in the case of a junior applicant, eminently fundable.

Coriell is an independent, not-for-profit research organization founded in 1953. Its current programs center on the immunogenetics of diabetes, genes of the immune system, cancer therapeutics, and cell culture and banking. Coriell offers an excellent research environment, laboratory facilities, and generous start-up funds and benefits package. Salary is negotiable.

Candidates should submit curriculum vitae, a statement of research interests and accomplishments, and a list of at least three references to: **Director of Human Resources, Coriell Institute for Medical Research, 401 Haddon Avenue, Camden, NJ 08103. FAX: 856-964-0254; e-mail: ctule@cimr.umdnj.edu; website: cimr@arginine.umdnj.edu**. Applications will be accepted until the position is filled. *Equal Opportunity Employer/Affirmative Action.*

DEPARTMENT CHAIR OF BIOLOGY

Coastal Carolina University is a public, predominately undergraduate liberal arts institution located approximately 10 miles from Myrtle Beach, South Carolina, and enrolls more than 4,500 students from 43 states and 27 nations. The Department of Biology, part of the College of Natural and Applied Sciences, is seeking a Department Chair beginning July 1, 2001. The successful candidate is expected to have the Ph.D. degree in a biological science, recent research experience, demonstrated excellence in undergraduate teaching, and the ability to visualize and articulate departmental goals and objectives. Preference will be given to applicants with demonstrated leadership and organizational skills who can promote external funding and encourage cooperation with industry foundations and governmental agencies and educational institutions.

Each applicant should submit a letter of application, curriculum vitae, statement of teaching and research interests, and names and addresses of five references to: **Dr. Val Dunham, Dean, College of Natural and Applied Sciences, Coastal Carolina University, P.O. Box 261954, Conway, SC 29528-6054**. Additional information about the University and the Department can be accessed at **websites: http://kingfish.coastal.edu/biology/bio.htm; http://coastal.edu** and **http://coastal.edu/pages/news/mission.htm**. Deadline for initial consideration is December 1, 2000, and will continue until position is filled. *Coastal Carolina University is an Equal Opportunity/Affirmative Action Employer.*

VERTEBRATE BIOLOGIST

The Department of Biological Sciences, The University of Southern Mississippi (**website: http://www.biology.usm.edu**), invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level beginning fall 2001. Ph.D. required. The successful candidate will show evidence of ability to develop an externally funded research program, direct M.S. and Ph.D. students, and participate in undergraduate and graduate instruction including comparative anatomy. Preference will be given to candidates with an ecological orientation. Send curriculum vitae, statement of research and teaching interests, and names and addresses of three references by November 30, 2000, to: **Dr. Stephen T. Ross, Department of Biological Sciences, The University of Southern Mississippi, Hattiesburg, MS 39406-5018**. *Affirmative Action/Equal Opportunity Employer/ADAI.*

Washington
WASHINGTON·UNIVERSITY·IN·ST·LOUIS

Department of Biology
Ecology Faculty Search

The Department of Biology at Washington University seeks applicants for a tenure track faculty position in ecology at the Assistant Professor level. Candidates should have significant research accomplishments and a commitment to excellence in both undergraduate and graduate teaching. We seek applicants in research areas of ecology that can build on existing strengths within the Department in the fields of evolution or population biology. We especially encourage candidates with research interests in plant or microbial ecology, but all areas of ecology will be considered. Review of applications will begin December 1, 2000. Applications will be accepted until the position is filled. Letters of application should be accompanied by a curriculum vitae, brief statements of research and teaching interests, reprints of up to three selected papers, and the names and affiliations of three persons who have been asked to send letters of recommendation to:

Chairman, Department of Biology
Campus box 1137
Washington University
One Brookings Drive
St. Louis, MO 63130-4899

Women and members of minority groups are encouraged to apply. Washington University is an Affirmative Action Employer.

NATIONAL CANCER INSTITUTE

Bioinformatics

The National Cancer Center Institute (NCI), National Institutes of Health, is seeking applications for Initiative Leaders within its newly formed Center for Bioinformatics at its locations in Rockville and Gaithersburg, Maryland.

In order to capitalize on extraordinary opportunities brought about by developments in knowledge and technology, the NCI has launched an extensive series of programmatic initiatives. These include the Cancer Genome Anatomy Project (CGAP), the Mouse Model of Human Cancer Consortium (MMHCC), the NCI Director's Challenge (NCIDC), and Clinical Trials. These initiatives serve as nucleation points for the larger collection of investigator-initiated cancer research efforts. To meet the informatics needs of these activities and to provide integration across these efforts the NCI has established the Center for Bioinformatics (NCICB).

Each initiative will receive bioinformatics support through a Core Module. These modules are proposed to link individual participants within each initiative and to serve as gateways to the cancer research community. Initiative Modules have two major functions. The first is to provide a platform and tools that facilitate the exchange of information between these dispersed research efforts and the broader community. Of equal importance is the development of infrastructure to integrate information among the Initiatives.

The NCICB is seeking individuals to serve as leaders in developing bioinformatics infrastructure and applications to support the MMHCC and NCIDC Initiatives. A successful candidate will have experience in supervising software development teams as well as coordinating team efforts as part of a larger project. Experience with use of formal design methodologies, such as the Rational Unified Process, is desirable. A candidate must have experience with application development in a UNIX environment. Experience is also required in development and support of WWW-based applications in a Java and/or PERL-based WWW environment. Experience in developing applications utilizing commercial SQL-based RDBMS is preferred. Domain knowledge in either microarray-based experiment data analysis, genomics, or mouse models of disease is preferred. Interested applicants should submit a resume and cover letter to: **Dr. Kenneth Buetow, c/o Patrick Miller, 41 Library Drive, Room A101, MSC 5055, Bethesda, Maryland 20892**.

NIH is an equal opportunity employer.

Assistant Cooperative Extension Specialist in Viticulture
Department of Viticulture and Enology
Kearney Agricultural Research Center
University of California, Davis

The Department of Viticulture and Enology invites applications for an Assistant Cooperative Extension Specialist, an Academic position. The position will be located at the UC Kearney Agricultural Center in Parlier, in close proximity to the raisin and wine grape industries of the San Joaquin Valley. A Ph.D. in plant physiology, horticulture or closely related discipline is required; postdoctoral experience is desirable. The incumbent will be expected to develop a vigorous externally funded research program in viticultural production practices related to the raisin and wine grape industries of California.

Expertise should complement existing programs in viticulture, with strong preference give to the areas of grapevine nutrition and dried fruit production. Candidate finalists will be selected on the basis of the following criteria: demonstrated ability or potential to conduct independent research in viticulture production; commitment to effective outreach; demonstrated ability or potential to teach; excellence in written and oral communication; a record of scholarly and academic achievement; computer literacy; the ability to work effectively with extension colleagues, faculty, staff, and numerous clientele groups.

Send letter of interest, curriculum vitae, a statement of research and outreach interests and goals, a publication list accompanied by a reprint for each publication listed, graduate transcripts (if within 5 years), and names/addresses of at least 5 references to: **Dr. Nick K. Dokoozlian, Search Chair, Department of Viticulture and Enology, University of California, One Shields Avenue, Davis, CA 95616-8749.** The position will remain open until filled. To ensure consideration, applications must be received by February 1, 2001. Applications by facsimile or email will not be accepted.

desert research institute
university and community college system of nevada

Executive Director
Division of Atmospheric Sciences

DRI is seeking applications and nominations for the position of Executive Director of the Division of Atmospheric Sciences (DAS). Candidates must have a broad understanding of atmospheric and environmental sciences with an international reputation in leadership and research; Doctoral degree in atmospheric science or closely related field is preferred. Strong organizational and interpersonal skills are required to lead a dynamic division of 75 faculty and support staff including 35 Ph.D. scientists with an annual budget over $7 million. DAS conducts basic and applied research in atmospheric science and air quality, and directs the graduate program at University of Nevada-Reno. The Director will report to the DRI President, and work at our new office and laboratory facility in Reno.

The review of applications will begin on November 15, 2000, and will continue until the position is filled. For more information about the position, DAS and DRI visit **http://www.dri.edu.** For full consideration, refer to Position #20-001 in a letter of interest and enclose current curriculum vitae, a copy of your highest degree, and contact information for three references.

Human Resources
Desert Research Institute
2215 Raggio Parkway
Reno, NV 89512

DRI is an AA/EEO employer that hires only U.S. citizens and those authorized to work in the U.S.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Invites applications for an **ASSISTANT PROFESSOR** in the Division of Bone Marrow Transplantation at Stanford University Medical Center. This position is in the University tenure track. The candidate should have an M.D. or M.D./Ph.D. and be Board-certified or Board-eligible in internal medicine and hematology or oncology. The candidate should have an outstanding record of accomplishment and evidence of extramural grant support in laboratory research relevant to stem cell biology, transplantation biology, tumor immunology, or gene therapy. The candidate must be eligible for federally funded research support and be willing to participate in the clinical activities of the Division. Collaborations with colleagues in related disciplines, including the potential for multidisciplinary interactions through the new BioX initiative at Stanford, are important aspects of this position. Please send curriculum vitae and names and addresses of three potential references to:

Robert S. Negrin, M.D.
Director, Division of Bone Marrow Transplantation
Stanford University Medical Center
300 Pasteur Drive, Room H–1353
Stanford, CA 94305-5623
Telephone: 650-723-0822
FAX: 650-725-8950
E-mail: negrs@lelandstanford.edu

Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.

FOREST GENETICIST and Leader, Pacific Northwest Tree Improvement Research Cooperative (PNWTIRC), Department of Forest Science, Oregon State University, Corvallis. The Department of Forest Science (**website: http://www.cof.orst.edu/cof/fs/**) seeks an **ASSISTANT PROFESSOR** to fill a 12-month, tenure-track position conducting research on the breeding, conservation, and management of genetic resources of forest trees in the Pacific Northwestern United States. Ph.D. in plant genetics or breeding or a closely related field is required. Medical, dental, and life insurance group plans are available. A complete job description can be found at **website: http://www.cof.orst.edu/cof/fs/employ/002-924.htm.** For full consideration, send letter of interest describing qualifications and interest in position; complete curriculum vitae; copies of transcripts of university coursework; and the names, telephone numbers, and street and e-mail addresses of four references familiar with your qualifications by December 15, 2000 (applications will be accepted until position is filled). Mail to: **Forest Geneticist Search Committee, c/o Sandy Lewis, Department of Forest Science, 321 Richardson Hall, Oregon State University, Corvallis, OR 97331-5752.** For additional information, call: **Professor Steve Strauss; Telephone: 541-737-6578; e-mail: Steve.Strauss@orst.edu.** *Oregon State University is an Affirmative Action/Equal Opportunity Employer and has a policy of being responsive to the needs of dual-career couples.*

POSTDOCTORAL POSITIONS CELL CYCLE REGULATION NUCLEAR POSITIONING

Positions are available to investigate cell cycle regulation and nuclear positioning using *Aspergillus nidulans* and mammalian cells. For recent publications, see *EMBO J.* **18**:6994–7001, 1999; *Cell* **102**:293–302, 2000.

Experience in molecular genetics and biochemistry is an advantage but a strong publication record is most important. Send curriculum vitae, short summary of research accomplishments, and contact information of three references to:

Dr. Stephen A. Osmani
Ohio Eminent Scholar
Department of Molecular Genetics
The Ohio State University
484 West 12th Avenue
Columbus, OH 43210
E-mail: osmani.2@osu.edu

POSITIONS OPEN

DEPARTMENT CHAIR OF MARINE SCIENCE

Coastal Carolina University is a public, predominately undergraduate liberal arts institution located approximately 10 miles from Myrtle Beach, South Carolina, and enrolls more than 4,500 students from 43 states and 27 nations. The Department of Marine Science, part of the College of Natural and Applied Sciences, is seeking a Department Chair with a preferred start date of July 1, 2001. The successful candidate will be a teacher-scholar interested in continuing and enhancing an outstanding record in teaching, mentoring, and research. Competitive candidates will have administrative experience involving supervisory and fiduciary responsibilities, a strong record of marine-related research involving students, and a history of teaching excellence including curriculum development and in assisting the development of a graduate program.

Each applicant should submit a letter of application, curriculum vitae, statement of teaching and research interests, and names and addresses of five references to: **Dr. Val Dunham, Dean, College of Natural and Applied Sciences, Coastal Carolina University, P.O. Box 261954, Conway, SC 29528-6054.** Additional information about the University and the Department can be accessed at **websites: http://kingfish.coastal.edu/chair; http://coastal.edu** and **http://coastal.edu/pages/news/mission.htm.** Deadline for initial consideration is December 15, 2000, and will continue until position is filled. *Coastal Carolina University is an Equal Opportunity/Affirmative Action Employer.*

BIOCHEMISTRY FACULTY POSITION UNIVERSITY OF UTAH

The Department of Biology at the University of Utah seeks applicants for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level in the general area of biochemistry. We hope to appoint an individual who can contribute to both the research and teaching activities of a department with unusually broad interests ranging from biochemistry to ecology. Research areas of interest for this appointment include but are not limited to macromolecular structure and dynamics, enzymology, signal transduction, metabolism, biophysical chemistry, and membrane biochemistry. The new faculty will contribute to teaching biochemistry at both the undergraduate and graduate levels, including participation in new undergraduate courses being developed in conjunction with the Department of Chemistry. Please submit curriculum vitae, descriptions of research interests and teaching interests, and three letters of reference to: **Biochemistry Search Committee, Department of Biology, University of Utah, 257 South 1400 East, Salt Lake City, UT 84112-0840.** Review of applications will begin January 16, 2001. *The University of Utah is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minorities and provides reasonable accommodation to the known disabilities of applicants and employees.*

ANIMAL PHYSIOLOGIST: The Department of Biology invites applications for a 10-month tenure-track **ASSISTANT PROFESSORSHIP** to begin fall 2001. Candidates should be committed to excellence in research and teaching at the introductory and advanced levels. Applicants will be expected to teach a physiology course in the introductory biology core sequence and to offer an upper-division course in their area of expertise. The candidate will also be expected to participate in courses for Allied Health Science students. The successful candidate will be expected to develop an active research program that involves Master's and undergraduate students. Ph.D. required; postdoctoral/teaching experience a plus. Submit curriculum vitae, reprints, statement of research interests, and three letters of recommendation to: **Dr. Elliott J. Blumenthal, Chair, Animal Physiology Search Committee, Department of Biology, Indiana University–Purdue University Fort Wayne, Fort Wayne, IN 46805-1499** by December 15, 2000. **E-mail: blumenth@ipfw.edu; website: http://www.ipfw.edu.** *An Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

GENETIC TOXICOLOGIST

The Border Biomedical Research Center (BBRC) and Department of Biological Sciences at the University of Texas at El Paso seek a tenure-track **ASSISTANT** or **ASSOCIATE PROFESSOR** with research interests in genetic toxicology. This position continues expansion of this focus area. The BBRC and Doctoral program in pathobiology are particularly interested in researchers with expertise in epigenetic changes in DNA which result in disease, especially those that may result from xenobiotics found along the border region. The BBRC and Department maintain NIH-supported core facilities each for molecular biology, analytical chemistry, analytical cytology, tissue culture, and DNA sequencing. Small animal and aquatic facilities are available. Additional research support in the form of start-up funds is competitive, as is salary. Teaching responsibilities include courses relevant to the pathobiology program alternating with undergraduate courses in the candidate's area of expertise. The candidate may also choose to participate in the Doctoral program in environmental sciences and engineering as well as initiatives in bioinformatics and structural biology. A terminal degree and postdoctoral experience are required. Applicants should send curriculum vitae, statement of research goals, and contact information for three references to: **Dr. Pablo Arenaz, University of Texas at El Paso, Department of Biological Sciences, El Paso, TX 79968-0519.** *The University does not discriminate on the basis of race, color, national origin, sex, religion, age, disability, or sexual orientation in employment or the provision of services.*

GENETICS

The Department of Zoology is seeking to fill a tenure-track **ASSISTANT PROFESSOR** position in the area of eukaryotic genetics. The successful applicant will be expected to maintain an active research program, seek extramual funding, supervise student research, and participate in teaching graduate and undergraduate courses. The Department has state-of-the-art facilities for using molecular, cellular, and whole organism techniques and offers competitive start-up funds. The Department has 35 faculty, over 50 Ph.D./M.S. students, and approximately 1,000 majors (**website: http://zoology.muohio.edu/**). Miami University (enrollment 21,000) is rated nationally as a highly selective public university. Send letter of application, curriculum vitae, statement of teaching and research interests, and three letters of recommendation to: **Dr. Douglas Meikle, Chair, Department of Zoology, Miami University, Oxford, OH 45056. Telephone: 513-529-3100; e-mail: meikled@muohio.edu** for more information. Review of applications will begin on 1 December 2000 and continue until the position is filled. *Miami University offers Equal Opportunity in Employment and Education.*

PHYSIOLOGY FACULTY POSITION: A full-time position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level is available in the Department of Physiology of the College of Medical Sciences at Nova Southeastern University. Responsibilities include participation in team-taught courses to health professions students. The position requires a Ph.D. in physiology or an M.D. Individuals with teaching experience at the medical school level will be given special consideration. Although primarily a teaching position, opportunities for research do exist. Salaries are competitive and dependent upon qualifications. Fringe benefits are generous. The College of Medical Sciences is located in the new Health Professions Division facility on the Ft. Lauderdale campus. Position available immediately. Please send/FAX or e-mail a letter of interest; curriculum vitae; copies of graduate transcripts; and the names, addresses, and telephone numbers of three professional references to: **Position Number 998767, Nova Southeastern University, Office of Human Resources, 3301 College Avenue, Fort Lauderdale, FL 33314. FAX: 954-262-3813; e-mail (in MS Word or Word/Note Pad format): nsujobs@nova.edu.** Visit our **website: www.nova.edu.** *Affirmative Action/Equal Opportunity Employer.*

Technology Transfer Coordinator

The Beltsville Area, Agricultural Research Service, United States Department of Agriculture, invites applications for a Technology Transfer Coordinator whose primary responsibility is to plan, conduct, administer, coordinate, and evaluate overall activities necessary to effect optimum transfer of research to private sector and to State and Federal regulatory agencies for adaptation, development, commercialization, and implementation to accomplish USDA missions and goals. Participates in planning of research programs to bring attention to technology needs of industry, to overcome technical barriers of technology utilization, and to enhance adoption and utilization of research results. The Beltsville Area includes more than 300 Ph.D. scientists doing research in every area of plant and animal science, natural resources, food safety, and human nutrition. Position requires knowledge of scientific disciplines relating to agricultural research sufficient to understand the significance of research results, their potential for market application, and their relationship to the current technological base of industry. Provides leadership in managing patenting, licensing, development of Cooperative Research and Development Agreements (CRADA's), and other technology transfer and intellectual property activities.

