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ANALYTICAL CHEMISTRY

NEW ENGLAND COLLEGE
HENNIKER, NH
AUGUST 10 - 15, 1997
Timothy Harris, *Chair*
J. Michael Ramsey, *Vice Chair*

STRATEGIES FOR SYNTHESIS OF LARGE MOLECULAR LIBRARIES
M. Geysen
A. Czarnik / TBA / D. Kahne

NEW ANALYTICAL FACULTY
TBA
Eight 15 min. talks from young analytical faculty

HIGH THROUGHPUT SCREENING
TBA

BEAD TAGGING
TBA
N. Winograd / A. Czarnik / P. Nestler

HIGH THROUGH-PUT ANALYSIS: CAN I KNOW WHAT I MADE?
Moran
W. Hancock / Yan

USING CHEMICAL LIBRARIES FOR BINDING STUDIES
S. Olesik
Jacobsen

INSTRUMENTATION FOR AUTOMATED SYNTHESIS
K. Rowlan
S. H. Dewitt

LATE BREAKING RESEARCH
TBA

ANALYTICAL PYROLYSIS

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JUNE 22 - 27, 1997
Lars Carlsen, *Chair*

DETECTION
L. Carlsen
J. Boon / P. Snyder

IDENTIFICATION I
H. L. C. Meuzelaar
J. Dworzanski / P. Sisson

IDENTIFICATION II
J. Challinor / T. P. Wampler

CHARACTERIZATION I
H.-R. Schulten / J. de Leeuw

CHARACTERIZATION II
D. Bate / H. Ohtani

CHARACTERIZATION III
P. Landais / H. Egsgaard

SPECIAL TOPICS
F. Robert
A. Shedrinsky / R. Lehrle / L. Carlsen

ANGIOGENESIS AND MICROCIRCULATION

SALVE REGINA UNIVERSITY
NEWPORT, RI
AUGUST 17 - 22, 1997
Harold F. Dvorak, *Chair*
Patricia A. D'Amore, *Vice Chair*

VASCULAR DEVELOPMENT
W. Risau
P. Carmeliet / K. Alitalo / G. Yancopoulos

MATRIX AND ANGIOGENESIS
H. Sage
R. Nicosia / D. R. Senger / M. Pepper / D. Cheresh / M. Moses

PATHWAYS OF MICROVASCULAR PERMEABILITY
H. F. Dvorak
C. Michel / D. McDonald / A. Dvorak

GROWTH FACTOR REGULATION
N. Bouck
R. Kerbel / S. Werner / R. Jain / W. Risau

ENDOTHELIAL CELL SIGNALLING
M. Detmar
K. Heldin / M. Schwartz / J. Schnitzer / M. Gabbinck

ENDOTHELIAL CELL REGULATION
J. Lawler
L. Arispe / B. Olsen / M. Gimbrone / J. Isner / J. Madri

ENDOTHELIAL CELL INTERACTIONS - WITH OTHER CELLS I
P. D'Amore
P. D'Amore / W. Francke / D. Paul

ENDOTHELIAL CELL INTERACTIONS - WITH OTHER CELLS II
D. Wagner / E. Dejana / G. Schmid-Schoenbein / D. Milstone

ANGIOGENESIS INHIBITION
J. Folkman
J. Folkman / N. Ferrara / K. Thomas

ANGIOTENSIN

IL CIOCCO
BARGA, ITALY
APRIL 20 - 25, 1997
P. Corvol, *Chair*
F. A. O. Mendelsohn, *Vice Chair*

PHYLOGENESIS OF THE RENIN SYSTEM
D. Coates
H. Nishimura / N. Hazon / M. Salzet / E. Isaac / A. Shirras

G-PROTEIN COUPLING / ANGIOTENSIN COUPLING
K. Bernstein
B. Berk / L. M. Luttrell / J. Pouyssegur

ENDOTHELIN
M. Clozel
M. Yanagisawa / T. F. Luetscher / M. J. Dunn / O. Valdenaire / H. Kurihara

ANGIOTENSIN AND CNS
F. A. O. Mendelsohn
C. Llorens-Cortes / M. Raizada / M. McKinley

PROTEIN PROCESSING IN HEALTH AND DISEASES
I. Sen
J. Arribas / R. A. Black / T. L. Reudelhuber / S. E. Gandy

GENETICS
F. Soubrier
J. Rapp / J. Naggert / R. Lifton

INTERACTIONS OF THE RENINANGIOTENSIN SYSTEM AND THE ARGININE/NO SYSTEM
D. G. Harrisson
G. Gibbons / E. Shesley / T. Hintze

STEROIDS AND BLOOD PRESSURE REGULATION
A. Capponi
S. Berger / A. Agarwal / T. Balla / N. Cherradi

APPLIED AND ENVIRONMENTAL MICROBIOLOGY

SALVE REGINA UNIVERSITY
NEWPORT, RI
AUGUST 17 - 22, 1997

Hap Pritchard, *Chair*
Lily Young, *Vice Chair*

NOVEL ASPECTS IN APPLIED MICROBIOLOGY
I. Labuda
W. de Vos / N. Reusbech

IMPLICATIONS OF GENETIC ADAPTATION IN METABOLIC PATHWAYS
P. Williams
J. van der Meer / G. Zylstra / D. Springael

MICROBIAL RESPONSES IN MARINE SYSTEMS
C. Cavanaugh
N. Ruby

MOLECULAR TOOLS IN ENVIRONMENTAL BIOTECHNOLOGY
T. Barkay
M. Moran / S. Belkin / V. Torsvik

RESPONSE OF MICROORGANISMS TO STRESS AND COMPETITION
H. Drake
J. Loper / S. Kjelleberg

IMPORTANCE OF BIODEGRADATION PROCESSES CHARACTERIZATION TO BIOREMEDIATION
M. Haggblom
J. Spain / C. Harwood / L. A. Cohen

CONNECTING MICROBIAL COMMUNITY STRUCTURE WITH FUNCTION
R. Devereux
D. Kirchman / B. Ward

FROM LAB TO FIELD
G. Madsen
J. Zeyer / K. Fish / R. Lamar

COMPETITION, COEXISTENCE AND BIOTECHNOLOGY
Joe Cooney
D. Stahl / S. Lindow

ATHEROSCLEROSIS

KIMBALL UNION ACADEMY
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JUNE 15 - 20, 1997

David Hajjar & Helen Hobbs, *Co-Chairs*

CELL SIGNALING EVENTS AFFECTING VASCULAR TONE AND GROWTH
S. Monoada
M. Yanagisawa / J. Stamler / T. Sato

GENETIC APPROACHES TO THE STUDY OF ATHEROSCLEROSIS
E. Lander
J. Breslow / R. Litton

