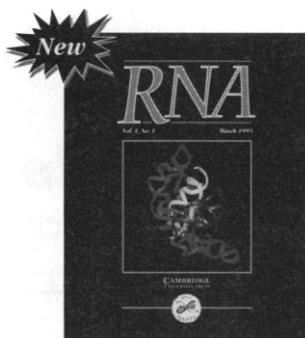


Important Journals from Cambridge University Press

RNA

The Official Publication of
The RNA Society

First Issue: March 1995



Editor: Timothy W. Nilsen, *Case Western Reserve University*

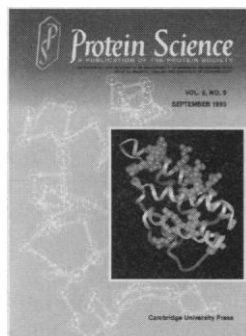
Associate Editors: Thomas R. Cech, *Univ. of Colorado*; Chris L. Greer, *Univ. of California, Irvine*; Christine Guthrie, *Univ. of California, San Francisco*; Robert M. Krug, *Rutgers Univ.*; Reinhard Lührmann, *Philipps Univ., Marburg*; Dino Moras, *CNRS, Strasbourg*; James Ofengand, *Roche Institute of Molecular Biology*; Nancy Standart, *Univ. of Cambridge*; Joan A. Steitz, *Yale Univ.*; Marvin Wickens, *Univ. of Wisconsin*

RNA has been designed to provide rapid publication of significant original research in all areas of RNA structure and function in eukaryotic, prokaryotic and viral systems. *RNA* will cover a broad range of subjects in RNA research, including: structural analysis by biochemical or biophysical means; mRNA structure, function and biogenesis; alternative processing; cis-acting elements and transacting factors; ribosome structure and function; translation and translational control; RNA catalysis; tRNA structure, function, biogenesis and identity; RNA editing; rRNA structure, function and biogenesis; RNA transport and localization; regulatory RNAs; large and small RNP structure, function and biogenesis; viral RNA metabolism; RNA stability and turnover; RNA evolution; and RNA chemistry. For information via the Internet contact: <http://www.cup.org/Journals/RNA/RNAHomePage.html>

Monthly, ISSN 1355-8382 Volume 1, 1995

Protein Science

A PUBLICATION OF THE PROTEIN SOCIETY



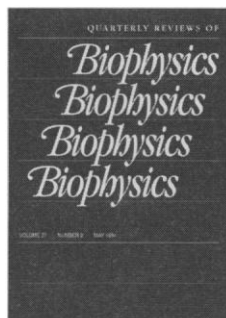
Editor-in-Chief: Hans Neurath, *University of Washington*

Associate Editors: Russell F. Doolittle, *Univ. of California, San Diego*; Tony Hugli, *Scipps Research Inst.*; Louise N. Johnson, *Univ. of Oxford*; Gerhard Wagner, *Harvard Medical School*

Protein Science is dedicated to the exploration of all scientific aspects of the "building blocks of life"—protein molecules. This innovative monthly journal presents research by leading scientists from around the world. The resulting publication is a body of work that each month advances the understanding of proteins in the broadest sense, ranging from their discovery, isolation, function, and molecular structure to the most advanced areas of molecular and cell biology, in which proteins of defined molecular properties play a significant role. *Protein Science* also offers the following electronic features: Kinemages, CD-ROM, Gopher Service, NLM-format Bibliography, and World Wide Web Server. In addition, a transition to on-line text and graphics will take place in 1995, providing faster publication and greater access to original proteins research. For information via the Internet contact: <http://www.prosci.uci.edu>

Monthly, ISSN 0961-8368 Volume 4, 1995

QUARTERLY REVIEWS OF *Biophysics*



Editors: R. Henderson, *MRC Laboratory of Molecular Biology, Univ. of Cambridge*; R. Rigler, *Dept. of Medical Biophysics, Karolinska Inst.*; J.C. Wang, *Dept. of Biochemistry and Molecular Biology, Harvard Univ.*; C.-I. Brändén, *ESRF, Grenoble*

This is the official journal of the International Union for Pure and Applied Biophysics. It covers the whole field of biophysics from microscopic imaging of cells to enzyme biochemistry, and has gained a worldwide reputation, as proven by the journal's excellent ranking in the Science Citation Index. *QRB* aims to provide a forum for general and specialized communication between biophysicists working in different areas. All reviews published are invited from authors who have made significant contributions to the field and offer critical and sometimes controversial accounts of recent progress and problems in their specialty. Thematic issues are occasionally published.

Quarterly, ISSN 0033-5835 Volume 28, 1995



CAMBRIDGE
UNIVERSITY PRESS

Subscriptions: These essential journals may be ordered from your subscription agent or directly from Cambridge University Press, 40 West 20th Street, New York, NY 10011-4211. Fax: (914) 937-4712. E-mail: journals_marketing@cup.org

For customers outside the US, Canada and Mexico, orders and inquiries must be addressed to Cambridge University Press, Journals Marketing Dept., The Edinburgh Building, Cambridge CB2 2RU, UK. Fax: 44(0)1223 325959. E-mail: journals_marketing@cup.cam.ac.uk

NEW

**5' DIRECT
FLUORESCENT
GUARANTEED
OLIGOS
From GENSET**

For
**MAPPING
LINKAGE
GENE EXPRESSION**

• **6-FAM**
• **HEX**
• **TET**
(ABI Dyes)

Also available for
DNA SEQUENCING
oligos 5'-labelled with

• **ROX, TAMRA**
(ABI Dyes)
• **FLUORESCCEIN**

ORDERS & INFORMATION

USA - GENSET Corp.

FAX : (1) - 800 551 5291

EUROPE - GENSET SA

FAX : (33) - 1 43 56 68 18

JAPAN - GENSET KK

FAX : (81) - 3 3585 5351



GUARANTEED OLIGOS™

**American
Association
for the Advancement of
Science**

**1995
Mentor Awards
Call for Nominations**

Lifetime Mentor Award (10 or more years)
Mentor Award (less than 10 years)

The American Association for the Advancement of Science (AAAS) invites nominations for the 1995 Mentor Awards. The two categories are *Lifetime Mentor Award* and *Mentor Award*. These annual awards honor individuals who, during their careers, demonstrate extraordinary leadership to increase the participation of women of all racial/ethnic groups; African American, American Indian, and Hispanic men; and/or people with disabilities in science and engineering fields and careers.

A prize of \$5000 and a commemorative plaque for the *Lifetime Mentor Award* will recognize an individual who has mentored and guided significant numbers of students from these underrepresented groups to the completion of doctoral studies and/or who has impacted the climate of a department, college, or institution to significantly increase the diversity of students pursuing and completing doctoral studies. This individual will have served in such a role for 10 years or longer.

The Mentor Award, a prize of \$2,500 and a commemorative plaque, will recognize an individual who has mentored a significant number of students over a period of less than 10 years.

The AAAS Mentor Awards are administered by the Committee on Opportunities in Science (COOS).

*Deadline for the 1995 Mentor Awards
nominations is 1 August 1995*

The 1995 Awards will be presented during the Association's Annual Meeting in Baltimore, MD in February 1996.

For more information on the AAAS Mentor Awards please contact Yolanda S. George or Paula Lee at (202) 326-6670.

Separate, quantify, or sequence carbohydrates in one day with Glyko FACE® technology

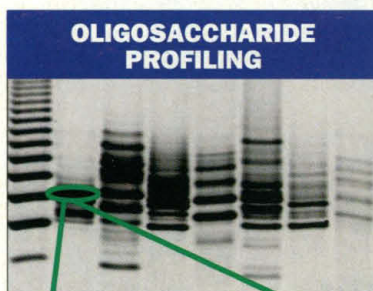
If you're working with DNA or protein, you're ready to work with carbohydrates

Glyko's FACE (*Fluorophore Assisted Carbohydrate Electrophoresis*) technology, makes it possible for you to work with and analyze complex carbohydrates using the same technique you already use every day in your laboratory: polyacrylamide gel electrophoresis.

Now, in less than one day, you can perform profiling, composition, or sequencing experiments such as the ones shown here, using FACE chemistry kits.

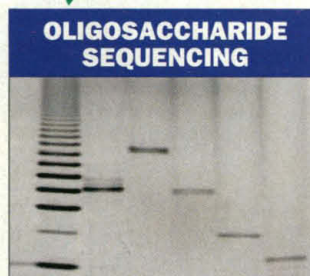
Color-coded FACE kits make carbohydrate analysis easy and reliable

FACE kits are color-coded and are designed to provide a complete approach to carbohydrate analysis...starting



FACE gel profile of N-linked oligosaccharides released from a number of different glycoproteins

FACE gel showing the monosaccharide compositional analysis of a tri-sialylated, triantennary oligosaccharide



MONOSACCHARIDE COMPOSITION

FACE gel illustrating the enzyme-based sequencing of a tri-sialylated, triantennary oligosaccharide

with the enzymatic or chemical release from the glycoconjugate to the separation, isolation, or sequencing of oligosaccharides.

Everything you need is included: enzymes or release chemicals, fluorescent-labeling reagents, electrophoresis

standards, controls, running buffers, precast polyacrylamide gels, and complete protocols.

The FACE Imager and FACE Analytical Software give you the ability to analyze, quantify, and document the results of N-linked and O-linked oligosaccharide profiling, monosaccharide composition, and sequencing gels



Glyko FACE kits are available for:

- N-linked Oligosaccharide Profiling Kit
- N-linked Capillary Electrophoresis Profiling Kit
- O-linked Oligosaccharide Profiling Kit
- O-linked Capillary Electrophoresis Profiling Kit
- N-linked Oligosaccharide Sequencing Kit
- Monosaccharide Composition Kit
- Glycosphingolipid Analysis Kit
- Glycosaminoglycan Identification Kit

Sequence your oligosaccharides with Glyko recombinant glycosidases

Glyko offers the most complete line of recombinant glycosidases available, each cloned to be free of other glycosidases, protease activity, and carbohydrates:

- **PNGase F:** releases Asn-linked oligosaccharides
- **Endo H:** releases Asn-linked high mannose and hybrid-type oligosaccharides
- **O-Glycosidase I:** releases Ser/Thr linked Gal-GalNAc
- **Enzymatic Deglycosylation Kit:** releases oligosaccharides from glycoproteins
- **NANase I:** releases α 2-3 N-acetylneuraminic acid
- **NANase II:** releases α 2-3,6 N-acetylneuraminic acid
- **NANase III:** releases α 2-3,6,8 N-acetylneuraminic acid
- **Neuraminic Acid Linkage Analysis Kit:** NANase I, II, and III
- **HEXase I:** releases β 1-2,4,6 N-acetylglucosamine
- **MANase I:** releases α 1-2,3,6 mannose
- **FUCase I:** releases α 1-6 fucose
- **HEPase I:** recombinant heparinase I

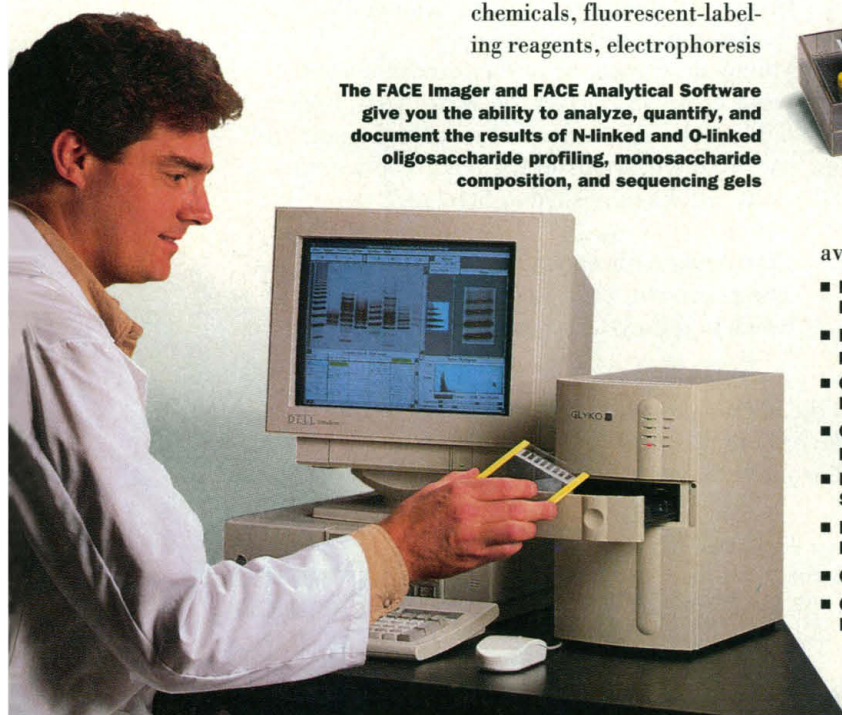
We want to be your carbohydrate research partner

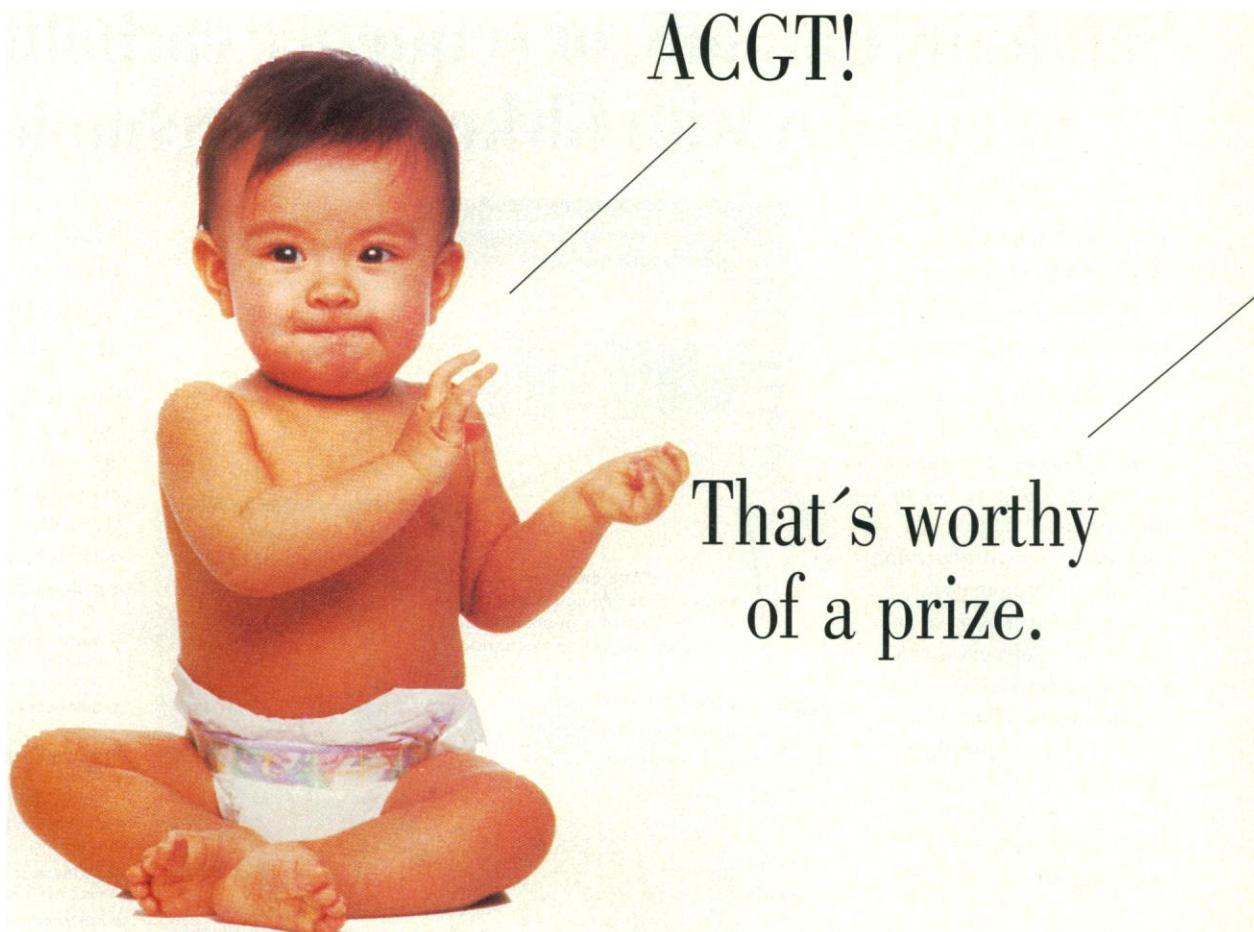
Glyko provides complete CARBOHYDRATE ANALYTIC SERVICES if you have only an occasional need for carbohydrate analysis, or lack the personnel to perform the analyses you require.

For more information, please call Glyko, Inc. in Novato, CA, toll free U.S. only at 1 800 33 GLYKO (334 5956), or 1 415 382 6653. Fax us at 1 415 382 7889.



Circle No. 86 on Readers' Service Card





Pharmacia Biotech & SCIENCE Prize for Young Scientists

IN MOLECULAR BIOLOGY 1995

Biotech and SCIENCE are joining forces to encourage scientists at the start of their careers. This major new world-wide prize will include US\$20,000 awarded to the best young scientist of the year, and up to 7 additional prizes of US\$5,000 each.

For 115 years SCIENCE has been one of the world's leading scientific journals, promoting science through print, exhibitions and conferences. Pharmacia Biotech, as one of the

Perhaps you don't have to be quite this young, but in recognition of the work that is done during preparation for a doctorate, Pharmacia

pioneers of biotechnology, is committed to serving the changing needs of the international scientific community.

Call for entries

You must be a recent Ph.D. graduate (awarded between 1 January and 31 December 1994) working in molecular biology.

Submissions must be in the form of a 1000 word essay, in English, on your thesis, highlighting the significance of its contribution and overall implications in the field. The winning essay will be published in SCIENCE.

Closing date for entries is 5 July 1995.

The prizes will be presented in Stockholm, Sweden, during December 1995.

Full details can be requested from the administrator, at the address below, or via Internet to: science_editors@aaas.org (US /ROW enquiries) or to: science@science-int.co.uk (European enquiries)

SCIENCE

The Award Committee

Pharmacia Biotech & SCIENCE Prize for Young Scientists
US/ROW enquiries – 1333 H Street, NW, Washington, DC 20005 USA.
Tel: 202 326-6501, Fax: 202 408-8015

European enquiries – Science International, 14 George IV Street, Cambridge, CB2 1HH, UK. Tel: +44 1223 302067, Fax: +44 1223 302068

Circle No. 26 on Readers' Service Card



**Pharmacia
Biotech**

PORTLAND PRESS

Publisher of the Biochemical Society

*Potions to
Penicillin*



*Aspirin to
Addiction*

Fran Balkwill and Mic Rolph

The science of the 'wonder drugs' that have shaped human health and history.

1 85578 065 8 H 128 pages 1995 \$21.00

The latest titles on Nitric Oxide ...

The Biology of Nitric Oxide Parts 1 - 4

edited by S Moncada, M A Marletta *et al*

Physiological and Clinical Aspects (Parts 1 & 3) Enzymology, Biochemistry & Immunology

(Parts 2 & 4)

Part 1 1 85578 012 7 H 420 pages 1992 \$87.50

Part 2 1 85578 013 5 H 230 pages 1992 \$57.50

Part 3 1 85578 063 1 H 570 pages 1995 \$200.00

Part 4 1 85578 068 2 H 500 pages 1995 \$176.00

Special price available for all four parts.

Nitric Oxide: Brain and Immune System

edited by S Moncada, G Nisticò & E A Higgs

1 85578 046 1 H 304 pages 1994 \$124.00

Interstitialium, Connective Tissue and Lymphatics

edited by R K Reed, G A Laine, J L Bert, P Winlove and N McHale

1 85578 073 9 H 350 pages 1995 \$120.00

Essays in Biochemistry 29

edited by K F Tipton and D Apps

1 85578 017 8 P 130 pages 1995 \$30.00

Pulmonary Vascular Remodelling

edited by J E Bishop, G L Laurent and J Reeves

1 85578 041 0 H 280 pages 1995 \$120.00

Fundamentals of Enzyme Kinetics

by A Cornish-Bowden

1 85578 072 0 P 350 pages 1995 \$25.60

Temperature Adaptation of Biological Membranes

edited by A R Cossins

1 85578 062 3 H 240 pages 1994 \$105.00

Molecular Botany

Signals and the Environment

edited by D J Bowles, P M Gilmartin and J P Knox

1 85578 050 X H 290 pages 1994 \$96.00

Visit booth # 203, ASBMB, San Francisco

Portland Press

Ashgate Publishing Co.,
Old Post Road, Brookfield,
VT 05036-9704, USA
Tel: 1-800-535 9544
Fax: 802 276 3837

Portland Press

Commerce Way, Colchester
CO2 8HP, UK
Tel: +44 1206 796351
Fax: +44 1206 799331

Postage: Add US\$3.50 per book.

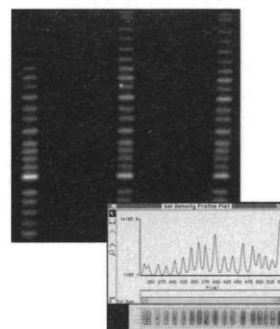


Circle No. 74 on Readers' Service Card

*When It Comes To Macintosh
Imaging Software...*

IPLab is The Only Choice

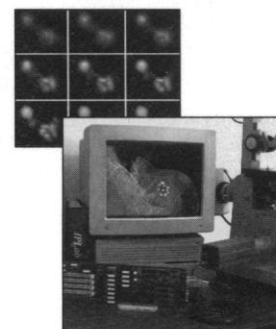
IPLab Gel



Macintosh Gel Analysis Software

- Single-lane density profile analysis with peak finding
- Molecular weight determination
- Localized background subtraction
- Supports 8-bit, 16-bit, TIFF, PICT and other file types
- Gel Documentation systems available for UV and white light

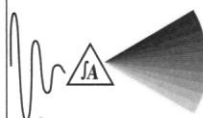
IPLab Spectrum



The Macintosh Imaging Solution

- Powerful image analysis software
- Acquisition and analysis systems for applications such as:
 - FISH
 - 3D visualization and deconvolution
 - Ratio imaging
- Compatible with video & digital cameras, filter wheels and motion control systems

**IPLab Spectrum and IPLab Gel
From the Macintosh Imaging Experts
At Signal Analytics**



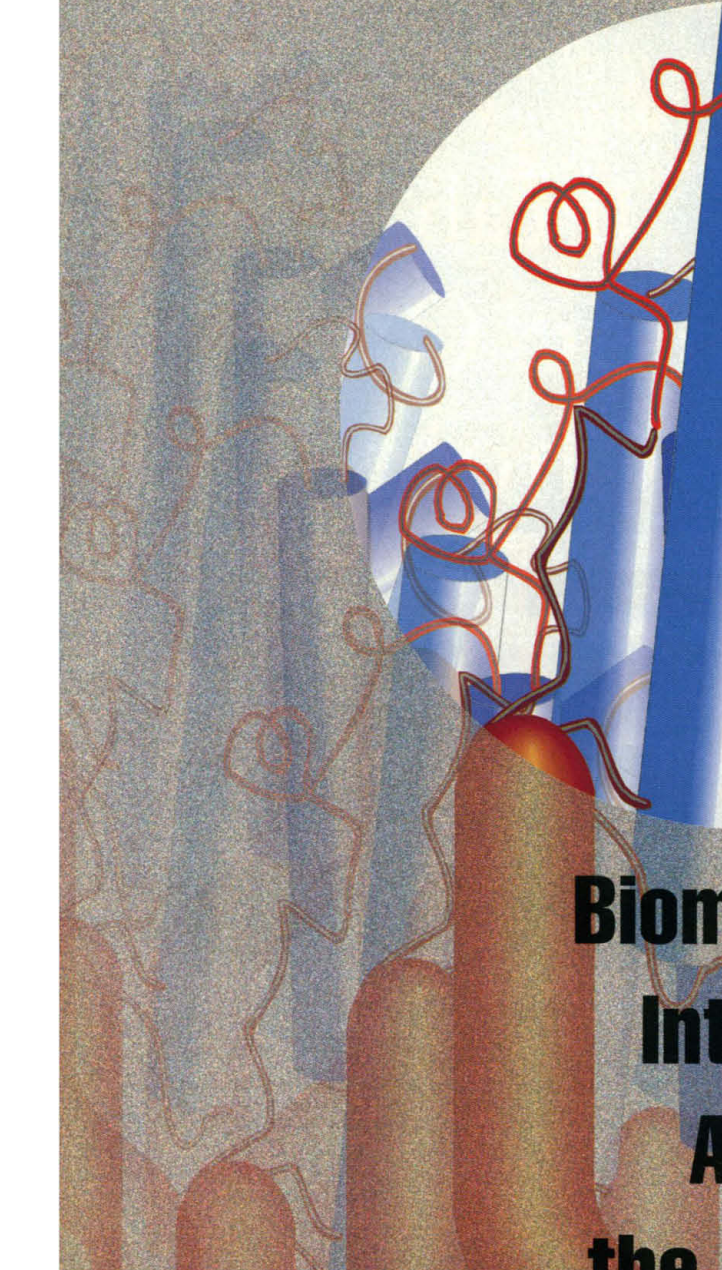
Signal Analytics Corporation

440 Maple Ave E, Ste 201
Vienna, VA 22180

Tel (703) 281-3277

Fax (703) 281-2509

Circle No. 35 on Readers' Service Card



Biomolecular Interaction Analysis - the shortest route between structure and function

*Comparison of a structural and
functional binding domain in human
growth hormone using real-time BIA*

*B. C. Cunningham and J. A. Wells
(J. Mol. Biol. (1993) 234, 554-563)*

From a structural point of view, the complex between human growth hormone (hGH) and the extracellular domain of its receptor (hGHbp) is one of the best characterized hormone-receptor complexes. One molecule of hGH binds sequentially to two molecules of hGHbp, involving separate sites on the hormone molecule and resulting in dimerization of the receptor.