For the complete vacancy announcement (ARS-X1E-1040) and application instructions, see **www.ars.usda.gov**. Applications must be postmarked by November 3, 2000. For technical information about the position, call **Dr. Phyllis E. Johnson (301) 504-6078 or email johnsonp@ba.ars.usda.gov.** *USDA is an equal opportunity provider and employer.*

THE COLLEGE OF NEW JERSEY

Biology Department ~ Faculty Positions

The College of New Jersey is located in the greater Princeton area, where numerous opportunities exist to interface with academic institutions and with local pharmaceutical and biotechnology companies. In addition, the Biology Department, housed in a newly constructed building with excellent facilities for teaching and research, prepares students for graduate and professional programs. The Department of Biology invites applications for two tenure-track appointments at the Assistant Professor level.

EUKARYOTIC CELL BIOLOGIST - The successful candidate will be a eukaryotic cell biologist with training in molecular biology, who will participate in the teaching of the Cellular and Molecular Biology course and offer a junior/senior level course in eukaryotic cell biology. Applicants should hold a Ph.D. and demonstrate a strong aptitude for teaching. Post-doctoral experience is required. Establishment of a productive research program in eukaryotic molecular cell biology is expected, as is a desire and capability to consistently involve undergraduates in research. Contact: Dr. Marcia O'Connell, Chair, Eukaryotic Cell Biologist Search Committee. Telephone: 609-771-2879; Fax: 609-637-5118. For inquiries only, e-mail: www.moconnel@tcnj.edu.

ANIMAL PHYSIOLOGIST - The successful candidate will be a broadly-trained Physiologist who will develop and teach a junior/senior level course that examines the physiological function of animals from the molecular to the organ system level. Applicants should hold a Ph.D. and demonstrate a strong aptitude for teaching. A productive research program in any area of animal physiology is expected. A desire and capability to consistently involve undergraduates in physiological research is required. Active participation in the revision and teaching of the introductory biology sequence is expected. The appointee will not participate in the teaching of a human anatomy and physiology course. Contact: Dr. Howard K. Reinert, Chair, Physiologist Search Committee. Telephone: 609-771-2474; Fax: 609-637-5118.

Applicants should send hard copies of their curriculum vitae, transcripts, statement of teaching interests, general description of the content and coverage of the junior/senior level course they would develop, statement of research interests (that includes how undergraduates would be involved in future research), representative publications, and three letters of recommendation by December 15th, 2000 to the name of the contact listed above to: Department of Biology, The College of New Jersey, P.O. Box 7718, Ewing, NJ 08628-0718. To enrich education through diversity, The College of New Jersey is an Affirmative Action/Equal Opportunity Employer.

THE COLLEGE OF NEW JERSEY

Director

Community Based Research and Outreach Program
Office of Research on Minority Health, Office of the Director
National Institutes of Health

The incumbent serves as the Director of the Office of Community Based Research and Outreach. S/he is responsible for providing leadership:

- In development and conduct of research programs to eliminate the disparities in the health status of racial and ethnic minority populations and the medically underserved;
- In promoting the growth and quality of research at the NIH into health disparity and minority health by identifying gaps in research and by devising innovative mechanisms for trans-NIH and community cooperation;
- In identifying high-priority health disparities among the states and different regions of the country;
- In the development of initiatives that are culturally relevant to different populations to improve the communication of research findings to high-risk populations and increase their participation in research studies;
- In the development and establishment of mechanisms for key stakeholders and other organizations and individuals interested in health disparities to communicate their needs and concerns to the NIH;
- In the development and implementation of a community-based research program at the National Institutes of Health with a focus on disease prevention, implementation of health messages in relevant racial and ethnic minority and disadvantaged communities, elucidating beliefs about health and illness and potential barriers to effective health care, etc.

Applicants must have a Ph.D. or M.D. degree and also must have a demonstrated broad scientific knowledge; leadership in leading an organization and knowledge of NIH award mechanisms and extramural research policies. Total salary is competitive and will be commensurate with the experience of the selectee. Please submit current curriculum vitae to the attention of: **Mr. Dave Conboy, OD Personnel Office, Building 2, Room 1W15C, 2 Center Drive, Bethesda, MD 20892, Maildrop # 0210, Phone: (301) 594-8257, Fax: (301) 402-1368.** Applications must be postmarked by October 27, 2000, and received by the close of business October 31, 2000.

NIH is an equal opportunity employer.

Facility Director
Molecular and Cellular Therapeutics
University of Minnesota Academic Health Center

The Academic Health Center (AHC) of the University of Minnesota is seeking to fill the position of Director for its Molecular and Cellular Therapeutics Facility. The Director will be responsible for: 1) All operational aspects of the University's 45,000 sq.ft. clinical biologicals production facility; 2) Oversight of quality assurance for all clinical trial materials produced in the facility; 3) Oversight of all internal and external contacts for the production of biologicals under FDA cGMP regulations; 4) Supervision of facility personnel and program budget; and 5) Tracking and compliance of all IND/IDEs filed by AHC researchers. In addition, the Director will work closely with AHC faculty in the development of documentation and appropriate release testing for a variety of biological products to include gene therapy vectors, cancer immunotherapy, xenotransplantation, and islet transplantation.

Candidates must have a B.S. or M.S. degree in the biological sciences, and at least 5 years experience in the field of biotechnology with a broad perspective on all aspects of clinical production to include an understanding of the issues of process development, Quality Control, and Quality Assurance as they relate to biological materials intended for use in clinical trials. Experience working with the FDA on IND applications and experience with FDA audits and audit responses will also be important considerations.

To be considered, please send a letter of application and resume/curriculum vitae to the **Chair, Search Committee, c/o Cathy Muchow, University of Minnesota Academic Health Center, 420 Delaware Street SE, Mayo Mail Code 501, Minneapolis, MN 55455-0342 by Dec. 1, 2000.** Additional information may be obtained at **612-625-3655 or by e-mail at rso@tc.umn.edu.**

The University of Minnesota is an equal opportunity educator and employer.

ISLAND BIOLOGY: GLASER DISTINGUISHED VISITING PROFESSORSHIP in Biological Sciences

Applications are solicited from distinguished Scientists interested in visiting the Department of Biological Sciences at Florida International University (FIU), the Florida State University at Miami. For the 2001 Glaser Visiting Professorship, we are specifically interested in Scientists with expertise in the area of island biology. The Glaser Professor will offer a short course (10 lectures over a two-week period during the spring 2001 semester), give a departmental seminar, and interact with faculty and students. Remuneration is $8,000 for travel, lodging, and honorarium. FIU is a growing, dynamic public university with 30,000 students. The Department of Biological Sciences has 36 faculty and 110 graduate students (M.S. and Ph.D.). Application must include letter of intent, brief course outline, résumé, and reprints of relevant publications before 15 November 2000 to: **Dr. Lidia Kos, Glaser Committee Chair, Department of Biological Sciences, Florida International University, Miami, FL 33199**. *FIU is an Affirmative Action/Equal Opportunity/Equal Access Employer. Women and minorities are especially encouraged to apply.*

TWO FACULTY POSITIONS ECOLOGY/CONSERVATION BIOLOGY AND MARINE BIOLOGY

The ecology and evolution group of the Department of Biological Science at Florida State University invites applications for two tenure-track positions, one in **ECOLOGY AND/OR CONSERVATION BIOLOGY** and a second in **MARINE BIOLOGY**. We welcome applications from excellent candidates of any rank. Successful candidates will establish independent research programs and contribute to undergraduate and graduate teaching. Applicants should send curriculum vitae, description of research interests and goals, statement of teaching interests, and selected reprints. Applicants should also provide names and contact information for three references and arrange to have letters of recommendation sent to the Search Committee. All application materials must be received by January 1, 2001, and should be submitted to: **Ecology and Marine Biology Search Committee, Department of Biological Science, Florida State University, Tallahassee, FL 32306-1100**. For more information, see **website: http://www.bio.fsu.edu** or **search3@bio.fsu.edu**. *Florida State University is an Equal Opportunity/Affirmative Action Employer committed to diversity in hiring and is a Public Records Agency.*

Biology/science education **ASSISTANT PROFESSOR**; tenure track. Ph.D. or Ed.D. with graduate courses in biology. Teach introductory biology, general education, and M.S. courses in biology science education. Contribute to development of a Doctoral program in science education for K–12 teachers. Pursue research/scholarship/grants. Experience in supervising science education research preferred. Applicants should submit curriculum vitae, summary of research interests, statement of philosophy of teaching, and the names of three references to: **Dr. Bonnie Lustigman, Chair, Biology Department, Montclair State University, Upper Montclair, NJ 07043**. Subject to available funding. Screening begins immediately and continues until position is filled. *Montclair State University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE in radiation medicine position available at Georgetown University School of Medicine. Qualifications: M.D./Ph.D. degree, experience in imaging DNA with atomic force microscopy (two years minimum), familiarity with radiation biology and molecular techniques. Send curriculum vitae and names of three professional references to: **Anatoly Dritschilo, M.D., Department of Radiation Medicine, Division of Radiation Research, Georgetown University School of Medicine, 3970 Reservoir Road, N.W., E202B, The Research Building, Washington, DC 20007**. *Georgetown University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

CELLULAR AND MOLECULAR BIOLOGIST

The Department of Biological Sciences at Wichita State University invites applications for a tenure-track faculty position with the rank of **ASSISTANT PROFESSOR**. Applicants must have strong molecular and cellular biology skills; an earned Doctorate; a strong record of scholarly achievement, including publications; skills and enthusiasm for teaching at both the undergraduate and graduate level; capability of conducting independently directed research activities; good communication skills (oral and written); and successful experience with diverse populations. Generous laboratory space is available and start-up funds will be provided.

The deadline for receipt of applications is November 10, 2000. To apply, send a letter of interest, curriculum vitae, a statement of research goals (including plans for obtaining extramural research funding), a statement of teaching philosophy and interests, and contact information for three references to: **Faculty Search Committee, Department of Biological Sciences, Wichita State University, 1845 Fairmount, Box Number 26, Wichita, KS 67260-0026**. *Wichita State University is an Affirmative Action/Equal Opportunity Employer.*

INVERTEBRATE BIOLOGIST: tenure-track **ASSISTANT PROFESSOR** position beginning August 2001. Research area open but special consideration given to individuals working in biomonitoring or with organisms economically important in agroecosystems. The individual may teach courses in animal diversity, invertebrate biology, biostatistics, and an upper-level/graduate course in area of specialty. The successful candidate must have strong commitment to undergraduate education and will be expected to establish a research program involving undergraduate and M.S. students. Applications should include curriculum vitae, copies of transcripts and reprints, three letters of reference, and statements of teaching and research interest. Review of all materials will begin December 15, 2000, and will continue until filled. Send materials to: **Dr. Paul Switzer, Department of Biological Sciences, Eastern Illinois University, 600 Lincoln Avenue, Charleston, IL 61920**. For more details contact **Search Chair**; **e-mail: cfpvs@eiu.edu** or visit **website: www.eiu.edu/~biology**. *Eastern Illinois University is an Equal Opportunity/Equal Access/Affirmative Action Employer committed to achieving a diverse community.*

Evolutionary Biologist, **ASSISTANT PROFESSOR**, tenure-track position beginning August 2001. We seek an individual who applies molecular techniques to the study of vertebrate evolution to teach comparative vertebrate anatomy, an upper-division course in evolution, and several sections of an innovative, interdisciplinary core course in the natural sciences. Ph.D. required; ability to supervise research of undergraduate biochemistry and biology majors important. Teaching experience very desirable. Submit letter of application; curriculum vitae; unofficial transcripts; and names, telephone numbers, and e-mail addresses of three or more references to: **James P. White, Dean of the School of Arts and Sciences, St. Bonaventure University, St. Bonaventure, NY 14778**. Review of applications will begin November 20, 2000. *St. Bonaventure University provides Equal Opportunity in Employment without regard to race, creed, color, gender, age, national or ethnic origin, marital status, veteran status, or disability.*

The General Libraries of Emory University currently have openings for the positions of **SCIENCES COORDINATOR** and **SCIENCE LIBRARIAN**. The Sciences Coordinator provides leadership for the development and management of science information resources as a whole and serves as the primary selector/liaison for one or more science subjects. The Science Librarian serves as a selector/liaison for one or more science subjects, provides general reference services, and provides instruction in all science disciplines. Please see our **website: http://info.library.emory.edu/jobs/** for complete position announcements, instructions on how to apply, and additional information.

POSITIONS OPEN

FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology at The University of Texas Southwestern Medical Center seeks applications for a tenure-track position at the level of **ASSISTANT PROFESSOR**. Competitive applicants must have a relevant Ph.D. or M.D. degree, postdoctoral training, and show evidence of firm commitment to a career in independent research.

We are particularly interested in strong candidates with an appropriate background who wish to apply techniques of molecular or cellular biology, biochemistry, or physiology to fundamental problems of pharmacological interest. A superb start-up package and excellent research facilities are available. Responsibilities will also include teaching of medical and/or graduate students after the first year of employment.

Send curriculum vitae and a brief description of proposed research to:

Dr. Alfred G. Gilman, Chairman
Department of Pharmacology/Recruitment
The University of Texas
Southwestern Medical Center
5323 Harry Hines Boulevard
Dallas, TX 75390-9041

An Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATE/ASSISTANT positions open. Boehringer Ingelheim has an open Research Associate position responsible for the development of innovative metered dose inhaler products, both preformulation and formulation. Design and execution of experiments to optimize formulation stability and develop compatible packaging components. Evaluation of experimental results and technical report writing. Must have an M.S. in pharmaceutics or physical chemistry with knowledge of colloid/surface science, polymer science, and solution kinetics as well as demonstrated skill using HPLC in pharmaceuticals setting (Job Code AD-GCD/GC02).

Senior Research Assistant position is in the Chemical Development Department and responsible for the investigation of new synthetic routes aimed at large-scale production of novel pharmaceuticals. Must have a Master's degree in chemistry with knowledge of organic synthesis, mechanistic organic chemistry, and multistep organic synthesis. Also requires demonstrated skills in chromatographic and spectroscopic techniques, FT-NMR, FT-IR, UV-VIS, HPLC, GC-MS and EM, SOP compliance, separation, purification, and product characterization (Job Code AD-GCD/GC01).

Applicants send résumé to: **BI Staffing Center, P.O. Box 534, Waltham, MA 02454-0534. E-mail: BIPI@BI-Careers.com**. All résumés must include the appropriate Job Code.

JUNIOR FACULTY POSITIONS UNIVERSITY OF CALIFORNIA, IRVINE

As a part of the expansion of medical genomics at the University of California, Irvine, the Department of Biological Chemistry in the College of Medicine invites applications for a state-funded faculty position at the **ASSISTANT PROFESSOR** level. Applicants should hold the Ph.D. or Ph.D./M.D. degree and have an outstanding record in biomedical research. Preference will be given to candidates using innovative approaches in vertebrate model or human systems to address fundamental molecular problems in the areas of development and disease. The individual is expected to establish and maintain an independent research program of high caliber and participate in the training of graduate and medical students. Curriculum vitae, brief research description, representative publications, statement of teaching interests, and three letters of reference should be submitted prior to December 15, 2000, to: **Department of Biological Chemistry Search Committee, Department of Biological Chemistry, College of Medicine, D240 Medical Science I, University of California, Irvine, CA 92697-1700**. E-mail applications will not be accepted. *The University of California, Irvine, is an Equal Opportunity Employer.*

2001:02

fellowships

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

AAAS Science + Technology Policy Fellowships 2001:02 >>>

What >>> Help shape science and technology policy in Washington, DC: Contribute scientific and technical information and external perspectives to federal decision-making, while learning how government works. The AAAS fellowship programs provide a unique participatory public policy experience for scientists and engineers, through one-year assignments involving domestic and international science policy issues in the Congress and several executive branch agencies. Stipends typically range from $48,000 to $52,000.

Who >>> Applicants must have a Ph.D. or equivalent doctoral-level degree in any physical, biological or social science, any field of engineering, or any relevant interdisciplinary field. Engineers with master's degrees and three years of post-degree experience also may apply. U.S. citizenship is required. Federal employees are not eligible. Approximately 50 fellowships are awarded each year in nine different programs.

When >>> The fellowship year begins September 1, 2001. Fellows attend a two-week orientation before beginning their assignments and participate in a year-long seminar series on topics relevant to science, technology, and public policy. **Application deadline is January 10, 2001.**

Where >>> Fellows are placed in the Congress, the National Science Foundation, the National Institutes of Health, the Department of State, the Department of Defense, the Agency for International Development, the Environmental Protection Agency, the Department of Agriculture, the Food and Drug Administration, the Department of Justice, and other federal offices.