EXPERIMENTAL MODELS AND METHODOLOGIES TO STUDY ATHEROSCLEROTIC LESIONS
R. Ross
J. Lusis / A. Beaudet / A. Nagy / D. Stern

USE OF GENE. TRANSFER TECHNIQUES IN ANGIOGENESIS AND ATHEROGENESIS
J. Leiden
E. Nabel / J. Isner / V. Dzau

ROLE OF INFLAMMATORY CELLS IN LESION PROGRESSION AND REGRESSION
E. Haber
P. Libby / J. Witztum / G. Hanson

NEW ADVANCES IN LIPOPROTEIN RECEPTOR BIOLOGY AND CHOLESTEROL TRAFFICKING
H. Hobbs
I. Tabas / N. Maeda / J. Heinecke / A. Nicholson

EXTRACELLULAR MATRIX AND VASCULAR REMODELING
R. Hynes
J. Lawler / D. Wagner / B. Olsen

MOLECULAR LINKS BETWEEN THROMBOSIS AND ATHEROSCLEROSIS
D. Luskatoff
D. Lawrence / P. Carmeliet / J. Degen / F. Samad

PLENARY SESSION
D. Hajjar
O. Smithies

ATMOSPHERIC CHEMISTRY

SALVE REGINA UNIVERSITY
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Daniel J. Jacob & Paul H. Wine, *Co-Chairs*

CHEMISTRY AND CLIMATE
V. Ramanathan
J. T. Kiehl / D. H. Rind

STRATOSPHERIC CHEMISTRY
S. Solomon
K. A. Boering / H. Fischer / D. R. Hanson

GLOBAL TROPOSPHERIC CHEMISTRY
S. C. Liu
B. G. Heikes / J. F. Muller

BIOSPHERE - ATMOSPHERE EXCHANGE
P .A. Matson
W. S. Broecker / E. A. Davidson / A. B. Guenther

ATMOSPHERIC CHEMISTRY: PAST, PRESENT AND FUTURE
R. J. Cicerone
P. J. Crutzen / M. J. Molina / F. S. Rowland

MARINE AIR CHEMISTRY
E. S. Saltzman
D. D. Davis / B. J. Huebert / W. C. Keene

REGIONAL AIR QUALITY
W. L. Chameides
G. R. Cass / M. Trainer

NEW FRONTIERS IN ATMOSPHERIC MEASUREMENTS
S. P. Sander
J. P. Burrows / L. G. Huey / M. S. Zahniser

HOX CHEMISTRY
W. H. Brune
H. P. Dorn / P. O. Wennberg

ATOMIC PHYSICS

NEW ENGLAND COLLEGE
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P. L. Gould, *Chair*
J. Delos, *Vice Chair*

BOSE-EINSTEIN CONDENSATION
S. Rolston
W. Ketterle / D. Jin / K. Burnett

QUANTUM MEASUREMENT, ENTANGLEMENT, AND COMPUTING
D. Wineland / I. Cirac

STRONG-FIELD PHYSICS
K. Kulander
R. Jones / K. Schafer / L. Van Woerkom

THREE-BODY PHYSICS
J. Burgdoerfer / J.-M. Rost

APPLICATIONS OF ATOMIC PHYSICS
K. Kirby / R. Walsworth

RECURRENCES IN FIELDS
J. Delos
K. Welge / N. Spellmeyer

LASER COOLING AND ATOM OPTICS
C. Cohen-Tannoudji

BARRIER FUNCTION OF MAMMALIAN SKIN

TILTON SCHOOL
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Peter Elias, *Chair*
Hans Schaefer, *Vice Chair*

STRUCTURE AND MOLECULAR ORGANIZATION
N. Kitson
J. Bouwstra / P. M. Steinert / B. Shroot

STRUCTURE AND FUNCTION
M. Fartasch
B. A. Dale-Crunk / W. M. Holleran / T. Egelrud / K. Sandhoff

OTHER EPITHELIAL BARRIERS
G. Menon
D. M. McCafferty / L. M. Lichtenberger / P. W. Wertz

REGULATION OF DEVELOPMENT/HOMEOSTASIS
K. R. Feingold
M. L. Williams / I. Harris / J. C. Ansel / B. J. Nickoloff

IMMUNOLOGY OF THE BARRIER
P. R. Bergstrasser
D. N. Sauder / A. A. Gaspari / R. S. Kalish

PATHOPHYSIOLOGY OF THE BARRIER
G. G. Krueger
D. R. Roop / J. P. Sundberg / G. Imokawa / H. Tagami

DEBATE: VALIDITY OF IN VITRO MODELS
G. Flynn
M. Ponec / J. E. Rivière

DRUG DELIVERY/TISSUE MONITORING
R. H. Guy
V. Préat / K. Tachibana / J. A. Tamada / W. F. Swain

OTHER EPIDERMAL BARRIERS
R. O. Potts
L. Packer / E. Christophers / V. J. Hearing

BIOANALYTICAL SENSORS

NEW ENGLAND COLLEGE
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David R. Walt, *Vice Chair*

TRANSDUCER POSSIBILITIES
R. Renneberg
E. Hall / M. Mauro / L. Kricka

BIOMOLECULAR INTERACTIONS/IMMOBILIZATION
U.Krull / M. Grunze / J. Herron

SENSOR REACTION KINETICS
T. Cass
P. Schuck / D. Conrad / M. Hogan

OPTICAL BIOSENSORS
J. Lakowicz
W. Lukosz / M. Ehrat / F. V. Bright

SENSOR TOPIC DISCUSSSIONS MICROFABRICATED DEVICES I
L. Burgess
G. Kovacs / D. J. Harrison / P. Yager

MICROFABRICATED DEVICES II
M. Albin
M. Knapp / J. Ramsey / M. Heller

INNOVATIVE BIOSENSORS
M. A. Northrup
D. Baselt / D. Stenger

WHAT IT TAKES TO GET A PRODUCT TO MARKET
G. Wilson
N. Parris / E. Saaski / M. Eggers

BIODEGRADABLE POLYMERS

IL CIOCCO
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Emo Chiellini, *Chair*
Graham Swift, *Vice Chair*

SYNTHETIC AND SEMISYNTHETIC BIODEGRADABLE POLYMERS
C. Buchanan / T. Fujimaki / P. R. Gruber / R. Gross / S. Penczek / F. Rypacek / G. Schornick / M. Tsuji

MICROBIAL POLYESTERS - SYNTHESIS AND DEGRADATION
G. Braunegg / Y. Doi / S. Goodwin / R. W. Lenz