The work of Brian C Cunningham and James A Wells of Genentech Inc, USA, used Biomolecular Interaction Analysis (BIA) to measure the progress of the macromolecular interactions in real-time, allowing the evaluation of the kinetics as well as the affinity of the interactions. By this method it was possible to determine the effect of replacing each of the 30 contact residues in the hGH site 1 structural binding domain with alanine.

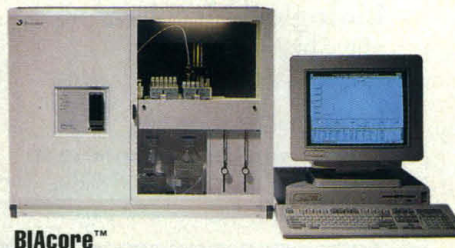
The results indicated that only one quarter of the residues account for the major part of the binding energy. Thus the functional binding domain is considerably smaller than the structural binding domain. The results are potentially valuable in the design of hormone analogues for therapeutic purposes, identifying critical residues for the binding interaction and implying that it might be possible to design smaller hormone mimics.

Establishment of a clearly defined experimental situation for the real time BIA studies was aided by the specific immobilization chemistry on the sensor chip. By immobilizing the receptor through a single cysteine residue introduced at a chosen position, the properties of the surface-bound interaction could be closely controlled. This work clearly demonstrates the value of real-time BIA in analysing functional aspects of macromolecular interaction.

With BIAlite™ and BIAcore™, BIA technology is available in a range of automation and sample processing capabilities at a price level to fit every budget.

If you want to see more of what's going on in your biomolecular interactions contact Pharmacia Biosensor today.

See more of what's going on



 **Biosensor**

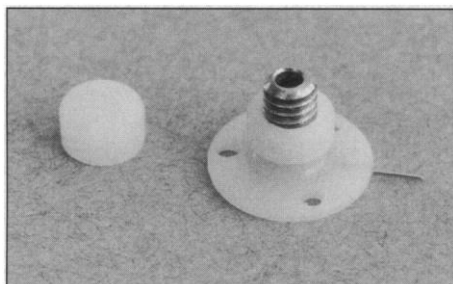
Pharmacia Biosensor
USA 1-800-BIA-2599, France +33-1-3064 3400
Germany +49-7614 9030, UK +44-727-814 075
Japan 03-3492-9499, Australia toll free 008 252 265
Head Office: Sweden +46-18-165376

Circle No. 44 on Readers' Service Card

PRODUCTS & MATERIALS

Mini-Button Port

The Mini-Button Port is an implantable catheter-skin interface button for rodents for the intravenous administration of solutions over an extended period of time. It can simplify the process when repetitive admin-



istration of solutions or withdrawal of fluid is required. The port can also provide a chronic interface for catheters to other body organs or cavities for testing the safety and efficacy of drugs. **Kent Scientific. Circle 139.**

Monoclonal Antibodies

A new line of monoclonal antibodies (mAbs) reacts with Stat proteins 1, 2, 3, 4, 5, and 6. Stat proteins function both as cytoplasmic signal transducers and activators of transcription. The mAbs can be used in protein immunoblotting and other immunological applications. **Transduction Laboratories. Circle 140.**

A complete line of anti-human and anti-mouse Fas/APO-1 (CD95) mAbs have numerous applications in apoptosis research. Fas is a cell surface receptor that can mediate apoptosis, or programmed cell death. Two new mAbs for multidrug resistance research include anti-human LRP, clone LRP-56, which is specific for the LRP protein that is strongly overexpressed in various P-glycoprotein-negative tumor cells, and anti-human P-glycoprotein, MRK16, which is specific to a surface epitope of human P-glycoprotein. The anti-Ash/Grb-2 mAb recognizes an epitope in the N-terminal SH3 domain of human, rat, or mouse Ash/Grb-2, which is believed to play a role in signaling

pathways between receptor protein tyrosine kinases and a Ras protein. **Kamiya Biomedical. Circle 141.**

Mutation Analysis Kit

The MisMatch Detect Point Mutation Screening Kit provides a simple, rapid method for detecting dispersed point mutations in a nonisotopic format. Target regions of at least 500 bases can be efficiently screened in a single step. The whole procedure, including data analysis, can be completed in less than a day. **Ambion. Circle 142.**

Magnetic Ion Exchangers

MagaCell-DEAE, MagaCell-CM, and MagaCell-PEI are magnetic ion exchangers designed for fast, easy, and efficient separation of proteins, enzymes, and nucleic acid fragments. MagaCell is used in a magnetizable batch separation technique, offering significant advantages over conventional ion exchangers. MagaCell does not require that samples be free of cellular debris or other insoluble matter because it does not incorporate conventional ion exchange columns. Washing and elution steps are easy using a simple magnet. Working gradients can be obtained quickly by changing the buffer composition in a stepwise manner. **Cortex Biochem. Circle 143.**

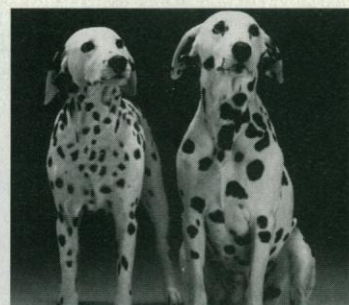
Nuclease Decontamination

RNase (ribonuclease) Inhibitor can be used to inhibit the activity of endogenous RNases in reaction mixtures used for complementary DNA synthesis, in vitro transcription, translation, and RNase-free antibody production. It can also enhance long-term stability of RNA samples in storage. Amresco RNase Inhibitor is a 50-kD protein that exhibits potent activity against RNase A-type RNases (including RNase B and C) but does not inhibit RNase T1, RNase H, or RNA polymerase and reverse transcriptase activ-

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 is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card and placing it in a mailbox. Postage is free.

Investigator™

Electrophoresis Brought To Life



Spot the difference...

The power of 2-D electrophoresis is now brought to both analytical and preparative scale applications. Using Oxford GlycoSystems' Investigator™ 2-D electrophoresis system, you can move easily from 1st dimension isoelectric focusing (IEF) to 2nd dimension PAGE gels, then to blotting and sequencing your target protein.

...an obvious choice

Investigator 2-D systems are the most widely used complete 2-D electrophoresis systems.

- Duracryl™ high performance gels
- Dedicated reagents
- High resolution and reproducibility
- Integrated temperature control system
- Up to 10 gels per run
- Preparative gels

With a capacity of up to 1 mg protein total, and recovery of up to 10 µg from a single spot, you'll find the Investigator the obvious choice.

For a FREE information pack on how Investigator™ systems can improve your electrophoresis applications contact us today.

Oxford GlycoSystems

USA and Canada: Tel: (617) 533 0100,
Fax: (617) 533 0101, Tollfree: 1-800 722 2597
UK and Europe: Tel: +44 (0)1235 553066,
Fax: +44 (0)1235 554701, Tollfree: 0800 212061
Tollfree to UK from: Switzerland 155 2739;
France 0590 86 08; Germany 0130 81 37 48
Japan: Tel: 3-3862-2108, Fax: 3-3866-5165

ity. NucleasEliminator removes and deactivates even high concentrations of nuclease contamination from glass and plastic surfaces. Simply wipe, immerse, or fill the surface or vessel to be decontaminated with NucleasEliminator, incubate 5 min at room temperature, and rinse thoroughly with nuclease-free water. **Amresco. Circle 144.**



Personal Temperature Cyclers

Gene Runner Temperature Cyclers pack advanced features into a compact unit. Features include menu-driven programming, temperature uniformity for reproducible results, and large capacity for a personal cycler (48 ml by 0.5 ml, 96 ml by 0.2 ml, 96-well microtiter plate). Simulated tube control and advanced software provide the same precision reaction control for small samples and microplates. Models with a heated lid are also available. **Savant Instruments. Circle 145.**



Imaging System

The IsoScan Imaging System creates a high resolution digital image using a flatbed scanner, dedicated computer, and software.



IsoScan allows the laboratorian to scan and digitize an entire electrophoresis gel in a single pass. Unlike the narrow slit width of laser densitometers, the system offers full band analysis, allowing irregularly shaped contours such as "smiling" bands to be accurately processed. **Isolab. Circle 146.**



Literature

Transduction Laboratories 1995 Antibodies Catalogue features more than 60 new monoclonal antibodies for signal transduction research covering a variety of areas, including nitric oxide synthase, cell adhesion, MAP

kinase pathway, cell cycle, tyrosine kinases, protein phosphatases, Ras pathway, receptor proteins, neuroscience-related proteins, tumor and disease markers, apoptosis, and protein kinase C. **Transduction Laboratories. Circle 147.**

1995 Immunochemicals for Research catalog includes antibodies to enzymes, antibodies to transcription factors, cyanine-conjugated affinity-purified antibodies, and more. **Rockland Immunochemicals. Circle 148.**

Extreme Imaging: How to Select an Electronic Camera for your Application is a color brochure designed to provide readers a basic understanding of the various electronic cameras currently available. **Photometrics. Circle 149.**

HPLC Application Handbook guides the user through high-performance liquid chromatography (HPLC) column selection, mobile phase selection, controlling analyte retention, and detector selection for analysis, separation, and purification. It features 270 applications chromatograms, more than 175 literature references, and 1200 compounds, alphabetically indexed by samples and compounds. **Hamilton. Circle 150.**

Nanosphere™ Size Standards. Certified in billionths of a meter by Duke Scientific

Nanosphere Size Standards are calibrated in billionths of a meter (nanometers) and are available in 22 sizes from 21 to 900nm—all traceable to the National Bureau of Standards. Nanospheres are part of our complete line of spherical particles from 0.02 to 2000 micrometers in diameter. They are used as standards for instrument calibration, quality control, filter checking, and in numerous biotechnology applications. At Duke Scientific—established in 1971—we have the expertise and resources to meet any of your requirements for microspheres and particles. Call us today for information.



2463 Faber Place, P.O. Box 50005, Palo Alto, CA 94303, Toll Free (800) 334-3883, in CA (415) 424-1177, Fax (415) 424-1158
Circle No. 23 on Readers' Service Card



STABLE ISOTOPES AND LABELED COMPOUNDS

**Highest Isotopic Enrichment
>99% Chemical Purity
Fast Delivery**

Amino Acids
Fatty Acids
Carbohydrates
Agricultural Compounds
Environmental Pollutants
Custom Synthesis

ISOTECH INC.
A Matheson, USA Company

3858 Benner Road, Miamisburg, OH 45342
800-448-9760 513-859-1808 FAX 513-859-4878

Circle No. 17 on Readers' Service Card

Science

PERSONNEL PLACEMENT

LINE CLASSIFIED ADVERTISEMENTS

Deadlines: Ads are due by Thursday, 10 a.m., 2 weeks prior to the issue date. *Science* is published each Friday, except the last Friday of the year. Call for holiday deadlines. Ads must be submitted in writing.

How to Submit a Classified Ad:

Prepare double-spaced typewritten copy. Do not include any abbreviations. *Science* will edit and typeset ads according to *Science* guidelines. Include billing information, and desired publication date. Available categories: Positions Open, Meetings, Announcements, Courses and Training, Search Firms. *Science* cannot provide proofs of typeset line ads.

Mail, FAX or Email materials to:

Science Classified Advertising
1333 H Street, N.W., Room 814
Washington, DC 20005
Telephone: 202-326-6555
FAX: 202-682-0816

Internet Email: science_classifieds@aaas.org

Rates: Ads are \$43 per line; \$430 minimum. One line equals 52 characters and spaces; centered headings equal 32 characters and spaces. A 3% cash discount is granted to all prepaid ads.

Estimates: *Science* will provide a cost estimate for line ads. This is an approximate cost only. Allow for variation between estimated lines and actual typeset lines and resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.

Ads from Outside the U.S.: A discount of \$30 will be offered to advertisers making payment in U.S. dollars by checks drawn on U.S. banks. Contact Gordon Clark at +44 1223 302 067 (telephone) or +44 1223 576 208 (FAX).

Credit Cards: *Science* accepts American Express, MasterCard and VISA. Discount does not apply to credit cards.

Cancellations: Deadline for cancellation is 10 a.m., Tuesday, 10 days prior to issue date.

DISPLAY PERSONNEL ADVERTISEMENTS

For rates and info. for fractional display ads call:

Deborah Cummings
Recruitment Advertising
Telephone: 202-326-6541
FAX: 202-682-0816

Janis Crowley
Recruitment Advertising Manager
Telephone: 212-496-7704
FAX: 202-682-0816

Gordon Clark
European Recruitment Advertising
Telephone: +44 1223 302 067
FAX: +44 1223 576 208

CONDITIONS: The AAAS encourages employers to actively recruit and employ underrepresented minority groups. *Science* reserves the right, at its discretion, to edit or decline to publish advertisements submitted to it.

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR PHARMACOLOGY/TOXICOLOGY

The College of Pharmacy at the University of New Mexico seeks candidates for a tenure-track faculty position at the ASSISTANT/ASSOCIATE PROFESSOR level. The minimum requirements include a Ph.D. in Pharmacology/Toxicology or related field, a record of research related to toxicology, and teaching experience related to pharmacology/toxicology. Ideal candidates will also have a record of quality instruction in a professional curriculum as well as graduate instruction, and possess the ability to develop and maintain an extramurally funded toxicology-centered research program. This position offers excellent opportunities for collaborative research within the College of Pharmacy, the School of Medicine, Cancer Center, and National Laboratories. The position is available September 1, 1995. Applications will be accepted until May 31, 1995, or until the position is filled. Please send a letter of intent describing career goals, curriculum vitae, and three letters of reference to: Scott Burchiel, Ph.D., Chair, Pharmacology/Toxicology Faculty Search Committee, College of Pharmacy, University of New Mexico, Albuquerque, NM 87131. Telephone: 505-277-0920; FAX: 505-277-6749. *The University of New Mexico is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH FACULTY MAYO CLINIC SCOTTSDALE

A faculty position is available starting in 1996 at the ASSOCIATE PROFESSOR or higher level. Research programs will address the molecular basis of human disease. The new 75,000 square foot S.C. Johnson Medical Research Building houses laboratories and core facilities, including an 8,000 square foot animal facility devoted primarily to transgenic and gene inactivation operations. Mayo Scottsdale is fully integrated with and electronically coupled to Mayo campuses in Rochester, Minnesota and Jacksonville, Florida. Appointments are available in the appropriate department of the Mayo Graduate School of Medicine. Scottsdale faculty have active research programs in extracellular matrix, mucin molecular biology, myeloid cell differentiation, eosinophil-mediated inflammation, homeobox genes in nervous system development and the molecular pathophysiology of cystic fibrosis. Generous start-up and space allotments are provided. A strong record of extramural support is required. Please forward curriculum vitae, statement of research interest and names of three references to: Faculty Search, S.C. Johnson Medical Research Center, Mayo Clinic Scottsdale, 13400 East Shea Boulevard, Scottsdale, AZ 85259. *Mayo Clinic Scottsdale is an Affirmative Action Employer and Educator. It promotes cultural diversity in its workforce.*

ASSISTANT PROFESSOR—DUKE UNIVERSITY

The Division of Geriatrics and The Aging Center at Duke University and the Durham VA Geriatric Research Education and Clinical Center are seeking a full-time, tenure-track faculty member at the JUNIOR or MID-ASSISTANT PROFESSOR level. The preferred candidate is an M.D.-scientist with a primary research focus in basic biomedical research on aging biology in areas of investigation such as telomerase, apoptosis, signal transduction, and gene regulation. The successful candidate will have VA salary support and would be expected to seek VA and NIH research funding. Start-up funds and well-equipped laboratory are available. Applicants should submit a curriculum vitae, bibliography, a brief (one-to-two page) description of research interests and three letters of reference to: Chair of Search Committee, Dr. L. M. Obeid, Department of Medicine, Box 3345, Duke University Medical Center, Durham, NC 27710. *Duke University is an Equal Opportunity Employer. Minorities and women are encouraged to apply.*

ASSISTANT PROFESSOR of Obstetrics, Gynecology and Reproductive Sciences, to mount an independent research program in the Reproductive Genetics Unit. M.D. or Ph.D. should be experienced in molecular biology, cell biology and/or mammalian developmental genetics. Research interaction and graduate teaching opportunities are available through established University of California, San Francisco (UCSF) programs. Send curriculum vitae and arrange for three reference letters to: Roger Pedersen, Ph.D., Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, CA 94143-0750. (Review starts June 15, 1995.) *UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

FACULTY POSITION MICROBIOLOGY, IMMUNOLOGY & MOLECULAR GENETICS

Applications for tenure-track ASSISTANT PROFESSORSHIP are invited from candidates with a background in immunology, prokaryotic biology, virology or cell biology using molecular and/or cellular technologies. The aim of the research program should focus on the pathogenesis of infectious diseases and/or gene expression of normal and neoplastic cells. Candidates should possess a Ph.D. or M.D. with proven ability or high potential for an independently funded, productive research program. Send curriculum vitae, bibliography, three letters of recommendation and statement of research and teaching interests to: John M. Lehman, Ph.D., Department of Microbiology, Immunology & Molecular Genetics A-68, Albany Medical College, 47 New Scotland Avenue, Albany, NY 12208.

The Albany Medical Center is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF FLORIDA

ASSISTANT PROFESSOR of Wildlife Ecology Ref. No. 91370. Twelve-month, tenure-accruing position (60% Extension, 40% Research) to develop an extension program offering information on wildlife ecology in a landscape experiencing rapid population growth, urbanization and agricultural development and a research program in wildlife ecology emphasizing issues related to urban and agricultural interfaces. Must possess an earned Ph.D. degree in Wildlife Ecology, Wildlife Habitat Conservation or a closely related field; communicate effectively with diverse clientele to conduct extension and research programs, and to procure extramural funds.

Applicants must submit a letter of application, curriculum vitae, list of publications, official transcripts of college training and letters of reference. All application materials must be received by closing date (June 15, 1995). Send application materials to: Dr. Calvin E. Arnold, University of Florida, P.O. Drawer 5127, Immokalee, FL 33934. *Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR: Theoretical Visual Neuroscience Center for Neural Science and Courant Institute of Mathematical Sciences. As part of its Sloan Theoretical Neuroscience Program, the Center for Neural Science at New York University, together with the Courant Institute of Mathematical Sciences, is planning to hire an Assistant Professor (tenure-track) in the field of Theoretical Visual Neuroscience. Applicants should have a background in mathematics, physics, and/or computer science with a proven record of research in visual science or neuroscience. Applications (deadline June 30, 1995) should include a curriculum vitae, names and addresses of at least three individuals willing to provide letters of reference, and a statement of research interests. Send to: Sloan Search Committee, Center for Neural Science, New York University, 4 Washington Place, New York, NY 10003. *NYU encourages applications from women and members of minority groups.*

RESEARCH ASSISTANT PROFESSOR NEPHROLOGY

The Department of Medicine at the University of Maryland School of Medicine is seeking a Ph.D. trained in molecular biology for studies of growth regulation in the nephron for a full-time, non-tenure-track position at the RESEARCH ASSISTANT PROFESSOR level on/between July-December 1995. Skills in gene transfer, RNase protection assays and *in situ* hybridization desirable. Applicants should submit curriculum vitae and names of at least three to four references to: Matthew R. Weir, M.D., Nephrology Division, University of Maryland Medical Center, 22 South Greene Street, Baltimore, MD 21201. *University of Maryland at Baltimore encourages women and minorities to apply and is an Affirmative Action/Equal Opportunity Employer/ADA Employer.*

Comparative Physiologist, Ph.D., nine-month, tenure-track appointment as ASSISTANT PROFESSOR. Starting August 14, 1995. Undergraduate teaching and research required. Teaching includes Comparative Physiology, Anatomy/Physiology and Introductory Zoology. Send résumé, application letter, and three references to: Dr. Marilyn Kilgen, Department of Biology, Nicholls State University, Thibodaux, LA 70310. Deadline: June 1, 1995. *Nicholls State University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

Virginia Commonwealth University's Department of Pharmacology and Toxicology seeks a non-tenurable **ASSISTANT PROFESSOR**, with a Ph.D. or M.D. and at least five years of postdoctoral experience in molecular biology of adrenergic receptors. Documented experience in gene cloning, protein purification, cell culturing, site-directed mutagenesis, and DNA/protein interactions is required. Submit a curriculum vitae, letter of interest, and names of three references, by July 1, 1995, to: **Search Committee Chair, P.O. Box 980613, Richmond, VA 23298-0613**. Position description available. *Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Employer and encourages women, minorities and persons with disabilities to apply.*

ASSISTANT ADJUNCT PROFESSOR and POSTDOCTORAL POSITIONS available to study new myoclonus animal model. Techniques include microdialysis, autoradiography, molecular biology and drug screening. Experience in 5HT and dopamine receptors preferred. Send curriculum vitae and names of three references to: **Daniel Truong, M.D., Neurology 154 Med Surge I, UCI, Irvine, CA 92717**. Refer to position no. 95-5. *UCI, noted in education, enriched by diversity.*

The George Washington University Medical Center (GWUMC) is seeking a **PROFESSOR and CHAIR** for the Department of Pharmacology. The GWUMC seeks a distinguished Ph.D., M.D. or M.D./Ph.D. molecular neuropharmacologist with an outstanding record of scientific productivity and proven ability to obtain external funding. This position will also be the Chief of the interdisciplinary research program in Neuroscience and Behavior that is one component of a newly established Institute of Biomedical Research. The successful candidate will be expected to sustain the academic excellence of the Department and guide expansion of the Neuroscience and Behavior program into one of national prominence. The successful candidate will have demonstrated distinction in teaching at the medical, graduate and postdoctoral levels, as well as the leadership qualities and administrative skills necessary to head an academic interdisciplinary research and training program. Review of applications will begin on June 15, 1995, and continue until the position is filled.

Applicants should submit curriculum vitae, an outline of current and future research interests, and names of three references to: **David Reiss, M.D., Chair of the Search Committee, Center for Family Research, Department of Psychiatry, George Washington University Medical Center, 2300 I Street, N.W., Room 613, Washington, DC 20037**. *The GWUMC is an Equal Opportunity/Affirmative Action Employer. Applications from women and minorities are encouraged.*

FACULTY POSITIONS IN MOLECULAR BIOLOGY AND MOLECULAR PHARMACOLOGY

The Department of Pharmacology and Molecular Biology at The Chicago Medical School is initiating the third phase of faculty recruitment for **TENURE-TRACK POSITIONS** (at all levels) from candidates with expertise in endocrinology, cardiology or oncology at the molecular/genetic level. Preference will be given to those candidates with ongoing, funded research program or assurance of research support. Attractive benefits and start-up funds are available. The school is located in a modern facility adjacent to the very pleasant North Shore community of Lake Bluff, 38 miles from downtown Chicago with proximity to forest preserves and Lake Michigan. The department under new leadership has already recruited several faculty of high caliber. Excellent core facilities and strong graduate program (Ph.D. and M.D./Ph.D.) are available. Please send curriculum vitae, research plans and three names for reference to: **Dr. Samson T. Jacob, Chairman, Department of Pharmacology and Molecular Biology, The Chicago Medical School, 3333 Green Bay Road, North Chicago, IL 60064**. *The Chicago Medical School is an Equal Opportunity/Affirmative Action Employer.*

LECTURER in Biology, full-time, one year only. Teach Animal Biology, Human Anatomy and Physiology. Ph.D. or ABD preferred. M.S. minimum. Starts September 6, 1995. Apply to: **Dr. F. Duane Blume, Department of Biology, California State University Bakersfield, 9001 Stockdale Highway, Bakersfield, CA 93311-1099**. Deadline May 31, 1995. *California State University Bakersfield is an Affirmative Action/Equal Opportunity Employment Employer.*

POSITIONS OPEN

MOLECULAR REPRODUCTIVE BIOLOGIST

The University of Pittsburgh School of Medicine invites applications for a **TENURE-TRACK POSITION** in the Department of Cell Biology and Physiology. Preference will be given to individuals with training in molecular and cell biology with research interests in the hypothalamic-pituitary-gonadal axis. The successful candidate will be expected to develop an independent research program and research collaborations with reproductive physiologists in the NIH-funded Center for the Study of Reproduction. Position, salary, laboratory space and start-up funds commensurate with level of experience.

The desired starting date is negotiable. Applications must be received by May 31, 1995. Applicants should have a Ph.D. and/or M.D. degree and postdoctoral experience. Send curriculum vitae, summary of research interests and names of three references to: **Raymond A. Frizzell, Ph.D., c/o Byron E. Helms, Department of Cell Biology and Physiology, University of Pittsburgh School of Medicine, E1448 Biomedical Science Tower, Pittsburgh, PA 15261**. *The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.*

INSTITUTE OF GENOMIC MEDICINE MOLECULAR BIOLOGIST/GRANTS SCHOLAR POSITION

The Institute of Genomic Medicine (IGM), a nonprofit organization dedicated to mapping the human genome and understanding the genetic causes of disease, seeks to hire a molecular biologist with exceptional conceptual and writing skills, who has the desire and capacity to serve as **GRANTS SCHOLAR** for a highly qualified team of scientists. Candidates must possess a Ph.D. degree in molecular biology with strong interests in the cell biology and genetics of human disease. Recent postdoctoral experience is essential. Scientific talent, dedication, achievement focus, and teamwork skills are a must.