Why >>> AAAS sponsors these programs to provide the opportunity for accomplished and societally-aware scientists and engineers to participate in and contribute to the public policy-making process of the federal government. The programs include:

+ Congressional Fellows
+ AAAS/NIH Science Policy Fellows
+ AAAS/NSF Science and Engineering Fellows
+ Diplomacy Fellows
+ Defense Policy Fellows
+ Science, Justice, and Public Policy Fellows
+ Environmental Fellows
+ Risk Policy Fellows
+ Roger Revelle Fellows in Global Stewardship

How >>> For application instructions and further information: **fellowships.aaas.org**. AAAS Science and Technology Policy Fellowship Programs, 1200 New York Avenue, NW, Washington, DC 20005 • *Phone* 202/326-6700 • *E-mail* science_policy@aaas.org
Underrepresented minorities and persons with disabilities are encouraged to apply.

fellowships.aaas.org

AAAS

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INVERTEBRATE ZOOLOGIST
EUKARYOTIC GENETICIST
ROWAN UNIVERSITY

The Department of Biological Sciences of Rowan University announces openings for two **TENURE-TRACK POSITIONS**. (1) Invertebrate Zoologist: The successful candidate will have an active research program in some field of invertebrate zoology. A background in marine biology is desirable. Teaching responsibilities include invertebrate zoology, introductory biology, and possibly marine biology. (2) Eukaryotic Geneticist: The successful candidate will have an active research program in eukaryotic genetics, cytogenetics, molecular genetics, and/or molecular biology. Teaching responsibilities will include genetics, human genetics, and introductory biology. Applicants for either position should have completed Doctoral work in the appropriate field, must have demonstrated the ability to conduct independent research, and should possess a strong interest in and commitment to undergraduate education including involving undergraduates in research. To apply, submit curriculum vitae; statement on research experience and plans; statement on teaching; names, addresses, and e-mail addresses of three references; and copies of graduate transcripts to: **Dr. Andrew Prieto, Chair, Department of Biological Sciences, Rowan University, 201 Mullica Hill Road, Glassboro, NJ 08028-1701**. Applications must be received by November 15, 2000. For more information on these positions and the Department, go to **website: http://www.rowan.edu/mars/depts/biology/biohome.htm**.

ASSOCIATE SCIENTIST
Laurence H. Baker Center for Bioinformatics and Biological Statistics
Iowa State University
Ames, Iowa

The Associate Scientist provides bioinformatics support to faculty working with large amounts of DNA sequence data to mine biological information from the data. The individual consults with and trains faculty and students in the use of bioinformatics software and the computer equipment on which the software resides. The Associate Scientist helps to hire and manage a team of analysts to meet the needs of the bioinformatics community.

Ph.D. degree and two years of experience in a computational or biological science or M.S. degree and five years of experience in computational or biological science is required.

Applicants should send curriculum vitae and names, addresses, and telephone numbers of three references to: **Dr. Hal Stern, Interim Director, Laurence H. Baker Center for Bioinformatics and Biological Statistics, 102F Snedecor Hall, Iowa State University, Ames, IA 50011-1210. E-mail: hstern@iastate.edu.** To guarantee consideration, application must be received by December 1, 2000.

Iowa State University is an Equal Opportunity/Affirmative Action Employer.

SCIENTIST: 2000-65
MOLECULAR BIOLOGIST

Corixa Corporation is a leading-edge biotechnology company dedicated to the discovery of vaccines for the treatment of cancer, infectious diseases, and autoimmune diseases. We are seeking a motivated scientific professional to join our Redwood City, California, location. The candidate will be responsible for research scale production of recombinant molecules needed for autoimmune disease and allergy research programs. Requires experience in cDNA cloning, DNA sequencing, RT PCR, prokaryotic and mammalian expression systems, and tissue culture and other common molecular biology techniques. Protein purification experience is preferred but not required. Corixa offers an attractive compensation and benefits package and a progressive work environment. Please apply by November 20, 2000, to: **Corixa Corporation, Attention: 2000-65, 301 Penobscot Drive, Redwood City, CA 94063. FAX: 650-361-8958; website: www.corixa.com**. *Equal Opportunity Employer.*

POSITIONS OPEN

University of Pennsylvania
School of Dental Medicine
ASSISTANT OR ASSOCIATE PROFESSOR OF PATHOLOGY

The Department of Pathology in the School of Dental Medicine, University of Pennsylvania, is seeking two outstanding Scientist(s) for tenure-track faculty positions at either the Assistant or Associate Professor level. The candidate(s) must have a Ph.D. or a combined D.M.D., M.D./Ph.D. degree or equivalent qualifications and postdoctoral training. The successful candidate is expected to develop or have previously established a high-quality, independent research program in cellular and molecular pathogenesis of disease. Areas of interest include infectious disease and diseases associated with connective tissue, growth and development, and neoplasia. Also of interest are individuals whose research focuses on the relationship between disease, cell cycle abnormalities, and molecular aspects of cell death. The School of Dental Medicine and the University offer opportunities for collaborative research in many areas. The successful candidate will participate in the teaching program of the Department of Pathology which includes teaching of general and oral pathology to dental students. Applicants should send a letter that includes a statement of research interests, curriculum vitae, and bibliography. The candidate should also include a list of three references. The completed application should be sent to:

Dr. Bruce J. Shenker, Chair
Department of Pathology
University of Pennsylvania
School of Dental Medicine
Philadelphia, PA 19104-6002

PENN is an Equal Opportunity/Affirmative Action Employer. Applications are encouraged from qualified females and minorities.

BOTANIST

The Department of Biological Sciences, The University of Southern Mississippi (**website: http://www.biology.usm.edu**), invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level beginning fall 2001. Ph.D. required. The successful candidate must show evidence of ability to develop an externally funded research program, direct M.S. and Ph.D. students, and participate in undergraduate and graduate instruction including taxonomy and local flora. Preference will be given to candidates with special knowledge of Southeastern flora. Send curriculum vitae; statement of teaching and research interests; and names and addresses of three references by November 30, 2000, to: **Dr. Fred Howell, Department of Biological Sciences, The University of Southern Mississippi, Hattiesburg, MS 39406-5018**. *Affirmative Action/Equal Opportunity Employer/ADAI.*

Warren Wilson College. Two-year, temporary positions; require a Ph.D. **BIOLOGY/ENVIRONMENTAL SCIENCE**: a generalist position in biology, environmental studies, and science education. **ENVIRONMENTAL CHEMISTRY**: expertise in environmental applications; preference for expertise in soil science. Submit cover letter, curriculum vitae, official graduate transcripts, evidence of teaching excellence, three letters of reference by December 1, 2000, to: **Dr. Virginia McKinley, VPAA, Warren Wilson College, P.O. Box 9000, Asheville, NC 28815-9000. Website: www.warren-wilson.edu.**

POSITIONS OPEN

TENURE-TRACK ASSISTANT PROFESSOR

The Department of Zoology at Miami University has an opening for a broadly trained **BIOLOGIST** with the expertise to introduce molecular genetic techniques into the introductory courses on its campus in Hamilton, Ohio. The successful applicant will be expected to teach undergraduate courses in zoology, establish and maintain an active research program (specific area of research is open), and actively participate in university and community service. The Hamilton campus is an open-admission commuter campus with an enrollment of 3,100 students, located 16 miles from the main campus in Oxford, Ohio. Faculty on the Hamilton campus are full members of the Department of Zoology, which is composed of 35 faculty, over 50 Ph.D./M.S. students, and approximately 1,000 majors. The successful candidate will have access to state-of-the-art facilities for molecular, cellular, and whole organism research located on the Oxford campus. Send letter of application, curriculum vitae, statement of teaching and research interests, and three letters of recommendation to: **Dr. Ann Rypstra, Department of Zoology, Miami University, Oxford, OH 45056. Telephone: 513-529-3100; e-mail: rypstral@muohio.edu; websites: http://zoology.muohio.edu/** and **http://www.ham.muohio.edu/**. Review of applications will begin on November 27, 2000, and continue until the position is filled. Ph.D. required. Position will begin August 2001.

Miami University offers Equal Opportunity in Employment and Education.

VISITING ASSISTANT PROFESSOR. The Department of Natural Science, Loyola University Chicago, invites applications to fill a nontenure-track position for fall 2001. Applicants must have a Ph.D., a well-defined interest in teaching nonscience majors, a strong commitment to excellence in teaching at the undergraduate level, and an active interest in research or scholarly endeavors in their field. Life science courses currently offered by the Department include botany, ecology, environmental science, evolutionary biology and genetics, human biology, human heredity, human reproduction, and a lecture/laboratory course in microbiology for nursing majors. Send curriculum vitae; statements of teaching and research interests; and names, addresses, telephone numbers, and e-mail addresses of three references by January 15, 2001, to: **Chair Search Committee, Department of Natural Science, Loyola University Chicago, 6525 North Sheridan Road, Chicago, IL 60626**. *Loyola University, Chicago, is an Equal Opportunity Educator and Employer.*

RESEARCHER

Researcher at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level holding M.D. or Ph.D. is sought to join the Department of Physical Medical and Rehabilitation and Harvard Medical School and Spaulding Rehabilitation Hospital. A specific focus on muscle physiology as applied to rehabilitation is required together with a substantial research track record and established independent, extramural grant funding. Candidate should have at least three to five years of experience in human research and a strong commitment to academic medicine. Interested persons should send their curriculum vitae to: **Walter Frontera, M.D., Ph.D., Chairman, Department of Physical Medical and Rehabilitation, Spaulding Rehabilitation Hospital, 125 Nashua Street, Boston, MA 02114**.

POSTDOCTORAL RESEARCH POSITION
Indiana Molecular Biology Institute
Indiana University

New Postdoctoral program affiliated with the Walther Cancer Institute. The program is centered on basic biological mechanisms relevant to cancer research. Position open July 1, 2001. Details online at **website: http://www.bio.indiana.edu/research/imcb/jobs.html; e-mail: freemanr@bio.indiana.edu**.

Equal Opportunity/Affirmative Action Employer.

University of California
Lawrence Livermore National Laboratory
Science in the National Interest

Associate Director for Energy and Environment

Lawrence Livermore National Laboratory, one of the nation's premier applied science laboratories, is seeking an Associate Director to lead its new Energy and Environment Directorate and effect cohesive programs at the intersection of energy, environmental, and national security interests. National demands for energy resources and environmental quality are closely interrelated and linked in a fundamental way to our national security mission. Thrust areas include nuclear materials management; energy, carbon and climate; and environmental risk reduction and remediation. Will identify, develop, advocate, and lead programs that focus on key and enduring national energy and environmental needs; manage a workforce of 400 employees; and develop a strong geo-, atmospheric, and environmental science research base.

The Associate Director will manage and grow a $100M portfolio of programs that include:

- scientific design and engineering of nuclear waste repositories;
- science and technologies to enhance the safety, security and reliability of nuclear power;
- development of new energy technologies that reduce carbon emissions and are environmentally benign;
- application of terascale computing to develop, compare and validate models for global climate;
- application of earth science and hydrology to the nation's most challenging site clean up needs;
- development and application of state-of-the-art environmental measurement technologies, including the Center for Accelerator Mass Spectrometry;
- application of geo-, environmental and atmospheric science to key issues in nonproliferation, stockpile stewardship and defense.

The Associate Director will have a Ph.D. or equivalent training and experience in the physical sciences or engineering, a strong technical background in energy and environmental sciences and technology, senior level management, leadership and advocacy experience over a large-scale, mission-oriented research and development organization, a record of developing and leading innovative programs in energy and environment, experience in strategic and tactical planning and program development, experience building strategic partnerships, and knowledge of energy and environmental policy, planning, and technical activities within the DOE and/or other federal, state, local, and industrial organizations.

US citizenship is required to be considered for this position.

To apply, send a cover letter with your resume to: **adeedsc@llnl.gov**. If mailing send to: Ms. Lori Fong, Recruiting and Employment, Lawrence Livermore National Laboratory, PO Box 5510, L-725, **Dept. AJSCAK000**, Livermore, CA 94551.

We are proud to be an equal opportunity employer with a commitment to workforce diversity.
Review of applicants will begin on November 1, 2000.

For more information about the Energy and Environmental Directorate and this position, visit our web sites at:

http://en-env.llnl.gov **www.llnl.gov/jobs**

Global Opportunities

Staff Scientist/ Postdoctoral Position

Mechanism of Radiation Injury

A staff scientist position and a postdoctoral position are available for highly motivated individuals to study the molecular basis of radiation injury in a well-funded laboratory at the National Institute of Radiological Sciences (NIRS), Japan. Successful candidate will be a self-starter with excellent skill of communication in English and have a strong background in either molecular biology or cell biology. Candidate for the staff scientist must be a Japanese M.D. who is willing to learn the treatment of radiation injury and has at least two years of experience of laboratory research. Candidate for the postdoctoral position must be a Ph.D. or M.D. with at least two years of research experience in molecular or cell biology. Contact:

Makoto Akashi M.D., Ph.D. or
Toshiyasu Hirama M.D., Ph.D.
Division of Radiation Health
National Institute of Radiological Sciences
4-9-1 Anagawa, Inage-ku
Chiba 263-8555, Japan
E-mail: akashi@nirs.go.jp C.C. to hirama@nirs.go.jp
Fax: 81-43-284-1736
Phone: 81-43-206-3122

DEPARTMENT OF GENETICS
CASE WESTERN RESERVE UNIVERSITY

The Department of Genetics and Center for Human Genetics at **Case Western Reserve University** and **University Hospitals of Cleveland** seeks outstanding applicants for several faculty positions.

The Department has strong research programs in human, molecular, and developmental genetics. Over twenty-five basic science and clinical faculty base their research, teaching, and clinical activities in the Department of Genetics. State-of-the-art research laboratories, with research programs in human genetics, molecular genetics, gene expression, developmental genetics, chromosome structure and function, genome evolution and organization, functional genomics and genetic epidemiology, provide an opportunity for collaborative research in all aspects of genetics, in organisms ranging from *Drosophila* and *C. elegans* to mouse and humans.

Computational Genetics and Genomics Faculty Search: One tenure-track appointment at the level of Assistant Professor with expertise in mathematical, quantitative or computational analysis of genetics and genomics.

Genetics Faculty Search: Several tenure-track appointments at the level of Assistant, Associate or Full Professor. We intend to build on strengths in developmental genetics, chromosome structure/function, complex traits, and genetic disease and expand the scope of genetic research in our department.

Applicants should submit a Curriculum Vitae, including a brief statement of current and future research interests, and should arrange for at least three letters of reference.

All materials should indicate the search for which the application is intended and should be addressed to:

Faculty Search
Department of Genetics
Case Western Reserve University
University Hospitals of Cleveland
Biomedical Research Building 7th floor
2109 Adelbert Rd.
Cleveland, OH 44106-4955

Case Western Reserve University is an Equal Opportunity Employer encouraging excellence through diversity. Qualified women and minority candidates are especially encouraged to apply.

POSITIONS OPEN

BIOMEDICAL RESEARCH STAFF POSITIONS MICROARRAY EXPRESSION ANALYSIS

The Life Sciences Division of Ernest Orlando Lawrence Berkeley National Laboratory has immediate openings for two Biomedical Research Staff members, one M.S. and one B.S., in the Research and Development group within the Joint Genome Institute. Individuals will be responsible for development, production, and experimentation of high-density DNA microarrays to study gene expression with the goal of developing the technology for use in a high-throughput environment on a genomewide scale. Successful applicants will be required to assemble, analyze, and report data and propose future experiments. Emphasis will be placed on experiments with applications in functional genomics and proteomics. Please submit one copy of your résumé and two letters of recommendation to: **E.O. Lawrence Berkeley National Laboratory, One Cyclotron Road, Biosciences Human Resource Center, MS Donner, Berkeley, CA 94720**. Please cite Job LS/012722/JS in your cover letter. *Berkeley Laboratory is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS: Two NIH-funded Postdoctoral positions are available to study HIV neuropathogenesis and HIV vaccine design. The first position requires a strong background in molecular biology and the second in cellular immunology. Send curriculum vitae and names of three references to: **Dr. A. Nath, Professor, Department of Neurology, University of Kentucky, KY Clinic L–445, Lexington, KY 40536-0284. E-mail: anath@pop.uky.edu; Telephone: 859-323-6702; FAX: 859-323-5943.** *Affirmative Action/Equal Employment Opportunity Employer.*

A **POSTDOCTORAL POSITION** is immediately available to study the mechanism of action of exciting novel inhibitors of mitosis. Working knowledge in molecular biology and protein biochemistry is essential. Background in using yeast and/or *Xenopus* to study cell cycle is helpful but not absolutely required. Interested candidates should send their curriculum vitae and names of two to three references to: **Jun Liu, Center for Cancer Research, MIT, E17-128D, 40 Ames Street, Cambridge, MA 02139. Telephone: 617-253-5750; FAX: 617-258-6172; e-mail: junliu@mit.edu.**

Harvard Neuroscience **POSTDOCTORAL POSITION.** Multidisciplinary laboratory studying the neural control of sleep in animal models. Methods include microdialysis/HPLC and ELISA, immunohistochemistry, and electrophysiology. Send curriculum vitae, brief description of research experience/interest, names of three references to: **R. E. Strecker, M. Thakkar,** and **R. W. McCarley, Harvard Medical School, Brockton VAMC (151C), 940 Belmont Street, Brockton, MA 02301. E-mail: robert_strecker@hms.harvard.edu; FAX: 508-895-0171.** *Equal Opportunity Employer.*

RESEARCH SCIENTIST positions are available in a biopharmaceutical company. Interested applicants with Ph.D. degree in medicinal chemistry/pharmacology or molecular immunology and experience in drug discovery process are invited to apply. Responsibilities include overall participation in the multidisciplinary projects involving drug discovery and preclinical studies. Please send curriculum vitae with references to: **Dr. A. Young, Lorus Therapeutics Inc., Sunnybrook and Women's College HSC, 2075 Bayview Avenue, Room S115, Toronto, Ontario M4N 3M5 Canada. FAX: 416-488-8099.**

POSITIONS OPEN

MetaPhore Pharmaceuticals, a research-driven pharmaceutical company focusing on the development of novel metal-based strategies for the treatment of human diseases, is seeking qualified Scientists to fill these positions.

NEUROPHARMACOLOGIST: In the areas of pain research we have innovative projects aimed at discovering novel therapeutics for the management of acute and chronic pain.

B.S./M.S. RESEARCH ASSOCIATE: Minimum of two to five years of laboratory experience with *in vivo* models of pain. Molecular and biochemical skills in the relevant area are a bonus.

A **PH.D.-LEVEL SCIENTIST**: This person will play a key role in the design/development/execution of *in vivo* models of pain. Ph.D. in pharmacology with more than three years of postdoctoral experience. State-of-the art research skills (which include molecular and biochemical), knowledge of the literature, strong publication record, and good communication skills required.

Please submit your résumé to: **Ms. D. Schaller, MetaPhore, 1910 Innerbelt Business Center Drive, St. Louis, MO 63114.** Only candidates considered for interviews will receive responses. We offer a competitive compensation package and a comprehensive benefits and retirement package.