BLENDS AND COMPOSITES BASED ON BIODEGRADABLE POLYMERIC COMPONENTS
C. Bastioli / S. Huang / G. Hinrichsen / S. H. Iman / A. L. Pometto III

BIODEGRADABLE POLYMERS IN BIOMEDICAL AND PHARMACEUTICAL APPLICATIONS
J. Feijen / K. Kataoka / C. Migliaresi / R. A. Muzzarelli / J. Sunamoto / R. B. M. Tighe / M. Vert

FATE AND RECOVERY OF BIODEGRADABLE POLYMERS
B. De Wilde / K. Fukuda / R. Narayan/ C. Pettigrew

BIOENERGETICS

PROCTOR ACADEMY
ANDOVER, NH
JUNE 29 - JULY 4, 1997
Shelagh Ferguson-Miller, *Chair*
William Allison, *Vice Chair*

WATER CHAINS IN MEMBRANE PROTEINS, ROLE IN PROTON CONDUCTANCE?
W. Cramer
W. Cramer / B. Roux / R. Fillingame / G. Fritzsch

QUINONE OXIDOREDUCTASES: STRUCTURE AND FUNCTION
T. Ohnishi
T. Ohnishi / C.-A. Yu / E. Berry / B.Trumpower / T. Friedrich / L. Dutton / U. Brandt

ENERGY COUPLING IN ATPSYNTHASE
S. Dunn
S. Dunn / M. Yoshida / R. Capaldi / J. Walker

O2 REDUCTION AND COUPLING MECHANISMS
G. Babcock
G. Babcock / H. Michel / S. Yoshikawa / P. Rich / P. Brzezinski / T Kitagawa / M. Wikstrom / O. Einarsdottir / B. Hill

ENERGY LINKED AND MITOCHONDRIAL TRANSPORT SYSTEMS
B. Rosen
B. Rosen / J. Wu / P. Maloney / W. Konings / P. Kaur / R. Kaplan

WORKSHOPS: ELECTRON TRANSPORT, OXIDASE
G. Palmer / R. Gennis

ATPSYNTHASE F1F0
W. Junge / R. Cross

ELECTRON TRANSPORT, BC1/COMPLEX I
H. Weiss / F. Daldal

TRANSPORT ATPASES
M. Forgac

ELECTRON TRANSFER MECHANISMS
W. Woodruff
W. Woodruff / V. Davidson / L. Dutton / H. Gray / D. Nocera

CELLULAR BIOENERGETICS
P. Bernardi
P. Bernardi / R. Rizzuto / A. Tzagoloff / M. Montal / G. Kroemer / C. Thompson

REVIEW OF HOT TOPICS
W. Allison
R.Capaldi / A.Tzagoloff

BIOLOGICAL STRUCTURE AND GENE EXPRESSION

IL CIOCCO
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APRIL 27 - MAY 2, 1997
Benjamin Geiger, *Chair*
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THE INTEGRIN PATHWAY: FROM SURFACE RECOGNITION TO SIGNALING
D. Ingber
M. Ginsberg / B. Geiger / P.-C. Marchisio

ADHESION-MEDIATED EFFECTS ON GENE EXPRESSION
A. Ben-Ze'ev
S. Farmer / Z. Werb / F. Watt

STRUCTURAL BASIS FOR DYNAMIC CYTOPLASMIC PROCESSES
M. Mooseker
M. Way / L. Cooley

CYTO-ARCHITECTURAL ASPECTS OF GENE EXPRESSION AND MORPHOGENESIS
M. Bissell
S. Dedhar / C. Damsky / M. Schliwa

CYTOSKELETAL INVOLVEMENT IN RNA TRANSPORT, LOCALIZATION AND TRANSLATION
R. Singer
A. Matus / J. Carson / I. Ginzburg

STRUCTURE-FUNCTION RELATIONSHIPS IN THE NUCLEUS
R. van Driel
S. Henikoff / A. Belmont / T. Cremer

STRUCTURAL CONSIDERATIONS IN TRANSCRIPTION AND SPLICING
G. Stein
J. Lawrence / M. Bradbury / D. Spector

DNA ORGANIZATION AND REPLICATION
G. Hager
T. Kohwi-Shigematsu / R. Laskey / D. Coffey

INVOLVEMENT OF CELL ADHESION AND CYTOSKELETAL INTERACTIONS IN CELL GROWTH AND APOPTOSIS
R. Assoian
E. Ruoslahti / A. Bershadsky / C. Schneider

BIOMATERIALS: BIOCOMPATIBILITY AND TISSUE ENGINEERING

HOLDERNESS SCHOOL
PLYMOUTH, NH
JULY 20 - 25, 1997
Jeffrey Hubbell & Robert Pilliar, *Co-Chairs*
Peter Johnson, *Vice Chair*

ADVANCES IN INORGANIC MATERIALS SCIENCE
J. Lemons
W. Johnson / R. Howlett / G. Stucky

ADVANCES IN ORGANIC MATERIALS SCIENCE
S. Gehrke
U. Suter / S. Granick / J. Kohn

GROWTH AND ADHESION FACTORS
S. Seyedin
M. Nugent / L. Griffith / D. Hammer

SURFACES AND SELF ASSEMBLY
D. Grainger
S. Stupp / M. Tirrell / P. Stayton

BIOMECHANICS AND TRANSPORT
S. Downes
B. Boyan / M. Saltzman / J. Davies

BIOMIMETICS
D. Urry
M. Gallop / D. Tirrell / I. Aksay

INFECTION AND INFLAMMATION
J. Bryers
G. Georgiou / J. Anderson / S. Cooper

INTEGRATED SYSTEMS
T. Matsuda
J. Bonadio / E. Hunziger / E. Edelman

SPECIAL PRESENTATION

BIOORGANIC CHEMISTRY

PROCTOR ACADEMY
ANDOVER, NH
JUNE 15 - 20, 1997
John H. Griffin & Anthony W. Czarnik, *Co-Chairs*
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DRUG RESISTANCE, TARGETS, AND STRATEGIES
R. Thompson / C. Bertozzi
S. Levy / D. Williams / D. Littman / D. Rich / S. Mobashery

MOLECULAR DIVERSITY
A. Schwabacher
S. Kaldor / J. Minshull / C. Barbas / K. Gubernator

NEW METHODS
R. Cummings
J. Loo / Y.-H. Chu / R. Flowers / P. Schuck

NUCLEIC ACIDS AND GENOMICS
B. Carter
B. Metcalfe / P. Schimmel / H. Sugiyama

ENZYMES AND MECHANISMS
K Shokat / P. Petillo
A. Fersht / D. Drueckhammer / R. Raines / I. Fujii