The IGM, founded by scientists from Harvard Medical School, is located in the Charlestown Navy Yard, amidst strong academic institutions. The IGM offers a competitive academic salary, opportunities for growth, and an "environment of excellence" for professional success. Qualified candidates should submit a cover letter, their curriculum vitae, samples of scientific writing, and two letters of reference to: **Dr. George Scheele, Institute of Genomic Medicine, Building 96, 13th Street, Charlestown, MA 02129**. *An Equal Opportunity Employer/Minority/Female/Disabled/Veteran.*

The Department of Medicine, Division of Hematology-Oncology, at UCLA, is seeking an individual to fill a research position at the rank of **ASSISTANT RESEARCH**, to conduct studies in the field of molecular cytogenetics of breast and ovarian cancers. This research involves the study of genomic alterations associated with these malignancies using archival pathology material and established cell lines. Candidates must have a Ph.D. in Biological or Biophysical Sciences plus a minimum of three years of experience related to this area of study. Experience with fluorescence *in situ* hybridization and long-range mapping techniques is required. Starting salary is \$43,772 per year. Candidates are invited to submit a curriculum vitae and bibliography to: **Search Committee, UCLA School of Medicine, Center for the Health Sciences, Los Angeles, CA 90095-1678, Attention: Sherri Simpson**. *UCLA is an Affirmative Action/Equal Opportunity Employer.*

The University of Puerto Rico-Cayey Campus is recruiting for **TENURE and NON-TENURE-TRACK POSITIONS**, Evolutionary-Vertebrate Zoologist, Biochemist, Plant Physiologist, Physics (Astronomy), Mathematics (Analysis), Assistant Professor Level, beginning August 1995, to teach undergraduate Introductory courses and their respective specialties. Doctorate degree and a strong commitment to teaching excellence and involvement of students in research is required. Bilingual (fluent in Spanish/English). Submit curriculum vitae, statement of teaching and research interests, and three letters of recommendation by June 5, 1995, to: **Dean of Academic Affairs, Cayey University College, Cayey, Puerto Rico 00736**. Telephone: 809-738-6338; FAX: 809-738-6962. *University of Puerto Rico is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

INSTITUTE OF MOLECULAR BIOLOGY ACADEMIA SINICA, TAIWAN, ROC

Tenure-track positions for **RESEARCH FELLOWS** are open for outstanding individuals to establish research programs in an expanding, stimulating research institute. Scientists with a Ph.D. degree and at least two years of postdoctoral experience in molecular cell biology and biochemistry are encouraged to apply. Although people who work on genetics and development, and on cellular signal transduction, are of particular interest to the selection committee, individuals with demonstrated records of research accomplishments and scientific creativity in all areas of molecular genetics will be considered.

The Institute currently has 25 laboratories, and is well-funded by the Academia Sinica and the National Science Council. Successful candidates will be appointed at the Assistant, Associate, or Full Research Fellow level, and are expected to develop their own independent research programs as well as program projects with other research fellows in the Institute.

Deadline for application is July 15, 1995. First-round candidates will be selected by July 31, 1995. The interview process and final decision are expected to be completed by September 15, 1995.

Interested individuals should send curriculum vitae, a description of past research accomplishments and future research interests, and three letters of reference by July 15, 1995, to: **Dr. Che-Kun Shen, Director, Institute of Molecular Biology, Nankang, Taipei, Taiwan 11529, ROC**. FAX: 886-2-788-4177.

PLANT ECOLOGIST POSITION

The Department of Botany and Microbiology, University of Oklahoma (OU) is seeking a plant ecologist for a tenure-track **ASSISTANT PROFESSOR** position. This individual will be expected to teach and conduct research in ecosystems ecology and must have a Ph.D. in botany, ecology or a related field. Teaching responsibilities include undergraduate biology, ecology and a specialty course at the graduate level. Postdoctoral experience and expertise in computational ecology, rhizosphere ecology or GIS are particularly desired. Curriculum vitae, including statements of research and teaching interests should be sent to: **Dr. Linda Wallace, Chair Ecology Search Committee, Botany and Microbiology Department, University of Oklahoma, Norman, OK 73019-0245**. Screening will begin September 1, 1995, and will continue until the position is filled. *The University of Oklahoma is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply. OU has a policy of being responsive to the needs of dual-career couples.*

ASSISTANT PROFESSOR (RESEARCH)

The Department of Pathology, Anatomy and Cell Biology of Thomas Jefferson University is seeking an **ASSISTANT PROFESSOR (Research)** to investigate the interaction of proteins with free radicals. Ph.D. with experience in the use of analytical and biophysical techniques, e.g., GC/MS, NMR and EPR spectroscopy required. Send curriculum vitae with references to: **Dr. Y. Israel, Thomas Jefferson University, 1020 Locust Street No. 275, Philadelphia, PA 19107**. *Equal Opportunity Employer.*

FACULTY POSITIONS X-Ray Crystallography (2) NMR Spectroscopy and Molecular Modeling

As a part of the newly formed Center for Structural Biology at the University of Kentucky, the above tenure-track faculty positions are available through the Department of Biochemistry, the Division of Medicinal Chemistry and Pharmacaceutics, and the Center for Computational Sciences. **ASSISTANT or ASSOCIATE PROFESSOR** level appointments will be considered. The successful applicant is expected to develop an active, externally funded, research program, and to participate in teaching. Send curriculum vitae, including a summary of proposed research, and have three letters of recommendation sent to: **Structural Biology Search Committee, Department of Biochemistry, University of Kentucky, Lexington, KY 40536**. *An Affirmative Action/Equal Opportunity Employer.*

Postdoctoral Opportunities In The Biomedical Sciences.

Listed below are some of the outstanding research training opportunities that are currently available at the National Institutes of Health.

Behavioral Neurophysiology **Steven P. Wise, PhD**

Positions are available for a project aimed at identifying and analyzing neural signals that reflect behavior-guiding rules and other aspects of higher-order visuomotor control. The project will involve operant conditioning and single-neuron recording from rhesus monkeys, as well as both physiological and anatomical data analysis. Applicants should have less than five years postdoctoral experience. Laboratory of Systems Neuroscience (OE-79), NIMH, Building 110, Room 121, Elmer School Road, Poolesville, MD 20837.

Cardiac Magnetic Resonance **Robert S. Balaban, PhD**

Magnetic resonance imaging and spectroscopy at 4 tesla are being used to investigate animal and human cardiac physiology, especially cardiac perfusion. Prior experience with imaging pulse sequence development is desirable. Applicants should have less than five years of postdoctoral experience. Laboratory of Cardiac Energetics (OE-79), NHLBI, Building 10, Room B1D161, 10 CENTER DR MSC 0105, BETHESDA MD 20892-0105.

Cellular Immunology/HIV Infection **Leonid B. Margolis, PhD**

Cell-cell interactions in explants of human lymph tissues and the biophysical mechanisms of AIDS infection are being investigated. In particular, the cellular immune response to AIDS infection will be studied in a three-dimensional cell culture system. Applicants must have a background in immunology; be capable of creating new lines of inquiry within an existing project; and have less than five years of postdoctoral experience. Laboratory of Theoretical and Physical Biology (OE-79), NICHD, Building 10, Room 10D14, 10 CENTER DR MSC 1855, BETHESDA MD 20892-1855.

Cell Signaling **Sue-Goo Rhee, PhD**

Transmembrane signaling cascades involving PI-specific phospholipase C (PLC) and PC-specific phospholipase D (PLD), characterization of noble peroxidases discovered several years ago, and elucidation of the role of hydrogen peroxide in cell signaling are being studied. Applicants should have a strong background in biochemistry or molecular biology and must have less than three years of postdoctoral experience. Laboratory of Cell Signaling (OE-79), NHLBI, Building 3, Room 122, 3 CENTER DR MSC 0340, BETHESDA MD 20892-0340.

Gene Therapy **Maurizio C. Capogrossi, MD**

The effects of gene therapy in angiogenesis using animal models of heart and limb ischemia is being studied. Candidates should have training in animal (rats and rabbits) anatomy, physiology and surgery and have less than five years of relevant postdoctoral

experience. Laboratory of Cardiovascular Science, (OE-79), NIA, 4940 Eastern Avenue, Baltimore, MD 21224.

Neurobiology **Carolyn B. Smith, PhD**

Imaging of rates of protein synthesis in brain *in vivo* is under investigation. Kinetic modeling and compartmentation of amino acid metabolism and recycling are emphasized. Projects include studies of development and plasticity. Applicants should have a strong background in neuroscience and neurochemistry and must have less than five years postdoctoral experience. Laboratory of Cerebral Metabolism (OE-79), NIMH, Building 36, Room 1A05, 36 CONVENT DR MSC 4030, BETHESDA MD 20892-4030.

Structural Biology **Peter D. Sun, PhD**

A position is available in the area of protein crystallography including protein expression, crystallization and structure determination of *tgf-beta* receptors, ligand-receptor complexes, integrins and other related proteins. Candidates should have an interest in the structure and function of growth factor activated cell surface receptors and must have less than five years postdoctoral experience. Laboratory of Molecular Structure (OE-79), NIAID, Building Twin II, Room 106, 12441 Parklawn Drive, Rockville, MD 20852.

Additional Postdoctoral Fellowship Opportunities

For an on-line listing of additional postdoctoral openings, you may access the NIH EDNET Bulletin Board POSTDOC conference via Internet (wylbur.cu.nih.gov) or modem (1,301-402-2221 or 1,800-358-2221) with parameters set at "7,Even,1". When connected to NIH, type in "vt100" for terminal emulation, "F5E" for initials, and "AJL1" for account number.

The Postdoctoral Research Fellowship Opportunities catalog, which describes intramural laboratories at the NIH, is also available by request. An electronic version of the catalog may be accessed via the Internet using either the Gopher Information System (gopher.nih.gov) or the World Wide Web (<http://www.nih.gov/>). When connected, select *Research Opportunities at the NIH*. If you would like to request a catalog or have further questions, please contact the NIH Office of Education, Building 10, Room 1C129, 10 CENTER DR MSC 1158, BETHESDA MD 20892-1158, 301-402-1603, Fax 301-402-0483.

To Apply

If you hold a doctoral degree (e.g., PhD, MD/PhD, MD, DO, DDS, DMD or DVM) accompanied by previous laboratory research experience, and would like to be considered for one of these positions, please send a cover letter, *curriculum vitae*, bibliography, and statement of research interests to the address listed with each position. In addition, please arrange to have letters of recommendation sent from three scientists who can provide an evaluation of your qualifications.



National Institutes Of Health

Office of Education

The NIH is an Equal Opportunity Employer

POSITIONS OPEN

WILDLIFE BIOLOGY/ORNITHOLOGY Department of Biological and Environmental Sciences California University of Pennsylvania (Temporary, Full-Time, Non-Tenure-Track)

Applications are invited for a temporary, full-time, non-tenure-track position in Wildlife Biology/Ornithology at the ASSISTANT PROFESSOR level beginning August 1995. There is a possibility that the appointment will be extended for the 1996-1997 academic year. The successful applicant's duties include teaching Wildlife Management Techniques, Principles of Wildlife Ecology, Experimental Design, Ornithology and Environmental Science. The successful candidate should have expertise in computer use for teaching and communication, quantitative ecology, and strong evidence of excellent teaching. Applicants should have a Ph.D. in Wildlife Biology or in a related field. Applicants should be field ambulatory for the necessary field trips in the wildlife courses and Ornithology. Applicants should have a strong commitment to maintain productive research programs directing undergraduate and graduate (M.S.) students involving land use impacts on wildlife, especially in agricultural ecosystems. Send curriculum vitae, a statement addressing the above criteria, and three letters of recommendation to: Dr. C. Allan Miller, Director of Environmental Studies and Chairman of the Search Committee, Department of Biological and Environmental Sciences, California University of Pennsylvania, California, PA 15419 USA, by 5 June 1995.

California University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer. Women, minorities and individuals with disabilities are encouraged to apply.

ZOOLOGY/ICHTHYOLOGY Department of Biological and Environmental Sciences California University of Pennsylvania (Temporary, Full-Time, Non-Tenure Track)

Applications are invited for a temporary, full-time, non-tenure-track position for the 1995-1996 academic year at the ASSISTANT PROFESSOR level. Teaching undergraduate course in General Zoology (three hours lecture, three hours laboratory per week) and Ichthyology, an upper-level undergraduate/graduate course (three hours lecture, three hours laboratory per week). A Ph.D. in Biology or related field is required as well as teaching experience.

Applicant should be able to teach microscopy relative to Zoology and Ichthyology. Applicant should also be field ambulatory for the occasional but necessary field trips involved in Ichthyology. Submit a letter of application, résumé, official transcripts, and three current letters of reference (including telephone numbers) to: Dr. Thomas P. Bucklew, Assistant Chairman and Chairman of the Search Committee, Department of Biological and Environmental Sciences, California University of Pennsylvania, California, PA 15419 by June 5, 1995.

California University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer. Women, minorities and individuals with disabilities are encouraged to apply.

VISITING FACULTY IN BIOLOGY

Applications are sought for a broadly educated biologist to teach six undergraduate courses: ecology (two sections), plant ecology, and evolution and two non-laboratory courses for non-majors. This will be a full-time, one-year, NON-TENURE-TRACK FACULTY position with a search to fill a tenure-track position in 1996. Salary commensurate with experience. Send a curriculum vitae, list of references, copy of transcripts, and a statement of your interest in teaching these particular courses to: Bruce Haggard, Search Committee, Department of Biology, Hendrix College, 1601 Harkrider, Conway, AR 72032. Telephone: 501-450-1375; Email: haggard@hendrix.edu. Affirmative Action/Equal Opportunity Employer.

MEDICAL PHYSICIST—Supervise safe, effective use of radiation and radionuclides. Require Master's in Health or Biomedical Physics and two years of experience in job or related occupation such as Physicist. Experience must include Therapeutic Radiology—Hypothermia Treatments, Neutron Treatments, TBI, UGTPI and TSET. \$70,000 per year. 40 hours per week. Job Site/Interview: Los Angeles, California. Send this ad and résumé to: Job No. JA36206, P.O. Box 269065, Sacramento, CA 95826-9065.

POSITIONS OPEN

ASSISTANT PROFESSOR Group Leader in Molecular Genetics

The Department of Genetics, Faculty of Science, University Erlangen-Nürnberg (Germany), invites applications for a Molecular Geneticist beginning August 1995. Depending on the qualification of the applicant, the position will be filled either for three years, renewable for a second three-year term (Bes.Gr. C1; Beamter auf Zeit) or as a tenured position (Bes.Gr. A13). The applicant should hold a Ph.D. and have at least two years of postdoctoral experience in molecular genetics. Candidates are expected to participate in undergraduate and graduate teaching and to operate an independent research group. A laboratory for a group of six to eight members and adequate equipment funds will be made available. In addition, the candidate benefits of the excellent infrastructure of the newly equipped department. Candidates are expected to attract extramural funds to support their operation. Other laboratories in the department work with a focus on pathogenetic mechanisms of acute lymphocytic leukemias caused by chromosomal translocations. Applicants with experience complementing these areas of research and participating in a program project grant on lymphoproliferation are particularly welcome. Applications should be sent until May 31, 1995, to: Dr. Georg Fey, Chair, Department of Genetics, University of Erlangen-Nürnberg, Staudtstrasse 5, D 91054 Erlangen, Germany. Telephone: +49-9131-858494; FAX: 49-9131-858526.

JUNIOR FACULTY POSITION BIOMEDICAL ENGINEERING Massachusetts Institute of Technology

The Department of Mechanical Engineering at MIT invites applications for a junior FACULTY POSITION in the general area of Biomedical Engineering. The candidate's areas of interest should complement and enhance current research and teaching activities in mechanical engineering. Focus on mechanical and either biochemical or biophysical phenomena at the biological microscale (cells and matrices), as well as their relation to physiological or pathological function of tissues and organs, is desired. Emphasis on a specific tissue/organ is desirable, together with interests in applications to a variety of *in vitro* and *in vivo* systems. Applicants must hold an earned doctorate in mechanical engineering, biomedical engineering, or a related field and have a demonstrated ability to carry out innovative research and a strong promise of outstanding teaching. Applicants should send a curriculum vitae including citizenship and/or visa status, a one-to-two page statement of research interests, copies of no more than three publications, and the names, addresses and telephone numbers of at least three references to:

Chair—Biomedical Engineering Faculty Search
Department of Mechanical Engineering Room 3-173
Massachusetts Institute of Technology
Cambridge, MA 02139-4307

Applications received by July 31, 1995, will be given full consideration.

MIT is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

POSTDOCTORAL POSITION to study transmembrane receptor mediated signal transduction mechanisms involved in the regulation of phospholipases coupled to the release of arachidonic acid in cells transfected with wild type and mutated receptors and signaling elements. Applicants must have a Ph.D., M.D. or D.V.M. degree with experience in cell culture and in the area of molecular biology. Please send curriculum vitae and the names of three references to: Dr. K. U. Malik, Department of Pharmacology, University of Tennessee, Memphis, 874 Union Avenue, Memphis, TN 38163. Telephone: 901-448-6075; FAX: 901-448-7300. An Equal Opportunity/Title IX/Section 504/Affirmative Action Employer.

POSTDOCTORAL POSITION – to study the molecular mechanism(s) involved in EGF-mediated stimulation of cardiac adenylyl cyclase. Studies will involve mutations of signaling elements, expression and purification of recombinant proteins and reconstitution of events in cells and *in vitro* (see e.g., *PNAS (USA)*, 92:2229-2233, 1995). Please send application with names and telephone numbers of three references to: Dr. Tarun B. Patel, Department of Pharmacology, University of Tennessee, Memphis, 874 Union Avenue, Room 115, Memphis, TN 38163. Telephone: 901-448-6006; FAX: 901-448-7300.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study the sequence determinants of protein folding kinetics and thermodynamics. Combinatorial mutagenesis in conjunction with the phage display technology is being used to generate a) widely divergent and b) highly simplified sets of sequences which adopt the folds of the Protein L IgG binding domain and the src SH3 domain (see *Protein Science*, June 1995). Molecular biology experience and interest in protein folding required. Send curriculum vitae and three references to: Dr. David Baker, Department of Biochemistry, University of Washington, Seattle, WA 98195.

A **POSTDOCTORAL POSITION** for a Ph.D. is available immediately in the Department of Biochemistry, East Carolina University School of Medicine to work on the effects of diabetes and insulin resistance on various enzymes involved in lipid and lipoprotein metabolism. The post is supported by the NIH and is available for three to four years. Previous experience with lipoproteins and molecular techniques is desirable. Please submit a curriculum vitae and the names of three references to: Dr. Hisham Barakat, Department of Biochemistry, East Carolina University School of Medicine, Greenville, NC 27858. An Equal Employment Opportunity/Affirmative Action Employer. Accommodates individuals with disabilities. Immigration Reform and Control Act procedures followed.

POSTDOCTORAL POSITION Signal Transduction and Immunology Dana-Farber Cancer Institute

POSTDOCTORAL POSITION beginning July 1, 1995, to study signaling mechanisms (tyrosine and lipid kinases, GTP binding proteins) mediated by the TcR/CD3-CD4 and CD28 antigens in T cells. Experience in molecular biology and/or cellular immunology preferable but not required. Send/FAX curriculum vitae and the names of three references to: Dr. Christopher Rudd, Associate Professor, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115. FAX: 617-632-5259. Equal Opportunity Employer.

POSTDOCTORAL POSITION: Available immediately to study the role of ethanol on signal transduction in stimulated lymphocytes. Applicants should have a Ph.D. in immunology, immunotoxicology, or biochemistry. Experience in gene regulation, biochemical and molecular techniques, and flow cytometry is desirable. Applicants should send a curriculum vitae and the names of three references to: Dr. Gary Meadows, Department of Pharmaceutical Sciences, Washington State University, Pullman, WA 99164-6510. Washington State University is an Equal Opportunity/Affirmative Action Employer. Members of ethnic minorities, women, Vietnam-era or disabled veterans, persons of disability, and/or persons age 40 and over are encouraged to apply.

RESEARCH ASSOCIATE position available to study the genetic and molecular regulation of sex determination in *Drosophila*. Experience in *Drosophila* genetics and molecular biology preferred. Interested candidates should send a curriculum vitae, a brief summary of research experience and three letters of recommendation to: Dr. Claire Cronmiller, Department of Biology, Gilmer Hall, University of Virginia, Charlottesville, VA 22901. Telephone: 804-982-5484; Email: crc2s@virginia.edu. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

Recent Ph.D. **MOLECULAR BIOLOGIST** required to study differentiation-dependent gene expression of two glucose transporter isoforms SGLT1 and SGLT2. Protein kinase-mediated mRNA stabilization is a focus. Contact: Dr. Julia Lever, Department of Biochemistry and Molecular Biology, University of Texas Medical School, P.O. Box 20708, Houston, TX 77225. Email: jllever@utmsm.med.uth.tmc.edu. The University of Texas is an Equal Opportunity/Affirmative Action Employer. Women and minorities encouraged to apply.

THE SCRIPPS RESEARCH INSTITUTE Positions in Receptor Biochemistry and Signal Transduction

Applications are invited for **POSTDOCTORAL FELLOW** positions in the Department of Immunology. For research area see *Ann. Rev. Immunol.*, 13:437, 1995; *Science*, 265:808, 1994; *PNAS*, 90:2744, 1993; and *PNAS*, 90:9930, 1993. Positions available immediately. Send curriculum vitae and references to: Richard J. Ulevitch, Ph.D. or Peter S. Tobias, Ph.D., IMM-12, TSRI, 10666 North Torrey Pines Road, La Jolla, CA 92037. FAX: 619-554-3289. The Scripps Research Institute is an Equal Opportunity/Affirmative Action Employer.

PROGRAM OFFICERS

The Office of Naval Research is seeking highly qualified individuals to plan, evaluate, initiate, organize, encourage, direct, and coordinate basic research, exploratory development, and advanced development projects which are essential to the Department of the Navy (DoN) and Department of Defense (DoD) in the following areas: mathematics, computer science, electronics engineering, statistics, physics, oceanography, general engineering, meteorology, geophysics, chemistry, metallurgy, materials engineering, mechanical engineering, marine biology, biology, engineering psychology, aerospace engineering, and physical science. These positions may be temporary (not to exceed one year) or term (more than one year not to exceed four years), depending on the need of the specific position. The positions are Civil Service positions at the GS-13, GS-14 level, and/or GS-15 level (\$48,878-\$88,326 plus a 5.48% locality adjustment).

The incumbents will serve as Program Officers in one of the following departments: Information; Electronics and Surveillance; Ocean, Atmospheric and Space; Engineering, Materials, and Physical Science and Technology (S&T); Personnel Optimization and Bimolecular S&T; Special Programs; or Industrial Programs. Duties include, but are not limited to the following: (1) conceive, establish goals for; organize, direct, and defend integrated S&T programs in applicable scientific areas related to the specific position; (2) implement S&T programs through the management and execution of individual projects and tasks; (3) serve as a source of S&T information in his/her field and work closely with scientists and engineers at Navy laboratories, Warfare Centers, other Federal S&T funding agencies and laboratories, universities, and industry; and (4) participate in a variety of activities to formulate DoN, DoD, and national S&T needs and requirements.

Applicants should have a Ph.D. or equivalent training in one of the above areas and at least one year of related professional experience. To be qualifying, this experience must have been at a level of difficulty and responsibility equivalent to that of the next lower grade level in the Federal service. Qualifying experience includes: (1) technical knowledge of one of the above areas (evidenced by such factors as recent publications, presented papers, invited talks, etc.); (2) ability to manage science and/or technology projects; and (3) ability to establish and maintain effective working relationships with the science and/or technology community.

Interested persons should submit the new Optional Application for Federal Employment (OF-612); a resume or any other written format, including the old SF-171 (Application for Federal Employment); supplemental forms, and a list of publications to:

OFFICE OF NAVAL RESEARCH
SATELLITE HUMAN RESOURCES OFFICE, CODE 00HR
ATTN: ANNOUNCEMENT #95-21
800 NORTH QUINCY STREET
ARLINGTON, VA 22217-5660

Applicants should submit an application for each occupational series (e.g., mathematics, oceanography, etc.) for which he/she wants to be considered. Applications postmarked by 17 July 1995 will be accepted. This announcement will serve to provide a supply of qualified applicants for any temporary or term Program Officer position which may occur within six months of the opening date. Applicants are requested to complete the appropriate supplemental forms. To request a copy of the vacancy announcement and supplemental forms, call (703) 696-0972/4163, or TDD (telecommunication device for the deaf) (703) 696-2681.

U.S. CITIZENSHIP REQUIRED

AN EQUAL OPPORTUNITY EMPLOYER

GROUP LEADER

The Heart Research Institute has the fundamental objective of understanding, and hence restricting, the critical events in atherogenesis. It comprises 5 research groups, representing studies in complementary areas of the field of atherosclerosis, notably oxidation and antioxidant; lipoprotein metabolism, subcellular transport and efflux; roles of macrophage foam cells; cytokines and immunological processes and their clinical relevance. The Institute occupies a modern facility and has excellent equipment for molecular and cell biological studies. Funding is from NHMRC, NHF, and other competitive granting agencies, together with pharmaceutical collaborations and donations (individual and corporate).

The Institute has an opening for a new group, and seeks a dynamic innovative and productive researcher to lead and develop one in an area of molecular or cellular mechanistic work relevant to atherogenesis. Endothelial cell biology is amongst the appropriate areas, but we are interested to receive a broad range of applications, quality being the primary criterion. The position is available in 1995, and is for 5 years, with renewability available based on performance. Salary is by negotiation, based on NHMRC scales. Some start up staff and equipment support will be provided. Interested candidates should provide a one page synopsis of their research plan and its relevance to atherosclerosis, together with a full cv, bibliography, three relevant reprints, and the names of three referees. Application will remain open until the position is filled.

Apply to the Director, Prof Roger Dean
Heart Research Institute
145 Missenden Road
Camperdown, Sydney, NSW 2050 Australia
Tel: +61 2 550 3560. Fax: +61 2 550 3302
Email: r.dean@HRI.edu.au
from whom further information is available.