An Equal Opportunity Employer.

DEVELOPMENTAL BIOLOGIST POSITION
University of Minnesota, Duluth

The Department of Biology at the University of Minnesota, Duluth (UMD) invites applications for a one-semester (January 16 to May 27, 2001) nontenure-track **INSTRUCTOR/ASSISTANT PROFESSOR** position. Salary and rank will be commensurate with candidate's credentials and experience. The successful applicant will teach an upper-level course in developmental biology with laboratory and participate in a team-taught introductory biology course. The appointment may be extended for up to three additional semesters with the applicant also teaching an upper-level course in cell biology with laboratory and other instructional duties each academic year. The availability of research facilities to continue current research is negotiable.

Qualifications: Terminal degree in the biological sciences with broad academic training and research experience in molecular/cellular approaches used to address fundamental questions concerned with the developmental biology of multicellular animal systems, strong oral and written communication skills, authorship of at least one peer-reviewed paper, and one year of college-level teaching experience (graduate teaching assistantship experience acceptable).

Review of complete applications will begin on October 30, 2000, and will continue until the position is filled. Send letter of application, curriculum vitae, brief statements of teaching experience and research interests, and arrange to have three letters of reference sent to: **Dr. Conrad E. Firling, Chair, Developmental Biologist Search Committee, Department of Biology, University of Minnesota, Duluth, 10 University Drive, Duluth, MN 55812-2496.** See **website: www.d.umn.edu** for information on the University of Minnesota, Duluth, and UMD Department of Biology. *The University of Minnesota is an Equal Opportunity Educator and Employer.*

The University of Wisconsin–Whitewater (UWW) seeks three tenure-track **ASSISTANT PROFESSORS** in biological sciences, one each in molecular biology, aquatic ecology, and invertebrate zoology. UWW is a premier public regional university with an emphasis in undergraduate research. Details at **website: http://facstaff.uww.edu/biology/search00.html.** Deadline: December 1, 2000. Contact: **University of Wisconsin–Whitewater, 800 West Main Street, Whitewater, WI 53190. Telephone: 262-472-1092.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

CHIEF SCIENTIST TO LEAD RESEARCH IN SOLID STATE PHYSICS
RIKEN
(The Institute of Physical and Chemical Research)
Permanent Position

RIKEN invites applications for the position of Chief Scientist to direct a new laboratory for experimental research on solid state physics related to magnetic and transport properties. Individuals with expertise in strongly correlated electron systems and heavy electron systems are encouraged to apply, although excellent candidates in related areas will also be seriously considered. The successful candidate will be responsible for the overall management of the laboratory and research strategy and implementation of research projects, as well as the more general aspects of the Institute's management and research planning activities.

The post is a permanent appointment subject to RIKEN's mandatory retirement age of 60. Terms and conditions of employment shall include a director-level salary and shall be in accordance with RIKEN's procedures for appointing Chief Scientists. The successful applicant will be expected to take up this position from April 1, 2001.

Applicants should submit complete curriculum vitae with a photograph, a list of publications (one copy each of five key publications), a statement detailing research experience, reasons for her/his application, and proposals for research at RIKEN (the total length for these last items should not exceed five pages of regular-sized paper), and the names and addresses of three references. All applications are to be received by January 10, 2001. Further details are available from the address below:

Dr. Maki Kawai
Head of the Chief Scientist Nominating Committee
Surface Chemistry Laboratory
RIKEN
Hirosawa 2-1,
Wako-shi, Saitama 351-0198 Japan
E-mail: maki@postman.riken.go.jp
Website: http://www.riken.go.jp/

RESEARCH ENTOMOLOGIST/ MICROBIOLOGIST

The U.S. Department of Agriculture, Research, Education, and Extension, Agricultural Research Service (ARS), Northern Plains Area, Bee Biology and Systematics Laboratory, is accepting applications for a permanent, full-time Research Entomologist/Microbiologist to provide expertise that will contribute directly to the USDA Alternatives to Methyl Bromide Initiative and the USDA Small Farms Initiative. Specific research objectives are to (1) develop novel approaches for the management of chalkbrood (*Ascosphaera* spp.) in commercial scale populations of the alfalfa leafcutting bee, blue orchard bee, other bee pollinator species; (2) develop chemical and/or biological and cultural (e.g., sanitation) control methods for commercial-scale bee pollinator species; and (3) research the etiology of bee diseases by using culture media and diagnostic kits for isolation, identification, and enumeration of specific microorganisms. *U.S. citizenship* and a Ph.D. or equivalent is desired. Salary commensurate with experience ($50,139 to $91,589). For information on the research program and/or position, contact: **Dr. W. P. Kemp; Telephone: 435-797-2525; e-mail: wkemp@biology.usu.edu.** A copy of the vacancy announcement will be available on the ARS **website: www.ars.usda.gov/afm/hrd/resjobs.** For information on application procedures, contact: **John Watterson; Telephone: 435-797-3071.** Applications in response to this advertisement should be marked ARS–X0W–0342 and should be mailed to: **USDA, ARS, HRD, WOB, 5601 Sunnyside Avenue, Beltsville, MD 20705-5106.** Applications must be postmarked by the closing date of 31 December 2000. *USDA is an Equal Opportunity Provider and Employer.*

European Opportunities

serono
biotech & beyond

The Institute is an affiliate of the Serono Group which has its Executive Headquarters in Geneva and is a leading multinational engaged in research, development and marketing of products in the biotechnology field. The Institute is a state-of-the-art centre of scientific excellence. Its research is directed towards the identification of novel molecular mechanisms underlying disease and the discovery of new drugs. We currently have open positions in our Biotechnology Department:

BIOCHEMICAL PHARMACOLOGIST (ENZYMOLOGIST)

Main Responsibilities:
- Participation in the design and the implementation of high throughput assays as well as the down stream enzymology
- Provide key enzymology experience and insight to a variety of cross-functional project teams

Requirements:
- Ph.D. in Biochemistry, pharmacology or a related discipline,with a strong background in enzymology
- Experience in the design, validation and implementation of enzyme assays for use in the HTS campaigns.

Informal enquiries concerning the position can be directed by e-mail to **alexander.scheer@serono.com.**

TECHNICIAN IN PHARMACOLOGY/ENZYMOLOGY

Main activities:
- Independently establish, validate and robotise enzymatic assays, and run HTS campaigns.
- Computerized data management and results analysis.

Requirements:
- Experienced in HTS screening within the pharmaceutical industry.
- Advanced technician/engineer training, knowledge in cell culture would be a plus.

For more information, please contact Dr Perrin: **dominique.perrin@serono.com**

If you are interested in one of the above positions, please send your curriculum vitae with a list of publications and the name of three referees to the Human Resources Department of the Institute (quoting the advertisement source).

Serono Pharmaceutical Research Institute
Serono International S.A.
14, chemin des Aulx, 1228 Plan-les-Ouates, Geneva, SWITZERLAND
Tel: +41 22 706 96 66 Fax: +41 22 706 69 65 Internet: www.serono.com e-mail:spri.jobs@serono.com

European Opportunities

JOHANNES GUTENBERG-UNIVERSITÄT MAINZ

In a team of toxicologists working on carcinogen metabolism, carcinogenesis and genotoxicity a position (BAT IIa or BAT Ib) is available for a

Research Associate (PhD)

Experience in **synthetic organic chemistry** is required. Not necessary, but an advantage: Experience in synthesis of aromatic molecules, epoxides and their analogs, radiosynthesis, QSAR. Salary according to experience DM 75.000 to 150.000 (US$ 37.500 to 75.000) before taxes per year.

Application with curriculum, publication list and photograph to

Prof. Dr. F. Oesch,
Director of the Institute of Toxicology,
University of Mainz,
Obere Zahlbacher Str. 67,
D-55131 Mainz, Germany.

Global Opportunities

National University of Singapore

Founded 1905

DEPARTMENT OF COMMUNITY, OCCUPATIONAL AND FAMILY MEDICINE RESEARCH FELLOW IN MOLECULAR EPIDEMIOLOGY

National University of Singapore (NUS) invites applications for appointment as **Research Fellow in Molecular Epidemiology** in the Department of Community, Occupational and Family Medicine.

We are looking for outstanding medical graduates with recognised higher academic qualifications or scientists with PhD degrees in the relevant areas of research. Preference will be given to candidates with research experience in molecular epidemiology of chronic diseases such as cancer or cardiovascular disease.

As the National University of Singapore is a comprehensive research university, the Department has established an international track record in research in the areas of environmental health, heavy metal and solvent toxicology, cancer and cardiovascular epidemiology, health service research and HIV/STD control. It also has good laboratory facilities to support Analytical Chemistry, Biochemical and Molecular Biology, Industrial Hygiene and Tissue Culture.

Remuneration will commensurate with qualifications and experience.

Interested parties should submit their applications, supported by a resume, detailed research plan and three letters of reference to:

Head
Department of Community, Occupational and Family Medicine
National University of Singapore
Faculty of Medicine (MD3)
16 Medical Drive
Singapore 117597

Fax: **(65) 779 1489**
E-mail: **cofsec@nus.edu.sg**
Closing date: 10 November 2000

Visit our web-site at **http://www.nus.edu.sg/NUSinfo/Appoint/res-cofm.htm** for links to information on the Department, the University, terms and conditions of service, and the application form.

Only shortlisted candidates will be notified.

MOLECULAR OR CELL BIOLOGIST BONE OR CARTILAGE RESEARCH

The Albert Einstein Healthcare Network invites applications for an **ASSISTANT** or **ASSOCIATE SCIENTIST** in the Department of Orthopaedics in the area of molecular or cell biology related to bone or cartilage research. Basic science teaching to resident staff and supervision of resident research projects are responsibilities of this position. Start-up funds for independent research are available.

The successful applicant must possess a Doctoral degree in an appropriate area and is expected to maintain a competitively funded research program. The candidate may be eligible for a faculty appointment at Thomas Jefferson University, and opportunities are available for a teaching position at LaSalle College.

Applicants should submit their curriculum vitae, bibliography, and a brief description of their funded research activities, and arrange to have three letters of reference sent. Applications will be considered in the order they are received. Please send to:

John A. Handal, M.D.
Chairman, Department of Orthopaedics
Albert Einstein Healthcare Network
5501 Old York Road
Willowcrest Building, Fourth Floor
Philadelphia, PA 19141

Albert Einstein Healthcare Network is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR HEMATOPOIETIC STEM CELL BIOLOGY

The Division of Stem Cell Transplantation and the Department of Radiation Oncology of the University of Pittsburgh Cancer Institute (UPCI) are seeking a Scientist with published expertise and interest in the fields of human and experimental animal hematopoietic stem cell biology to establish an independent laboratory and to collaborate in research projects within the UPCI involving single hematopoietic stem cell (HSC) isolation and expansion; isolation and characterization of multilineage stem cells from nonhematopoietic organs of the adult; HSC molecular biologic responses to ionizing irradiation; and effects of total body irradiation on HSC trafficking, dose responses, DNA repair, and alterations in signal transduction.

Applicants should send a letter of interest and curriculum vitae to: **Andrew Yeager, M.D.,** and **Joel S. Greenberger, M.D., c/o Andrew Yeager, M.D., Professor and Director, Hematopoietic Stem Cell Transplantation Biology Program, University of Pittsburgh Cancer Institute, 200 Lothrop Street, MUH N755.8, Pittsburgh, PA 15213. E-mail: yeager@msx.upmc.edu.**

The University of Pittsburgh Cancer Institute is an Equal Opportunity/Affirmative Action Employer.

ECOLOGIST

Department of Biology and Microbiology, California State University, Los Angeles, will hire a tenure-track **ASSISTANT PROFESSOR** starting fall 2001. Ph.D. required. Preference will be given to candidates who use molecular techniques to address ecological questions at the population, community, or ecosystem levels. Successful applicant is expected to participate in a multidisciplinary program of instruction and research in environmental science, the Center for Environmental Analysis (**website: http://cea-crest.calstatela.edu/**). Teaching duties in lower-division biology and area of specialty. Research start-up funds, laboratory space, and core facilities in DNA sequencing, image processing, and GIS are available. Applicants should submit curriculum vitae, statements of research interests and teaching philosophy, and three letters of recommendation to: **Dr. Robert Desharnais, Department of Biology and Microbiology, California State University, Los Angeles, CA 90032-8201. FAX: 323-343-6451; e-mail: rdeshar@calstatela.edu.** Review of applications will begin 1 December 2000 and will continue until the position is filled. *An Equal Opportunity/Title IX Employer. Reasonable accommodations may be requested.*

POSITIONS OPEN

TWO POSTDOCTORAL RESEARCHERS

New Mexico Institute of Mining and Technology has two Postdoctoral Research positions for an Office of Naval Research-funded project in the Biology Department. Both are a one-year appointment that upon extension of funding may be continued. Position One: Researcher will identify virulence target proteins in pathogenic organisms, design immuno-PCR or aptamer-based methods for high-sensitivity detection of virulence factors, perform routine experiments, develop nonroutine novel technologies, perform data analysis, and prepare manuscripts. Ph.D. required in biochemistry or molecular biology or a closely related field. Knowledge in the following areas required: cell biology, molecular biology, biochemistry. Desired experience in flow cytometry and virology. Position Two: Researcher will develop novel pathogen detection technologies, identify target nucleic acid sequences in pathogenic microorganisms (using techniques of molecular biology and bioinformatics), design and test amplification (PCR and strand displacement amplification) protocols for detecting and identifying viral and bacterial pathogens, and prepare manuscripts. Ph.D. in microbiology, molecular biology, or related field required. Knowledge of pathogenic microbiology and modern molecular techniques is required. All candidates must have the ability to communicate effectively and professionally with project collaborators (at Yale University, B-D Corporation, and two national laboratories); faculty; staff; and students. Salary: $31,470 to $39,166. Send letter, curriculum vitae, transcripts, and names of three references to: **New Mexico Institute of Mining and Technology, 801 Leroy Place, Human, Resources Wells Hall, Socorro, NM 87801**. To apply for Position One, address application to **Box 81B** and for Position Two, address application to **Box 71B**. For information about New Mexico Tech, visit our **website: http://www.nmt.edu/**. E-mail applications NOT accepted. *Affirmative Action/Equal Opportunity Employer.*

Gilead Sciences is an independent biopharmaceutical company that seeks to provide accelerated solutions for patients and the people who care for them. The company discovers, develops, manufactures, and commercializes proprietary therapeutics for challenging infectious diseases (viral, fungal, and bacterial infections) and cancer.

POSTDOCTORAL POSITION

Postdoctoral position at Gilead Sciences offers exciting opportunity in clinical virology. Highly motivated individual will participate in ongoing research in HIV drug resistance. Research involves enzyme kinetic assays using recombinant RT enzymes to analyze mechanisms of drug resistance. Position available immediately, offering very competitive salary and excellent benefits.

The successful candidate will be expected to have a Ph.D. and experience in enzymology, protein purification, virology, and basic molecular biology.

Interested candidates should send a résumé, indicating Job Code SCAF-290, to: **Human Resources, Gilead Sciences, Inc., 333 Lakeside Drive, Foster City, CA 94404. E-mail: careers-fostercity@gilead.com; FAX: 650-522-5800; website: www.gilead.com.** *We are proud to be an Equal Opportunity Employer.*

Tulane University School of Medicine, Department of Medicine, Section of Nephrology is searching for a Ph.D. Scientist with background in cell and molecular biology to become involved in an ongoing funded project involving transport. Modern laboratory with latest equipment and excellent technical assistance provided. Very competitive salary and benefits package including appointment as **RESEARCH ASSISTANT/ASSOCIATE PROFESSOR**. Interested applicants should send curriculum vitae and names, addresses, and telephone numbers of three references to: **Ms. Elise Legrand, 1430 Tulane Avenue, SL12, New Orleans, LA 70112. E-mail: elegran@tulane.edu**. Position will remain open until a qualified candidate is identified. *Affirmative Action/Equal Opportunity Employer. Women and minorities are urged to apply.*

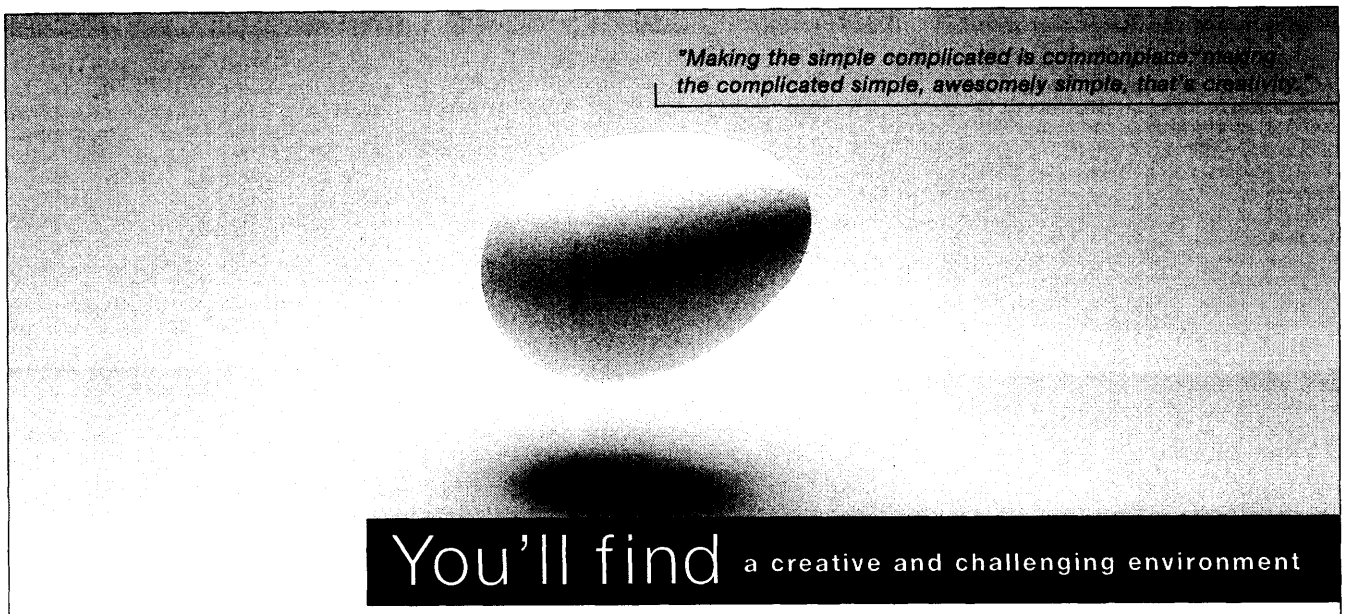
POSITIONS OPEN

Tulane Cancer Center and Tulane University Department of Pharmacology seek a distinguished Scientist as the inaugural appointee to The Joe W. and Dorothy Dorsett Brown Foundation Chair in Molecular Cancer Pharmacology. This exceptionally generous **ENDOWED PROFESSORSHIP** represents a new institutional commitment to the Cancer Center of Excellence at Tulane. Resources committed to the Chair include recently constructed research space, access to extensive core equipment and facilities, and an additional tenure-track faculty line to be recruited by the successful candidate to increase the programmatic focus in molecular pharmacology of cancer. Close interaction with Centers of Excellence in Gene Therapy, Infectious Diseases, Primate Research, and Bioenvironmental Research provide opportunities for exciting collaborations and research program expansion. The Tulane Cancer Center is committed to translational research using the funded GCRC, its Office of Clinical Research, and its Gulf Coast Clinical Research Network. Interested candidates are encouraged to send their curriculum vitae and a letter including the names of three references to: **Roy S. Weiner, M.D., Director, Tulane Cancer Center, 1430 Tulane Avenue, New Orleans, LA 70112. E-mail: rweiner@tulane.edu**. The position will remain open until filled by a qualified candidate. *Affirmative Action/Equal Opportunity Employer.*