RECOGNITION AND MIMESIS
T. Wandless / C. Chow
K. Judice / K. Deshayes / L. Jolliffe / L. Addadi / M. Snapper

BONES AND TEETH, CELL AND MOLECULAR BIOLOGY OF

KIMBALL UNION ACADEMY
MERIDEN, NH
JULY 6 - 11, 1997

Marian F. Young, *Chair*
Gordon Strewler, *Vice Chair*

SKELETAL DISEASE: ACADEMIC, MEDICAL AND INDUSTRIAL CROSSROADS
J. Termine
J. McGowan / T. Minas

THE CARTILAGE BONE TRANSITION
G. Strewler
G. Karsenty / G. Segre / D. Ornitz

PATHOLOGICAL MINERALIZATION
L. Fisher
V. Castronovo / L. Demer

THE SYMBIOSIS OF BONE AND BLOOD
P. G. Robey
P. Bianco / P. Kincaid / P. Simmons

CELL:CELL COMMUNICATION: THE OSTEOCYTE AND OSTEOBLAST
T. Skerry
P. Nijweide / H. Donahue

THE RELATIONSHIP OF THE OSTEOBLAST AND OSTEOCLAST
F. P. Ross
T. J. Martin / R. St. Arnaud / M. Tondravi

GROWTH FACTORS AND HORMONES
E. Canalis
P. Rotwien / R. Derynck

THE DEVELOPMENT OF BONES AND TEETH: A COMMON MOTIF?
I. Thesleff
P. Sharp / B. Olson / P. Krebsbach

SPECIAL GUEST LECTURE

CALCIUM SIGNALLING

QUEEN'S COLLEGE
OXFORD, UK
SEPTEMBER 7 - 12, 1997

David Clapham, *Chair*
Andrew Thomas, *Vice Chair*

INTRACELLULAR RELEASE AND SECOND MESSENGERS
B. Ehrlich
K. Mikoshiba / C. Taylor / D. Ogden

CALCIUM SIGNALLING SECOND MESSENGERS
R. Irvine
A. Galione

CALCIUM OSCILLATIONS AND WAVES
M. Berridge
A. Thomas / J. Lechleiter

CONTROL OF CAPACITATIVE CALCIUM ENTRY
D. Clapham
K. Cunningham / R. Hardie / J. Putney, Jr.

THE CALCIUM ENTRY CHANNELS
J. Putney, Jr.
R. Penner / R. S. Lewis / H. C. Hartzell

CALCIUM AND THE NUCLEUS
O. Petersen
D. Clapham / M. Whitaker

NEW APPROACHES TO CALCIUM IMAGING
R. Tsien
T. Pozzan / J. Fernandez / N. Allbrighton / L. Stehno-Bittel

CALCIUM IN TRANSCRIPTION AND CELL DIVISION
A. Thomas

KEYNOTE ADDRESS
E. Neher

CANCER

50 YEARS

SALVE REGINA UNIVERSITY
NEWPORT, RI
AUGUST 3 - 8, 1997

Terry Van Dyke, *Chair*
Sara Sukumar, *Vice Chair*

CELL CYCLE
E. Harlow

SIGNAL TRANSDUCTION P53 ET. AL.
C. Prives / A. J. Levine

TUMOR SUPPRESSORS

ONCOGENES/TRANSLOCATIONS

HUMAN GENETICS & NEW GENETIC APPROACHES
J. Gray

GENOME INTEGRITY

TUMOR PROGRESSION GENE THERAPY AND NEW THERAPEUTICS
R. J. Samulski

CARBOHYDRATES

TILTON SCHOOL
TILTON, NH
JUNE 22 - 27, 1997

B. Mario Pinto, *Chair*
Jacques Van Boom, *Vice Chair*

GLYCOBIOLOGY
B. Ernst / N. E. Nifant'ev / R. Roy / H. Spaink / A. Varki

GLYCOSIDASES AND GLYCOSYL TRANSFERASES
A. J. Bennet / B. Svensson / M. Palcic / S. G. Withers

CONFORMATIONAL ANALYSIS
J. Duus / A. Imberty / J. Jiminez-Barbero / B. Meyer / T. Peters / J. F. Stoddart / R. J. Woods

SYNTHESIS
J.-M. Beau / G. J. Boons / O. Hindsgaul / M. Kiso / R. V. Stick

CATALYSIS

50 YEARS

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JULY 20 - 25, 1997

Vincent A. Durante, *Chair*
Raymond L. Gorte, *Vice Chair*

COMBINATORIAL APPROACHES AND ENANTIOSELECTIVE CATALYSIS
R. L. Augustine / A. Hoveyda

ENVIRONMENTAL CATALYSIS
J. N. Armor / TBA

METALLOCENE-BASED POLYMERIZATION CATALYSIS
W. T. Reichle
M. Bochmann / W. J. Evans / R. F. Jordan

OXIDATION CATALYSIS
K. J. Balkus, Jr. / G. Centi / K. Otsuka

INDUSTRIAL PROCESS CATALYSTS
N. Marchal / W. J. Smith / S. M. Augustine

SUPPORTED METAL CATALYSIS
D. E. Resasco / J. A. Rodriguez / G. Somorjai

MAGNETIC RESONANCE
A. Pines

CONTRIBUTED PAPERS TO BE SELECTED FROM AMONG POSTERS

CATECHOLAMINES

PROCTOR ACADEMY
ANDOVER, NH
JULY 20 - 25, 1997

Nancy Zahniser, *Chair*
Marie-Francoise Chesselet, *Vice Chair*

GENE REGULATION
D. Chikaraishi
D. Millhorn / E. Lewis / D. Chikaraishi

TRANSPORTERS
E. Hoffman
R. Edwards / S. Sesack / R. Blakely / M. Caron

POSTER "BULLETS"
D. Jackson

EXTRASTRIATAL DOPAMINE
M.-F. Chesselet
E. Abercrombie / Y. Smith / A. Graybiel

RECEPTORS, KINASES & CHANNELS
M. Caron
B. Kobilka / L. Luttrell / D. Clapham / M. Caron

STUDENT/POSTDOC CAREER OPPORTUNITIES
M. Zigmond / D. Smith

NEUROIMAGING IN HUMAN DISEASE
R. Innis
N. Volkow / R. Innis / B. Hoffer

CENTRAL NORADRENERGIC SYSTEMS
G. Aston-Jones
J. T. Williams / C. Berridge / G. Aston-Jones / E. Stone

KNOCKOUTS & BEHAVIOR
I. Creese
F. White / D. Grandy / J. Tepper

DEVELOPMENT, AGING & PLASTICITY
B. Hoffer
J. Schwartz / P. Bickford / L. Olson / B. Hoffer