The Heart Research Institute

NIA 005689

UNITED ARAB EMIRATES UNIVERSITY FACULTY OF MEDICINE & HEALTH SCIENCES

The Faculty of Medicine and Health Sciences was established by Royal Decree in 1986 with the clear remit of becoming an international centre of excellence both in terms of teaching and research. To this end, applications are invited from suitably experienced individuals to hold the position of

PROFESSOR AND CHAIRMAN DEPARTMENT OF PHYSIOLOGY

The Department presently has an established complement of academic, technical, and support staff. An active research programme is currently in place.

Candidates should possess an approved basic Degree in Medicine or in a relevant Biological Science. Additionally, a higher University Degree (e.g. Ph.D., M.D.) or a Membership of one of the Royal Colleges of the U.K. (or a Commonwealth equivalent), or certification of the American or the Arab Board, is essential.

Applicants for this position must be able to demonstrate leadership experience in the development and implementation of teaching and research. Fluency in English is essential as this is the language of instruction.

Benefits for the successful appointee include an extremely competitive tax-free salary, free accommodation, furniture allowance and assistance with children's school fees. The University will also provide an interest free car loan and business class tickets from the point of recruitment at the beginning and at the end of the contract and once during the academic year. An award of 8.6% of the gross salary is payable at the end of each year of service.

The Emirates has one of the most enviable lifestyles of the Gulf Region with all the amenities of any modern society.

Interested candidates can apply by sending a comprehensive curriculum vitae, a list of publications, copies of certificates and the names and addresses of four current referees to:

Professor Iain McA Ledingham, Dean - Faculty of Medicine,
United Arab Emirates University, P O Box 17666,
Al Ain, United Arab Emirates.
Fax No. 00971 3 657649.

Applications will be closed 6 weeks after the date of publication

Kuwait Institute for Scientific Research

Kuwait Institute for Scientific Research (KISR) is a non-profit organization actively engaged in applied research in the fields of environmental and earth sciences; water resources; food resources; engineering; petroleum, petrochemicals and materials and techno-economics.

KISR has a vacancy in the following field:

BIOCHEMICAL ENGINEERING

Major duties: Leading and conducting research and development in numerous areas of biotechnology applications such as biochemical process optimization and scale-up, applied fermentation technology, wastewater treatment and solid waste management.

Qualifications: Applicants should have a Ph.D. in Biochemical Engineering, with strong background in Microbiology, Biochemistry or any other related biological sciences, plus 10-15 years of experience.

KISR offers attractive tax free salaries commensurate with qualifications and experience and generous benefits that include: gratuity, free furnished and air-conditioned accommodation, school tuition fees for children, six weeks annual paid vacation, air tickets, free medical care and life insurance.

Interested applicants are requested to send their Curriculum Vitae, latest list of publications and supporting information no later than one month from the date of this publication, to:

Personnel Manager
Kuwait Institute for Scientific Research
P.O. Box 24885, 13109 Safat
Kuwait.

DIRECTOR

International Institute for Applied Systems Analysis (IIASA) Laxenburg (Austria)

The Executive Council of the International Institute for Applied Systems Analysis (IIASA) invites nominations and applications for the position of Director. IIASA is an international non-governmental research organization, located in Laxenburg near Vienna (Austria) and supported by seventeen countries. The Director supervises 85 professionals and approximately 100 support staff with an annual budget of \$15 million. He or she plans and oversees a broad range of programs concerned with global environmental change, develops and recommends policies for the execution of research programs, determines the effectiveness of current programs, and develops new and revised programs.

The applicant should be capable of providing an imaginative leadership in developing the potential role of an institution such as IIASA, should have a track record of general management experience in a scientific- preferably international -research institution and should have recognized experience with interdisciplinary research. He or she should have an excellent command of English, the working language of the Institute. Knowledge of at least one other major European language is desirable (preferably Russian or German).

Nominations and applications should be sent to:

Professor K.L. KOMAREK
The Director's Search Committee
IIASA-Schloss Laxenburg
A-2361 Laxenburg
Austria

Applications should be accompanied by a current curriculum vitae, a bibliography, and a cover letter that addresses the qualifications of the position. Salary commensurate with experience. Review of applications will begin on July 1st, 1995.

PATHOLOGIST POSITIONS

The Pathology Branch, Environmental Toxicology Program, National Institute of Environmental Health Sciences has opportunities for four permanent positions as Veterinary Medical Officers in several areas of research and testing related to the identification and characterization of chemical and physical environmental agents that have the potential to cause adverse health effects. U.S. citizenship is required. Salary will be commensurate with experience and qualifications. Salary ranges are as follows: (GS-13 \$50,706 - \$65,915; GS-14 \$59,920 - \$77,893; GS-15 \$70,482 - \$91,629).

SENIOR PATHOLOGIST:
GS-14 (Code: HNV106A)
GS-15 (Code: HNV106B)

Research and management of studies to determine toxic and carcinogenic effects of xenobiotics. Experience in rodent carcinogenesis pathology, morphology, immunohistochemistry and molecular biology is preferred. For further information contact: **Dr. Gary A. Boorman, (919) 541-3440, Fax (919) 541-4714, email BOORMAN@NIEHS.NIH.GOV.**

TOXICOLOGICAL PATHOLOGIST:
GS-13 (Code: HNV107A)
GS-14 (Code: HNV107B)

Management of rodent studies, review of morphological diagnoses, determining terminology and criteria for toxic and carcinogenic lesions in B6C3F1 mice and F344 rats. Serves as study director for chemicals under evaluation. For further information contact: **Dr. Rick Hailey, (919) 541-0294, Fax (919) 541-4714, email HAILEY@NIEHS.NIH.GOV.**

TOXICOLOGIST/PATHOLOGIST:
GS-13 (Code: HNV108A)
GS-14 (Code: HNV108B)

Serves as study director for new chemicals, plans studies, develops protocols that will provide meaningful information that can be used in risk assessment. Experience in molecular biology and modeling of chemical effects is preferred. For further information contact: **Dr. Gary A. Boorman, (919) 541-3440, Fax (919) 541-4714, email BOORMAN@NIEHS.NIH.GOV.**

PATHOLOGIST FOR ALTERNATE SPECIES:
GS-13 (Code: HNV109A)
GS-14 (Code: HNV109B)

Management of studies to evaluate chemicals using small fish models. Plans studies that will help reduce the number of rodents needed in chemical evaluations, determines which alternate models may prove most effective. Experience in small fish models and carcinogenicity studies is preferred. For further information, contact: **Dr. Gary A. Boorman, (919) 541-3440, Fax (919) 541-4714, email BOORMAN@NIEHS.NIH.GOV.**

The closing date of this announcement is June 1, 1995. To ensure consideration, send cover letter indicating the position(s), by code number, to:

**Ms. Norma Daye, NIEHS Personnel Office
P. O. Box 12233, Research Triangle Park, NC 27709
(919) 541-3377**

GLOBAL CAREER OPPORTUNITIES

THE UNIVERSITY OF THE WEST INDIES Mona, Jamaica

PROFESSOR OF BOTANY

Department of Botany, Faculty of Natural Sciences

The appointee will be expected to provide academic leadership and guidance for research, teaching and the development of programmes at both the undergraduate and graduate levels. Preference will be given to applicants with interest in the following areas: Terrestrial Ecology with a strong background in Taxonomy; OR Crop Physiology.

In addition to research within the Department, the University will encourage cooperative research activities between the Department and its Centres of Excellence, eg the Biotechnology Centre, the Centre for Nuclear Sciences and the Tropical Metabolism Research Unit. The Department has a good Electron Microscope. The following facilities are also available: a SLOW POKE-2 research reactor for neutron activation analysis and X-ray diffraction and fluorescence equipment and a CONVEX Supercomputer.

Detailed applications giving full particulars of qualifications and experience, date of birth and the names and addresses of three referees should be sent to the Assistant Registrar (Centre), Office of Administration, University of the West Indies, Mona, Kingston 7, Jamaica (tel. [809] 927 6469; fax [809] 927 4869). Further particulars of the post, including salary, are available from the same source or from Appointments (43903), Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF (tel. 0171 387 8572 ext. 206; fax 0171 813 3055; email appts.acu@ucl.ac.uk), to whom candidates in the UK should also send one copy of their application.

Closing date: **30 June 1995.**

POSTDOCTORAL FELLOW AGRICULTURE GEOGRAPHY

CIAT (Centro Internacional de Agricultura Tropical) is seeking a PostDoctoral research fellow in agricultural geography for appointment in the Land Management Resource Group. The group aims to contribute to the sustainable productivity of land resources in tropical America through a better understanding of the dynamics of land use. The position will be awarded for one year with extension to a further year on mutual consent.

The research fellow will compile geographic information systems (GIS) coverages of crop distributions throughout the continent. These will be used, with existing CIAT databases, to produce characteristic classifications of the growing environments of the relevant crops. The coverages will also be used to characterize land use patterns throughout the area. The research fellow will also assist in the production of a continental GIS coverage of land use and resource degradation. The candidate will work with research group members and other international organizations to produce a manual of methods for the mappings.

A Ph.D. in Geography, Agriculture or related subject is required. Experience with geographic information systems, spatial analysis and database construction will be an advantage. Fluency in English is essential and a good working knowledge of Spanish and Portuguese would be highly desirable.

Application letters must include Curriculum Vitae, names and full addresses of three referees and be addressed to Dr. D. Pachico, Associate Director General, CIAT, Apartado Aéreo 6713, Cali, Colombia, or by Fax (57/2) 4450273. Applications will be accepted until July 15 and the appointment would initiate approximately September 1.

CIAT is a nonprofit organization with almost 100 internationally recruited scientists earning competitive salary packages and having privileges and immunity similar to those of U.N. organizations. It is based in Cali, Colombia, an attractive, hospitable, city in the foothills of the Andes. The climate is pleasant. Housing, schooling and health services are excellent. The communications include daily national and international flights.

POSITIONS OPEN

POSTDOCTORAL POSITION MOLECULAR NEUROENDOCRINOLOGY UNIVERSITY OF CALIFORNIA, SAN DIEGO

Molecular and biochemical investigations of regulatory proteases and protease inhibitors required in prohormone processing for the biosynthesis of peptide hormones and neurotransmitters (*FASEB J.* 8:1269, 1994). The selective roles of proteases, belonging to multiple classes, in the biosynthesis of opioid peptides, neuropeptide Y, and ACTH will be analyzed by gene cloning and expression (sense and antisense), and mutagenesis. Experience in molecular biology and/or gene expression of enzymes/proteins is required. Send curriculum vitae with three references to: **Dr. Vivian Hook, Department of Medicine, University of California, San Diego, 200 West Arbor Drive, No. 8227, San Diego, CA 92103-8227.**

POSTDOCTORAL POSITION available immediately to isolate and culture liver stem cells from mice and rats. Experience in cell isolation, flow cytometry, tissue culture, histology and immunolabeling, as well as molecular biology and liver physiology preferred. Candidates should send curriculum vitae, transcripts, statement of research interests and three letters of reference to: **Stewart Sell, M.D., Department of Pathology and Laboratory Medicine, University of Texas at Houston, Box 20708, Houston, TX 77005. Email: sell@capser.med.uth.tmc.edu. The University of Texas is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.**

POSTDOCTORAL POSITION is available to study metastasis in breast cancer. The focus is on the expression of proteases and the mechanisms responsible for their induction. The systems studied include cell culture and transgenic mice. Applicant should send a curriculum vitae, and three references to: **Dr. Ruth J. Muschel, Room 230, J. Morgan Building, University of Pennsylvania, Philadelphia, PA 19104-6082. Email: muschel@mail.med.upenn.edu. University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION

Immediate opening for two years. Cutting edge research in vascular pathology in the aging brain and the neurodegenerative disease leukoaraosis (*Radiology*, 194: 469, 1995). Also studies of abnormal vascular collagen in aging brain, neonatal germinal matrix hemorrhage, and brain microemboli after heart surgery (*Ann Neurol*, 28: 477, 1990). Work with neuropathologist, neuroradiologist, neuroscientist, and histology technicians. Prefer candidate with expertise in histology, immunohistochemistry, pathology, brain, vascular biology, computer image analysis, and collagen. Send a single-page résumé to: **Dr. William R. Brown, Department of Radiology, Bowman Gray School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157. FAX: 910-716-2029.**

Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION in Plant Molecular Genetics available to study the "hormone-like" effects of sucrose on plant gene expression and development, using *Arabidopsis thaliana* as a model system. Experience with molecular biology, genetics and/or plant biology required. Send curriculum vitae and three references to: **Dr. Sue Gibson, Department of Biochemistry and Cell Biology - MS140, Rice University, Houston, TX 77005. Telephone: 713-285-5933; FAX: 713-285-5154; Email: sig@bioc.rice.edu. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available in the Section of Neurobiology at Yale Medical School to study effects of neuroleptics on cortical dopaminergic system as part of a large program project concerned with neurobiology of schizophrenia. Knowledge of molecular biology and experience with HPLC is desired. Eligibility requires U.S. citizenship or permanent residency. Please contact: **Dr. Michael S. Lidow, SHM C303 Section of Neurobiology, Yale University Medical School, 333 Cedar Street, New Haven, CT 06510. Telephone: 203-785-6281.**

POSTDOCTORAL POSITION is available immediately to study male germ cell genetic modification (*Proc. Natl. Acad. Sci. USA*, 91: 11298; 11303). Experience in molecular biology is required. Send curriculum vitae, names of three references and a letter describing research skills and interests to: **R. L. Brinster, School of Veterinary Medicine, University of Pennsylvania, 3850 Baltimore Avenue, Philadelphia, PA 19104.**

POSITIONS OPEN

VASCULAR AND TUMOR BIOLOGY BETH ISRAEL HOSPITAL HARVARD MEDICAL SCHOOL

POSTDOCTORAL POSITIONS available immediately to study: (i) pathogenesis of angiogenesis, including roles of fibrin and cell matrix interactions, integrins, etc. (ii) VPE/VEGF-regulation of expression, mechanisms of action and (iii) cytokine regulation of endothelial cell gene expression. Experience in molecular biology (cloning and sequencing), protein biochemistry or cell biology is required. Start date: October 1995 to April 1996. Please send names of three references to: **Harold F. Dvorak, M.D., Beth Israel Hospital, Harvard Medical School, Department of Pathology, 330 Brookline Avenue, Boston, MA 02214. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION to assess the role of adenosine in the regulation of myocardial energetics during coronary underperfusion. Methodology includes ³¹P NMR spectroscopy, radio-tracer kinetics, biochemical purine measurements.

A mechanistically based mathematical model of the high energy phosphate/adenosine system is used for analyzing kinetics. Research experience in physiology and biochemistry is needed. Please send cover letter, curriculum vitae and names of three references to: **Dr. Keith Kroll, Bioengineering WD-12, University of Washington, Seattle, WA 98195. Telephone: 206-685-2008; Email: keith@nsr.bioeng.washington.edu. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH POSITIONS

(two) available to study the regulation of triglyceride lipases. Preference for one position will be given to applicants with experience in the characterization of phospholipid-glyceride mixtures by physical methods. For the other position, preference will be given to applicants with experience in lipase regulation at the substrate level. Candidates must have a Ph.D. in the physical chemistry/biochemistry or a related discipline. Send curriculum vitae and names of three references by June 15, 1995, to: **Dr. Howard Brockman, The Hormel Institute, University of Minnesota, 801 NE 16th Avenue, Austin, MN 55912. Email: hlbroc@maroon.tc.umn.edu. The University of Minnesota is an Equal Opportunity Employer.**

A **POSTDOCTORAL POSITION** is available immediately for individuals interested in molecular biology of human retroviruses, retroviral transactivators, and mechanisms of T-cell transformation. Prior training in or a strong desire to learn retrovirology, protein and nucleic acid biochemistry, molecular aspects of T-cell activation are required. For additional information, see: **N. Adya and C.-Z. Giam, J. V., 69:1834, 1995; Adya et al., PNAS, 91:5642, 1994; S. Paca-uccaralertkun et al., MCB, 14:456, 1994.** Please send curriculum vitae and list of three references to: **Dr. Chou-Zen Giam, BRB 1031, Division of Infectious Diseases, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106. Case Western Reserve University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION NEW YORK UNIVERSITY MEDICAL CENTER

Position available immediately to study the biochemistry of Alzheimer's disease amyloid. Prior experience with protein purification, HPLC/FPLC, amino acid sequencing and conformational studies is preferred. Send curriculum vitae and three letters of reference to: **Thomas Wisniewski, M.D., Department of Pathology, New York University Medical Center, 550 First Avenue TH427, New York, NY 10016.**

An Equal Opportunity Employer.

T-CELL TRAFFIC IN THE BRAIN

POSTDOCTORAL POSITIONS to study leukocyte motility in the nervous system. Available January 1996. Include brief, specific description of relevant experience, the basis for your interest, and fellowships for which you are eligible. Reply to: **Dr. L. Lampson, Laboratory of CNS Immunology and Tumor Biology, Department of Neurology/LMRC 116, Brigham and Women's Hospital, Boston, MA 02115.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITIONS

Two newly funded **RESEARCH POSITIONS** will be available in July or August of 1995 to study the cellular and molecular processes that result in neurodegeneration. Research focuses on the neuroprotective mechanisms of peptide growth factors, pathways of nitric oxide toxicity, and the role of signal transduction in the ischemic cascade. Experimental approaches include cultures with primary neurons, gene regulation, pharmacological and trophic factor manipulation of neuronal survival, and global and focal animal stroke models. Applicants must have a Ph.D. or M.D. with expertise in cellular and/or molecular biology. Salary will be consistent with NIH guidelines. Please send a curriculum vitae, a summary of research interests and goals, and three references to: **Kenneth Maiese, M.D., Department of Neurology, Laboratory of Cellular and Molecular Cerebral Ischemia, 6E-19 University Health Center, Wayne State University School of Medicine, 4102 St. Antoine, Detroit, MI 48201. Wayne State University is an Equal Opportunity/Affirmative Action Employer.**

The Beckman Laser Institute and Medical Clinic, University of California, Irvine (UCI) is seeking to fill **POSTDOCTORAL POSITIONS** (Ph.D. or M.D./Ph.D.) in the areas of photomedicine, photochemistry, biophysics, cell and molecular biology, oncology, dermatology, and surgery.

Candidates should have interest or experience in working with lasers. Please reply to:

**Michael W. Berns, Ph.D.
Beckman Laser Institute & Medical Clinic
University of California, Irvine
1002 Health Sciences Road East
Irvine, CA 92715**

UCI: Rooted in Education; Enriched by Diversity.

POSTDOCTORAL POSITION available immediately to join NIH-funded project in the Department of Allergy, Immunology and Rheumatology. Interests of the laboratory center on understanding mechanisms underlying autoimmune disease. Candidates should have Ph.D. or equivalent and knowledge of basic molecular biology, including familiarity with relevant techniques (or desire to learn them). Respond with description of career goals and previous research along with résumé and three references to: **Dr. Charles Steinman, HSC T-16-040, SUNY at Stony Brook, Stony Brook, NY 11794-8161. FAX: 516-444-3475. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION

A **POSTDOCTORAL POSITION** is available to study collagen gene regulation. In particular, the laboratory is interested in the mechanisms by which growth factors and DNA methylation influence collagen gene expression. Applicants with experience in molecular biology and/or cell biology should send a résumé and the names of three references to: **Dr. Barbara Smith, Department of Biochemistry, Boston University School of Medicine, Boston, MA 02118. FAX: 617-638-5339; Email: smith@med-biochem.bu.edu. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately to study structure-function relationships in cytochrome b₅ and interprotein interactions between cytochrome b₅ and redox partners. Experience in gene cloning, heterologous expression and protein purification is highly desired. Experience with NMR spectroscopy is desired but not essential. Send résumé and three letters of reference to: **Dr. Mario Rivera, Department of Chemistry, Oklahoma State University, Stillwater, OK 74078. Oklahoma State University is an Affirmative Action/Equal Opportunity Employer. Applications from women and underrepresented minorities are particularly welcome.**

POSTDOCTORAL POSITION available for a Ph.D. or M.D. to study the pathogenesis of human and murine insulin-dependent diabetes and potential immunotherapeutics (see *Nature*, 366:69-72, 1993). Experience in cellular immunology preferred. Send curriculum vitae, reprints, names, addresses and telephone numbers of three references to: **Daniel L. Kaufman, Department of Molecular and Medical Pharmacology, University of California, Los Angeles, Los Angeles, CA 90095-1735. Affirmative Action/Equal Opportunity Employer.**

**The Exploration Of Sequence Space:
Selecting Functional Molecules
From Combinatorial Libraries**



INDIANA UNIVERSITY
Indiana Molecular Biology Symposium IX
Indiana Institute for Molecular and Cellular Biology
October 12-15, 1995

Keynote Address

Jack Szostak

Replicating Biopolymer Libraries

Jamie Scott, Carlos Barbas, Lawrence Loeb,

Jack Keene

Combinatorial Chemical Libraries

Susan Freier, William L. Scott, Anthony Czarnik,

Michael Sofia, Bruce Eaton

In Vitro Selection and Evolution of Catalysts

Gerald Joyce, Donald Hilvert, David Bartel,

Peter Schultz

Drugs and Diagnostics

Richard Houghten, Ronald Zuckerman,

Barry Polisky, Wilhelm P. Stemmer

Complexity and Life

Stuart Kauffman, Richard Cramer,

Günter von Kiedrowski, Gregory M. Fahy

Registration information: Rhea Freeman,
Jordan Hall 322A, Indiana University, Bloomington, IN 47405-6801
Ph: 812-855-4183 Fax: 812-855-6082

**PROTEIN CRYSTALLOGRAPHY IN
STRUCTURE-BASED DRUG DESIGN**

Principal Investigator

Be at the forefront of drug discovery research with The DuPont Merck Pharmaceutical Company. We are focused on meeting unmet medical needs through the discovery and development of innovative compounds leading to novel pharmaceuticals. At DuPont Merck, you'll do research in state-of-the-art laboratories directly with world-class scientists whose discoveries go right to the marketplace, to those in need.

We currently have an opening in our Structural Biology Program. This is a multidisciplinary program dedicated to structure-based drug design by combining various fields such as crystallography, biochemistry, molecular biology, computational chemistry, and nuclear magnetic resonance. The current program is investigating many disease related targets, including AIDS. The selected candidate will have access to state-of-the-art technology including two Rigaku R-axis data collection units, two robotics crystallization units, Silicon Graphics power series ONYX computer and workstation, and a Gray Y-MP supercomputer. The candidate should have a Ph.D. with training in protein crystallography or related field and several years post graduate experience. Experience in molecular genetics and/or protein chemistry is preferred.

We offer a competitive salary and a generous benefits package including paid vacation and relocation assistance as well as excellent working conditions and challenging assignments.

Please send a letter of introduction and resume to: Human Resources-RM, The DuPont Merck Pharmaceutical Company, Experimental Station, 400/2413A, P.O. Box 80400, Wilmington, DE 19880-0400. An equal opportunity employer M/F/D/V.



The DuPont Merck Pharmaceutical Company
Merging Strengths...Emerging Opportunities

CHAIRMAN
Biochemistry and Molecular Biology
The University of Chicago

The Division of the Biological Sciences, which includes The Pritzker School of Medicine, at the University of Chicago is seeking a Chairman of the Department of Biochemistry and Molecular Biology. This is a multidisciplinary department with 30 faculty in the fields of structural biology, nucleic acid biochemistry and cellular biochemistry. The Chairman reports to the Dean of the Division and is responsible for providing academic and administrative leadership in research and teaching of undergraduate, graduate, post-graduate and medical students. The successful applicant has an outstanding record of scientific accomplishment and demonstrated teaching and administrative abilities that will qualify him/her for the rank of Professor.

Applications should be submitted by July 1, 1995. Please send curriculum vitae and the names of three individuals familiar with your work to: **Dr. Anthony Mahowald, Chair, Search Committee for BMB, 5841 South Maryland Avenue, MC1000, Chicago, IL 60637-1470.** The University of Chicago is an Affirmative Action Equal Opportunity Employer.



**THE UNIVERSITY
OF CHICAGO**



Senior Scientist – Skin Research

3M Health Care is a leading supplier of skin-related products to the professional and consumer markets. The 3M Biosciences Laboratory is engaged in research and development of skin-related products and has an outstanding opportunity for an experienced, highly motivated skin scientist.

Qualified candidates must have a Ph.D. or equivalent experience in Biological Science, Bioengineering or a related field with a strong understanding of the anatomy, physiology and biomechanics of the skin. A minimum of five years of post graduate experience is required with industrial experience preferred. Broad familiarity with biological and biomechanical evaluation of skin and skin contact products is essential. Experience in dermatology, in clinical evaluation of skin and skin care products, and in development of clinical protocols is desirable. You will participate in team efforts to develop a wide range of novel skin-related products and technologies. The qualified candidate will have the opportunity to initiate new significant skin-related research programs.