The Department of Biology at Valdosta State University announces the availability of a 10-month, tenure-track position at the rank of **ASSISTANT PROFESSOR** in genetics beginning August 1, 2001. Successful candidate will be expected to teach introductory biology courses for majors and nonmajors and an upper-level course in genetics. Candidates with the ability to teach a course in modern developmental biology will be given preference. Position requires a Ph.D. in biological sciences and has the expectation of a continuing research program in the advertised discipline and a strong commitment to undergraduate teaching. Submit letter of application addressing qualifications for this position along with curriculum vitae, statements of teaching philosophy and research interests, transcripts, and three letter of recommendation by 30 November 2000 to: **Genetics Search Committee, Biology Department, Valdosta State University, Valdosta, GA 31698-0015.** *Valdosta State University is an Equal Opportunity Educational Institution.*

The University of Alabama at Birmingham intends to hire a **POSTDOCTORAL FELLOW** to pursue studies funded by the National Cancer Institute using the *E. coli* nucleoside purine phosphorylase gene. Applicants should have training in molecular techniques and in particular aspects of molecular virology necessary to establish and propagate vectors for targeting animal models of human cancer. The Postdoctoral Fellow will work closely with five established senior Scientists in the areas of protein crystallography, nucleoside biochemistry, and new animal models for cancer and human gene therapy. For consideration, please send curriculum vitae and three references to: **Dr. Eric Sorscher, Department of Medicine, MCLM 796, 1530 Third Avenue South, Birmingham, AL 35294-0005. FAX: 205-934-7593; e-mail: sorscher@uab.edu.** *The University of Alabama is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOW in molecular toxicology. The Department of Environmental and Occupational Health, Graduate School of Public Health, University of Pittsburgh, is seeking a Postdoctoral Fellow with experience in molecular biology and/or cell culture to study genetic changes in human cells and in humans. Our current research involves development and application of new technology to study the biochemical mechanisms of environmental carcinogens in human cells. The position is available immediately. Send curriculum vitae and names of references to: **Dr. Phouthone Keohavong, Department of Environmental and Occupational Health, 260 Kappa Drive, RIDC Park, Pittsburgh, PA 15238.** *The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer.*



You'll find a creative and challenging environment

We're looking for

section head of enabling technologies chemistry (ETC)

You will have the responsibility for NMR, analytical & chemical support, and computational chemistry & informatics. We are looking for a person with extensive experience of drug projects, a solid scientific background, and high management skills.

For further information, please contact Jan-Erik Nyström +46 8 553 254 39.

analytical chemist - automation and systems manager

This pivotal function comprises developing, supporting and maintaining the chemistry departments analytical systems. You should have a strong knowledge of analytical chemistry, and a keen interest in instruments and automation.

For further information, please contact Swier Copinga +46 8 553 257 53, or Sven Hellberg +46 8 553 287 91.

analytical chemists - physico-chemical characterisation

We are looking for two analytical chemists to perform analyses of purity, solubility, stability, lipophilicity (logP & logD), and pKa determinations. A suitable background is a BSc/MSc-degree in organic/analytical chemistry.

For further information, please contact Swier Copinga +46 8 553 257 53, or Sven Hellberg +46 8 553 287 91.

computational chemist

As computational chemist you will analyse the relationship between chemical structures and biological activity. We are seeking a person at the PhD-level with good team and communication skills.

For further information, please contact Sven Hellberg +46 8 553 287 91.

analytical chemist - expert in chromatographic separation

The position involves the maintenance of chromatographic equipment, the development of new separation methods, and helping our Chemistry groups with separation problems. We believe you have a PhD or MSc degree and a research background in analytical/organic chemistry. Experience of preparative chromatography is preferable.

For further information, please contact Swier Copinga +46 8 553 257 53, or Sven Hellberg +46 8 553 287 91.

Discovery AstraZeneca R&D Södertälje, located in Sweden, is a fully integrated unit with a staff of more than 250 and with research focusing on the two therapeutic areas CNS and pain Control For further information see: www.astrazeneca.se/areas/ledigajobb

Please send your written application marked either "Section Head - Tech. Chem.", "AC-Auto.Systems Manager", "AC - Physico.Character.", "Computational Chemist", "AC - Exp.Chromo.Sep." no later than November 17 to: hannes.vedin@astrazeneca.com or to AstraZeneca R&D, Human Resources, Hannes Vedin, B:213, S-151 85 Södertälje. Sweden

LEADING INNOVATION IN WORLD HEALTHCARE AstraZeneca

AstraZeneca is one of the world's leading pharmaceutical companies with approximately 50,000 employees. In Sweden, about 10,000 people work for the company in pharmaceutical research, production and marketing.

IGNELL OCH PARTNERS

POSITIONS OPEN

POSTDOCTORAL POSITION

A Postdoctoral position is available immediately in **Dr. Powel Brown's** laboratory at the Breast Center at Baylor College of Medicine. Dr. Brown directs a molecular biology laboratory, which is conducting breast cancer research with an emphasis on investigating gene regulation in normal and malignant breast cells. The ultimate goal of the laboratory is to identify critical signaling pathways that are required for the transformation of normal cells into breast cancer. Potential areas of study include investigation of the role of transcription factors in breast cell transformation, identification of novel genes regulated by critical transcription factors using cDNA microarrays, or targeting signal transduction pathways for the treatment or prevention of breast cancer.

Successful candidates for the Postdoctoral position should possess a recent Ph.D. degree in molecular and cellular biology. Individuals should be highly motivated with experience in molecular and cellular biology. *Candidates should also have U.S. citizenship or permanent resident status.* Send curriculum vitae, letter of research interest, and three references to: **Powel Brown, M.D., Ph.D., Breast Center at Baylor College of Medicine, One Baylor Plaza, MS 600, Houston, TX 77030. E-mail: pbrown@bcm.tmc.edu.**

Baylor College of Medicine is an Equal Opportunity/Equal Access/Affirmative Action Employer.

POSTDOCTORAL RESEARCH POSITION in molecular developmental evolution available to study Hox genes in basal metazoans (placozoa, sponges, cnidarians, and ctenophores). We use comparative studies of *Antp* superclass genes to unravel molecular genetic pathways that have fueled macroevolutionary innovation in early metazoans. Hannover facilities include recently renovated molecular laboratories equipped with state-of-the-art instrumentation and well-established animal culture facilities. The project involves interactions with collaborators at Yale University and some travelling between Yale and Hannover is necessary. The position is funded through the German Science Foundation and available immediately for two years initially (salary is according to BAT IIa; more than 80.000 Deutschmarks per annum). A strong background in molecular biology is required; English is spoken in the laboratory. Please submit curriculum vitae, a brief research biography, and the names and addresses (including e-mail and telephone numbers) of two references. Electronic submission is encouraged. **Bernd Schierwater, Director ITZ, Ecology and Evolution, Tierärztliche Hochschule Hannover, Bünteweg 17d, 30559 Hannover, Germany. E-mail: bernd.schierwater@ecolevol.de.**

POSTDOCTORAL POSITION
BRIGHAM AND WOMEN'S HOSPITAL
HARVARD MEDICAL SCHOOL

Postdoctoral fellowship position available immediately to study *Drosophila* models of human neurodegenerative diseases. Our laboratory investigates the molecular mechanisms of Alzheimer's disease, Parkinson's disease, ALS, and polyglutamine disorders using models we have created in fruit flies (see *Nature* **404:** 394–398, 2000). Please send curriculum vitae and names of three references to: **Mel Feany, M.D., Ph.D., Department of Pathology, Brigham and Women's Hospital, 221 Longwood Avenue, Room 514, Boston, MA 02115. E-mail: mel_feany@hms.harvard.edu.**

POSTDOCTORAL FELLOWSHIP or **JUNIOR FACULTY POSITION** in molecular genetics available immediately for work on identification of genes involved in controlling signal transduction mechanisms in response to mechanical forces. Experience in mouse genetics and linkage analysis is essential. Good publication record and writing skills an advantage. Salary and benefits competitive; possible long-term position. Send résumé, cover letter, and names of three references to: **Ms. C. Farrell, Loma Linda University, P.O. Box 7210, Loma Linda, CA 92354.**

POSITIONS OPEN

POSTDOCTORAL ASSOCIATES
IN COMPUTATIONAL NANOSCIENCE
Center for Engineering Science Advanced Research
Oak Ridge National Laboratory

The Oak Ridge National Laboratory (ORNL) invites applications for Postdoctoral Associates (with potential eligibility for future staff positions) at the Center for Engineering Science Advanced Research (CESAR). The Basic Energy Science Program of DOE's Office of Science provides primary support for CESAR. The Defense Advanced Research Projects Agency (DARPA), the Office of Naval Research (ONR), the Ballistic Missile Defense Organization (BMDO), NASA, and other governmental agencies provide additional funding.

CESAR's mission is to conduct fundamental research at the frontiers of Intelligent Systems science and technology. Activities range from cooperating autonomous robots to computational nanotechnology and quantum information science and technology. CESAR involves participants from six ORNL divisions and 13 universities.

Immediate openings exist for outstanding Ph.D. candidates with background in computational materials science, computational chemistry, and/or computational physics. The focus of the research is to develop and simulate computing architectures based on arrays of nanoparticles (e.g., quantum dots and molecular electronics). Experience with the methods of *ab initio* materials simulation, electron transport, quantum Monte Carlo, and high-performance computing is desired. Work will be conducted as part of CESAR's Computational Nanotechnology group with access to Terascale computing resources within ORNL's Computer Science and Mathematics Division (CSMD). Close interaction with CESAR's Experimental Nanotechnology program is expected.

Expected duration of these positions is two years. Appointments are offered through ORNL Postdoctoral Research Associates Program (**website: http://www.orau.gov/orise/edu/postgrad/ornlpdoc.htm**), which is jointly administered by ORNL's Office of Science Education and Oak Ridge Institute for Science in Education (ORISE) at annual stipend levels of $45,000 to $55,000 depending upon prior experience. Subject to performance and funding availability, a regular staff appointment may be considered. *Some positions may require the ability to obtain and maintain a U.S. Department of Energy security clearance and therefore U.S. citizenship may be required.*

For immediate consideration, send a résumé and list of three or more references to the following address: **Dr. J. Barhen, CESAR Director, Computer Science and Mathematics Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6355. Telephone: 865-574-7131; FAX: 865-574-0405; e-mail: barhenj@ornl.gov.** *The Postdoctoral program is open to all qualified individuals without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.*

WILDLIFE ECOLOGIST

The University of Montana seeks an entry-level **ASSISTANT PROFESSOR** in wildlife ecology with responsibilities in the School of Forestry and the Wildlife Biology program. The applicant should apply innovative teaching and research skills to wildlife habitat relationships at the community or landscape scale.

A Ph.D. is required; postdoctoral education, field research experience, and interactions with resource management agencies are preferred. Screening begins 1 January 2001. Submit curriculum vitae, research and teaching interests, recent publications, transcripts, and three letters of reference (under separate cover) to:

Mark S. Lindberg, Chair
Wildlife Ecologist Search Committee
Wildlife Biology Program, School of Forestry
The University of Montana
Missoula, MT 59812
E-mail: lindberg@forestry.umt.edu

Equal Employment Opportunity/Affirmative Action.

POSITIONS OPEN

POSTDOCTORAL POSITION
YALE UNIVERSITY

Two Postdoctoral positions are available to participate in research on cytokine-mediated inflammation and lymphoid organ development. One position will investigate the role of lymphotoxin/tumor necrosis family numbers in lymphoid organ development using transgenic and knockout technology. Previous experience in molecular biology is essential, and a background in mammalian development is desirable. The second position will investigate tertiary lymphoid organs in cytokine-induced inflammation and autoimmune disease. Previous experience in antigen processing desirable. Salary is commensurate with experience. Send curriculum vitae, a brief description of research experience and interests, and addresses and telephone numbers of three references to: **Nancy H. Ruddle, Ph.D., Professor of Epidemiology and Public Health and Immunobiology, Yale University School of Medicine, P.O. Box 208034, New Haven, CT 06520-8034. E-mail: nancy.ruddle@yale.edu.**

POSTDOCTORAL

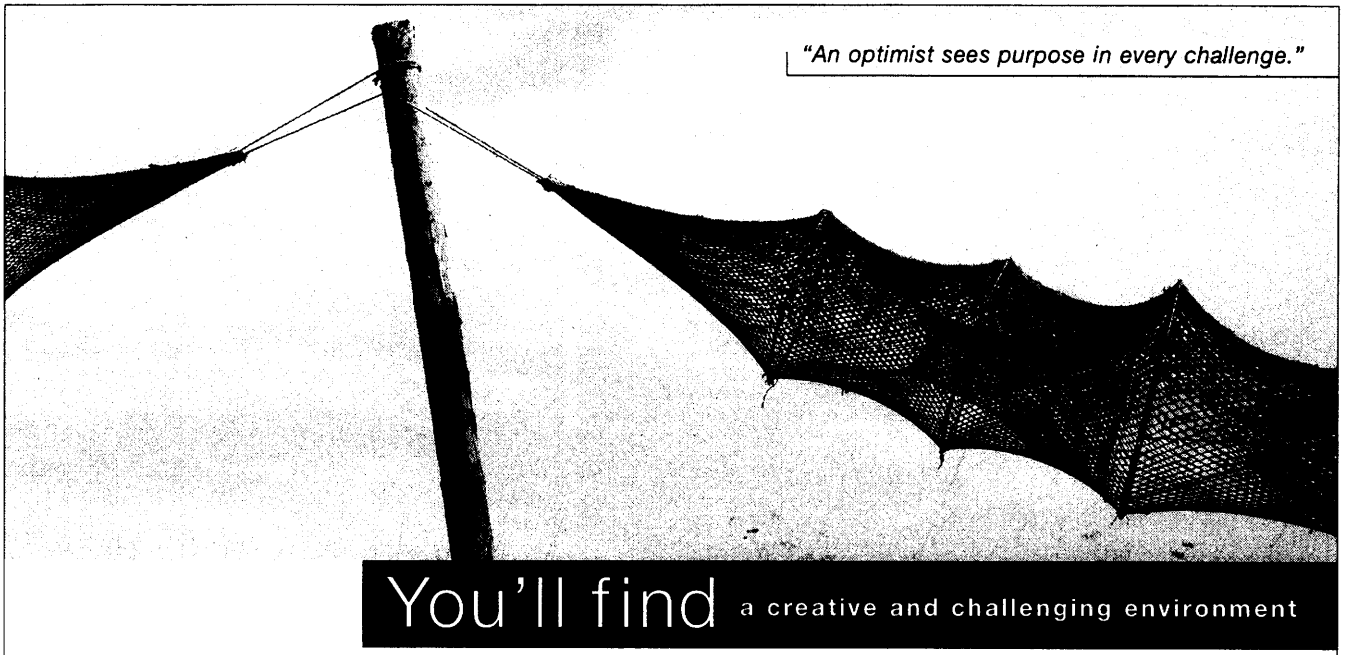
Postdoctoral position is available in a new laboratory effective January 1, 2001, to study the molecular mechanisms of potassium channels function and regulation of polyamines. Major approaches include but are not limited to mutagenesis and generation of transgenic mice, work with isolated mouse heart, single cells and cell cultures, and electrophysiology and computer modeling. A Ph.D. in physiology/pharmacology/molecular biology (and related) with corresponding experience and strong record of publications is required. Solid general educational background, independent thinking, and responsibility are a must. Please submit curriculum vitae, including names and addresses of three references, to: **Dr. Anatoli Lopatin, University of Michigan Medical School, Department of Physiology, Room 7812, Medical Sciences II, 1150 West Medical Center Drive, Ann Arbor, MI 48109-0622. FAX: 734-936-8813; e-mail: alopatin@umich.edu.**

POSTDOCTORAL POSITION
DENDRITIC CELLS AND MUCOSAL
IMMUNE RESPONSES

The laboratory investigates the localization, function, and trafficking of dendritic cells in mucosal lymphoid tissues. A Postdoctoral position is available focusing on the role of specific dendritic cell subsets in the induction and regulation of immune responses to mucosal pathogens. A Ph.D. and/or M.D. degree, experience in cellular and molecular immunology, and excellent technical skills are required. Candidates must have less than five years of postdoctoral experience. An interview is mandatory. Contact: **Brian L. Kelsall, M.D., Laboratory of Clinical Investigation, Building 10, 11N238, 10 Center Drive, Bethesda, MD 20892-1890. Telephone: 301-496-7473; FAX: 301-402-2240; e-mail: bkelsall@niaid.nih.gov.** Applications will be accepted until November 30, 2000. *NIH is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP
IMMUNOLOGY AND INFECTIOUS DISEASES

A position is available in the Department of Immunology and Infectious Diseases at the Research Institute, Palo Alto Medical Foundation, with a coappointment at Stanford University for a Ph.D. or M.D. to investigate mechanisms of host resistance against opportunistic pathogens. Project includes studies of the role of cellular immunity, cytokines, adhesion molecules, and genetic regulation of the immune response. Appropriate prior experience in immunology/molecular biology/cell biology preferred. Send curriculum vitae and names and addresses of three references to: **Dr. Yasuhiro Suzuki, Research Institute, Palo Alto Medical Foundation, 795 El Camino Real, Ames Building, Palo Alto, CA 94301. FAX: 650-329-9853.** *Equal Opportunity Employer.*



We're looking for

senior medicinal chemists

We are looking for two medicinal chemists with capability of leading chemistry or project teams. Your Ph.D. degree should be in organic chemistry with several years of experience from drug projects, preferably in leading positions. Excellent knowledge of medicinal and organic chemistry is essential.