HEART FAILURE
N. Zahniser
D. Port

PLENARY LECTURE
L. Limbird

CELL CONTACT AND ADHESION

PROCTOR ACADEMY
ANDOVER, NH
JUNE 8 - 13, 1997

Urs Rutishauser, *Chair*
Barry Gumbiner, *Vice Chair*

KEYNOTE ADDRESS
M. Takeichi

STRUCTURAL BIOLOGY OF CAMS
K. Ingham / L. Shapiro

RECEPTOR TYROSINE PHOSPHATASES
N. Tonks / K. Zinn / M. Streuli / S. Brady-Kalnay

DOWNSTREAM OF INTEGRINS
F. Giancotti / M. Hemler / M. Beckerle / M. Ginsburg

IGCAMS OF THE NERVOUS SYSTEM
P. Sonderegger / G. Davis / S. Schacher / U. Rutishauser

CADHERINS: MOLECULES TO TISSUES
D. Colman / D. McClay / P. Polakis / B. Gumbiner

CELLULAR COMMUNICATION
C. Kintner / D. Paul

CELL ADHESION AND DISEASE
M. Hook / V. Lemmon / D. Cheresh

LATE-BREAKING STORIES AND SELECTIONS FROM SUBMITTED ABSTRACTS
TBA

CELL DEATH

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PERSPECTIVES OF APOPTOSIS
R. Lockshin

MEMBRANE MOLECULES, DEATH DOMAINS AND DEATH EFFECTOR DOMAINS
V. Dixit / D. Wallach / C. Haslett / R. Schlegel

MEDIATOR OF STRESS RESPONSES
Y. Hannun / M. Karin / G. Wong / S. Lowe

CYTOPLASMIC AND ORGANELLESPROTEASE CASCADES IN APOPTOSIS
B. Osborne / E. Alnemri / G. Kroemer / D. Newmeyer / X. Wang

NUCLEAR EVENTS, DNA FRAGMENTATION AND PROTEASES
R. Walker / S. Martin / A. Greenberg

INHIBITORS OF APOPTOSIS
C. Thompson / L. Miller / D. Vaux

NEURODEGENERATION
T. Ferguson / E. Johnson / S. Bennett / M. Sikorska

ORGANISMAL PERSPECTIVES OF APOPTOSIS
D. Papermaster / J. Tilly / Z. Zakeri / P. Davies

LESSONS FROM PHYLOGENY AND THE TEST TUBE
J.-C. Amiesen / Y. Lazebnick

CELL PROLIFERATION, MOLECULAR AND GENETIC BASIS OF

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SIGNAL TRANSDUCTION I
L. Cantley
D. Bar-Sagi / D. Morrison / J. Blenis

SIGNAL TRANSDUCTION II
B. Neel
D. Cantrell / R. Davis / N. Sonenberg

TRANSCRIPTION
J. Crabtree
J. Nevins / F. Rauscher

CELL CYCLE I
J. Roberts / N. Dyson / D. Morgan

CELL CYCLE II
H. Piwnica-Worms
M. Kirschner / R. Heald

ONCOGENES, CHECKPOINTS AND CANCER
R. Eisenman
A. Pendergast / C. Prives / C. B. Harley

EXTRACELLULAR MATRIX / CYTOSKELETAL ARCHITECTURE
T. Parsons
C. Damsky / J. Collard

DIFFERENTIATION AND DEVELOPMENT
T. Curran
L. Tartaglia / P. Soriano

DRUG DISCOVERY - MOLECULAR TARGETS FOR THERAPY
J. Brugge
F. McCormick / J. Folkman / A. T. Oliff

CERAMICS , SOLID STATE STUDIES IN

KIMBALL UNION ACADEMY
MERIDEN, NH
AUGUST 3 - 8, 1997
Carol Handwerker & Roger French, *Co-Chairs*
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WHAT DO WE REALLY KNOW ABOUT THE STRUCTURE AND MOTION OF INTERFACES ?
R. Cannon
D. Bonnell / J. Howe

ANISOTROPY: INTERFACIAL THERMODYNAMICS AND KINETICS
S. Bennison
W. C. Carter / A. Glaeser

INTERACTIONS BETWEEN SURFACES: THIN OXIDE FILMS IN CERAMICS
M. Harmer
C. B. Carter / S. Garafalini

POLYMER-CERAMIC INTERFACES: ADHESION, TRIBOLOGY AND WEAR
T. Michelske
P. McGuiggan / M. Robbins

DYNAMIC PROCESSES AT INTERFACES
G. Rohrer
D. Chatain / M. Aziz

MANIPULATION OF VANDERWAALS DISPERSION FORCES: CERAMIC PROCESSING TO BIOSENSORS
J. Wettlaufer
J. Lewis / D. Charych

APPLICATIONS OF INTERFACE DESIGN: HIGH-VALUE-ADDED INTERFACES
I. Aksay
K. Sharp / R. Youngman

SEGREGATION AND ORDERING AT CERAMIC INTERFACES
J. Cahn
H.H. Brongsersma / P. Davies

SPECIAL TOPIC
C. Handwerker / R. French

CHEMICAL OCEANOGRAPHY

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GROUNDWATER INPUTS
W. Moore

THE ROLE OF IRON IN OCEAN BIOGEOCHEMICAL CYCLES
P. Falkowski

CHEMICAL TRACERS IN PALEOCEANOGRAPHY
E. Boyle

CHEMICAL TRACERS IN UPPER OCEAN PROCESSES
S. Emerson

STATUS OF THE GLOBAL OCEAN CARBON CYCLE
J. Sarmiento

UTILIZATION AND CYCLING OF DISSOLVED ORGANIC MATTER
E. Druffel

SULFIDE SPECIATION
G. Cutter

CHEMOTHERAPY OF EXPERIMENTAL AND CLINICAL CANCER

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CONTROL OF THE APOPTOTIC THRESHOLD
Y. Hannun
D. Kufe / T. Mak

BASIC SCIENCE OF DNA REPAIR
J. Essigman
J. Hoiejmakers / J. Jiricny / I. Mellon

REPAIR AS A DETERMINANT OF DRUG SENSITIVITY
S. Markowitz
S. Gerson / P. Karran

THE CELL CYCLE AS A TARGET OF CHEMOTHERAPY
K. Keyomarsi
J. Endicott / L. Meijer / W. El-Deiry

KEYNOTE ADDRESS

TOPOISOMERASE I AND THE RESPONSE TO DNA-DAMAGING AGENTS
Y. Pommier
M. T. Muller / J. Pouliot / M.-A. Bjornsti