3M is a multinational equal employment opportunity corporation that offers a cooperative, stimulating work environment and a competitive compensation/benefits package. To apply, please send your resume (no agencies or phone calls) to:

NAS REPLY SERVICE

Dept. 5MP54
One Appletree Square
Minneapolis, MN 55425

We Are An Equal Opportunity Employer M/F/D/V

POSITIONS OPEN

POSTDOCTORAL POSITION IN IMMUNOLOGY Karolinska Institute Stockholm, Sweden

Available for studies of MHC class I molecules with particular emphasis on T cell development, NK cell development, CTL and NK cell recognition of MHC class I molecules, autoimmunity, tumor and viral immunity, and transplantation. Experimental models involve studies with MHC class I transgenic and knock-out mice. A strong background in immunology is desired. Send curriculum vitae, brief description of research experience, and names of three references to: **Dr. Hans-Gustaf Ljunggren, Microbiology and Tumorbiology Center, Karolinska Institute, S-171 77 Stockholm, Sweden.**

POSTDOCTORAL POSITION available to study post-translational modification and regulation of noncollagenous bone proteins and their function in bone formation and metabolism. Areas of interest include: 1) vitamin K-dependent proteins: matrix Gla protein and bone Gla protein, and 2) secreted phosphoproteins: serine phosphorylation as a regulator of function. Send résumé and three references to: **Dr. Paul Price, Department of Biology, University of California, San Diego, La Jolla, CA 92093-0322. FAX: 619-534-1492.**

POSTDOCTORAL FELLOW

A Cancer Biology/Gene Therapy Laboratory has an opening for an aggressive **POSTDOCTORAL FELLOW** to join a group of three M.D.'s, two Ph.D.'s and two graduate students. The research is based on identifying host factors in oncogenes that can explain aggressive behavior in breast and ovarian cancers in certain age groups. The aim of several of these studies is to ultimately develop innovative treatment modulators such as gene therapy in treating nonresponsive patients. The group has an ongoing clinical trial in ovarian cancer and is in the process of establishing a second Phase I trial in breast cancer. Send curriculum vitae to: **Aizen J. Marrogi, M.D., Department of Dermatology (SL73), Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, LA 70112.**

POSTDOCTORAL POSITION CELL CYCLE REGULATION

A **POSTDOCTORAL POSITION** is available in the laboratory of **Stephen A. Osmani** at the Weis Center for Research to study cell cycle regulation (see *EMBO J*, 14: 986-994, and 995-1003, 1995). Experience in genetics or molecular biology or biochemistry a plus but a strong publication record most important. Please send curriculum vitae, copies of publications and names of three references to: **Geisinger Human Resources (SAO), 100 North Academy Avenue, Danville, PA 17822-1529. Email: sao@smtp.geisinger.edu. Equal Opportunity Employer/Minority/Female/Disabled/Veteran.**

POSTDOCTORAL POSITION immediately available to study cellular mechanisms of neuronal vulnerability in a primate model of experimental glaucoma. Candidates must have an M.D. or Ph.D. degree with expertise in neurobiology. Experience with neuroanatomic investigation of the retina and/or visual system pathways is highly desirable. Applicants should submit a curriculum vitae with names of references and a brief summary of research experience and interests to: **John H. Morrison, Ph.D., Department of Neurobiology, Box 1065, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574. FAX: 212 996-9785. An Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS IN OPHTHALMIC LASER RESEARCH

One or two **POSTDOCTORAL RESEARCH** positions are available at the New England Eye Center, Tufts University School of Medicine, to conduct ophthalmic laser research and to develop novel techniques for optical tomography and laser surgery. Potential candidates should have a strong background in optics and lasers, good communication skills, and an ability to work closely with clinical investigators. A Ph.D. degree in biomedical engineering, biophysics, optics, or related field is preferred. Successful candidate will be encouraged to develop his or her own independent research program. Please send curriculum vitae and three letters of recommendation to: **Carmen A. Puliafito, M.D., Director, New England Eye Center, 750 Washington Street, Boston, MA 02111. FAX: 617-636-4215.**

POSITIONS OPEN

Three year **POSTDOCTORAL POSITION** available to study molecular mechanisms of wound healing. Proposed work would focus on identifying the regulatory mechanisms underlying expression of specific muscle proteins by non-muscle cells during wound contraction. Techniques include 3 and 4D digital and confocal microscopy. A strong background in molecular biology is required. Send curriculum vitae with statement of interest to: **Dr. James V. Jester, Department of Ophthalmology, University of Texas, Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 95235-9057. FAX: 213-648-2382; Email: jester@crnjsgj.swmed.edu. University of Texas Southwestern is an Equal Opportunity Employer.**

POSTDOCTORAL POSITION is available for a recent Ph.D. with experience in cellular immunology and molecular biology to study T cell development and early thymocyte differentiation. Send curriculum vitae and names of three references to: **Dr. J. C. Zúñiga-Pflücker, Department of Immunology, University of Toronto, Medical Sciences Building, Toronto, Ontario M5S 1A8, Canada. FAX: 416-978-1938. Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately to study the role of POU/homeodomain genes in the development of the embryonic mouse CNS. Relevant techniques include *in situ* hybridization, transgenic mice and embryonic stem cell technology. Experience in molecular biology required. Please send cover letter, curriculum vitae and the addresses and telephone numbers of three references to: **E. Bryan Crenshaw, Ph.D., Department of Neuroscience, 145 Johnson Pavilion, The University of Pennsylvania, 36th & Hamilton Walk, Philadelphia, PA 19104-6074. Telephone: 215-898-1998; FAX: 215-573-2015; Email: crenshaw@mail.med.upenn.edu.**

POSTDOCTORAL POSITIONS—available to study cytochrome P450-mediated toxicity in cell lines expressing specific isoforms of P450. Projects include studies on the role of calcium in ethanol toxicity; acetaminophen and other hepatotoxins; production of reactive oxygen species and their potential role in the P450-catalyzed toxicity; and molecular studies on signal transduction and up-regulation of cellular protective pathways against toxicity. A strong background in biochemistry and cell biology is required. Experience in tissue culture and molecular techniques desirable. Please submit letter of application, curriculum vitae, and names of three references to: **Dr. Arthur I. Cederbaum, Department of Biochemistry, Box 1020, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION

POSTDOCTORAL POSITION available immediately to study multiple genomic alterations in human urinary bladder carcinogenesis. The study is focused on the identification of genomic loci and/or positional cloning of genes which are potentially involved in the development and progression of human urothelial neoplasia. Candidates with relevant experience in molecular biology and genetics should send résumé and the names and addresses of three references to: **Bogden Czerniak, M.D., Ph.D., M.D. Anderson Cancer Center, Department of Pathology/Box 85, 1515 Holcombe Boulevard, Houston, TX 77030. The University of Texas M.D. Anderson Cancer Center is an Equal Opportunity Employer and a smoke-free workplace.**

POSTDOCTORAL FELLOW and RESEARCH ASSOCIATE positions in Molecular and Cellular Biology. The Institute of Genomic Medicine, a nonprofit organization, founded by scientists from Harvard Medical School and dedicated to understanding the genetic causes of human disease, has positions available to study the role of GPI-linked membrane proteins and compartmental pH in membrane trafficking in polarized epithelial cells, with applications to cystic fibrosis and chronic diseases of the pancreas, lung, and kidney. Candidates should have a Ph.D. degree and experience in cell fractionation, protein chemistry, and molecular biology (cloning, DNA sequencing, and gene expression). Submit a cover letter, a curriculum vitae, and two letters of reference to: **Dr. George Scheele, Institute of Genomic Medicine, Building 96, 13th Street (Navy Yard), Charlestown, MA 02129.**

POSITIONS OPEN

POSTDOCTORAL POSITION—Available immediately for investigations on control of cardiac muscle gene expression and cardiac morphogenesis. Requires Ph.D. with background in cellular, developmental, and molecular biology. Send curriculum vitae and three references to: **Dr. Jim J.-C. Lin, Department of Biological Sciences, 138 Biology Building, Iowa City, IA 52242-1324. The University of Iowa is an Equal Opportunity Employer. Women and minority candidates are encouraged to apply.**

POSTDOCTORAL POSITION at the University of California, San Francisco (UCSF)—San Francisco General Hospital to study signal transduction in macrophages infected with *Mycobacterium tuberculosis*. Focus is on interferon gamma signaling and modulation by extracellular matrix. Requirements include Ph.D. and cell biology experience. Experience in signaling or microbial pathogenesis highly valuable. Send curriculum vitae and names of three references to: **Dr. Joel Ernst, UCSF Box 0868, San Francisco, CA 94143-0868. UCSF is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE POSITION. Cytogeneticist (molecular): Gene and cancer biology. Cell culture. Chromosomal analyses (banding), Fluorescent *In Situ* Hybridization (locus- and chromosome-specific probes). Good writing skills. Salary competitive. Send curriculum vitae with names and telephone numbers of three references to: **Suite 5028 Robinson, University of Kansas Cancer Center, 3901 Rainbow, Kansas City, KS 66160-7312. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE position is available to investigate signal transduction pathways involved in the regulation of cell proliferation and adhesion (see *J. Cell Biol.*, 121:643-654) in the Molecular Pharmacology Laboratory at the Guthrie Research Institute. The Institute offers outstanding facilities and opportunities for both collaborative and independent work in a supportive environment. This position requires experience in cell biology, molecular biology, pharmacology, or biochemistry. Send curriculum vitae and names of three references to: **Dr. Carol L. Williams, Guthrie Research Institute, Guthrie Square, Sayre, PA 18840. An Equal Opportunity Employer.**

POSTDOCTORAL FELLOWSHIPS IN IMMUNOLOGY The Irvington Institute for Medical Research 1996-1999

The Irvington Institute for Medical Research will award up to twelve (12) **POSTDOCTORAL FELLOWSHIPS** in Immunology for three (3) consecutive years of work in a lab or a hospital in the United States. A laboratory may qualify for only one (1) fellow per year. The fellowships will be awarded for basic immunological research.

M.D.s, Ph.D.s, and M.D./Ph.D.s are encouraged to apply. Candidates with not more than three (3) years of laboratory experience will receive priority. The Irvington Institute does not have a citizenship requirement; however, applicants from abroad must first obtain sponsorship by a senior scientist in the United States before applying for an Irvington award.

The Institute will pay a stipend of \$23,000, \$25,000, and \$27,000 for years one, two and three, with an additional eight percent (8%) each year offered to help cover the cost of health insurance, travel and supplies.

August 15, 1995 is the deadline for filing applications. The Institute will notify applicants in November 1995 whether they have been selected to receive a fellowship to begin July 1, 1996. Applications may be obtained by writing to: **Mary Shaw, Fellowship Coordinator, The Irvington Institute for Medical Research, 120 East 56th Street, No. 340, New York, NY 10022 USA. FAX: 212-758-8968.**

POSTDOCTORAL FELLOWSHIP

New Biotechnology Company. Opportunity exists for entering into the development of the Company with eligibility for stock options. Experience and expertise required in genome search technology, gene transfer, tissue culture, cloning, PCR, DNA and RNA techniques. Send curriculum vitae and three letters of reference: **A.C.T., P.O. Box 1583, Goleta Station, Santa Barbara, CA 93116.**

THE NEUROSCIENCES INSTITUTE

La Jolla, California

THE NEUROSCIENCES INSTITUTE (NSI) IS AN INDEPENDENT, not-for-profit organization at the forefront of research on the brain. The NSI, located on the campus of The Scripps Research Institute in La Jolla, is also the home of the Neurosciences Research Program and serves as an international meeting place for neuroscientists; Fellows have opportunities to interact with visitors from many institutions worldwide.

FELLOW IN THEORETICAL NEUROBIOLOGY

APPLICATIONS ARE INVITED FOR POSITIONS AS FELLOW IN Theoretical Neurobiology. Since 1987, the NSI has had a research program dedicated to developing biologically based, experimentally testable theoretical models of neural systems. Current projects include large-scale simulations of neuronal networks, the design of behaving automata, and detailed formulations of biologically based models of perceptual systems. Fellows will have daily opportunities to interact with NSI's Fellows in Experimental Neurobiology.

Applicants should be at the postdoctoral or assistant professor level with strong backgrounds in theoretical or experimental neuroscience or related fields. Positions are now available.

Fellows will receive stipends appropriate to their qualifications and experience. Candidates should send a short statement of research interests, a curriculum vitae, and the names of three references to: *Dr. W. Einar Gall, Research Director, The Neurosciences Institute, 3377 North Torrey Pines Court, Suite 310, La Jolla, California 92037.*

MAYO CLINIC

Rochester
Minnesota



FACULTY POSITION CARTILAGE RESEARCH

An opportunity for innovative research in a setting conducive to unlimited collaboration with other laboratories in all related fields. Applicants should have an advanced degree (Ph.D., D.Sc., M.D., D.V.M. or D.D.S.) and experience in cartilage biochemistry, molecular biology, or a closely related field. Academic rank commensurate with experience. Send curriculum vitae and three letters of reference to:

William P. Cooney, M.D.
Chair, Search Committee
Mayo Clinic
Orthopedic Research, Mayo E-14
Rochester, MN 55905
Fax: (507) 284-5075

Mayo Foundation is an affirmative action and equal opportunity educator and employer.

POST-DOCTORAL TRAINING DEPARTMENT OF MOLECULAR PHARMACOLOGY AND BIOLOGICAL CHEMISTRY NORTHWESTERN UNIVERSITY MEDICAL SCHOOL



The department is located on the Chicago campus of Northwestern University. Situated in the Gold-Coast area of Chicago, the department and area offer a rich environment for first-rate biomedical research and cultural opportunities. There are excellent interactions and joint programs with faculty located at the Evanston campus and Argonne Laboratories.

Areas of training include: molecular biology and genetics, developmental biology, protein chemistry, X-ray crystallography of proteins and nucleic acids, analytical and synthetic chemistry, and structure based drug design. Listed below are examples of potential mentors and research projects.

- W. Anderson: *Proteins, structure and function.*
- A. Andres: *Steroid regulated gene expression during development.*
- C. Bradfield: *Molecular biology of PAS family of proteins.*
- M.L. Dubocovich: *Melatonin receptors: circadian & visual function.*
- M. Hoesy: *Signal transduction proteins & phosphorylation.*
- G. Krafft: *Alzheimer's disease and drug target design.*
- T. Narahashi: *Excitable cell ion channels.*
- J. Nye: *Genetic control of neurogenesis*
- B. Shoichet: *Structure based drug design*
- E. Silinsky: *Mechanisms of synaptic transmission and modulation.*
- M. Watterson: *Molecular basis of calcium action in eukaryotic cells.*

For further information about these and other projects and mentors, contact Ms. Paula Alexander, 303 E. Chicago Ave., Chicago, IL, 60611-3008.

Affirmative Action/Equal Opportunity Employer

ASSISTANT PROFESSOR POSITION IN VETERINARY PARASITOLOGY

The Department of Parasitology, College of Veterinary Medicine, The University of Georgia, invites applications from qualified individuals for a tenure-track position at the Assistant Professor level, which will be available January 1, 1996. The qualified individual will have either a DVM and Ph.D. or the Ph.D. in Parasitology or a field closely allied to Veterinary Parasitology. Preference will be given to candidates with post-Ph.D. experience. The applicant must be qualified for appointment to the Graduate Faculty of The University of Georgia. Documented evidence of skills in molecular parasitology and classical parasitology are prerequisite to employment. The person will actively engage in all facets of the teaching, research, and service programs of the Department. Assigned duties are approximately 50% teaching and 50% research, although the time commitment for each is negotiable. The service commitment ordinarily will be fulfilled by way of communication with practicing veterinarians and the general public. Demonstrated achievement and/or strong potential for fundable research from extramural sources is a requirement, and previous experience in teaching at the collegiate level is desirable. Teaching duties will include serving as supervisor for masters and doctoral students and as a committee member for graduate students. The individual will teach one or more graduate-level courses based on his/her expertise in classical parasitology (Parasitic Protozoa, Helminthology), participate in teaching a graduate level course in Experimental Methods in Parasitology, and develop a new course(s) in Molecular Parasitology for graduate students. Participation in the teaching program (Veterinary Parasitology I and II) for second-year veterinary students is expected. The person will collaborate with other faculty and students within the Department of Parasitology as well as other faculty within the College of Veterinary Medicine and serve on departmental, college, and university-wide committees. Salary is commensurate with qualifications. Interested individuals are invited to submit a letter of interest stating professional goals and interests, a current curriculum vitae, and names and addresses of three (3) references to: Dr. Annie K. Prestwood, Chair, Search Committee, Department of Parasitology, College of Veterinary Medicine, The University of Georgia, Athens, GA 30602-7387. Deadline for receipt of completed applications is August 1, 1995.

The University of Georgia is an affirmative action/equal opportunity employer and applications from minorities and women are invited.

ALPHAGENE

AlphaGene is a new biotechnology company which develops high-quality and innovative gene libraries for the emerging biotechnology industry, utilizes these libraries for efforts to map the human genome, and develops novel approaches in the biologic and genetic analysis of human disease.

AlphaGene is recruiting highly-motivated molecular biologists for the following positions:

POSTDOCTORAL SCIENTIST RESEARCH ASSOCIATE SENIOR SCIENTIST

Candidates must possess a Ph.D. degree in molecular biology with extensive experience in cloning, DNA sequencing, and expression of heterologous genes in prokaryotic and eukaryotic cells. Experience in the synthesis of gene libraries, PCR, and in-situ mutagenesis is highly desirable. Scientific talent, dedication, achievement focus, and teamwork skills a must.

AlphaGene, founded by scientists from Harvard Medical School, is located in the Boston/Cambridge area, amidst strong academic institutions and a growing community of "leading-edge" biotechnology companies. AlphaGene offers a competitive salary, a generous benefits package, opportunities for growth, and an "environment of excellence" for professional and commercial success. Qualified candidates are requested to submit, in confidence, a cover letter, their curriculum vitae, and two references to: Dr. George Scheele, AlphaGene Resources, Building 96, 13th Street, Charlestown, MA 02129. An Equal Opportunity Employer M/F/D/V.

BIOTECHNICAL / PHARMACEUTICAL JOB FAIRS

Research Triangle Park, NC
Embassy Suites Hotel

Friday, June 16, 1995
Saturday, June 17, 1995

San Francisco, CA
Crown Sterling Suite Hotel

Friday, June 23, 1995
Saturday, June 24, 1995

Interviewing Companies will include—

- ◆ **FDA—Center For Drug Evaluation & Research**
- ◆ **FDA—Center For Biologics Evaluation & Research**
- ◆ **Systemix** ◆ **Pharmaceutical Product Development**
- ◆ **Gen-Probe** ◆ **Clintrials** ◆ **Sugen**
- ◆ **Besselaar** ◆ **Quintiles** ◆ **and others**

CAREER CONNECTION, the nation's leader in industry specific Job Fairs, provides a unique forum in which Biotechnical employers interview, in private suites, experienced candidates with diversified levels of skill in : **Biotechnical and Pharmaceutical Research & Development, Manufacturing, QA/QC, Validation, Marketing & Sales, Clinical Research, Regulatory Affairs**, and many other positions in biology and chemistry. Candidates can pre-register by sending or faxing their resume to **CAREER CONNECTION**. Attending Candidates should bring extra resume copies and please dress in business attire. Admission is free. For more information please call:

CAREER CONNECTION

Dept. SM-495, P.O. BOX 7451, Thousand Oaks, CA. 91359
(805) 374-8777 or (800) 967-0020 FAX (805) 494-1870

The Douglas Hospital Research Centre, internationally renowned for its work in mental health, is seeking applications for a

Scientific Director

Established since 1979, the Douglas Hospital Research Centre has developed its areas of investigation to include schizophrenia, depression, aging, Alzheimer's disease, alcoholism and eating disorders. In keeping with the complexity of these problems, research activities are oriented towards a comprehensive approach comprising biological, psychosocial and clinical research. Funding of over 5M\$ is provided through government agencies, industry and non-profit organizations.

Candidates will need to demonstrate: the knowledge, skills and vision to further develop the Research Centre as an integral part of the hospital, university and scientific community • an international research reputation based on research funding and publications • sensitivity to clinical research issues and wide knowledge of the mental health field • proven administrative and leadership abilities • the ability to be an effective spokesperson for the Research Centre in its interactions with its various constituents • a commitment to collaborative and/or multi-disciplinary research • a commitment to establishing a proactive rapport with McGill University and the Department of Psychiatry especially with respect to development issues.

An academic (PhD) and/or a medical (M.D.) background and fluent French or English are required; bilingualism in these languages would be an asset.

Applications supported by a full curriculum vitae should be sent, in confidence, to : **Chairman, Selection Committee - Scientific Director, Porteous Pavilion, Room K-1307, Douglas Hospital Research Centre, 6875 Lasalle Blvd., Verdun, Québec, Canada H4H 1R3.**

CENTRE DE RECHERCHE
DE L'HÔPITAL DOUGLAS
DOUGLAS HOSPITAL
RESEARCH CENTRE



CENTRE DE COLLABORATION OMS DE MONTRÉAL
POUR LA RECHERCHE ET LA FORMATION
EN SANTÉ MENTALE
MONTREAL WHO COLLABORATING CENTRE
FOR RESEARCH AND TRAINING IN
MENTAL HEALTH



JOB OPPORTUNITIES

National Institute for Occupational Safety and Health Health Effects Laboratory Division

The National Institute for Occupational Safety and Health (NIOSH), (Centers for Disease Control and Prevention, US Public Health Service), is seeking qualified candidates to serve in the Health Effects Laboratory Division in Morgantown, West Virginia. The Health Effects Laboratory Division (HELD) is a new Division that will provide NIOSH with state-of-the art advanced technology capability, emphasizing laboratory research. The Division will conduct focused, applied, and multifaceted laboratory research; develop intervention programs; and design and implement effective methods for health communications.

The focus of the research will address real-life, workplace-related health problems, utilizing workplace contaminants where appropriate. The overall goal of preventing occupational health problems will form the heart of the research agenda. The research effort will be multidisciplinary and interactive with other Divisions in NIOSH.

NIOSH will be recruiting toxicologists (T-1), microbiologists (M-1), pathologists (P-1), physiologists (PH-1), veterinarians (V-1), industrial hygienists (IH-1), chemical engineers (CE-1), aerosol physicists (AP-1), health communications specialists CHCS-1), general engineers (GE-1), electrical or electronic engineers (EE-1), computer specialists/programmers (CS-1), biostatisticians/mathematicians(B-1).

NIOSH is looking for senior researchers/health communicators who have substantial training in the field for which they are interested, doctorate degree preferred. Substantial experience with occupational health research is desirable.

These positions will be within the Commissioned Corps of the United States Public Health Service or in the Civil Service System of the United States Government. Salary ranges depend upon qualifications, experience and personnel system used. All citizens of the United States may apply. No previous federal experience is necessary.

Interested candidates should request information regarding current job postings (identifying discipline by code number) from: Human Resources Management Office, 1095 Willowdale Road, M/S 153, Morgantown, West Virginia 26505.

NIOSH maintains a Smoke-Free environment. All applicants will receive equal consideration without regard to race, religion, color, national origin, sex, sexual orientation, political affiliation age, or any other nonmerit factor.

Major Opportunities in Biomedical Research at the Mount Sinai School of Medicine

The Mount Sinai School of Medicine, with the completion of its new East Building next year, will effectively double its space dedicated to biomedical research and education. New research initiatives will complement and expand the existing research programs in cancer research, cardiovascular sciences, developmental biology, human genetics and gene therapy, immunobiology, molecular genetics, neurobiology of aging, signal transduction, structural biology and systems physiology.

To support these initiatives, Mount Sinai is recruiting 75 new tenure-track faculty members for the Departments and Centers of the Medical School. Research groups organized around the areas of interest will include faculty at the ranks of Professor, Associate Professor and Assistant Professor. New faculty members will be expected to develop highly meritorious, independent research programs and to participate in the training of Ph.D., M.D. and M.D./Ph.D. students, and post-doctoral fellows.

Nominations and applications of the highest quality may be sent to: Dr. Nathan G. Kase, Dean, Mount Sinai School of Medicine, One Gustave L. Levy Place, Box 1096, New York, NY 10029. Please send your curriculum vitae, bibliography, statement of research interests and three references. For additional information, please call (212) 241-7335. Mount Sinai is an equal opportunity/affirmative action employer.

**Mount
Sinai**



**Temple
University
School of Medicine**

Postdoctoral Positions Dept. of Microbiology & Immunology

Two positions are available immediately to work on lymphomagenesis in patients with HIV infection. Excellent opportunities exist for intensive interaction with physician scientists and basic scientists in the Fels Institute for Cancer Research and Molecular Biology. The goal of the study is to determine whether lymphoma development can be correlated with viral burden, and to determine the effects of antiretroviral therapy with or without antiherpes virus therapy. Molecular biology, cell culture and immunotechniques experience is desirable. One position requires previous FACS experience. Contact **Earl Henderson, Ph.D., Department of Microbiology and Immunology, Temple University School of Medicine, Philadelphia, PA 19140. Tel 215-707-3583, Fax 215-707-7788.**

Temple University is an Equal Opportunity/Affirmative Action Employer and strongly encourages applications from women and minorities.

Positions in Molecular and Cellular Biology

The mission of Human Genome Sciences is to identify and develop drugs and diagnostic products based on our leadership in the discovery and expression of novel genes from human and animal origin.

MOLECULAR BIOLOGY

We have an immediate opening for a scientist in our Protein Therapeutics group. The successful candidate will have broad-based scientific and leadership skills and will be part of a team using DNA sequence and relational database analysis toward the development of protein therapeutic agents. The position requires a Ph.D. or M.D. with at least 4 years post-graduate experience with a wide variety of molecular skills including demonstrated expertise in gene expression and mammalian tissue culture.

CELL BIOLOGY

We have several openings for Immunologists and Cancer Immunologists. As a member of the Cell Biology group, you will join a highly-interactive team responsible for pre-clinical development of a broad range of protein therapeutic agents. Qualified candidates will possess a Ph.D. or M.D. with at least 4 years post-graduate experience in cellular immunology with emphasis on growth factor biology or cancer immunology with experience in small animal models and use of monoclonal antibodies as therapeutic agents.

HGS offers a full complement of benefits and competitive salaries.

For immediate consideration, please send your curriculum vitae to: **Human Resource Department, Human Genome Sciences, Inc., 9410 Key West Avenue, Rockville, MD 20850-3331. An Equal Opportunity Employer.**

HGS

Human Genome Sciences, Inc.