For further information, please contact Lars-Inge Olsson +46 8 553 283 55.

organic/medicinal chemists

The primary tasks are design and synthesis of new drug candidates. Your background is a Ph.D. degree in organic chemistry or a Master/Bachelor of Science degree with several years of experience in organic chemistry or drug research.

For further information, please contact Lars-Inge Olsson +46 8 553 283 55.

combinatorial chemistry/multiple parallel synthesis and lab automation

We are looking for three chemists who will devise and execute synthetic routes to target libraries, as well as monitor and evaluate new synthetic technologies. A relevant background is a Ph.D. degree in organic chemistry with experience of parallel synthesis in automated systems for reactions in solution and solid phase.

For further information, please contact Sverker Hanson +46 8 553 278 59.

radio chemist

The main responsibilities are design, synthesis, purification, and characterisation of isotope modified compounds, with both stable and radioactive tracers. Suitable background is a Ph.D. degree in organic chemistry. Experience in handling of radioactive compounds is valuable.

For further information, please contact Lars-Inge Olsson +46 8 553 283 55.

Discovery AstraZeneca R&D Södertälje, located in Sweden, is a fully integrated unit with a staff of more than 250 and with research focusing on the two therapeutic areas CNS and pain Control For further information see: www.astrazeneca.se/areas/ledigajobb

Please send your written application marked either "Senior Medicinal Chemist", "Org./Med.Chemist", "Combinatorial Chemist" or "Radio Chemist" no later than November 17 to: hannes.vedin@astrazeneca.com or to AstraZeneca R&D, Human Resources, Hannes Vedin, B:213, S-151 85 Södertälje. Sweden

LEADING INNOVATION IN WORLD HEALTHCARE AstraZeneca

AstraZeneca is one of the world's leading pharmaceutical companies with approximately 50,000 employees. In Sweden, about 10,000 people work for the company in pharmaceutical research, production and marketing.

IGNELL OCH PARTNERS

POSITIONS OPEN

POSTDOCTORAL POSITION
JOHNS HOPKINS ONCOLOGY CENTER

Three positions are available in 2001 to investigate selected aspects of normal and malignant stem cell biology and gene therapy, especially using the NOD/SCID chimera model. A Ph.D. with strong laboratory research background in cellular and molecular biology/immunology/hematopoiesis is required. *U.S. citizens preferred for training grant eligibility.* Mail, FAX, or e-mail curriculum vitae, e-mail address, research background summary, three reference letters, explanation of current visa status (must be available to spend three years on this project), and best example of written (preferably published) English language ability to: **Curt I. Civin, M.D., Johns Hopkins Oncology Center, 1650 Orleans Street, Room 2M44, Baltimore, MD 21231. E-mail: civincu@jhmi.edu; FAX: 410-955-8897.** *Johns Hopkins University School of Medicine is an Equal Employment Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to investigate interleukin 5 receptor recognition mimetics and structure-based antagonism. Studies will involve such activities as mutagenesis of recombinant proteins, miniprotein mimetics design and chemical synthesis, epitope randomization via phage display, and optical biosensor interaction analysis and functional analyses at the molecular and cellular levels. Individuals with experience in peptide/protein chemistry required; experience in molecular biology techniques a plus. Send curriculum vitae and names of three references to: **Irwin Chaiken, Ph.D., Department of Medicine, University of Pennsylvania, 909 Stellar Chance Laboratories, 422 Curie Boulevard, Philadelphia, PA 19104-6100. FAX: 215-349-5572; e-mail: chaiken@mail.med.upenn.edu.**

POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS are available to study secretory vesicle dynamics and neuropeptide release. Imaging of green fluorescent protein and calcium in living growth cones and synapses is used in concert with molecular approaches. Experience studying secretion or synaptic transmission and a recent Doctoral degree are preferred. Please e-mail curriculum vitae and a description of research interests to: **Edwin Levitan, Ph.D., Department of Pharmacology, University of Pittsburgh; e-mail: Levitan@server.pharm.pitt.edu.** *The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately to study germinal center function in autoimmunity to DNA in a mouse model for SLE. A Ph.D. and a strong background in molecular or cellular immunology are required. Experience in immunohistochemistry and cDNA sequencing will be essential. Please send curriculum vitae, research background, and names of three references to: **Tony Marion, Ph.D., Department of Molecular Sciences, University of Tennessee Health Science Center, 858 Madison Avenue, Memphis, TN 38163. E-mail: tmarion@utmem.edu.**

A **POSTDOCTORAL POSITION** available to investigate membrane and cytoskeletal proteins in cardiovascular and hematological diseases using knockout animals, stem cells, and SNPs. Experience in molecular biology essential. *U.S. citizens or permanent residents.* Please send curriculum vitae and three references to: **Dr. L. Amy Sung, Department of Bioengineering, 0412, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0412. E-mail: amysung@bioeng.ucsd.edu.**

POSTDOCTORAL POSITIONS available to study retinoid and nuclear receptor-induced apoptosis (*Science* **289:**1159, 2000; *MCB* **20:**957, 2000). Strong background in molecular biology, signal transduction, and/or apoptosis is required. Send curriculum vitae and names of three references to: **Dr. Xiaokun Zhang, The Burnham Institute, 10901 North Torrey Pines Road, La Jolla, CA 92037. FAX: 858-646-3195; e-mail: xzhang@burnham-inst.org.**

POSITIONS OPEN

BIOMEDICAL ENGINEERING DISTINGUISHED POSTDOCTORAL FELLOWSHIPS
Johns Hopkins University

The Department of Biomedical Engineering at Johns Hopkins University invites applications for the BME Distinguished Postdoctoral Fellowships.

The aims of the program are (1) to promote an interdisciplinary approach to the study of complex biomedical systems and (2) to provide the very best of the recently graduated Ph.D.s an opportunity to perform independent research in a supportive environment.

The Fellowship will provide each recipient the freedom to conduct highly visible research while drawing upon the material resources and scientific expertise of the established laboratories of the BME faculty sponsor. Two faculty members will sponsor each recipient; at least one will have a primary appointment in BME.

We are seeking candidates in the following areas of concentration: biomedical imaging, biomaterials, cardiovascular systems, molecular and cellular systems, sensors and instrumentation, systems and computational neuroscience, tissue engineering, and theoretical and computational biology.

Salary will be highly competitive and will include additional funds to cover health insurance. The duration of the Fellowship is two years. This program is funded by the Whitaker Foundation.

Interested applicants should submit curriculum vitae, two letters of reference, and a two-page description of their research interests and previous work to: **Dr. Murray Sachs, Director, Department of Biomedical Engineering, 720 Rutland Avenue, Baltimore, MD 21205-2196.**

Deadline for receipt of applications is December 15, 2000. For more information, see **website: http://www.bme.jhu.edu/postdoc.** *The Johns Hopkins University is an Equal Opportunity/Affirmative Action Institution.*

TWO POSTDOCTORAL POSITIONS/ MICROBIOLOGY
EAST TENNESSEE STATE UNIVERSITY

Two Postdoctoral Fellowship positions available beginning February 1, 2001, to study aspects of *Chlamydia trachomatis* pathogenesis. One, preferably a D.V.M./Ph.D. will use female swine genital tract tissue grown *in vitro* to dissect the effects of estrogen and progesterone on chlamydial (swine abortion isolate) ascending infection. The second Fellow (Ph.D., M.D., M.D./Ph.D.) will exploit liposome technology to assess the role of several chlamydial envelope-associated components in attachment/entry of polarized genital epithelial cells. Salary will be commensurate with experience on the recommended NIH scale. Please send curriculum vitae and three letters of recommendation to: **Priscilla B. Wyrick, Ph.D., Professor and Chair, Department of Microbiology, Box 70579, James H. Quillen College of Medicine, East Tennessee State University, Johnson City, TN 37614.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS are available to study basic helix-loop-helix (bHLH) transcription factors in pancreatic development, function, and cancer model systems. Areas of research include but are not limited to (1) identifying bHLH binding partners and DNA binding specificities; (2) examining the roles of specific signal transduction pathways; and (3) utilizing mouse genetic approaches, coupled with gene chip technology, to generate novel transgenic lines and to identify specific downstream target genes. A strong background in molecular and cellular biology is essential. Prior experience working with transgenic mice also is preferred. Please send curriculum vitae and the names of three references to: **Stephen F. Konieczny, Ph.D., Department of Biological Sciences, Hansen Life Sciences Research Building, Purdue University, West Lafayette, IN 47907-1392.** See **website: http://www.bio.purdue.edu/courses/Koniecznylab/index.html** for more information.

Purdue University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIP IN MOLECULAR PATHOGENESIS OF LYMPHOMAS
National Institutes of Health
National Institute of Allergy and Infectious Diseases

A Fellowship is available immediately in the Laboratory of Immunopathology to study the molecular control of normal B cell development and oncogenesis. This is a full-time research position for a Ph.D. or M.D. that centers on developing mouse models for human lymphomas, primarily those with protooncogenes deregulated by translocations involving immunoglobulin genes: MYC, BCL6, BCL2, CCND1, etc. We are using techniques of transgenesis, cell and molecular biology, genetics, and biochemistry. Candidates should have strong backgrounds in one or more of these areas with well-rounded expertise in molecular biology being essential. Salary begins at $31,000 and increases commensurate with experience. Please send curriculum vitae and statement of research interests to:

Herbert C. Morse III, M.D.
Chief, Laboratory of Immunopathology
National Institute of Allergy and Infectious Diseases
Building 7, Room 304, MSC 0760
7 Center Drive
Bethesda, MD 20892-0760
FAX: 301-402-0077
E-mail: hmorse@niaid.nih.gov

NIH is an Equal Opportunity Employer.

IMMEDIATE OPENING FOR POSTDOCTORAL FELLOW
Drosophila Developmental Neurobiology
The University of Michigan
Department of Pathology

A Postdoctoral position is available immediately to study the mechanisms underlying cell identity specification using the fruit fly *Drosophila* as a model. Current projects include the analysis of transcription factor activity in embryos and tissue culture. A variety of fly genetics, cell biology, and molecular biology techniques is being used. Experience in the transcription factor field and/or *Drosophila* would be beneficial.

Please send curriculum vitae and the names of three references to:

Dervla Mellerick-Dressler, Ph.D.
Department of Pathology
University of Michigan
8301B MSRBIII
1150 West Medical Center Drive
Ann Arbor, MI 48109-0646
E-mail: dervlam@umich.edu

The University of Michigan is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH SCIENTIST: Two positions available to study the HIV-1 life cycle in human neural cells with emphasis on transcriptional regulation of viral replication. Applicants should have a Ph.D. or equivalent with extensive experience in molecular biology and strong interest in neurobiology. Direct inquiries by post or e-mail only, including curriculum vitae and the names/addresses of three references, to: **Dr. David J. Volsky and Dr. Mario Canki, Columbia University/St. Luke's–Roosevelt Hospital Center, Molecular Virology Laboratory, 432 West 58th Street, Antenucci Research Building, Room 709, New York, NY 10019. E-mail: mc366@columbia.edu.** *Columbia University takes Affirmative Action toward Equal Employment Opportunity.*

Engineering and Public Policy at Carnegie Mellon seeks **DOCTORAL STUDENTS** with technical backgrounds to address policy issues in energy and environmental systems; information technology; policy risk analysis and communication; research and development, innovation, and development. See **website: http://www.epp.cmu.edu.** Contact: **Victoria Massimino, Engineering and Public Policy, Carnegie Mellon, Pittsburgh, PA 15213 U.S.A.**

EMBL

Monterotondo Research Programme

The European Molecular Biology Laboratory (EMBL) is an international research organisation consisting of three Outstations in Hamburg (Germany), Grenoble (France) and Hinxton (UK), a mouse biology programme in Monterotondo (Italy) and a Headquarters Laboratory situated in Heidelberg (Germany). EMBL invites applications for the position of

COORDINATOR, MOUSE BIOLOGY PROGRAMME (ref. no.: 00/86)

We are seeking an individual of proven excellence in mouse biology and with the managerial skills required to lead the Mouse Biology Programme situated near Rome at Monterotondo. The Programme is scheduled to expand rapidly from its current size to a total of six research groups with the associated infrastructure. The successful applicant will therefore have the opportunity to play the major role in developing an important new institute in the field of mouse biology. The Coordinator will be an EMBL Senior Scientist and will receive an open-ended contract.

The EMBL Research Programme in Mouse Biology was established beginning of 1998 at the 'Campus Adriano Buzzati-Traverso' at Monterotondo, near Rome, at a site where the 'European Mouse Mutant Archive' (EMMA), and the 'Istituto di Biologia Cellulare' (IBC) of the 'Consiglio Nationale delle Ricerche' (CNR) are also located. Additional research groups of IBC-CNR and the 'International Centre for Genetic Engineering and Biotechnology' (ICGEB) are expected to move to the Monterotondo campus within the next year. There are also excellent interactions between the EMBL scientists in Monterotondo and those located in other EMBL units, particularly the headquarters laboratory.

The Research interests of the current EMBL Mouse Biology Programme include anti-viral defense mechanisms (Ulrich Kalinke), receptor tyrosine kinases in brain (Liliana Minichiello), B-cell development (Klaus Rajewsky) and the actin cytoskeleton (Walter Witke, Acting Coordinator). K. Rajewsky and U. Kalinke will depart in 2001-2002.

Informal enquiries can be made to, and further information obtained from, the Director-General of EMBL (F.C. Kafatos) or the EMBL Scientific Coordinator (I. Mattaj) at kafatos@embl-heidelberg.de or mattaj@embl-heidelberg.de, respectively.

Closing date for applications: December 20, 2000. The appointment can begin at any time after that date by mutual agreement.

EMBL is an inclusive, equal opportunity organisation. By providing an exciting and stimulating research environment consisting of young, independent research groups it also provides access to outstanding graduate students and postdocs. The Laboratory provides financial help in relocating families and additional benefits.

Applicants should submit a curriculum vitae, quoting reference no. 00/86, with a description of research interests and future plans, and should provide the names and contact information of three referees. Applications to be sent to:

The Personnel Section, EMBL, Postfach 10.2209, D-69012 Heidelberg, Germany.
Fax: +49 6221 387555; email: jobs@embl-heidelberg.de

FONDATION ARES-SERONO
THE ARES-SERONO FOUNDATION

The Ares-Serono Foundation Fellowships in Biomedicine
2001 Award Announcement

FELLOWSHIPS IN REPRODUCTIVE ENDOCRINOLOGY

Two Fellowships will be awarded by the Ares-Serono Foundation for postdoctoral training pertaining to studies in the field of reproductive endocrinology, particularly related to molecular or immune mechanisms potentially leading to therapeutic application, based on an international competition.

Fellowship Terms

Full-time postdoctoral training
2 years of support
USD40, 000 annual grant towards salary and direct expenses for postdoctoral training

Eligibility

1. Applicants must have completed a PhD and or MD or equivalent degree within 3 years from the start date of a fellowship.
2. Candidates applying for a second postdoctoral fellowship must be changing institutions.
3. Ability to communicate fluently in English (verbal and written)

For the Application form and Eligibility Guidelines, please contact:

The Ares-Serono Foundation, 12 chemin des Aulx, 1228 Plan-Les-Ouates, Geneva, Switzerland
Fax: +41-22-706-9398
Internet address: Deborah.Moore@serono.com

School of Biology

Professor & Director

NERC Sea Mammal Research Unit (SMRU)
Division of Environmental & Evolutionary Biology

SMRU is an NERC-funded University Unit based at Gatty Marine Laboratory. The Directorship becomes vacant with effect from 1 March 2001, or as soon as possible thereafter, and will carry with it an associated position of full Professor in Biology.

You should have an outstanding record of academic achievement, proven leadership abilities and an excellent publication record relevant to the position. All fields of academic enquiry related to the biology of sea mammals will be considered.

Excellent facilities and substantial support come with the position. For further information about SMRU and the School please visit our website http://biology.st-and.ac.uk

Application packs available from Personnel Services, University of St Andrews, College Gate, North Street, St Andrews, Fife KY16 9AJ. (Tel: 01334 462571, fax: 01334 462570, e-mail: Jobline@st-andrews.ac.uk). We regret applications cannot be made by e-mail. Please quote ref: ML032/9097/00. Closing date: 1st November 2000.

www.st-and.ac.uk

University of St Andrews

The University operates Equal Opportunities and No Smoking Policies

POSITIONS OPEN

BIODIVERSITY

We seek applicants for a two-year **POSTDOCTORAL FELLOWSHIP** in the University of British Columbia Centre for Biodiversity Research. The Centre is currently made up of over 40 members of the UBC science faculty with interests in biological conservation. Preference will be given to candidates with bold ideas, demonstrated research ability, and strong communication skills. The successful candidate will be expected to conduct original research on core problems in biodiversity and conservation, foster interactions within the Centre, run a seminar series, and help maintain the Centre's website. The starting date is September 1, 2001. The annual salary is $33,000.