PRECLINICAL DEVELOPMENT OF RAPAMYCIN
P. Houghton
R. Abraham / K. Arndt

NOVEL TARGETS
N. Gibson
G. Smith / A. Matter / P. Brooks

PROSTATE CANCER — NEW APPROACHES
K. Tew
N. Dawson / N. Greenberg

CHRONOBIOLOGY

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RETINAL RHYTHMICITY
G. Fleissner
G. Tosini / C. Green / M. Pierce / M. Menaker

SCN MECHANISMS
R. Moore
S. Honma / S. Amir / M. Gillette / P. Zlomanczuk / I. Zucker

CLOCK MECHANISMS I
K. Thomas
M. Rosbash / S. Golden / S. Kay / K. Siwicki

CLOCK MECHANISMS II
T. Roenberg
M. Young / S. Reppert / J. Giebultowicz / J. Takahashi / J. Hall

OUTPUT REGULATION
C. Johnson
J. Loros / S. Dryer / R. Silver / M. Zatz

ENTRAINMENT MECHANISMS / PHOTORECEPTION
J. Dunlap
A. Seghal / S. Crosswaite / A. Eskin / T. Page

HUMAN CIRCADIAN RHYTHMS
C. Czeisler
C. Cajochen / D Skene / K. Honma / E. Klerman / S. Daan

AGING
F. Turek
D.-J. Dijk / D. Bliwise / T. Monk / E. Van Cauter / S Campbell

PLENARY SESSION
J. Aschoff

CLUSTERS, NANOCRYSTALS, AND NANOSTRUCTURES

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SEMICONDUCTOR CLUSTERS
B. Whaley
A. Nozik / D. Neumark

LAYERED CLUSTERS
P. Alivisatos
T. P. Martin / K. Klabunde / H. Weller

THEORETICAL ADVANCES FOR LARGE CLUSTERS
U. Landman
G. Scuseria / K.-M. Ho

CLUSTER ASSEMBLED MATERIALS
R. E. Palmer
R. Andres / R. Van Duyne / A. Perrez

MONODISPERSE CLUSTERS
J. R. Heath
J. D. Corbett / R. L. Whetten

OPTICAL AND MAGNETIC PROPERTIES
M. Moskovits
S. Arnold / L. Woste

PARTICLE SELF-ASSEMBLY
C. A. Mirkin
W. Gelbart / M. Bawendi

SPECTROSCOPIC STUDIES
M. M. Kappes
H. H. Haberland / L.-S. Wang / K. Raghavachari

HOLES AND TUBES
W. A. De Heer
J. Y. Ying / R. E. Smalley

COASTAL OCEAN CIRCULATION

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ATLANTIC COAST CIRCULATION PROCESSES
R. W. Garvine
B. Beardsley / S. Glenn / E. Hill / C. Garrett / R. Signell

GULF COAST CIRCULATION PROCESSES
K. H. Brink
B. Reid / P. Niiler / L. Oey / A. Gargett / R. Geyer

NEARSHORE AND SMALL SCALE PROCESSES
J. S. Allen
J. Kirby / A. Hay / S. Lentz / D. Farmer

WEST COAST CIRCULATION PROCESSES I
C. D. Winant
J. Barth / B. Hickey / R. Samelson

WEST COAST CIRCULATION PROCESSES II
D. B. Haidvogel
J. Huyer / M. Hendershott

COATINGS AND FILMS

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CORROSION
G. Bierwagen
F. De Flavian / M. Strattman

INTERFACES/INTERPHASES
R. Ryntz
G. Pickett / T. C. Chung

NEW COATINGS USES I
G. Pilcher
B. Vincent / P. Kinlin

NEW COATINGS USES II
J. Seiner
L. Carlblom

NOVEL MEASUREMENTS
T. Provder
M. Urban / C. Hagades / J. Gerlock

PHYSICAL PROPERTIES
C. Schoff
C. Gautier / R. Otovani / D. Eley

FUTURE REQUIREMENTS
J. Martin
M. Nichols / S. DeVito / M. Donnely

COLOR AND APPEARANCE
M. McKnight

NEW MATERIALS/CHEMISTRY
B. Brady
D. Wicks / S. Thames

COLLAGEN

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EXTRACELLULAR MATRIX - CELL INTERACTIONS
K. von der Mark
R. Assoian / L. Fessler / T. Pihlajaniemi

MOLECULAR AND DEVELOPMENTAL BIOLOGY OF CONNECTIVE TISSUES
S. Adams
G. Karsenty / B. Olsen / M. Pacifici

ROLE OF CYTOKINES AND GROWTH FACTORS ON EXTRACELLULAR MATRIX EXPRESSION
L. Sandell
M. Goldring / D. Kingsley / H. Lodish

REGULATION OF MATRIX GENE EXPRESSION
M.-L. Chu
B. de Crombrugghe / D. Rowe / Y. Yamada

REGULATION OF MATRIX STRUCTURE AND FUNCTION
M. van der Rest
R. Mayne / N. Morris / K. Tryggvason

COLLAGEN STRUCTURE AND MOLECULAR ASSEMBLY
M. Grant
D. Birk / D. Greenspan

MOLECULAR ASSEMBLY OF THE EXTRACELLULAR MATRIX
T. Linsenmayer
R. Heinegard / C. Kielty / K. Nagata

MOLECULAR PATHOLOGY OF THE EXTRACELLULAR MATRIX
F. Ramirez
L. Bruckner-Tuderman / P. Byers

INVITED LECTURER

CONDENSED MATTER PHYSICS

TILTON SCHOOL
TILTON, NH
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Shobo Bhattacharya & Chao Tang, *Co-Chairs*

VORTICES IN SUPERCONDUCTORS

GRANULAR MATERIALS

QUANTUM CHAOS

SOC, FRACTURES, AND OTHER DYNAMICAL SYSTEMS

BIOLOGICAL SYSTEMS

COMPLEX FLUIDS

PARTIAL LIST OF SPEAKERS:
B. Altshuler / P. Bak / P. Chaikin / S. Coppersmith / D. Fisher / J. Langer / D. Nelson / A. Libchaber / H. Swinney

50 YEARS

CORROSION - DRY

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David Young, *Chair*

OXIDATION OF NON-METALLIC MATERIALS
M. Graham
E. Irene / N. Jacobson

STRESS IN OXIDE SCALES
D. Shores
M. Hollatz / M. Bobeth / W. Pompe / J. Nicholls

OXIDATION OF TIAL
M. Schutze
R. Stroosnidjer / M. Brady

THERMAL BARRIER COATINGS I
W. Allen
K. Fritscher / W. Brindley

THERMAL BARRIER COATINGS II
I. Wright
V. Sri Srinivasan / L. Singheiser

INTERNAL OXIDATION
J. Meier
G. Savva / G. Weatherly / H. Stott

INTERFACIAL PROCESSES
F. Gesmundo
B. Pieraggi / P. Pemsler / M. Treska / L. W. Hobbs