Dedicated To Discovery For Health

POSTDOCTORAL RESEARCH OPPORTUNITIES IN BIOMEDICAL RESEARCH

Value
Through
Innovation

Boehringer Ingelheim Pharmaceuticals is seeking outstanding scientists to conduct biomedical research in a pharmaceutical R&D environment. Explore the opportunities for postdoctoral research in surroundings where creativity and innovation drive the search for novel drug therapies targeting critical human diseases with unmet therapeutic needs.

Biomedical research at Boehringer Ingelheim is focused on inflammation/immunology. We have interests in a broad spectrum of research including the following areas: leukocyte activation, apoptosis, regulation, molecular immunology, enzymology, structural biology.

Candidates must hold a Ph.D., M.D., or Sc.D. in the biological sciences. They should also possess highly developed analytical skills in addition to excellent oral and written communication skills.

Boehringer Ingelheim's R&D facility is located in a campus-like setting in a beautiful area of Western Connecticut. We offer excellent facilities and a supportive and challenging environment.

For an opportunity to contribute to our innovative programs, please send your resume and brief cover letter to: **Dept. JP-PD, Boehringer Ingelheim Pharmaceuticals, Inc., 900 Ridgebury Road, P.O. Box 368, Ridgefield, CT 06877.**



**Boehringer
Ingelheim**

*We are an equal opportunity employer.
As a progressive healthcare company, we have a non-smoking environment.*

Research Entomologist, permanent full-time. GS-11/12/13. USDA, Forest Service, Stoneville, MS is seeking an entomologist to conduct research to develop pest prediction and control guidelines for management of southern hardwood and wetland ecosystems. Primary responsibilities include but are not limited to investigating: 1) the role of insect pests in decline diseases of oaks and other southern hardwoods; 2) the biology of insects that transmit the oak wilt fungus in Texas live oaks; and 3) the economic impacts and chemical and biological controls for defoliators and insect borers in intensively managed and natural stands of southern bottom-land hardwoods. Applicant must be a U.S. citizen. A Ph.D. in entomology or ecology with significant forest entomology experience is desired. Experience in silviculture, molecular biology or biochemistry is preferred. Salary is commensurate with experience (\$35K-\$65K). Applications will be accepted until June 23, 1995. For a copy of announcement # SO-174-E-95D, forms, and information call: Ms. Melissa Dantzler at 601-686-3154. Mail applications to: Mr. Richard Quick, T-10210, U.S. Postal Service Bldg., 701 Loyola Ave., New Orleans, LA 70113. Equal Opportunity Employer.

Post-Doc, Research Entomologist/Research Plant Pathologist, 2-Years. GS-11. USDA, Forest Service, Stoneville, MS is seeking an entomologist or plant pathologist for a 2-year appointment (1 or 2 yr. extension possible) to conduct research aimed at developing improved methods for control of oak wilt in Texas live oaks. The incumbent will identify and catalog potential insect vectors that may transmit oak wilt and assay insects for the presence of the oak wilt fungus using molecular techniques including PCR. Applicant must be a U.S. citizen. A Ph.D. in entomology, plant pathology, or related plant science is desired, as well as experience in PCR and in the identification of sap and bark beetles in hardwoods (especially oak species). Salary starts at \$35,578. Applications will be accepted until July 12, 1995. For a copy of announcement # SO-143-E-95T, forms, and information call: Ms. Melissa Dantzler at 601-686-3154. Mail applications to: Mr. Richard Quick, T-10210, U.S. Postal Service Bldg., 701 Loyola Ave., New Orleans, LA 70113. Equal Opportunity Employer.

POSTDOCTORAL ASSOCIATE POSITIONS THE UNIVERSITY OF IOWA

Please contact the appropriate department to express your specific interest:

ANATOMY: Dr. J.P. Long, Interim Head, Bowen Science Building.

BIOCHEMISTRY: Alan G. Goodridge, Professor and Head, Bowen Science Building.

DERMATOLOGY: Postdoctoral Associate in Dermatology for the study of cell biology of cutaneous cells including epidermal cells, sweat gland cells, and hair follicular cells. Basic qualifications: M.D., Ph.D. or equivalent. Desirable: expertise in cell culture, membrane transport of cultured cells and/or molecular biology of eukaryotic cells. Pay is \$18-21,000 plus fringe - one to three years depending on NIH funding. Send resume and references to Kenzo Sato, M.D., Ph.D., Department of Dermatology.

INTERNAL MEDICINE: Openings available in all disciplines in the Internal Medicine Department, College of Medicine, the University of Iowa. Contact Francois M. Abboud, M.D., Professor and Head, or Michele Pugh, Human Resources, SE320 GH, (319)356-7290.

MICROBIOLOGY: Dr. Michael Apicella, Professor and Head, Bowen Science Building.

OBSTETRICS/GYNECOLOGY/PHARMACOLOGY: Postdoctoral Associate position is available in the Gynecologic Oncology Research Laboratory. Research area includes molecular genetics of oncogene/tumor suppressor gene expression in ovarian cancer. Contact Richard E. Buller, M.D., Ph.D. Associate Professor, Director, Division of Gynecologic Oncology, Departments of Obstetrics & Gynecology and Pharmacology. Phone: 319:356-2015.

OTOLARYNGOLOGY: Dr. Bruce Gantz, Interim Head.

PATHOLOGY: Richard G. Lynch, M.D., Professor and Head, 144 Medical Laboratories. Research activity in all areas of pathology.

PEDIATRICS: Dr. Frank H. Morriss, M.D., Professor and Head.

PHARMACOLOGY: Dr. Arthur A. Spector, Professor and Interim Head, Bowen Science Building. Openings in all areas of pharmacology and toxicology.

PHYSIOLOGY & BIOPHYSICS: Robert E. Fellows, M.D., Ph.D. Professor and Head, Bowen Science Building.

UROLOGY: Position available to begin August 1, 1995 for research in a fully equipped basic science laboratory. Research is centered around the role of various growth factors in male germ cell maturation and the molecular aspects of male infertility. Background experience must include molecular biology techniques, e.g. in situ hybridization, RT-PCR, and plasmid cloning, morphological techniques, e.g. immunostaining, and RNA analysis/detection. Experience with mammalian embryo culture and transgenic mice is desirable, but not required. Send curriculum vitae and the names/ telephone numbers of 3 references to: Dr. Jay Sandlow, Department of Urology. FAX: (319) 356-3900.

A Ph.D. or equivalent is required. Desirable qualifications are based on Project Investigator's interest for research. Women and minorities are strongly encouraged to apply. *The University of Iowa, College of Medicine, Iowa City, Iowa, 52242, is an Equal Opportunity/Affirmative Action Employer.*

PROTEIN X-RAY CRYSTALLOGRAPHER

A tenure track faculty position (rank open) is available in the Department of Molecular Physiology and Biological Physics at the University of Virginia School of Medicine. The Department intends to further strengthen its current program in structural biology (atomic force microscopy, spectroscopy, cryoelectron microscopy, electron probe analysis and confocal microscopy), by recruiting an individual with an established reputation and an outstanding peer-reviewed record in protein X-ray crystallography. The School of Medicine intends to establish a new Center for Protein Crystallography and plans to recruit at least two crystallographers. Candidates with interests in proteins involved in signal transduction are particularly encouraged to apply, but crystallographers with other areas of research interests will also be considered. There is also considerable interest in and opportunities for collaborations from the Department of Biochemistry, Microbiology, Pharmacology, and Biology.

A salary and benefits package commensurate with experience and qualification will be offered.

Please send applications with curriculum vitae and three references to Lukas K. Tamm, Ph.D., Search Committee Chairperson, Department of Molecular Physiology & Biological Physics at the University of Virginia School of Medicine, 1300 Jefferson Park Avenue, Box 449 Jordan Building, Charlottesville, Virginia, 22908.

The University of Virginia is an equal opportunity/affirmative action employer. Qualified female and minority applicants are encouraged to apply.



DIFFERENTIAL DISPLAY OF GENE EXPRESSION

DALHOUSIE UNIVERSITY

Halifax, Nova Scotia, Canada
16-18 July, 1995

This will be an interdisciplinary symposium exploring the revolutionary new technique of Differential Display of mRNA and its growing application to a wide range of fields in biology, medicine and drug development. Sessions will include the use of the technique in cancer research, cardiovascular research, diabetes, brain research and developmental studies as well as extensive discussion of technical improvements. The generation of expressed sequence tags (ESTs) and application of these to drug discovery will be emphasized.

Speakers include: A. Pardee (Boston, MA), T. Flanigan (Oxford, UK), J.C. Venter (Gaithersburg, MD), P. Couceyro (Baltimore, MD), J.B. Watson (Los Angeles, CA), R.M. Schultz (Philadelphia, PA), G.L. King (Boston, MA), M. Russell (Boston, MA), J. Babity (Halifax, NS), L. Chalifour (Montréal, Qué.), J.T. Holt (Nashville, TN), M. McClelland (LaJolla, CA), W.G. Tatton (Halifax, NS), D. Ennulat (Boston, MA), K. Okamoto (Cold Spring Harbour, NY), M. McHale (Harlow, UK), Yuan Zhu (Boston, MA).

SPONSORS: GenHunter Corp, Perkin-Elmer Corp

Organizers: Harold Robertson (Halifax), Peng Liang (Boston, MA), Ronald Leslie (Oxford, UK), Giora Feuerstein (Philadelphia, PA)

THE ORGANIZERS INVITE POSTER SUBMISSIONS. REGISTRATION LIMITED (200).

Information and registration: H.A. Robertson, Laboratory of Molecular Neurobiology, Department of Pharmacology, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H7 tel 902 494-3435, fax 902 494-1388 or email harold.robertson@dal.ca

HEALTH SCIENTIST ADMINISTRATOR (HSA)

GS-601-12/13/14

The National Institute of General Medical Sciences (NIGMS), National Institutes of Health, Bethesda, MD is seeking a HSA, responsible for performing a variety of management functions associated with the scientific and technical merit review of research and research support, research center grant, program project grant, and research training grant award applications concerned with the physical, biochemical, and cellular and molecular aspects of biology, and with the techniques and methods used in modern basic research. The incumbent coordinates and oversees the activities of chartered review committees, Special Emphasis Panels, and ad hoc review panels for NIGMS programs, including minority programs, research and research training programs. The incumbent provides guidance on the policies and procedures of the NIH peer review system and the Institute's program guidelines and initiatives, participates in site visits, attends meetings of study sections and review committees, prepares summary statements of review committee findings and recommendations, and attends Council meetings to provide information concerning the review of applications.

Applicants must possess specific knowledge, skills and abilities (KSAs) in order to qualify for this position. In addition to the KSAs, there a number of documents that must be submitted when applying for this position. Applicants who fail to submit all of the required documents will not be considered for the position; therefore, you **must** call the **NIGMS Personnel Office at (301) 594-2749** to obtain the application package and qualification requirements. TDD Number is (301) 402-6327. Announcement closes 6/19/95. U.S. citizenship is required.

NIH is an Equal Opportunity Employer

INTROGEN THERAPEUTICS, INC.

Career Opportunities in Gene Therapy

Positions are available at all levels in Introgen's newly opened R & D laboratory in Houston. The company is focused on the development of gene therapeutics for the treatment of cancer. Our initial clinical protocols will use *p53* gene replacement and *K-ras* antisense expression vectors to treat lung and head and neck cancers. Both viral and non-viral delivery systems are currently in development.

Opportunities in Research, Development, Manufacturing, and Regulatory Affairs

Introgen Therapeutics is seeking talented, motivated individuals who are compatible with our aggressive clinical timelines. Experience in one or more of the following R & D areas is particularly desirable: molecular biology, virology, drug delivery, process development, cell targeting, protein or peptide chemistry, immunology, intracellular trafficking, lipid chemistry, or analytical chemistry. We also welcome applications from individuals with manufacturing and regulatory expertise consistent with gene therapeutics.

Please address replies to:

Human Resources
R & D
Introgen Therapeutics, Inc.
8080 N. Stadium Dr., Suite 1200
Houston, TX 77054
(713) 797-9913 FAX

ASST. DIRECTOR Molecular Genetics Diagnostic Laboratory

The Department of Human Genetics of the Mount Sinai School of Medicine is seeking an outstanding individual with strong technical and managerial experience for the position of Assistant Director of the Molecular Genetics Diagnostic Laboratory.

**Mount
Sinai**

The Assistant Director will report to the Director and (1) oversee the daily operations of the laboratory, (2) maintain quality control standards, (3) develop new molecular assays, and (4) provide training for technicians, postdoctoral fellows, and students. The successful candidate will have a Ph.D. in Molecular Biology or a related field, or a BS or MS with equivalent experience. Strong written and verbal communication skills are essential. Please send a statement of professional interests, a curriculum vitae, and names of three references to: **Dr. C.M. Eng, Department of Human Genetics, Mount Sinai School of Medicine, Box 1203(S), One Gustave L. Levy Place, New York, NY 10029-6574.** An equal opportunity employer. Women and minorities are encouraged to apply.

The Mount Sinai Medical Center of New York

genzyme

Moving forward. With a commitment to the development of new technologies and the resources required for success, Genzyme has become a major, diversified healthcare products company. **Making progress.**



In an environment that supports initiative and innovation, our world-class research teams continue to make substantial scientific and clinical progress in all of our major programs.

Drug Discovery Assay Development and Drug Screening RESEARCH ASSOCIATE

The successful candidate will develop and implement microplate assays to support the discovery and optimization of novel small molecule drug candidates. The position requires an MS/BS in Chemistry or Biochemistry with a minimum of two years' relevant laboratory experience. The ideal candidate will have expertise in enzymology or receptor/ligand studies and experience in high throughput screening, including familiarity with PC-based data management. **Code PJ-1**

Genzyme rewards success with an excellent compensation and benefits package, including 3 weeks' paid vacation, a 401(k) plan with a company match, extensive insurance benefits and an Employee Stock Purchase Plan. Send resumes, indicating job code, to: Genzyme Corporation, Human Resources Department, One Kendall Square, Cambridge, MA 02139. An equal opportunity employer.

ADVANCING HEALTHCARE PRODUCTS
AND SERVICES WORLDWIDE



Public Announcement Regarding an Industrial Science and Technology Frontier Program Project on "Evolutionary Molecular Engineering"

Announced by the New Energy and Industrial Technology
Development Organization on May 12, 1995

In order to promote the research and development of industrial technology, the New Energy and Industrial Technology Development Organization (NEDO) would like to inform all interested companies and research organizations regarding the research and development project described below. This new project is being undertaken as part of the Industrial Science and Technology Frontier Program of the Agency of Industrial Science and Technology, Ministry of International Trade and Industry of Japan.

Theme of the Research Project "Evolutionary Molecular Engineering"

Outline of the Research and Development Work to be Entrusted

The purpose of this project is to establish an experimental evolutionary system (repeated artificial mutation and selection in the laboratory) to create novel biomolecules, especially proteins. The system will be developed based on the mechanism of molecular evolution, and will lead to a new fundamental principle in biotechnology.

Procedure for Application

(1) Qualification Criteria

All companies or research organizations who meet the following qualification criteria may submit an application to participate in the above project.

1. The applicant must be a company or organization having human resources who are experienced and well qualified to carry out the research and development in the field covered by or related to the project.
2. The applicant must be in sound financial condition and have the ability to manage finances as necessary to fully carry out the project work.
3. The applicant must be able to comply with NEDO's instructions, if such are necessary, to fully carry out the project work.
4. The applicant must have attended the explanatory meeting held by NEDO as set forth in item (2) below or been represented at the meeting by a responsible agent or representative who is capable of accurately conveying the contents of the meeting in detail.

(2) Explanatory Meeting

An explanatory meeting will be held on the date shown below in order for NEDO to fully explain the details of the project's research and development work to be entrusted and the application documents to be submitted. All companies or research organizations who are interested in submitting an application to participate in the project are required to attend this meeting or to send an agent or representative to attend on their behalf. Japanese will be the only language used during the meeting.

Date: Wednesday, May 24, 1995
Time: 10:30 to 11:30
Place: NEDO's Head Office
30th Floor,
Sunshine 60 Building, Meeting Room 360
1-1, Higashi-Ikebukuro 3-Chome
Toshima-ku, Tokyo 170

(3) Further Information

For further information regarding the research and development work to be entrusted under the above project, please contact NEDO by telefax as follows:

New Energy and Industrial Technology Development Organization
Contract Division, Accounting Department
28th Floor, Sunshine 60 Building,
1-1, Higashi-Ikebukuro 3-Chome
Toshima-ku, Tokyo 170
Telefax: 03-5992-1184

CELL/MOLECULAR BIOLOGIST

Garden State Cancer Center
Newark, New Jersey

We are currently seeking a Cell/Molecular Biologist to study tumor-host interactions involved in the progression of malignancy. Recent Ph.D. with postdoctoral experience in tissue-specific gene regulation, mammalian cell transfection, *in situ* hybridization, PCR and general methods of molecular and cell biology desired. Experience in cell culture and tumor transplantation is essential. Applicants must be authorized to work in the U.S. Send curriculum vitae, reprints and 3 letters of reference to:

Personnel Officer
Garden State Cancer Center
at the Center for Molecular
Medicine and Immunology
1 Bruce Street
Newark, NJ 07103
FAX: (201)982-7047



**Garden State
Cancer Center**

at the Center for Molecular Medicine and Immunology

Equal Opportunity Employer

PHYSIOLOGY AND BIOPHYSICS ASSISTANT OR ASSOCIATE PROFESSOR

Applications are invited for a tenure-leading faculty position in the Department of Physiology and Biophysics at the University of Nebraska College of Medicine. We are particularly interested in recruiting a cardiovascular physiologist whose interests lie in understanding integrative cardiovascular function by using cellular and/or molecular techniques. The successful candidate will be expected to establish an independent, funded research program which will complement a group of cardiovascular investigators whose research is at the integrative, organ, and cellular level. Additional responsibilities will be engaging in the teaching programs of the department at the medical school and graduate levels. A competitive salary and setup funds are available. Applicants should forward by July 1, 1995, a Curriculum Vitae, a brief description of research accomplishments, plans for future research, and the names of three individuals who can serve as references to:

Harold D. Schultz, Ph.D.
Chairman, Search Committee
Department of Physiology & Biophysics
University of Nebraska
College of Medicine
600 South 42nd Street
Omaha, NE 68198-4575

An Equal Opportunity/
Affirmative Action Employer
Minorities and Women are
Encouraged to Apply

THE

BIOGEN

MISSION



Biogen Inc., headquartered in Cambridge, MA is a biopharmaceutical company principally engaged in developing and manufacturing drugs for human healthcare through genetic engineering. The company's revenues are generated from the worldwide sales by licensees of five products, including alpha interferon and hepatitis B vaccines and diagnostic products. Biogen is focused primarily on developing and testing products for the treatment of multiple sclerosis, inflammatory and respiratory diseases, and certain viruses and cancers.

PROCESS DEVELOPMENT - BIOCHEMICAL ENGINEERING

Biochemical Engineer

This is an excellent opportunity for an individual with a solid knowledge of quantitative and statistical analysis tools to develop mammalian cell cultures or microbial fermentation processes. Specifically, you will identify appropriate scale up/scale down parameters, assess new manufacturing technologies, as well as develop nutrient feed strategies and new in process monitoring and control techniques. To qualify, candidates must have a PhD in Biochemical Engineering and 0-5 years' experience. The ability to work with multi-departmental teams is essential, as are strong written/verbal communication skills. Expertise in cell culture is essential.

Process Engineer Associate

This individual will conduct laboratory experiments to develop bioreactor processes for mammalian cell culture or microbial fermentation derived products. Primary responsibilities involve operating and maintaining bioreactors and associated process control equipment, maintaining inoculum cultures, as well as collecting and analyzing process data. To succeed, candidates must have a BS in Chemical Engineering, Biochemical Engineering or Microbiology with an emphasis on fermentation. Applicants must also have 0-5 years' experience in the maintenance and operation of bioreactors. The ability to work in multi-departmental teams and strong written/verbal communication skills also required. Cell culture expertise preferred.

PROCESS DEVELOPMENT - GENE EXPRESSION

Scientist

We currently seek an individual with a strong interest in tissue culture work and vector/screening strategies to assume responsibility for the construction of cell lines destined for GMP manufacturing. This will involve vector construction and screening of mammalian cell lines, creating novel expression vectors, and evaluating GMP cell lines for genetic stability. Candidates must have a PhD in Molecular Biology or Cell Biology and 0-3 years' experience developing CHO or myeloma-based cell lines. The ability to supervise a small group of scientists is essential, as are strong interpersonal communication skills and a desire to work at the bench.

Process Associate

This individual will utilize in-depth tissue culture experience to provide extensive tissue culture work on the construction, screening and selecting of cell lines with high level expression. In this capacity, you will be responsible for devising screening and selection procedures for maximizing gene expression of cell lines producing protein products for clinical trials. You will also carry out vector construction, media development and cell line selection strategies. To qualify, candidates must have a BS in Biology or Cell Biology and 2-4 years' experience in the development of cell lines for GMP manufacturing. Demonstrated success managing many different cell lines is essential, as is expertise with manipulation of CHO and myeloma cell lines. The ability to work with a wide variety of personnel a must.

Process Associate

As an associate level scientist, this individual will prepare cell lines destined for clinical manufacturing. This will involve constructing vectors, transfecting and screening cell lines, carrying out Southern and Northern blot analyses, as well as analyzing cell lines to improve cell line stability. To succeed, candidates must have a BS in Biology or related field and 2-4 years' experience with vector construction for mammalian cell development. A demonstrated knowledge of genetic manipulations and expertise with Southern and Northern blot analyses preferred.

Biogen offers what few companies in our industry can - Professional Challenge, Stability, Growth and one of the strongest financial profiles in the industry. In addition, our compensation and benefits package is one of the best in the industry, and is designed to attract and retain the finest talent available. If you are one of the best, you have an opportunity to join us now. Please forward your resume, to: Joe Mini, Dept. SCI, Biogen, Inc., 14 Cambridge Center, Cambridge, MA 02142, FAX: (617) 679-3595. Biogen is an Equal Opportunity Employer.

BIOGEN



**Public Announcement Regarding
New Research and Development Projects on a
Microanalysis System of Cell Information, a Highly Sensitive Optical DNA Assay Apparatus, an Ultra
High-Speed/High-Precision MRI System for Brain Function Measurement, a Support System for Brain
Tumor and Other Surgical Operations, and a Totally Implantable Artificial Heart System
(Pre-clinical Animal Experimentation)**

Announced by the New Energy and Industrial Technology
Development Organization on May 12, 1995.

In order to promote the research and development of industrial technologies, the New Energy and Industrial Technology Development Organization (NEDO) would like to inform all interested companies and research organizations regarding the five research and development projects described below. These new projects are being undertaken as part of the Research and Development Program on Medical and Welfare Equipment Technology of the Agency of Industrial Science and Technology, Ministry of International Trade and Industry of Japan.

Themes of the Research and Development Projects

1. R&D of a Microanalysis System of Cell Information
2. R&D of a Highly Sensitive Optical DNA Assay Apparatus
3. R&D of an Ultra High-Speed/High-Precision MRI System for Brain Function Measurement
4. R&D of a Support System for Brain Tumor and Other Surgical Operations
5. R&D of a Totally Implantable Artificial Heart System (Pre-clinical Animal Experimentation)

Outline of the Research and Development Work to be Entrusted

1. Microanalysis System of Cell Information

The purpose of this project is to develop a comprehensive system for early diagnosis of diseases. This system will make an optical analysis of molecular change of labeled cells sampled from minute quantities of human blood or tissue and an image analysis of morphological change of disease-related cells separated from the cell sample by the optical analysis.

2. Highly Sensitive Optical DNA Assay Apparatus

The purpose of this project is to develop an examination apparatus for early diagnosis of infectious diseases. The apparatus will consist of an optical biosensor chip that binds specifically with DNA of infectious agents, and an optical detection device such as an ellipsometric system. The combination of these two technologies will enable it to detect changes in reflectance ratio on the chip.

3. Ultra High-Speed /High-Precision MRI System for Brain Function Measurement

The purpose of this project is to develop a system to measure human brain functions by measuring, in a speedy and highly precise manner, changes in the magnetic property of hemoglobin in the blood at the cerebral cortex, locally activated by applying several kinds of stimuli to subjects.

4. Support System for Brain Tumor and Other Surgical Operations

The purpose of this project is to develop a system which supports a surgeon in delicate surgical procedures for diseased areas, such as a brain tumor, that are characterized by small amounts of movement and/or deformation. It will provide a surgeon with solid images on the field of operation, and other images from various types of diagnostic equipment in an integrated manner. It will also provide microscopic manipulators capable of performing precise operations such as incisions, resections, suturing, etc.

5. R&D of a Totally Implantable Artificial Heart System (Pre-clinical Animal Experimentation)

The Purpose of this project is to develop, through animal experimentation, a totally implantable artificial heart capable of continuous pumping ranging from a few months to a year without the incidence of thrombosis, to realize a compact and highly reliable totally implantable artificial heart with biocompatibility.

Procedures for Application

(1) Qualification Criteria

All companies or research organizations who meet the following qualification criteria may submit an application to participate in the above projects:

1. The applicant must have previous research and development experience in the field covered by or related to the project and possess the organizational structure, human resources and research facilities required to carry out the project work.
2. The applicant must be in sound financial condition and have the ability to manage its finances and facilities as necessary to smoothly carry out the project work.
3. The applicant must be able to comply with NEDO's instructions to fully carry out the project work.
4. The applicant must attend the explanatory meeting held by NEDO as set forth in item (2) below or be represented at the meeting by a responsible agent or representative who is capable of accurately conveying the contents of the meeting in detail.

(2) Explanatory Meeting

An explanatory meeting will be held on the date shown below in order for NEDO to fully explain the details of each project's research and development work to be entrusted and the application documents to be submitted. All companies or research organizations who are interested in submitting an application to participate in a project are required to attend this meeting or to send an agent or representative to attend on their behalf. Japanese will be the only language used during the meeting.