Send curriculum vitae, three letters of reference, and a brief statement of goals to: **Dr. Roy Turkington, Centre for Biodiversity Research, UBC, 6270 University Boulevard, Vancouver, BC V6T 1Z4 Canada. FAX: 604-822-0653; e-mail: royt@interchange.ubc.ca**.

The closing date for applying is January 31, 2001. *The University of British Columbia hires on the basis of merit and is committed to Employment Equity. All qualified persons are encouraged to apply. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

POSTDOCTORAL POSITIONS IN PHYLOGENETICS

Two Postdoctoral Fellowships and one Postdoctoral position are available immediately at the University of California, Davis, in phylogenetics and comparative biology. The Postdoctoral position involves computational and theoretical work on large phylogenies in collaboration with **Dr. Michael Sanderson**. Applicants should be knowledgeable about phylogenetic methods and experienced with statistics and/or computational biology. The Postdoctoral Fellowships are for collaboration with any of the Phylogenetic or Comparative Biologists in the Center for Population Biology at UC Davis (**website: http://www.eve.ucdavis.edu/PopBio.htm**). Positions are potentially renewable for up to two years. Candidates should send curriculum vitae, brief description of research interests, and two letters of reference by December 15, 2000, to: **Phylogenetic Postdoctoral Committee, Section of Evolution and Ecology, University of California, One Shields Avenue, Davis, CA 95616.**

POSTDOCTORAL FELLOWSHIPS are available in proteomics. Unique opportunity to join a multidisciplinary research team that applies 2-D gel electrophoresis, mass spectrometric methods (MALDI-TOF MS, ESI-Q-IT MS), and bioinformatics to the study of mammalian cells, tissues, and biological fluids. Ideal qualifications include a Ph.D. (chemistry or biochemistry) and solid research experience in biological mass spectrometry, protein chemistry, or bioinformatics. Please send curriculum vitae and three letters of recommendation to: **Dominic M. Desiderio, Ph.D., C. B. Stout Neuroscience Mass Spectrometry Laboratory, University of Tennessee Health Science Center, 847 Monroe Avenue, Room 117, Memphis, TN 38163. E-mail: ddesiderio@utmem.edu**. *University of Tennessee Health Science Center is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN SIGNAL TRANSDUCTION

A Postdoctoral position is available to work on an NIH-funded project on molecular aspects of protein degradation and gene regulation in the Ah receptor signal transduction pathway (*JBC* **274**:28708; *MCB* **20**:6095). A Ph.D. degree and strong background in cell culture and molecular biological techniques is required and previous work with transgenic animals desirable.

Send curriculum vitae and brief description of previous research to: **Dr. Richard Pollenz, University of South Florida, Department of Biology, 4202 East Fowler Avenue, SCA 110, Tampa, FL 33620. E-mail: pollenz@chuma1.cas.usf.edu.**

POSITIONS OPEN

Mayo Clinic **POSTDOCTORAL FELLOWSHIPS** in allergic diseases. Positions available immediately to study allergic diseases at Mayo Clinic Rochester, Minnesota and Mayo Clinic Scottsdale, Arizona. Aspects include discovery of novel eosinophil granule proteins, mechanisms and regulation of eosinophil activation, role of IgE in the allergic response, generation/characterization of murine transgenic and gene knockout models of allergic disease, eosinophil-associated cutaneous disease, inflammatory mechanisms of allergic diseases in humans, and function of respiratory smooth muscle. Applicants can work either at Mayo Clinic Rochester or Mayo Clinic Scottsdale. Please send curriculum vitae, bibliography, and names and addresses of three references to: **Gerald J. Gleich, M.D., Department of Immunology, Mayo Clinic, 200 First Street S.W., Rochester, MN 55905. Telephone: 507-284-7166; FAX: 507-284-5045; e-mail: gleich@mayo.edu**. *Mayo Foundation is an Affirmative Action/Equal Opportunity Employer and Educator.*

Illinois: **POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE** molecular microbiology applications invited for a Postdoctoral position to investigate the molecular mechanisms of glycopeptide resistance in *S. aureus* and coagulase-negative staphylococci. Mediation of resistance by changes in expression of several candidate genes is a current research focus. Applicants should have completed a Doctoral degree and have relevant experience in molecular microbiology, genetics, and biochemistry. The successful candidate will work under the guidance of a Senior Research Associate and Physician Scientist. Please send letter of interest with a brief statement of experience and curriculum vitae to: **Robert S. Daum, M.D., Section of Pediatric Infectious Diseases, University of Chicago, MC 6054, 5841 South Maryland Avenue, Chicago, IL 60637. E-mail: rsd2@midway.uchicago.edu**. *The University of Chicago is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH POSITIONS IN MICROBIOLOGY
American Society for Microbiology/ National Center for Infectious Diseases

Positions are available for Postdoctoral Scientists to conduct novel research with the overall objective of developing practical applications of microbiology, immunology, and epidemiology for diagnosis and prevention of infectious diseases. Associates will perform research in residence at the National Center for Infectious Diseases, which is headquartered at the Centers for Diseases Control and Prevention in Atlanta, Georgia.

Deadline for applications is November 15, 2000. **Website: http://www.asmusa.org/edusrc/edu23e.htm; e-mail: fellowships-careerinformation@asmusa.org** or **ihulede@asmusa.org**.

POSTDOCTORAL RESEARCH POSITION IN VISUAL NEUROSCIENCE

Postdoctoral position available to study the molecular structure and functional properties of GABAc receptors on retinal neurons. The GABAc receptor is a member of GABA receptor family expressed predominately in retina and other parts of the central nervous system. Candidates with strong background in either molecular biology or electrophysiology are encouraged to apply. Please send curriculum vitae and names of three references to: **Dr. Haohua Qian, Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago, 1855 West Taylor Street, Chicago, IL 60612.**

POSTDOCTORAL POSITION available at BioTech Imaging, Inc. (**website: www.biotechimaging.com**) to develop antibody-based methods for the detection and isolation of cells that are productively infected with HIV or HCV and cancer cells. Send curriculum vitae and three references to: **Virginia Salas, Ph.D., Bio-Tech Imaging, Inc., 2425 Ridgecrest Drive S.E., Albuquerque, NM 87108. FAX: 505-262-7943; e-mail: virginia@biotechimaging.com.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS EXTRACELLULAR MATRIX BIOLOGY

NIH-funded Postdoctoral positions are available for individuals interested in studying the molecular events associated with extracellular matrix remodeling during angiogenesis or in pulmonary diseases such as asthma and emphysema. One position is for a Cell Biologist with expertise in extracellular matrix biology and/or cytoskeletal biology to study the mechanisms by which extracellular matrix organization affects cytoskeletal function (contact **D. Hocking**). A second position is for a Physiologist with expertise in pulmonary pathology to study the regulation of extracellular matrix deposition in fibrotic lung disease (contact **D. Hocking; e-mail: denise_hocking@urmc.rochester.edu**). A third position is for a Cell/Molecular Biologist to study the role of extracellular matrix remodeling during angiogenesis (contact **J. Sottile; e-mail: jane_sottile@urmc.rochester.edu**). Send curriculum vitae, a brief description of research interests, and the names of three references to either: **Dr. Denise Hocking, Department of Pharmacology and Physiology, Box 711** or **Dr. Jane Sottile, Center for Cardiovascular Research, Box 679, University of Rochester Medical Center, 601 Elmwood Avenue, Rochester, NY 14642**. *The University of Rochester is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION
The University of Texas Health Center at Tyler

A Postdoctoral position is available to study novel posttranscriptional pathways of fibrinolysis and their relationship to inflammation and cancer in the lung and pleural space. The successful candidate will engage in the cloning of three newly characterized regulatory mRNA binding proteins that govern the expression of major components of the fibrinolytic system and related work to define the mechanisms by which the posttranscriptional pathways operate. Applicants with a Ph.D. and experience with molecular techniques, biochemistry, and protein purification will be given preference. Up to three years of support for postdoctoral training are available. Ongoing studies are supported by two recently funded NIH grants as well as other funding sources. Send curriculum vitae, description of research interests, and list of three references to: **Steven Idell, M.D., Ph.D., Chairman, Department of Medical Specialties, The University of Texas Health Center at Tyler, 11937 U.S. Highway 271, Tyler, TX 75708**. *The University of Texas Health Center at Tyler is an Equal Opportunity/Affirmative Action Employer. Minorities/Females/Veterans/Disabled.*

Illinois: funded **POSTDOCTORAL POSITION** available to study the mechanism of V (D) J recombination in lymphocytes and the nonhomologous endjoining pathway of DNA repair. (See *Nature* **396:** 173–177, 1998; *Cell* **95:**891–902, 1998; *Molec. Cell* **5:**993–1002, 2000). Candidate must have M.D. or Ph.D. and experience in molecular biology or biochemistry. Please send statement of interest, curriculum vitae, and names of three references to: **Dr. Karen Frank, Department of Pathology, University of Chicago, 5841 South Maryland Avenue, MC 1089, Chicago, IL 60637. E-mail: kfrank@mort.bsd.uchicago.edu; FAX: 773-834-5251**. *The University of Chicago is an Equal Opportunity/Affirmative Action Employer and welcomes applications from women and minorities.*

NIH training grant-funded **POSTDOCTORAL POSITION** (M.D., Ph.D., or equivalent) available immediately in the fields of immunological tolerance, autoimmunity, intracellular antibodies. Join a highly interactive interdepartmental research environment of more than 30 immunology groups. Previous experience in immunology, molecular/cell biology, or related fields preferred. *Candidate must be a U.S. citizen or permanent resident.* Send curriculum vitae and names of three references to: **Ignacio Sanz, M.D., University of Rochester School of Medicine and Dentistry, 601 Elmwood Avenue, Box 695, Rochester, NY 14642. FAX: 716-442-3214.**

THE UNIVERSITY OF CHICAGO

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FACULTY POSITIONS
DEPARTMENT OF HUMAN GENETICS

The Department of Human Genetics at The University of Chicago is recruiting new faculty for the coming academic year. Current strengths of the university genetics community include outstanding programs in complex disease analysis, evolution, molecular cytogenetics, neurobiology, population genetics, and cancer genetics.

We are recruiting outstanding tenure track faculty in broad areas of human genetics research, including but not limited to mouse models of human diseases, bioinformatics, computational genetics/genomics, experimental genomics, genetics of complex diseases, pharmocogenetics, and neurogenetics especially epilepsy genetics and developmental neurobiology.

State-of-the-art research space and generous start-up funds are available. Applicants must have strong potential for development of an outstanding independent research program. The successful recruit will be expected to participate in graduate and undergraduate teaching. Positions are open to PhD, MD, and MD/PhD candidates. Individuals with ABMG (or ABPN for those in neurogenetics) board certification or eligibility are encouraged to apply. Although the search is primarily aimed at Assistant Professor level scientists, appointments at other levels will be considered.

Applications will be reviewed January 3, 2001.

Chairman, Human Genetics
Search Committee
Recruit@genetics.uchicago.edu
Department of Human Genetics
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EUROPEAN OPPORTUNITIES

Roche

pharmaceuticals

Biochemist (postdoctoral position)

Who we are
As part of Roche's global pharmaceutical research organization, our group is responsible for the development of proteomics technologies within Roche Genetics. We offer a highly competitive infrastructure and broad-based expertise in proteomics technologies.

The position
As a Biochemist you will be responsible for the development of innovative separation techniques for a variety of human samples, including plasma samples, with the aim of increasing the sensitivity of the proteomics technology and the development of mass spectrometry-based protein quantification methods.

Who you are
You hold a PhD in biochemistry or a related discipline and have a strong background in protein chemistry. A broad knowledge of protein analysis is highly desirable, especially in conjunction with mass spectrometry and/or protein separation. You are interested in innovative approaches and interdisciplinary teamwork and have good communications skills.

Who to contact
If you feel you have the necessary background and experience and are interested in this position, please send your application with full supporting documentation to: F. Hoffmann-La Roche Ltd, Mr Werner Aschwanden, PSPB, 52/205, P.O. Box, CH-4070 Basel, quoting reference: As3585.

EUROPEAN OPPORTUNITIES

HUMBOLDT-UNIVERSITÄT ZU BERLIN

MDC
Berlin-Buch

Faculty of Mathematics and Natural Sciences I (Institute of Biology) of the Humboldt University Berlin and Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch invite applications for the following position:

Professorship in Molecular Cell Biology and Gene Therapy

(C-3 BBesG; 5 years, Code designation PR/009/00)

The occupant of this chair will be a member of the Faculty of Mathematics and Natural Sciences I of the Humbold University as well as the Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch. The occupant is expected to establish a link between the basic sciences and clinical medicine, as part of the curriculum: "molecular cell biology".

The applicant is expected to meet the demands for an appointment as a professor according to Article 100 of the Berliner Hochschulgesetz (Berlin Law on Higher Education). The applicant is expected to have outstanding research credentials, as well as documented proof of excellent teaching and organizational skills. An outstanding internationally recognized scientific record of accomplishments in the broad area of molecular cell biology and gene therapy is expected.

Appropriate space, staff and funds for setting up and operating a laboratory will be provided by the Humboldt University Berlin and the MDC. The professorship is supported by Schering AG Berlin and BERLEX Biosciences, US. The successful applicant will also be expected to apply for external funding.

A curriculum vitae, bibliography, documentation of teaching experience, and five reprints of important publications should be forwarded (in English) no later than 6 weeks after the appearance of this announcement to:

Dean, Faculty of Mathematics and Natural Sciences I
Invalidenstraße 110
D-10115 Berlin, Germany

The Faculty of Mathematics and Natural Sciences I and the MDC are equal opportunities employers and especially welcome applications from women in order to increase the proportion of female staf

The MDC is a member of the Hermann von Helmholtz Association of National Research Centers supported by the Federal Republic of Germany and by the Berlin Regional Administration. For further information on the MDC or the Humboldt University Berlin please visit our web site (http://www.mdc-berlin.de or http://www.hu-berlin.de)

POSTDOCTORAL POSITIONS IN STRUCTURAL BIOLOGY
Structural Biology Section
National Institute of Allergy and Infectious Diseases

Postdoctoral positions are available immediately to study the structure and function of one or more surface proteins from *Plasmodium sp.*, the pathogen that causes malaria, or to study one of several proteins of the immune system. We use biochemical and biophysical methods, aiming for insights into function by the determination of the X-ray structure of a biologically informative protein complex. This is an opportunity for persons with experience in biochemistry and/or molecular biology to crystallize a protein and to learn X-ray crystallography. Persons with experience in infectious disease research are especially encouraged to apply. Salary from $30,000 to $38,000.

Interested and highly motivated candidates having a Ph.D. or M.D. should send curriculum vitae and the names of three references to: **David N. Garboczi, Ph.D., NIAID/ NIH, 12441 Parklawn Drive, Rockville, MD 20852. Telephone: 301-496-4773; FAX: 301-402-0284; e-mail: garboczi@coral.niaid.nih.gov**. *The National Institute of Allergy and Infectious Diseases is an Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR NEUROSCIENCE

Dallas: The Department of Psychiatry at The University of Texas Southwestern Medical Center at Dallas is seeking outstanding Neuroscientists with research interests in any of several areas of psychiatric neuroscience including molecular neurobiology, cellular physiology, signal transduction, genetics, or behavioral neuroscience. The successful candidate will have an M.D. and/or Ph.D. degree with postdoctoral research experience; outstanding potential for acquiring external funding to maintain an active, independent research program; and ability to work effectively within a highly multidisciplinary and collaborative research group. Attractive start-up packages are available. Please submit curriculum vitae and cover letter (with names of three references) to:

Dr. Eric J. Nestler
Chairman, Department of Psychiatry
The University of Texas
Southwestern Medical Center
5323 Harry Hines Boulevard
Dallas, TX 75390-9070
E-mail: eric.nestler@UTSouthwestern.edu

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A **POSTDOCTORAL POSITION** is available immediately to join NCI-funded program studying host-virus interactions in the retroviral induction of leukemia/lymphoma. Projects include analysis of the relationship between genetic variation in a natural mammalian retrovirus and its tumorigenic potential, structure/function analysis of unique sequence elements in natural viral variants, and identification of host oncogenes involved in the malignant process. A Ph.D. in microbiology, molecular biology, or related discipline is required. Please send curriculum vitae, brief summary of research experience, and contact information for three references to: **Laura S. Levy, Ph.D., Department of Microbiology and Immunology, Tulane Medical School, 1430 Tulane Avenue, SL-38, New Orleans, LA 70112. Telephone: 504-587-2083; e-mail: llevy@tulane.edu.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS
NIH TRAINING PROGRAM IN DIABETES RESEARCH
Washington University School of Medicine

Applications are being accepted for Postdoctoral positions in a multi-investigator program to study diabetes and related endocrine diseases. Trainees will be offered opportunities in the following areas: insulin secretion, insulin action, β-cell growth, islet transplantation, autoimmunity, cytokines and β-cell function, glycoprotein oligosaccharides and hormone receptors, atherosclerosis, vascular and neurological complications, glucose transporters, biology of aldose reductase, embryogenesis, and regulation of gene expression. *U.S. citizenship or permanent resident status is required.* Salary on NIH scale. Curriculum vitae and three letters of recommendation are required. For information, please contact: **Dr. Michael L. McDaniel, Box 8118, Washington University School of Medicine, Department of Pathology, St. Louis, MO 63110. Telephone: 314-362-7435; FAX: 314-362-4096; e-mail: mcdaniel@pathology.wustl.edu**. *Affirmative Action/Equal Opportunity Employer.*

A **POSTDOCTORAL FELLOWSHIP** is available with full funding for two years through the National Science Foundation's Biocomplexity Program to develop and analyze a model of water, carbon, and nutrient cycling and the functional roles of plant species in peat lands. We expect that this work will provide a theoretical basis of peat land functioning to assist in the interpretation of various manipulative experiments, such as a long-term ecosystem warming experiment we have been conducting (see **website: http://www.nd.edu/~soilwarm/**). The postdoctoral will be based at the University of Minnesota in Duluth. Send letter of application, curriculum vitae, relevant publications, and names and addresses (including e-mail) of three references to: **John Pastor, Natural Resources Research Institute, University of Minnesota, 5013 Miller Trunk Highway, Duluth, MN 55811. E-mail: jpastor@nrri.umn.edu.**

POSTDOCTORAL POSITIONS
UNIVERSITY OF MICHIGAN

Two Postdoctoral positions are available immediately to study the role of lipid mediators (leukotrienes) in immunity and disease. Projects focus on (1) signaling pathways triggered by leukotriene receptor binding and (2) the regulation of fibrosis by lipid mediators. Experience in receptor-mediated signaling, whole animal modeling of disease, or fibroblast cell biology desirable. Please send curriculum vitae, brief statement of research interests, and names of three references to: **Dr. Marc Peters-Golden, Department of Internal Medicine, University of Michigan, Ann Arbor, MI 48109-0642. E-mail: petersm@umich.edu**. *University of Michigan is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOW
NEUROCHEMISTRY, NEUROSCIENCE

A Postdoctoral position is available to study neurotransmitters (glutamate and catecholamine) involved in mechanisms of pain and analgesia in the central nervous system. Experience in neurochemical (HPLC) assay and electrophysiological studies is preferred. Send curriculum vitae and the names of three references to: **Dr. Hui-Lin Pan, Penn State University College of Medicine, The Milton S. Hershey Medical Center, Department of Anesthesiology, P.O. Box 850, H187, Hershey, PA 17033.**

POSTDOCTORAL POSITION to study the mechanism of action of naked cuticle genes as Wnt signal transduction antagonists in flies and vertebrates (see *Nature* **403**:789–795, 2000). Position involves facility with *Drosophila* and/or vertebrate animals, tissue analysis, and molecular biology. Please send curriculum vitae and the names of three references to: **Keith Wharton, M.D., Ph.D., Departments of Pathology and Molecular Biology, University of Texas Southwestern Medical Center, 5323 Harry Hines Boulevard, Dallas, TX 75390-9072**. *An Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study the molecular mechanisms of leukemia and myeloma development. Strong experience in molecular biology is required. Send curriculum vitae and three references to: **Dr. Michael Tomasson, Washington University School of Medicine, 660 South Euclid Avenue, Campus Box 8007, St. Louis, MO 63110. E-mail: tomasson@im.wustl.edu.**

POSTDOCTORAL POSITIONS
MICROBIAL MOLECULAR EVOLUTION
YALE UNIVERSITY

Two or more Postdoctoral positions are available immediately to work with **Dr. Peg Riley** on the molecular evolution of microbial defense systems, the evolution of antibiotic resistance, *in vitro* evolution of novel antimicrobials, and microbial genome evolution. These projects will involve some combination of experimental evolution, molecular genetics, mathematical modeling, and genomics. Candidates with a strong background in molecular microbiology, population genetics, or molecular evolution are encouraged to apply.