HIGH TEMPERATURE CORROSION RESISTANCE OF CHROMIA-FORMERS
B. Gleeson
P. Steinmetz / T. Narita

SPECIAL SPEAKER
J. Stringer
J. Kirkaldy

DEVELOPMENTAL BIOLOGY

PROCTOR ACADEMY
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JUNE 22 - 27, 1997

R. Lehmann & E. Olson, *Co-Chairs*

ESTABLISHMENT OF BODY PLAN
C. Kenyon / J. Priess / K. Anderson

SIGNALING
M. Scott / J. Posakony / J. Massague

GRADIENTS
C. Tabin / P. Ingham / H. Sive / R. Harland

ORGANOGENESIS
E. Olson / D. Melton / M. Fischman / L. Niswander / J. Nüsslein-Volhard

CELL FATE
A. Lassar / M. Frasch / Y.N. Jan / T. Jessel

STEM CELLS AND PROGENITORS
R. Lehmann / K. Georgopoulos / C. Cepko

CHROMOSOMES
B. Meyer / M. Levine / S. Tilghman / D. Duboule / E. Davidson

CELL BEHAVIOR
E. Wieschaus / B. Shilo

MORPHOGENESIS
S. Carroll / B. Hogan / R. Krumlauf / A. McMahon / C. Kimmel

DRUG METABOLISM

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DRUG METABOLISM: PAST, PRESENT AND FUTURE
P. J. Murphy

APPLICATION OF BASIC KNOWLEDGE OF CYTOCHROME P450 TO UNDERSTANDING AND PREDICTION OF DRUG METABOLISM
H. W. Strobel
L. Z. Benet / B. W. Kemper / J. A. Peterson / D. F. V. Lewis / S. G. Sligar

APPROACHES TO UNDERSTANDING AND PREDICTION OF DRUG INDUCTION OF CYTOCHROME P450 IN HUMANS
L. J. Klunk
D. J. Waxman / S. A. Wrighton / P. B. Watkins

NOVEL ASPECTS OF GLUTATHIONE-S-TRANSFERASE MEDIATED DRUG METABOLISM
D. Nicoll-Griffith
R. N. Armstrong / G. Mulder

THE CLINICAL IMPORTANCE OF DRUG INTERACTIONS INVOLVING P450: A REALITY CHECK
P. B. Watkins
K. B. Thummel / K. Brosen / P. B. Watkins

RECENT ADVANCES IN OUR UNDERSTANDING OF FREE RADICALS AND ANTIOXIDANTS
P. Manitpisitkul
P. Manitpisitkul / J. B. Blumberg

DRUG TRANSPORTERS AND METABOLIC ENZYMES: SYNERGISTIC FORCES TO LIMIT XENOBIOTIC ACCESS
L. Z. Benet
L. Z. Benet / K. L. R. Brouwer / K. M. Giacomini

ANALYTICAL ADVANCES IN DRUG METABOLISM
R. E. White
I. A. Blair / K. Turteltaub

DYNAMICS AT SURFACES

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INELASTIC SCATTERING
D. Jacobs
R. Miller / G. Nathanson

SURFACE REACTIONS
B. Kasemo
D. King / S. Sibener / J. Engstrom

ADSORPTION-DESORPTION KINETICS
H. Weinberg
D. Menzel / B. Kay

REACTION DYNAMICS
D. Auerbach
S. Holloway / I. Chorkendorff / A. Hodgson

ADSORBATE VIBRATIONS
R. Cavanagh
J. Yates / P. Dumas

NANO-SCALE
G. Comsa
U. Landman / K. Kern / P. Avouris

NEW FRONTIERS
J. Norskøv
J. Tully / B. Hammer

PHOTO-DYNAMICS
W. Gadzuk
H. Petek / E. Hasselbrink / L. Richter

ELASTIN AND ELASTIC TISSUE

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William Parks, *Chair*

INVERTEBRATE MATRIX - EVOLUTION OF AN ELASTIC MATRIX
F. Keeley
S. Reber-Mueller

VASCULOGENESIS
C. Little
B. Rongish

MOLECULAR STRUCTURE OF MICROFIBRILS
L. Sakai
C. Keitly / P. Handford

CYTOKINES AND EXTRACELLULAR MATRIX
J. Bonadio
J. Keski-Oja / J. Heath

ELASTIN BIOSYNTHESIS
W. Parks
E. Davis / J. Rosenbloom / R. Pierce

MICROFIBRILLAR PROTEINS
F. Ramirez
M. Raghunath / M. Gibson

ANIMAL MODELS OF MATRIX ASSEMBLY
R. Mecham
D. Li / F. Ramirez

MUTATIONS IN MATRIX GENES
L. Peltonen
M. Keating / D. Milewicz

REPAIR OF ELASTIC TISSUE
J. Davidson
J. Foster / S. Shapiro

ELASTOMERS, NETWORKS AND GELS

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BLOCK COPOLYMERS
F. Bates / R. E Stadler

POLYMER BLENDS AND FLOW PROPERTIES
T. Hashimoto / W. W. Graessley / C.M. Roland / C. Han / G. Fredrickson

FUNDAMENTALS OF NETWORKS
S. Edwards / R. F. T. Stepto / G. Allen / Y. Hirokawa / L. Monnerie

COMPLEX NETWORKS
G. Debregeas / J. Mark / M. Gerspacher / J. Koenig / J. A. Kornfield

ULTIMATE AND PRACTICAL PROPERTIES
M. A. Sharaf / G. R. Hamed / B. Deloche / J. McGrath

GLOBALIZATION OF R&D
N. Calderon

ELECTRONIC MATERIALS; CHEMISTRY, EXCITATIONS, AND PROCESSING OF

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MOCVD OF III-NITRIDE SEMICONDUCTORS
S. DenBaars / R. Smith / J. Speck

ETCHING OF COMPOUND SEMICONDUCTORS
K. Seaward
S. Pearton

MOLECULAR MECHANISMS OF CVD ON PATTERNED SURFACES
R. Hamers
T. Mayer / P. Avouris / T. Ogino

NEW METHODS OF MATERIALS SYNTHESIS
W. Gladfelter
H. Weinberg / G. Ozin

PHOTONICS IN ORGANIC MATERIALS
A. Bard
J. Sheats / R. Silbey / A. Heeger

PHOTONICS IN QUANTUM CONFINED MATERIALS
J. Heath
P. Alivisatos

NON-THERMAL REACTIONS IN PROCESSING: ROLE OF TRANSLATIONAL ENERGY AND ELECTRONIC EXCITATION
A. Kummel
K. Giapis / W. Ho / P. Muller