Date: Wednesday, May 24, 1995
Time: 14:00 to 16:00
Place: NEDO's Head Office, Rm. 360
30th Floor, Sunshine 60 Building
1-1, Higashi-Ikebukuro 3-chome
Toshima-ku, Tokyo, Japan

(3) Further Information

For further information regarding the research and development work to be entrusted under the above projects, please contact NEDO by telefax as follows:

New Energy and Industrial Technology Development Organization
Contract Division, Accounting Department
28th Floor, Sunshine 60 Building
1-1, Higashi-Ikebukuro 3-chome
Toshima-ku, Tokyo 170, Japan
Telefax: +81-3-5992-1184

R&D Opportunities

Pioneer Hi-Bred International, Inc. is a worldwide leader in agricultural genetics. Founded in 1926, we are a publicly-held corporation with research, production and sales organizations worldwide. Our TRAIT AND TECHNOLOGY DEVELOPMENT DEPARTMENT has the following immediate openings in research and product development for protein and carbohydrate products:

Research Manager, Plant Geneticist Job #1055

The successful candidate will join a multidisciplinary team responsible for optimizing the expression of recombinant proteins in plants. Education/Experience: Ph.D. or equivalent experience in the area of Genetics plus 3 or more years' directly related experience is required. Knowledge of whole plant genetics and ability to use molecular and biochemical techniques are essential. Additional experience in goal setting and time lines for research projects is vital. Experience in molecular biology would be beneficial. Good working knowledge of computers and statistical analysis is required. Good data organization, interpersonal and communication skills are also essential.

Research Associate, Protein Biochemistry Job #1056

The selected candidate will join a laboratory team responsible for characterization of recombinant proteins in transgenic plants. The position entails using protein biochemistry methods to characterize and purify proteins in seeds of transgenic plants. Education/Experience: M.S. or equivalent in biochemistry, molecular biology, or related field OR a B.S. plus 2 years' relevant research experience is required. Experience in protein analysis and protein purification is essential. Solid knowledge of basic protein analytical methods plus additional background in protein purification, FPLC or enzymology are essential. Experience in molecular biology techniques would be beneficial. Good data organization, interpersonal and communication skills are also important.

For Jobs #1055 and 1056, applications received by June 2, 1995 will be assured of consideration. Applications, however, will be considered until the position is filled. Please send cover letter indicating job name and job number, two complete sets of resumes/application information to: Jon Day, Pioneer Hi-Bred International, Inc., 6800 Pioneer Parkway-Box 212, Johnston, IA 50131-0212.

Research Manager, Protein Biochemistry Job #1057 Enzymology of Carbohydrate Biosynthesis

We seek a biochemist to join a group devoted to research and product development in polysaccharide biosynthesis. Our group's overall aim is to modify carbohydrate accumulation in maize grain to enhance the value of that grain. The incumbent will establish a program that complements existing efforts in starch biosynthesis and the production of novel carbohydrates in maize endosperm. Education/Experience: Ph.D., or the equivalent, in biochemistry or closely related discipline plus four years experience in enzymology, preferably in carbohydrate biosynthetic pathways. Experience using the tools of molecular biology is highly desirable. Our team consists of biochemists and molecular and cellular biologists. Willingness to work in a team environment is essential.

Research Associate, Plant Biochemistry Job #1058 Carbohydrate Biosynthesis

This position requires a highly motivated individual who will join a research project focused on the manipulation of starch biosynthesis in maize. Education/Experience: M.S. in Biochemistry OR B.S. plus 2 years of directly related experience. Established proficiency in protein purification is required. Other skills among these areas are desirable: enzymology, molecular biology, carbohydrate analytical methods and plant genetics. The position requires extensive computer skills and ability to work in an interdisciplinary research and product development team.

For Jobs #1057 and 1058, application deadline is June 2, 1995. Please forward cover letter (indicating Job #), CV, and the names of three references, to Cindy Letizia, Specialty Grain Traits, Pioneer Hi-Bred International, Inc., 7300 NW 62nd Avenue - Box 1004, Johnston, IA 50131-1004.



PIONEER HI-BRED INTERNATIONAL, INC.

We are an Equal Opportunity Employer.

Help Us Research A New Generation Of Drug Discovery

Since 1888, Abbott Laboratories has used ground-breaking research to deliver innovative health care products to customers the world over. Today, we are one of the world's foremost health care companies—and our commitment to research is stronger than ever. As our Immunoscience Research Area expands its efforts to develop novel therapeutics for inflammatory and autoimmune diseases, we have research opportunities available at both the Senior Scientist and Associate Scientist levels. Join us and help introduce a new age of drug discovery.

GROUP LEADER— IN VITRO

In this position, you will lead a group of in vitro cellular immunologists in the study of immunosuppressant drug effects on cell proliferation, signaling, and co-stimulatory pathways.

Applicants must possess a Ph.D. in Immunology, 6-10 years of industrial research experience, outstanding leadership abilities, and excellent communication skills. In addition, we require a track record of innovative research with inhibitors of T lymphocyte activation. **Reply to Job #KM80278**

SENIOR SCIENTIST— IN VIVO

In this position you will direct a research program to characterize the in vivo anti-inflammatory potential of novel small molecules.

We require a Ph.D. in the biological sciences with 3-5 years of postdoctoral research training involving animal models of inflammation and/or autoimmunity. Excellent communication skills are essential. **Reply to Job #BL74095.**

ASSOCIATE SCIENTIST— IN VITRO

This position is responsible for studying immunosuppressant drug effects on cell proliferation, cell activation, signal transduction, and co-stimulatory pathways. This will involve extensive computer analysis. We prefer experience with cellular and biochemical measures of T lymphocyte activation. **Reply to Job #KM74082**

ASSOCIATE SCIENTIST— IN VIVO

In this position you will help expand the anti-inflammatory research effort in animals using surgical manipulations, injection, and sampling techniques. Additional responsibilities include the analysis of drug blood levels, conducting immunoassay methods, and developing disease models. **Reply to Job #BL74096.**

Candidates for all Associate Scientist positions should possess an MS in Biological Science, or a BS with 2+ years of research experience in immunology. Experience with word processing, spreadsheet, and graphics software is essential, as are excellent communication skills.

Abbott provides an excellent salary and benefits package including profit sharing and a stock retirement plan. We are located in an attractive suburban area, approximately 30 miles north of Chicago. For confidential consideration, please send your resume (indicating appropriate job code) with salary history to: **Alison Burke, D-583, AP6B, Abbott Laboratories, One Abbott Park Rd., Abbott Park, IL 60064.** Abbott is a Affirmative Action/Smoke-Free Employer.

ABBOTT LABORATORIES



Quality
Health Care
Worldwide
Since 1888

Experience the Abbott Edge

Roche

PROTEIN BIOCHEMIST

At Hoffmann-La Roche, the strength of our research efforts have made us a leader in the pharmaceutical and health care industries. Right now, we're looking for a dedicated Biochemist to conduct exploratory research in our Oncology Department.

The successful candidate will be responsible for the Department's protein biochemistry needs, employing innovative approaches to purify and characterize target proteins from nature and recombinant sources for assay development and structural determination. In addition to supervising junior scientists, the incumbent will collaborate closely with molecular biologists in project teams.

To qualify, you must have a Ph.D. in Protein Biochemistry with 3-5 years of experience as an independent researcher in academia or in the pharmaceutical industry. An extensive laboratory background in protein purification is required as is a proven record of accomplishments in team-based research reflecting your supervisory/ teamwork skills. Hands-on experience with assay development, enzyme kinetic and recombinant protein expression is highly desirable.

We offer a competitive salary and an outstanding benefits package in a supportive work environment. For consideration, please send your resume and salary history/requirements to: **Ms. Lynn Harac, Staffing Department LH125MC, Hoffmann-La Roche, Nutley, New Jersey 07110-1199.** We are an equal opportunity employer.

Roche

Hoffmann-La Roche

A Member of the Roche Group

**Albert Einstein College of Medicine
Gene Therapy**

Assistant or Associate Professor

The newly established Human Genetics Program along with the NIH funded Mental Retardation and Developmental Disabilities Center and the Department of Molecular Genetics are seeking to recruit an individual with outstanding credentials whose research interests include gene therapy protocols leading to and including human clinical trials. The position is a tenure-track position at the level of an Assistant or Associate Professor. Individuals who have an M.D., Ph.D. or combined degree with a program oriented toward human gene therapy are requested to send their *curriculum vitae*, a description of research interests and request three letters of recommendation to be sent to Dr. Raju Kucheralapati, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461. AECOM is a highly interactive academic institution located in the beautiful Pelham Bay Park area of the North Bronx, close to New York City and suburbs.

Albert Einstein College of Medicine is an equal opportunity employer.

CALIFORNIA CAREER OPPORTUNITIES

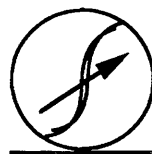
Research Scientists & Research Associates (Gene Therapy)

Immusol Inc., located in the coastal city of San Diego and strategically positioned in one of the country's top bio-science research communities, is an exciting new start-up biotech company. Among our general anti-viral missions, we are best known for our leading position in the development of gene therapy for HIV infection and AIDS. We currently have a multi-talented, energetic and highly cooperative gene therapy team with close ties to the University of California, San Diego and its world renowned AIDS research scientists and clinicians. We have recently formed strategic alliances with a world leading pharmaceutical company.

A number of positions for research scientists and research associates are available. The research scientist positions require a Ph.D degree plus several years research experience; the research associate positions require a MS degree or a BS degree plus several years research experience. We are looking for team players with creative scientific minds and an enthusiastic working attitude. Training in one of the following areas is necessary: virology, cell biology, or gene manipulation. Experience in vectorology (retroviral vector, AAV etc.), stem cell biology, protein chemistry catalytic RNA, as well as industrial experience will be considered a plus. We offer an attractive compensation package including stock options.

Please send a letter of interest describing how you meet these qualifications and your resume with a list of three references to:

Mang Yu, Ph.D.
Director, HIV Gene Therapy
Immusol, Inc.,
3050 Science Park Road
San Diego, CA 92121



Immusol
Incorporated

ENDOWED CHAIR SKELETAL MOLECULAR BIOLOGIST

*Orthopaedic Research Laboratories
Department of Orthopaedic Surgery
University of California at Davis*

The Department of Orthopaedic Surgery at the University of California at Davis is seeking a cell/molecular biologist with a strong background in skeletal tissues. The successful candidate will become the first recipient of the Lawrence J. Ellison Chair of Musculoskeletal Molecular Biology. Academic rank will be at Associate or Full Professor, commensurate with credentials.

Qualifications include a doctoral degree in a pertinent discipline, an outstanding record of accomplishment in cell and molecular biology with special emphasis on skeletal tissues, and excellence in teaching and administration of research projects. Candidates must have demonstrated the ability to pursue scientific questions in skeletal cell biology using advanced molecular techniques.

Send letter of interest, curriculum vitae, and names and addresses of five references to R. Bruce Martin, Ph.D., University of California, Davis, Orthopaedic Research Laboratories, Research Facility, Room 2000, 4815 Second Ave., Sacramento, CA 95817.

The position is open until filled; but to assure full consideration, applications should be received no later than September 30, 1995. The University of California is An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION IN TUMOR CELL BIOLOGY



Applications are invited for a postdoctoral position working on either of two general topics: 1) the role of the E2F/DP-1 family of transcription factors in regulation of the cell cycle and the function of the pRb and p53 tumor suppressor proteins in E2F regulation and apoptosis; 2) the role of the t(8;21) fusion protein in acute myeloid leukemia and the function of AML-1 in transcriptional regulation and development.

Qualified candidates should possess either a Ph.D. and/or M.D. in a relevant field. Please forward your CV and the names, addresses, and phone numbers of three references to:

Scott Hiebert, Ph.D.
Dept. of Tumor Cell Biology
St. Jude Children's
Research Hospital
332 N. Lauderdale
Memphis, TN 38105

Women and minorities are especially encouraged to apply.
SJCRH is an Equal Opportunity/Affirmative Action Employer.

HUMAN GENETICS PROGRAM MANAGER

Affymetrix is developing innovative DNA probe array-based systems for the research instrumentation, clinical diagnostic and emerging genetic analysis markets.

The successful candidate will have responsibility for establishing a human genetics research program which will apply the capabilities of large DNA arrays to provide genotypic data. Responsibilities of this position include exploring the genotype/phenotype relationship in transformed cells, recruiting and managing a strong research staff; acquiring/maintaining extramural support for research, and establishing and managing corporate and academic collaborations. The position requires a Ph.D. and/or M.D. degree with established research credentials and publication record in the area of molecular biology of inherited or somatic metastatic diseases. Outstanding research accomplishments in the area of the genetic basis of cancer is preferred, as is experience in multicenter collaborative relationships including clinical researchers.

We provide an excellent compensation package including a stock option program. Please send your resume to: **Affymetrix, Human Resources Department-Job Code TG320, 3410 Central Expressway, Santa Clara, CA 95051. EOE.**



SCIENTIST/ SENIOR SCIENTIST



Genentech's Bioanalytical Methods Development group (BAMD) is seeking an individual with a strong scientific background in immunology, oncology, molecular biology or analytical biochemistry to apply contemporary analytical methods toward the development of new biological pharmaceuticals.

As part of the drug development process, BAMD is responsible for developing quantitative assays to support pre-clinical and clinical studies, collaborating on discovery, pharmacokinetics, metabolism, toxicology and clinical research. Assays are generally designed to quantify recombinant human proteins and antibodies against those proteins in biological matrices. Additionally, methods are developed and studies conducted to provide insights into therapeutic efficacy and mechanisms of action.

The successful candidate will have a Ph.D. or M.D. and a proven track record in cell biology, biochemistry or molecular biology with an inclination toward developing or using analytical methodologies. The individual should demonstrate an ability to work collaboratively with colleagues within the group as well as with scientists in other disciplines throughout the Research and Development organization.

Contact us today and learn about our challenges as well as our excellent salary and benefits package for full time employees that includes child care resources, free health club membership, fully paid medical, dental, and vision coverage and an employee stock purchase plan. For immediate consideration, please send your resume to Genentech, Inc., Human Resources Dept. NSSP, 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal opportunity employment. Women and minorities are encouraged to apply.

Genentech, Inc.

Conference Announcement

The Fidelity of DNA Replication

Sponsored by the
National Institute of
Environmental Health Sciences

When: September 10-14, 1995

Where: Wrightsville Beach, North Carolina, USA

Objective: To discuss recent advances in nucleic acid and protein structure, chemistry, enzymology and genetics that contribute to understanding the fidelity of DNA replication.

Topics and Participants

Structures of Replication Proteins

W.F. Anderson, E. Arnold, L.S. Beese, J. Kraut,
J. Kuriyan, G.P. Mullen, H. Pelletier, T.A. Steitz

DNA Polymerase Mechanisms

S.J. Benkovic, R.P.P. Fuchs,
M.F. Goodman, K.A. Johnson, C.M. Joyce,
T. S.-F. Wang, S. H. Wilson

Functions of Multisubunit Replication Complexes

T.A. Kunkel, L.A. Loeb, C.S. McHenry,
N.G. Nossal, M. O'Donnell, C.C. Richardson,
S. Tabor, R.M. Schaaper

Mismatch repair and Genome Instability

J. Drummond, R. Fishel, H.J. Fritz, J. Jiricny,
R.M. Liskay, J.H. Miller, M. Radman

The Conference will feature morning and evening sessions. Afternoons are reserved for informal discussions and poster sessions.

Registration Fee: \$315 (meals, conference facilities & ground transportation)

Lodging: \$69 - \$75 + tax per night
(single or double occupancy)

To apply: Send name, address, phone & fax number, E-mail address and description of research interests to:

Fidelity Conference
Roel M. Schaaper and Thomas A. Kunkel,
NIEHS, P.O. Box 12233
Research Triangle Park, NC 27709, USA

Application deadline: June 23, 1995.
The conference will be limited to 120 people.

JOB ANNOUNCEMENT

Director, Fish and Wildlife Division

The Northwest Power Planning Council is seeking an experienced, highly motivated professional to serve as Director of its Fish and Wildlife Division.

The Council is an interstate compact agency formed pursuant to the Northwest Power Act by Congress and the four Northwest states of Idaho, Montana, Oregon and Washington. The Council develops the regional plan to protect and enhance Columbia River Basin fish and wildlife resources. The Council deals with some of the most interesting and challenging natural resource issues in the Pacific Northwest.

The position reports to the executive director. The division is comprised of 10 individuals with strong administrative, biological, hydrologic, modeling, legal and policy analysis skills. The budget for the division is approximately 1.2 million dollars.

The director provides issue management on a number of complex and controversial subjects. This work includes policy analysis and the preparation of policy options for Council deliberation. The director provides close coordination with the Council's fish and wildlife committee, comprised of four Council members, and with all Council members. Outreach is a key part of this job, including numerous contacts with interest groups and, on occasion, with the media. The Council is looking for candidates with extensive experience in dealing with natural resource issues. Experience in working with decision making organizations is also important. Strong oral and written communication skills are essential.

Salary and benefits are negotiable depending on previous experience and other qualifications. The Council is an affirmative action agency. Women and minorities are especially encouraged to apply. If you would like a copy of the job announcement call 1-800-222-3355. Closing date for receipt of applications is June 1, 1995.

Send resumes to: **James Tanner, Administrative Officer, Northwest Power Planning Council, 851 S.W. Sixth Avenue, Suite 1100, Portland, Oregon 97204.**



1995 ASBMB Fall Symposia



October 6-9, 1995

Keystone, Colorado

**"ACTIVATION OF TRANSCRIPTION IN
RESPONSE TO EXTRACELLULAR
SIGNALING PROTEINS"**

Organized by:
**George R. Stark, *The Cleveland
Clinic Foundation***



October 13-16, 1995

Granlibakken,

Lake Tahoe, California

**"DETERMINANTS OF SPECIFICITY OF
GROWTH FACTOR SIGNALING"**

Organized by:
**Jerrold M. Olefsky, *Veterans
Administration Hospital, UCSD***
Jeffrey E. Pessin, *University of Iowa*
**Alan R. Saltiel, *Parke-Davis
Pharmaceutical Research***



October 20-23

Keystone, Colorado

**"THE ROLE OF LIPID MESSENGERS
IN SIGNAL TRANSDUCTION
PATHWAYS, CELLULAR REGULATION
AND DISEASE"**

Organized by:
Robert M. Bell, *Glaxo, Inc.*
**John H. Exton, *HHMI Vanderbilt
University School of Medicine***

Speakers will be chosen from abstracts. Abstract deadline, July 11, 1995. The call for abstracts will be mailed to ASBMB members in May.

For information contact:

ASBMB SYMPOSIA OFFICE, ROOM 3206 • 9650 ROCKVILLE PIKE • BETHESDA, MARYLAND 20814-3998
TEL: 301-530-7010 FAX: 301-530-7014

**DEPARTMENT OF PHARMACOLOGY,
WAYNE STATE UNIVERSITY SCHOOL
OF MEDICINE, invites applications for TEN-
URE TRACK POSITIONS at the ASSIS-
TANT/ASSOCIATE PROFESSOR level.**

Candidates using contemporary approaches to study signal transduction, vesicular trafficking, cell cycle regulation, transcriptional regulation, and protease/protease inhibitors are preferred. Responsibilities include establishing an outstanding independent and extramurally-funded research program and teaching of pharmacology to medical and graduate students. Faculty may participate in the training of graduate students in Pharmacology as well as in interdisciplinary degree programs in Cancer Biology and/or Molecular Toxicology.

Opportunities are available for interactions with faculty in the Michigan Cancer Foundation, the Institute for Chemical Toxicology, the Center for Molecular Medicine, the Neuroscience Program, and the Neurotrauma Center.

Candidates should have a Ph.D. or equivalent degree with appropriate postdoctoral training. Highly competitive salary and start-up packages are available for these positions. Applications will be accepted until the positions are filled. A CV with a statement of research interests, reprints of two relevant publications and names, addresses, and telephone/fax numbers of at least three references should be forwarded to: **Dr. David Kessel, Chair, Faculty Search Committee, Wayne State University, School of Medicine, Department of Pharmacology, 540 E. Canfield, Rm. 6374, Detroit, MI 48201.**

*Wayne State University is an Equal Employment Opportunity/Affirmative Action employer.
Dr. Bonnie F. Sloane, Professor and Chair.*

TENURE TRACK FACULTY POSITION IN MAMMALIAN DEVELOPMENTAL BIOLOGY THE WHITEHEAD INSTITUTE FOR BIOMEDICAL RESEARCH AND THE DEPARTMENT OF BIOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY



Candidates are sought for a tenure-track position at a junior level in the area of mammalian developmental biology. We wish to identify candidates who are pursuing problems in this field, including mechanisms of embryonic induction, cell fate, and cell migration. We are particularly interested in research programs exploiting organismic systems and utilizing genetic and molecular approaches.

Candidates will be considered for a joint academic appointment between the Whitehead Institute for Biomedical Research and the Department of Biology, Massachusetts Institute of Technology. The successful candidate will be expected to conduct an active research program in mammalian developmental biology and to participate in the Department's teaching program.

Send a curriculum vitae, a short description of your research plan, and the names of at least three scientists who can provide an evaluation of accomplishments and future potential to: **Rudolf Jaenisch, Chairman, Mammalian Developmental Biology Search Committee, The Whitehead Institute for Biomedical Research, Nine Cambridge Center, Cambridge, MA 02142. An Equal Opportunity/Affirmative Action Employer.**

The University of Massachusetts Medical Center in Worcester, MA, has the following opportunity available within their Department of Pharmacology:

Professors Assistant, Associate, or Full

Applications are invited for three tenure-track faculty positions at the level of ASSISTANT, ASSOCIATE, or FULL PROFESSOR. Applicants are sought with research interests in receptor function and signal transduction and in related areas of cellular and molecular pharmacology or toxicology. Selections will be based on excellence in research and teaching, and the potential to maintain an outstanding, independent research program. Appointees will participate in a pharmacology course for medical students and in the department/interdisciplinary training programs at the Graduate School. An applicant should send *curriculum vitae*, statement of research plans, and names of three references for review beginning on July 1, 1995, to: **Dr. William Greenlee, Department of Pharmacology, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, MA 01655-0126. The University of Massachusetts is an Affirmative Action/Equal Opportunity**

**Employer and
strongly
encourages
applications
from female
and minority
candidates.**



POSTDOCTORAL ASSOCIATES

Molecular Excitability



MetroHealth Campus
Case Western Reserve University



An active multidisciplinary research program in Molecular Excitability has been established at MetroHealth Medical Center. The faculty include Drs. Buzz Brown, Bert Chang, Glenn Kirsch, Diana Kunze, Tony Lacerda, Bill Schilling, and Barbara Wible. The program focuses on understanding the structure, function and regulation of ion channels with special emphasis on their role in diseases of excitability. Training is designed to produce scientists with multidisciplinary expertise, equipped to work in either industrial or academic environments. Interactions exist among molecular biologists, electrophysiologists, pharmacologists, protein biochemists, geneticists and clinical scientists/physicians. We are seeking trainees who will contribute to specific projects and facilitate and enhance the multidisciplinary environment of the Research Center.

Applications are invited for **Postdoctoral Positions** in the following general areas:

•**Protein Biochemistry:** Isolation and purification of ion channels for functional reconstitution and direct structural studies.

•**Molecular Biology:** Definition of regulatory elements controlling ion channel gene expression and cloning and expression of novel ion channel regulatory subunits.

•**Cell Physiology:** Characterization of signal transduction mechanisms and ion channel localization by *in situ* hybridization and immunohistochemistry using fluorescence video and confocal microscopy.

•**Molecular Genetics:** Correlation of genotypic mutations with phenotypic expression of ion channels in disorders of membrane excitability.

•**Electrophysiology:** Delineation of structure/function relationships for ion channel pores and gates using patch clamp techniques to evaluate site-directed mutants and channel chimeras.

Send Curriculum Vitae and names/addresses of three references to:

Dr. William P. Schilling
Rammelkamp Center for Research
MetroHealth Campus
Case Western Reserve University
2500 MetroHealth Drive
Cleveland OH 44109-1998

GLOBAL CAREER OPPORTUNITIES



Max-Planck-Institut

für neuropsycholog. Forschung in Leipzig

The newly founded Max-Planck-Institut for Cognitive Neuroscience in Leipzig (Directors: Prof. A. Friederici, Prof. D. Y. von Cramon) is looking for a

Experimental Physicist/Statistician

with experience in the statistical analysis of experimental data.

The contract will initially be awarded for 3 years, commencing September 1995.

The successful candidate should possess a Ph.D. and be willing to work in a multi-disciplinary team. Experience with the analysis of NMR or PET data is desirable, as is a basic knowledge of NMR imaging methods. The job requires the conception of experimental protocols and the statistical analysis of functional NMR data.

The Institute will take delivery of a 3 T/1 m Bruker Medspec system in late 1995.

The Max-Planck-Society offers a generous salary and relocation assistance.

Preference will be given to disabled persons of the same qualification.

For an informal discussion please call David Norris on FRG-(0)421-218-3106/3452.

Candidates should send a c.v. by 15th June to:

Max-Planck-Institut für neuropsychologische Forschung
Verwaltung
Inselstr. 22-26, 04103 Leipzig, Germany

Research Toxicologist (metabolism/pharmacokinetics)

IIT Research Institute (IITRI), a Chicago based not-for-profit Research and Development Organization, has an opening in its Life Sciences Department for a study director. Candidate must have a Ph.D. in toxicology, pharmacology or related discipline with 0-5 years of experience. A background in metabolism and pharmacokinetics is essential as is experience in the conduct of GLP studies according to the EPA, FDA or OECD testing guidelines. Prior experience in a contract lab is a plus.