Please send curriculum vitae, a statement of research interests, and the names and e-mail addresses of three references to **e-mail: rileylab@yale.edu**. Applications will be considered until the positions are filled. Information about the **Riley** laboratory can be found at **website: www.eeb.yale.edu**.

Margaret (Peg) Riley
Department of Ecology and Evolutionary Biology
Yale University
New Haven, CT 06511

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POSTDOCTORAL RESEARCH FELLOW

The Parkinson's Institute, an internationally recognized nonprofit research and patient care organization, is offering a Postdoctoral Fellowship focused on the investigation of molecular aspects of neurodegeneration. Ph.D. and/or M.D. with expertise in molecular biology/genetics and neuroscience required. Experience in genotyping, mutation screening, and gene structure and function analysis is preferred. The Postdoctoral Fellow will work in a highly interactive environment with basic researchers and clinicians. Competitive salary and benefits. Please send a statement of research interests, curriculum vitae, and three references to: **Human Resources, Parkinson's Institute, 1170 Morse Avenue, Sunnyvale, CA 94089-1605. FAX: 408-734-8427; e-mail: hr@parkinsonsinstitute.org.**

POSTDOCTORAL POSITIONS

Fox Chase Cancer Center Breast Cancer Training Program offers several Postdoctoral positions in the area of breast cancer. Applications must include a letter of intent addressed to the Director of the Program (**website: http://www.fccc.edu/postdoc/BreastCaTraining.html**), a statement of the candidate's background interests and goals, curriculum vitae, and three letters of recommendation. Deadline for application is December 1, 2000. Or send by U.S. mail to: **Human Resources, c/o Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111**. *Equal Opportunity Employer.*

POSTDOCTORAL TRAINING GRANT POSITION in cell and molecular biology available for work on signal transduction mechanisms in bone cells. Experience in signal transduction studies and tyrosine phosphorylation essential. *Open to U.S. citizens and permanent residents only* due to NRSA grant. Salary and benefits competitive; possible long-term position. Send résumé, cover letter, and names of three references to: **Ms. L. Gonzalez, Loma Linda University, P.O. Box 7210, Loma Linda, CA 92354.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS W. HARRY FEINSTONE CENTER FOR GENOMIC RESEARCH

Positions are available immediately to study chemical carcinogenesis, cancer chemoprevention, regulation of basic helix-loop-helix transcription factors, and genechip analysis of drug efficacy and toxicity. Experience in molecular/cellular biology and cell culture techniques or xenobiotic metabolism and analytical chemistry is required. Graduates with a degree in biology, biochemistry, or toxicology are encouraged to apply. These positions are for one year with the possibility of renewal for up to three years. Interested individuals should provide their curriculum vitae and a list of three references to: **Dr. Thomas R. Sutter, University of Memphis 201, Life Sciences Building, Memphis, TN 38152-3560**. *The University of Memphis is an Equal Opportunity/Affirmative Action Employer.*

CAREER IN OPTOMETRY, OPTOMETRIC RESEARCH, OR TEACHING

The New England College of Optometry offers a unique program for those with a Doctorate in the sciences: biology, chemistry, physics, psychology, etc. Candidates have the opportunity to obtain the Doctor of Optometry (O.D.) degree in 27 months. The program begins annually in June. Employment opportunities exist in private practice, industry, faculty positions in optometric education, and research. Contact: **The Admissions Office, Department S, 424 Beacon Street, Boston, MA 02115. Telephone: 800-824-5526; e-mail: admissio@ne-optometry.edu**. Additional information, see **website: www.ne-optometry.edu**. Application deadline: March 1, 2001.

POSTDOCTORAL POSITIONS in molecular genetics of cellulose biosynthesis in trees are available at the Plant Biotechnology Research Center of Michigan Technological University (**website: http://forestry.mtu.edu/iwr/pbrc**). Extensive experience in plant molecular biology and transacting factor cloning is essential. Send curriculum vitae and contact details of three references to: **Dr. Vincent Chiang, Director, Plant Biotechnology Research Center, School of Forestry and Wood Products, Michigan Technological University, Houghton, MI 49931. E-mail: vchiang@mtu.edu; FAX: 906-487-2915**. Review of applications will begin in fall 2000 and continue until an appropriate candidate is chosen. *Michigan Technological University is an Equal Opportunity Education Institution/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS UNIVERSITY OF WASHINGTON

Postdoctoral positions available immediately to study (1) integrin-extracellular matrix interactions and signaling pathways involved in fibrosis and other pathogenic processes and (2) lymphocyte-endothelial interactions and viral-matrix interactions in HIV pathogenesis. Ph.D. or M.D. and strong background in molecular and/or cell biology are required. Immunology or virology experience desirable for HIV project. Send curriculum vitae and three references to: **Dr. Lynn Schnapp, University of Washington, Division of Pulmonary and Critical Care Medicine, 325 Ninth Avenue, Box 359762, Seattle, WA 98104. E-mail: lschnapp@u.washington.edu.**

A **POSTDOCTORAL POSITION** in molecular neurobiology is available at the National Institute of Mental Health to study novel molecules involved in the regulation of the circadian clock in mammals. Ph.D. graduates familiar with advanced molecular biological techniques such as protein-protein interaction screen, DNA-affinity chromatography, immunoprecipitation, EMSA, and mammalian cell transfection are encouraged to apply. Send or FAX curriculum vitae, three letters of reference, and a statement of experience and research goals to: **Dr. Ruben Baler, Chief, Unit on Temporal Gene Expression, National Institutes of Health, Building 36/2A09, Bethesda, MD 20892. FAX: 301-402-1748; e-mail: abri@codon.nih.gov.**

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study CFTR chloride ion channels using structure/function approaches and molecular modeling. Experience in electrophysiological or molecular biological methods required. Position funded by the NSF and the CF Foundation. Contact: **Dr. Nael McCarty** in the **Department of Physiology and Center for Cell and Molecular Signaling at Emory University**. Details at **website: http://www.emory.edu/WHSC/MED/PHYSIOLOGY/NMCC/nmlabtop.htm; e-mail: NMCC@physio.emory.edu**. *Emory University is an Equal Opportunity/Affirmative Action Employer.*

GLOBAL OPPORTUNITIES

POSTDOCTORAL POSITION: Experienced in single photon counting-laser spectrofluorometry in biophysics, bFGF and antiangiogenic drugs, quaternary structures of tryptophanased, membrane domains, DnaA, membrane reconstitution of CD26/DPPIV/ADCP. Curriculum vitae, publications, three recommendations. Contact: **Professor Parola, Chairman, Chemistry Department, Ben Gurion University, Beer Sheva, Israel. FAX: 97276472943; e-mail: aparola@bgumail.bgu.ac.i.**

FELLOWSHIPS

REGENTS FELLOWSHIPS in conservation biology at the University of New Orleans. The Department of Biological Sciences at the University of New Orleans announces Fellowships for Doctoral students for fall 2001. The Fellowship term is four years and includes a full tuition waiver, an annual stipend of $19,000, and a research/travel allowance. The Department of Biological Sciences offers opportunities to conduct research related to conservation biology in areas including biochemical/physiological adapatation, reproduction, genetics, systematics, evolution, and ecology. For more information, **e-mail** inquiries to: **biograds@uno.edu** or see our **website: http://www.uno.edu/~bios**. To apply, contact: **Director of Graduate Studies, Department of Biological Sciences, University of New Orleans, New Orleans, LA 70148.**

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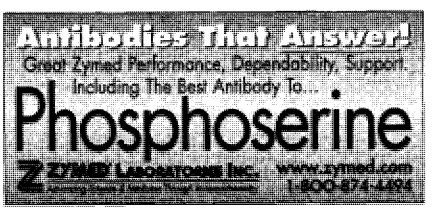

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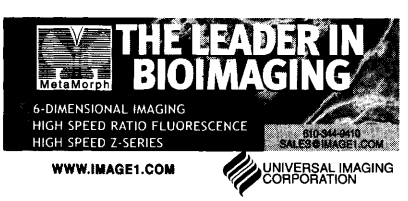

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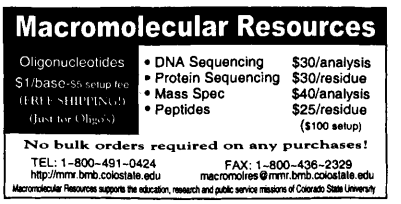

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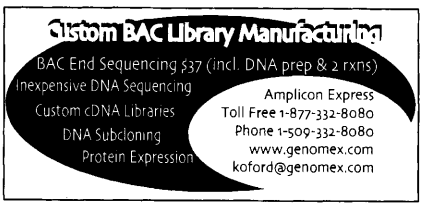

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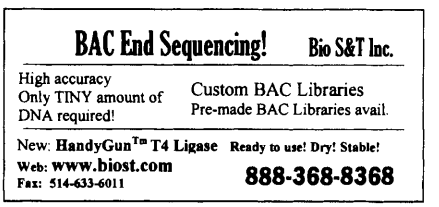

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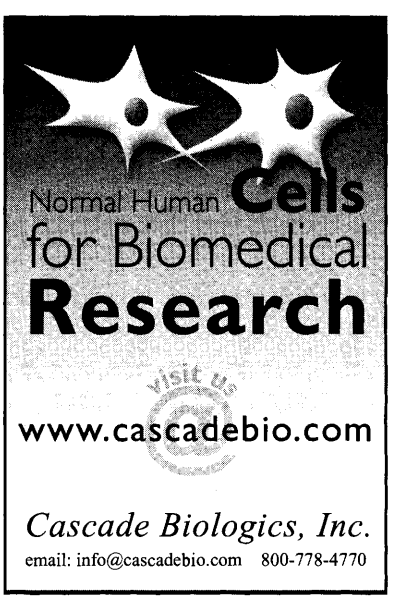

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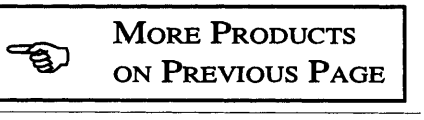

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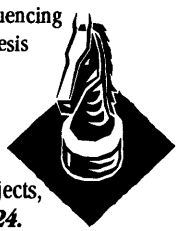

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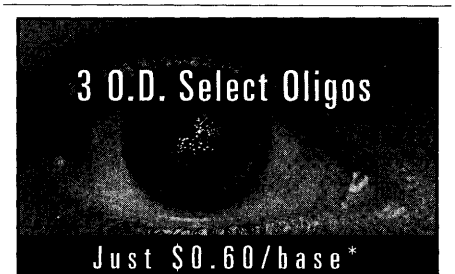

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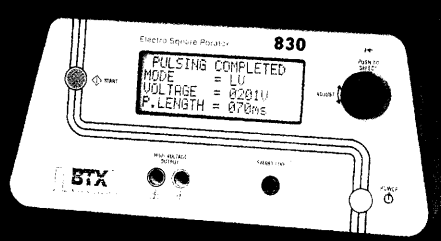
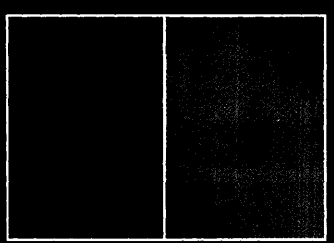
In vivo / In vitro Gene Delivery



ECM 830

Research Applications

Electro Gene Transfer
***In vivo* Gene Transfer**
Nuclear Transfer Cloning
***In ovo* Gene Transfer**
***In situ* Electroporation**
Multiple Sample Screening



DNA Injection Only | Injection followed by electroporation

Nishi, T. et al. High efficiency gene transfer in solid tumors by *in vivo* electroporation. Cancer Gene Therapy, vol.4(6), P-56 (1997)

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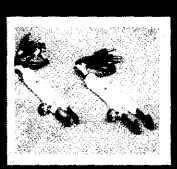
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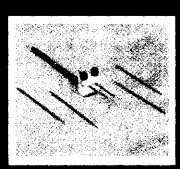
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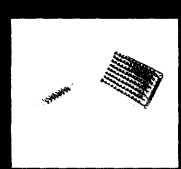
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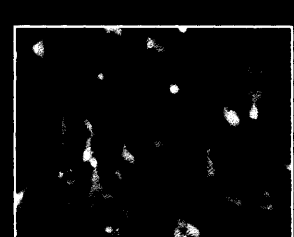
High GFP expression in Mouse PE501
Personal communication J. Viera
University of Washington (1999)

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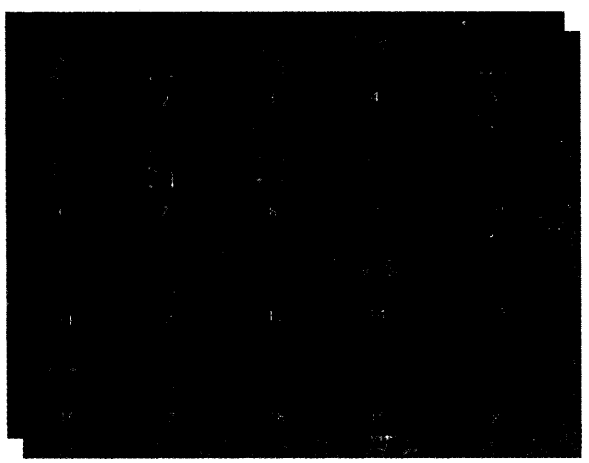
Mapped BAC Libraries

With the completion of the human draft sequence, a new era has begun which allows for rapid identification and mapping of genomic rearrangements. These collections of mapped BAC clones provide a method to rapidly move from the genetic maps to the cytogentic maps, thus identifying chromosomal rearrangements and copy number changes. Listed are the Mapped BAC Libraries that we currently offer. For additional information on any of the libraries, please see our website.



Photographs courtesy of Dr. Julie Korenberg.
Ref: J. R. Korenberg, X.N. Chen, K. L. Devon, D. Noya, M. L. Oster-Granite, B. Birren *Genome Research* (1999 May); 9(5):514-23.

CTF collection - BACs Identifying Centromeric and Telomeric Chromosome Ends

Molecular cytogenetic markers that span mouse chromosomes 1-19 & X. This set consists of 157 BACs mapped by FISH to each chromosome. The BACs are ordered by the genetic and RH maps.

Ref: J. R. Korenberg, X.N. Chen, K. L. Devon, D. Noya, M. L. Oster-Granite, B. Birren *Genome Research* (1999 May); 9(5):514-23.

VGC collection - BACs covering the entire Human Genome

The RPCI-11 human male BAC library is the starting material for mapping by filter-hybridization and verification by STS-content PCR. Clones are anchored to STS markers from the GeneBridge4 Radiation Hybrid map or from chromosome-specific YAC maps. The STS markers on this map are spaced at approximately 1-Mb intervals.

Ref: Cheung, Vivian G., L. Dalrymple, Narasimhan, J. Watts, G. Shuler, A.K. Raap, M. Morley, A. Brazel. (1999) *Genome Research*, 9:989-993.

CCAP NCI collection - BACs for studying chromosomal rearrangements in Human diseases

The Cancer Chromosome Aberration Project (CCAP) is developing a set of "tools" that will allow for the expedient definition and detailed characterization of the distinct chromosomal alterations that are associated with malignant transformation.

CSMC collection - BACs Integrating Genome Sequence with chromosome aberrations in Clinical Medicine

This collection of BACs is designed to provide rapid links between Human Genome sequence and chromosomal breakpoints both in germ line genetic disease and in cancer. The collection spans the entire human genome, and links chromosome bands at 2 Mb resolution.

Ref: J. R. Korenberg, *et. al.* (1999) Human Genome Anatomy: BACs Integrating the Genetic and Cytogenetic Maps for Bridging Genome and Biomedicine. *Genome Research* 9:994-1001.

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