A full range of benefits, including 100% tuition assistance is offered.

Please forward resume, including salary history/requirements to:

Susan L. Pigott
IIT Research Institute
10 West 35th Street
Chicago, IL 60616

IITRI is an Equal Employment/
Affirmative Action Employer

GLOBAL CAREER OPPORTUNITIES

CHAIR OF MICROBIOLOGY

Applications are invited for a Chair of Microbiology which became vacant from 31 December 1994 following the retirement of Professor D O White, A.O.

Applicants should have achieved distinction in teaching and international recognition for their research. The new Professor will be expected to provide leadership in teaching and research in a branch of science relevant to the broad field of Microbiology.

The position is open to medical and non-medical graduates.

SALARY: A\$80,176 per annum to which is added a superannuable pre-clinical loading salary differential of A\$6,846 per annum for a medically qualified appointee.

Further information about the position, including details of application procedure, conditions of outside work, superannuation, travel and removal expenses, housing assistance and conditions of appointment, is available from the Registrar; or from Appointments (43912), Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF (tel. 0171 387 8572 ext. 206; fax 0171 813 3055; email: appts.acu@ucl.ac.uk). All correspondence (marked "Personal and Confidential") should be addressed to the Registrar, The University of Melbourne, Parkville, Victoria 3052, Australia (tel. [61 3] 344 7528, confidential fax [61 3] 344 6897).

Applications close on **30 June 1995**.

The Council reserves the right to make no appointment or to fill the Chair by invitation at any stage.

The University of Melbourne is an equal opportunity employer and has implemented a smoke-free workplace policy.



THE UNIVERSITY OF MELBOURNE
MORE THAN A DEGREE

POSITIONS OPEN

RESEARCH ASSOCIATE—University of Minnesota. An individual with a Ph.D. in Social Psychology, Biostatistics, or a related field is sought for a full-time, non-tenured, annually renewable appointment as a Research Associate in the University of Minnesota's Department of Psychiatry. Experience in clinical or basic research is required along with extensive knowledge of statistical techniques to be used in biomedical research. Job duties will include assisting investigators in the design and execution of both clinical and basic studies, assisting in the preparation of grant applications and manuscripts, and providing instruction to faculty members and residents in statistics, research methodology, and design. Starting date for this position is July 1, 1995, and completed applications must be received by June 9, 1995. Send curriculum vitae plus three references to: **Dr. Esam El-Fakahany, Department of Psychiatry, Box 392 UMMC, 420 Delaware Street S.E., Minneapolis, MN 55455.** *The University of Minnesota is an Equal Opportunity Educator and Employer.*

GRADUATE ASSISTANTSHIP at the Center for Fluorescence Spectroscopy (CFS). Position available for a highly motivated individual to complete his/her thesis within the CFS, resulting in a Ph.D. from the Department of Biological Chemistry (University of Maryland at Baltimore) or the Department of Chemistry (University of Maryland, Baltimore County). Students with some completed graduate coursework are encouraged to apply. Research will involve use of advanced fluorescence methods. Send résumé and letters of recommendation to: **Dr. Joseph R. Lakowicz, Department of Biochemistry, University of Maryland School of Medicine, 108 North Greene Street, Baltimore, MD 21201.**

NEUROCHEMIST

SENIOR SCIENTIST position in biopharmaceutical company for Ph.D. neurochemist with minimum one year of postdoctoral experience in *in vivo* neurochemical techniques and *in vitro* receptor binding. Experience in *in vivo* neurotransmitter dynamics preferred. Ability to work independently as well as interact effectively as part of a team in a multidisciplinary environment on projects related to CNS drug discovery. Effective communication skills essential. Send curriculum vitae to: **CoCen-sys, Inc., Human Resources, 213 Technology Drive, Irvine, CA 92718.**

VERTEBRATE BIOLOGIST

Eastern Oregon State College has a **ONE-YEAR POSITION** (with the possibility of continuing for a second year) in vertebrate zoology available starting 16 September 1995. Teaching responsibilities will include courses in comparative vertebrate anatomy, histology, and general ecology; some general biology labs (majors course); and an upper division elective course in the candidate's area of expertise. The candidate should have a Ph.D. with a strong commitment to undergraduate teaching and advising. Screening begins on June 12, 1995, and continues until the position is filled. Applicants should send a curriculum vitae, copies of all transcripts, and the names and addresses of three references to: **Dr. Dennis Swanger, Biology Department, Badgley Hall, Eastern Oregon State College, 1410 "L" Avenue, La Grande, OR 97850-2899. FAX: 503-962-3873.** *Eastern Oregon State College is an Equal Opportunity/Affirmative Action Employer.*

The Johnson Space Center **VISITING SCIENTIST PROGRAM** in Space Biomedicine supports up to six months of on-site research and additional follow-on research at the Visiting Scientist's home institution. Sponsoring laboratories offer research projects in the following discipline areas: 1) Balance function modeling; 2) Radiation biophysics; 3) Biotechnology; 4) Cellular immunology; 5) Cellular physiology of muscle; 6) Water quality; 7) Biomechanics of bone; and 8) Psychology and behavior. For additional information or application materials, contact: **Barbara Railsback (S), USRA, Division of Space Life Sciences, 3600 Bay Area Boulevard, Houston, TX 77058. Telephone: 713-244-2009; FAX: 713-244-2006.**

POSITIONS OPEN

PALO ALTO INSTITUTE OF MOLECULAR MEDICINE

Non-profit basic research institute seeks **BIOMEDICAL SCIENTISTS** with RO1 or other funding. Work near the birthplace of biotechnology! All areas of biomedical research considered including cellular and molecular biology, pharmacology, chemistry and biochemistry.

Send curriculum vitae and research interests to: **James W. Larrick, M.D., Ph.D., PAIMM, 2462 Wyandotte Street, Mountain View, CA 94043.**

RESEARCH SCIENTIST

The University of Wisconsin Department of Surgery has a position available for a cardiac physiologist in an NIH-sponsored laboratory. You will be performing studies related to the actions of adenosine in normal and ischemic myocardium. Position requires demonstrated experience in cardiac myocyte isolation and recording of intracellular calcium currents and concentration. Qualified individuals must have a Ph.D. with one to two years of laboratory experience. Send curriculum vitae and the names, addresses and telephone numbers of three references to: **Dr. Robert Mentzer, Professor and Chairman, Division of Cardiothoracic Surgery, Clinical Science Center H4/358, 600 Highland Avenue, Madison, WI 53792-7375.** *The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer.*

SYMPOSIA

PROGRAM IN MATHEMATICS AND MOLECULAR BIOLOGY IV From DNA Sequence to Protein Structure and Function

Santa Fe, New Mexico, November 11-15, 1995. Sessions include: Nucleic Acid Structure, Signals in DNA Sequence, Long Range Sequence Effects, Analysis of Protein Structure, From Protein to Protein, Ab Initio Folding, Intermolecular Interactions. Limited travel funds available and students have priority. Abstract deadline: September 15, 1995. For information contact: **PMMB, 103 Donner Laboratory, No. 3206, University of California, Berkeley, CA 94720. FAX: 510-642-4071. Email: sylviaj@violet.berkeley.edu.**

SYMPOSIUM: Translation and Stability of mRNA. October 8 to 10, 1995; Cathedral Hill Hotel, San Francisco, California. Speakers: E. Baker, H. Blau, R. Braun, A. Geballe, P. Green, J. Harford, J. Hershey, A. Hinnebusch, M. Katze, R. Lehmann, M. Mathews, D. Morris, R. Parker, S. Peltz, G. Read, T. Rouault, P. Sarnow, R. Schneider, A. Shyu, R. Silverman, N. Sonenberg, O. Uhlenbeck, S. Warren, M. Wickens. Organizers: J. Harford, RiboGene; M. Katze, University of Washington; J. W. Larrick, PAIMM. Abstracts due September 25, 1995. Sponsor: Palo Alto Institute of Molecular Medicine, 2462 Wyandotte Street, Mountain View, CA 94043. Telephone: 415-694-4996; FAX: 415-694-7717; Email: PAIMM@AOL.COM.

SYMPOSIUM: Therapeutic Antibody Technology 95 October 30 to November 1, 1995; Cathedral Hill Hotel, San Francisco, California. Speakers: C. Barbas, C. Borrebaeck, D. Burton, P. Carter, D. Charish, K. Chester, A. Griffiths, A. Grillo-Lopez, K. Hellstrom, A. Hiatt, H. Hoogenboom, T. Ishiguro, A. Jakobovits, K. Johnson, W. Marasco, G. Mark, J. Marks, S. Morrison, I. Pastan, A. Plückthun, L. Ostberg, J. Reno, M. Rosenberg, T. Scanlon, W. Stemmer, L. Weiner, I. Wilson. Abstracts due October 16, 1995. Organizers: J. Larrick, J. Marks. Sponsor: Palo Alto Institute of Molecular Medicine, 2462 Wyandotte Street, Mountain View, CA 94043. Telephone: 415-694-4996; FAX: 415-694-7717; Email: PAIMM@AOL.COM.

SERVICES

IMMIGRATION-FOREIGN RESEARCHERS

You may be able to obtain a U.S. green card quickly and without a job offer, based on your achievements.

The Law Offices of David M. Kramer
12121 Wilshire Boulevard, Suite 1201
Los Angeles, CA 90025
Telephone: 310-820-5320

For information, leave message/send FAX with your name and address to: 310-820-6522.

ANNOUNCEMENTS

INTERNATIONAL FELLOWSHIP

The Dan Charitable Trust Fund for Research in Biological Sciences provides financial support for collaborative research between Japan and other countries or participation in international conferences or workshops held in Japan or other countries. A total of six **FELLOW-SHIPS** (one- or three-month duration) will be awarded every year. Applications for fellowships must be submitted to the address listed below by October 31, 1995. For more information, write: **Tetsuo Tabuchi, The Dan Charitable Trust Fund for Research in the Biological Sciences, Nippon Trust Bank, 3-1-8 Nihonbashi, Chuo-ku, Tokyo 103, Japan. FAX: 03-3271-2843.**

PRE-PROPOSALS—Deadline: 1 July 1995. International Foundation for Ethical Research (IFER) has grants available for research into alternatives to the use of live animals in research, testing and teaching. Projects must take into account the three R's: Refinement, Reduction, and Replacement plus a fourth R: Responsibility. For information and format write: **IFER, 53 West Jackson Boulevard, Department J, Chicago, IL 60604, or call: 312-427-6025.**

COMPUTER MARKETPLACE

Oligonucleotide Design Software


☆ HYBsimulator™ ☆

Using the nearest neighbor model, **HYBsimulator** will simulate the hybridization of a large group of oligonucleotides with a large database (**GenBank**) (**Computer Hybridization Simulation**) to design optimal oligonucleotides with insight into the biological system. *Imagine the possibilities...*

AGCT (800) 494-AGCT (714) 833-9983


Circle No. 33 on Readers' Service Card

MARKETPLACE



- Hybridoma Development
- Ascites Production
- In-Vitro Production
- Purification Services
- Labeling • Fragmentation

(518) 537-8000



Circle No. 41 on Readers' Service Card

Activated For Protein Modification

PEGs

Shearwater Polymers, Inc.

(800) 457-1806
(205) 533-4805 (fax)

Circle No. 1 on Readers' Service Card

Now ... a single source for all your microfiltration needs.

Ask for your **FREE** copy of the new **Poretics Microfiltration Products Selection Guide** and Catalog.

PORETICS CORPORATION 1-800-922-6090 510-373-1725 (fax)

Circle No. 62 on Readers' Service Card

Marketplace ads continue on page 942

MARKETPLACE



AMITOF'S CUSTOM DNA
\$1.50 per base/50nmole

- * No set-up Charge / No Rush Charge
 - * Shipped within 48 hours
- 1-800-5-AMITOF Fax 617-782-9352

Circle No. 64 on Readers' Service Card

ANTIBODY SOLUTION

- POLYCLONAL SERVICES
- *IN-VIVO* STUDIES
- ASCITES SCALE-UP
- IMMUNOCHEMISTRY
- ANTIBODY PRODUCTS
- HYBRIDOMA DEVELOPMENT



BERKELEY ANTIBODY COMPANY

Toll Free (800) 922-2226
FAX (510) 222-1867

Circle No. 83 on Readers' Service Card

P1 Library Screening
and FISH Analysis

Positive P1 clones are
screened and confirmed
by hybridization!

Use P1 clone DNA for FISH
analysis. Get fast, publish-
able results.

Not Just Clones — Relevant Clones



LABORATORIES

Circle No. 55 on Readers' Service Card

Video Gel Documentation

Beyond the Gold Standard...



The SpeedLight Platinum

- * Highest resolution digital image capture
- * Simple to use
- * Computer-independent

Call B/T SciTech - 1-800-352-4474

Visualize * Document * Digitize * Analyze * Make Slides

Circle No. 31 on Readers' Service Card

Human Microvascular Cells
Complete Cell System

NOW ONLY \$350

NEW DEFINED ANIMAL ENDOTHELIAL CELL SYSTEMS:
Porcine Aortic Endothelial Cell System
Bovine Aortic Endothelial Cell System



800-697-1211

Circle No. 66 on Readers' Service Card

Mutation Detection Kits

NO RADIOACTIVITY EASY TO USE NO GELS

GENECHECK, Inc.

Fort Collins, Colorado
phone: 1-800-822-6740
fax: (303) 226-0107



Circle No. 76 on Readers' Service Card

EVERYTHING
YOU NEED FOR
PROTEIN
CRYSTAL GROWTH

Crystallization research products for proteins, peptides & nucleic acids

FREE CATALOG

(800) 452-3899

Fax (909) 784-2215

Internet XTALROX@AOL.COM



Circle No. 5 on Readers' Service Card

MARKETPLACE

CUSTOM DNA SYNTHESIS

PURE & SIMPLE

- Superb Technical Support
- Impeccable Quality
- World's Fastest Service
- Cap Gel & TOF Mass Spec

* Some restrictions apply. Please call for details.

\$1^{19*}
per base
\$10 setup
50 nmole
scale

MIDLAND

STILL THE UNDISPUTED #1 CUSTOM DNA SYNTHESIS SERVICE

THE MIDLAND CERTIFIED REAGENT COMPANY

Phone 1-800-247-8766 FAX 915-694-2387
email MCRC@WLN.COM

Circle No. 6 on Readers' Service Card

\$195 CUSTOM PEPTIDES

- 15 - 30 mg • 8 - 20 residues
- Mass Spec. Provided
- Quantity discounts available



CHIRON
MIMOTOPES
PEPTIDE SYSTEMS

North America:
Tel: 1-800-338-4965
Fax: 1-800-654-5592

CM 0945

Circle No. 25 on Readers' Service Card

DNA PEPTIDES

- \$1.75 /base
- \$20 /residue
- Column Purified
- 15-40 mg in 5 days
- No setup fee
- No setup fee

GENEMED BIOTECHNOLOGIES
1 (800) 344-5337 • Fax (415) 952-9540

Circle No. 27 on Readers' Service Card

custom custom custom custom custom custom custom custom

PEPTIDE and DNA

Peptide and DNA engineering specialist:
Phosphoryl, Thiophosphoryl, Biotinyl, Chloromethyl,
Cyclic, Dimeric, Partial protected, FITC, DNP, pNA,
AMC, Phosphothionate and more

IonSpray MS and LC/MS

Synthetic or natural compounds analysis:
Organic, Inorganic, or coordination compounds
Drug metabolites, Enzyme digests, ect.
\$30/sample (MS), \$250/sample (LC/MS)

Call for more information (800-597-7873) or
Fax us sequence for quotation (510-371-1156).
Peptidogenic Research & Co. Livermore, CA.

Circle No. 4 on Readers' Service Card

2-D Electrophoresis Services

Fast - Reliable - Custom
1D & 2D Protein PAGE
Kendrick Labs, Inc
1 800 462-3417



Circle No. 54 on Readers' Service Card

MARKETPLACE

World leader in Synthetic DNA and Peptides

DNA E-Mail: Biosyn@aol.com

- NO SETUP charge • NO minimum order
- 1⁴⁹ base • Column Purified
- 10.0 OD's (~330 µg)
- Synthesis Report
- 24 hour SHIPPING

Call for \$1.19 /base oligos. Larger scales & more available.

PEPTIDE

! FREE MASS SPEC !

- NO SETUP charge • Free HPLC Tracing
- 15-40 mgs
- 8 - 30 residues
- Shipped in 5 days

! Antipeptide Antibodies production services, & more !

Since 1984, serving you with quality products

BIO-SYNTHESIS

Tel: 800-227-0627 Fax: 214-420-0442

Circle No. 43 on Readers' Service Card

CUSTOM ANTIBODIES:

- Antibody Only \$900.00
- 2 Rabbits, Conjugation & Delivery Included
- With Peptide Synthesis \$1200.00
- Less Than 10 Residues
- Purification, 2 Rabbits, Conjugation & Delivery Included

Advanced ChemTech

Fax(502) 968-1000 1-800-456-1403

Circle No. 30 on Readers' Service Card

Custom DNA from \$1.25/base

ransom hill bioscience, inc.

Now you can
search our
oligo archive
on-line.



If the oligo
you need is
there, it's
yours for

\$0.75/base (5 O.D.)!

For further information,
on this and other services...

Fax (800) 597-8509 or
EMAIL visla@delphi.com

Circle No. 9 on Readers' Service Card

Express Peptides

15 mg in 5 days
\$25 per residue

Research Genetics, Inc.
1-800-533-4363

Circle No. 10 on Readers' Service Card

GENERELEASER

PCR* READY DNA IN 5 MINUTES

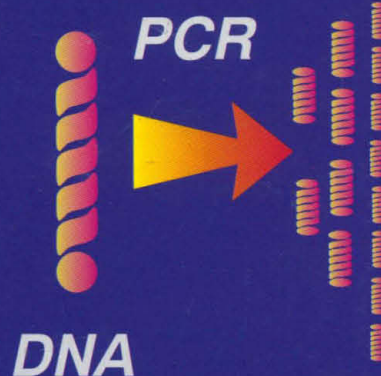
1993
R&D
100
WINNER



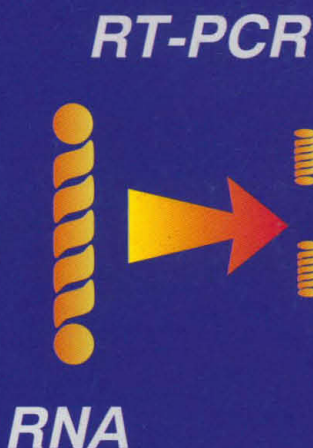
**SAMPLE
TYPES**



- * FIVE MINUTE PROTOCOL
- * MULTIPLE ASSAYS
- * KITS NOW AVAILABLE



DNA



RNA

IN ADDITION TO THE STOCK GENERELEASER REAGENT, KITS FOR DNA AND RNA PREPARATION FROM MOUSE TAILS, WHOLE TISSUES, YEASTS, PLANTS, AND PARAFFIN EMBEDDED TISSUES ARE AVAILABLE COMPLETE WITH PROTOCOLS, MICROWAVE RACK, DISPOSABLE PESTLES AND TUBES FOR 50 ASSAYS.

**CALL NOW FOR ONE OF THE MOST COST EFFECTIVE,
INNOVATIVE SAMPLE PREPS AVAILABLE**

BioVentures, Inc.

Phone 800-235-8938 FAX 615-896-4837

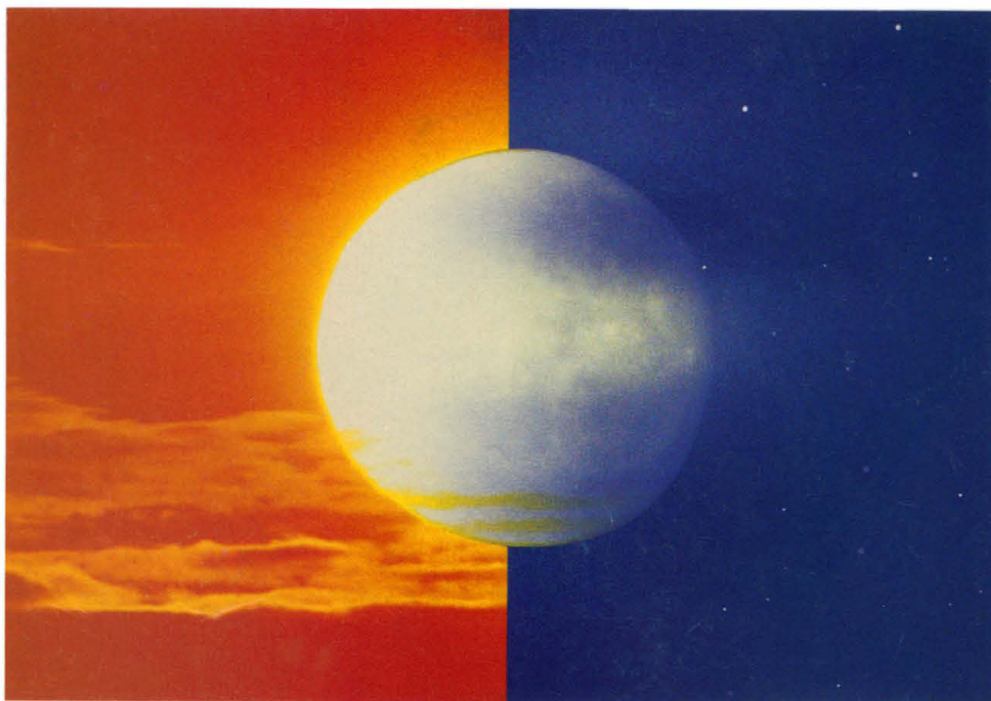
AUSTRALIA: Integrated Sciences Pty. Ltd. (02) 436-2611 AUSTRIA: Vienna Lab (1) 740-40-190 BELGIUM: Eurogentec (41) 66 01 50 CANADA: General Synthesis & Diagnostics (416) 978-8805 & Kara-Tech (604) 264-8844
CHINA: Jingmei Biotech 364-273 & T.W.C. BioSearch International (852) 699-6208 CZECH REPUBLIC: BioVendor sro (49) 69-6772127 FRANCE: ATGC Biotechnologie (1) 43 04 21 00 & Eurogentec (41) 66 01 50
GERMANY: Angewandte Gentechnologie Systeme mbH (6221) 831023 & Eurogentec (41) 66 01 50 & Syrinx-Vertriebsges mbH (69) 359686 or (6221) 161720 ISRAEL: Talron (8) 472563 ITALY: Polymed srl (55) 8071285
JAPAN: Funakoshi (3) 5684-1622 KUWAIT: Boushahri Medtech 5729000 THE NETHERLANDS: Eurogentec (41) 66 01 50 NEW ZEALAND: Integrated Sciences Pty. Ltd. (02) 436-2611
SOUTH AFRICA: Whitehead Scientific (21) 981-1560 SPAIN: Bio-Synthesis (1) 352-63-99 & C.E. Durviz sl (6) 347-6409 TAIWAN: Pro-Tech (2) 3810844 UNITED KINGDOM: Cambio 223-66500

*PCR IS COVERED BY PATENTS OWNED BY HOFFMANN-LA ROCHE

Circle No. 12 on Readers' Service Card

QuantikineTM Immunoassays

Precise, Accurate and
Highly Reproducible...

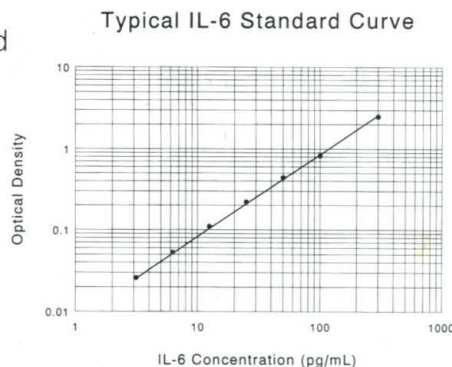


...as sure as night follows day.

The components of R&D Systems' Quantikine Immunoassays are engineered to provide outstanding performance:

- ▶ Precision ▶ Sensitivity
- ▶ Accuracy ▶ Specificity

More than 45 different immunoassays available for the measurement of cytokines and cytokine receptors.



FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES.

U.S.A. and Canada

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis MN 55413, USA.
Tel: 612 379-2956
Fax: 612 379-6580

Europe

R&D Systems Europe Ltd.
4-10 The Quadrant, Barton Lane
Abingdon, OX14 3YS, UK.
Tel: +44 (0)1235 531074
Fax: +44 (0)1235 533420

Japan

Funakoshi Co., Ltd.
9-7, Hongo 2-Chrome
Bunkyo-ku, Tokyo 113, Japan
Tel: +81 (03) 56841622
Fax: +81 (03) 56841633

Circle No. 59 on Readers' Service Card

Quantikine

- human IL-1 α
- human IL-1 β
- human IL-1ra
- human IL-2
- NEW human IL-2 sR α
- human IL-3
- human IL-4
- human IL-5
- human IL-6
- human IL-6 sR
- human IL-7
- human IL-8
- NEW human IL-10
- human IL-11
- human IL-12
- human ANG
- human EGF
- human FGF basic
- human G-CSF
- human GM-CSF
- human GRO α
- NEW human IFN- γ
- human LIF
- human M-CSF
- NEW human MCP-1
- human MIP-1 α
- NEW human MIP-1 β
- human OSM
- human PDGF-AB
- human RANTES
- human SCF
- human SLPI
- human sTNF RI
- human sTNF RII
- human TfR
- human TGF- β 1
- human TGF- β 2
- human TNF- α
- human TNF- β
- NEW human VEGF

Quantikine HS

- human IL-1 β
- human IL-3
- human IL-6
- human IL-7
- human FGF basic
- human TNF- α

Quantikine IVDTM

- human Epo

RESEARCH AND DIAGNOSTICS

R&D
SYSTEMS

1-800-343-7475