IN SITU OPTICAL DIAGNOSTICS DURING PROCESSING
I. Herman
R. Creighton / Y. R. Shen

ENVIRONMENTALLY BENIGN ORGANIC SYNTHESIS

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ENVIRONMENTALLY BENIGN ORGANIC SYNTHESIS: AN OVERVIEW
J. Breen
P. T. Anastas / R. Sheldon

NEW DEVELOPMENTS IN ENVIRONMENTALLY FRIENDLY CATALYSIS
B. Adger
J. H. Clark / C. Suckling / M. Burk

INDUSTRIAL EXAMPLES OF ENVIRONMENTALLY FRIENDLY CATALYSIS
W. Hoelderich
C. W. Kohlpaintner / M. Studer / L. Manzer

DEVELOPMENTS IN ENVIRONMENTALLY FAVORABLE PROCESS CHEMISTRY
T. Lester
D. Askin / G. Steffan / H. Geissler

GREEN CHEMISTRY AND BIOCATALYTIC SYNTHESIS
D. Crout
A. J. Russell / J. Woodley

DESIGN AND DEVELOPMENT OF BIODEGRADABLE PRODUCTS
A. Sattelberger
T. Federle / G. Swift / D. Freitag

CLEAN SYNTHESIS USING MICROWAVES
P. Tundo
J. Hamelin / A. K. Bose

SPECIAL TOPICS IN ENVIRONMENTALLY BENIGN ORGANIC SYNTHESIS
W. Nelson
J. Warner / K. R. Seddon / J.-L. Luche / D. Riley

ATOM ECONOMY: PRINCIPLES AND PRACTICE
R. Breslow
M. K. Stern / B. M. Trost

ENZYMES, COENZYMES AND METABOLIC PATHWAYS

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John S. Blanchard, *Co-Vice Chairs*

STRUCTURE/MECHANISM CORRELATIONS
J. Klinman
D. Hilvert / J. Kirsch

METAL IONS IN CATALYSIS
J. Stubbe
S. Ragsdale / W. Tolman / S. Sligar / M. Nelson

COUPLED VECTORIAL PROCESSES
J. Blanchard
K. A. Johnson / P. Dimroth

INTERFACIAL CATALYSIS
M. Jain
S. McLaughlin / M. Glaser / O. Berg / R. Verger

ENZYMES IN DISEASE
R. Mayer
J. Valentine / N. Thornberry / J. Schloss

NUCLEIC ACID ENZYMOLOGY
D. Herschlag
A. M. Pyle / J. Doudna / F. Althaus / L. Beese

CLINICAL ENZYMOLOGY
D. Hupe
L. Marnett / D. Percival / J. Urbina

ENZYME MECHANISMS
R. Kluger
E. Hedstrom / J. Richard

BIOSYNTHETIC PATHWAYS
R. Matthews
R. Croteau / D. Schwartz

EPIGENETIC EFFECTS ON GENE EXPRESSION

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Marjorie Matzke, *Co-Chairs*

EPIGENETIC EFFECTS IN FUNGI
E. Selker
G. Faugeron / A. Klar / D. Shore

POSITION EFFECT
J. Haber
R. Allshire / S. Henikoff / P. Meyer / V. Pirrotta

CHROMATIN STRUCTURE AND GENE FUNCTION
A. Wolffe
W. Bickmore / J. Tamkun / L. Wallrath

PARAMUTATION AND GENE SILENCING IN MAIZE
V. Chandler
K. Cone / B. Eggleston / E. Walker

GENE SILENCING AND METHYLATION IN ANIMALS
T. Bestor
S. Cross / C. Laird / H. Willard

GENE SILENCING AND METHYLATION IN PLANTS
N. Fedoroff
J. Bender / J. Finnegan / R. Martienssen / J. Messing

GENE SILENCING AT ECTOPIC SITES
R. Jorgensen
D. Baulcombe / J. Birchler / M. Matzke

PARENTAL IMPRINTING IN MAMMALS
S. Tilghman
D. Barlow / M. Lalande / K. Latham / A. Surani

EPITHELIAL DIFFERENTIATION & KERATINIZATION

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Fiona M. Watt, *Vice Chair*

EPITHELIAL CELL ADHESION
W. Franke
J. Nelson / J. Stanley / A. Sonnenberg

THE CYTOSKELETON AND ADHERENS JUNCTIONS
P. Cowin
E. Fuchs / W. Birchmeier / K. Green

ISSUES RISING I
F. Watt / J. Bickenbach

DEVELOPMENT AND CANCER
E. Epstein
M. Scott / A. Bale / M. Peifer

ISSUES RISING II
T. Sargent / S. Bale

SKIN IMMUNOLOGY AND INFLAMMATION
T. Kupper
J. Carroll / J. Ansel / J. Lowe

ISSUES RISING III
P. Steinert / M. Blumenberg

SIGNALING PATHWAYS
P. Dotto
T. Hunter / C. Glass / J. Crabtree

CELL CYCLE, CELL DEATH AND TUMORIGENESIS
S. Yuspa
A. Balmain / G. Evan / K. Vousden

EXCITATORY AMINO ACIDS AND BRAIN FUNCTION (NEW)

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Darrell W. Brann, *Vice Chair*

PLENARY LECTURE - EAAS AND SYNAPTIC TRANSMISSION
C. Stevens

EAA RECEPTORS: TOPOLOGY AND REGULATION
M. Kennedy
S. Heinemann / M. Hollmann / Y. Stern-Bach / M. Mayer

EAA RECEPTORS AND POSTTRANSCRIPTIONAL MODIFICATION
S. Amara
G. Westbrook / R. Huganir

EAA RECEPTORS AND SYNAPTIC ORGANIZATION / PLASTICITY
R. Huganir
M. Kennedy / M. Sheng / C. Jahr / R. Malenka

EAAS, LTD AND LTP
H. Cline
M. Bear / R. Malinow

EAAS AND SYNAPTIC PLASTICITY II
R. Malinow
E. Schuman / A. MacDermott / S. Tonegawa / H. Cline

EAA TRANSPORTERS AND CELL DEATH
T. Greenamyre
S. Amara / D. Choi

METABOTROPIC RECEPTORS / HYPOTHALAMIC FUNCTION
A. MacDermott
R. Nicoll / J. Conn / S. Ojeda / D. Brann

PATHOPHYSIOLOGICAL IMPLICATIONS OF EAAS
D. Choi
J. McNarama / T. Greenamyre

FERTILIZATION AND THE ACTIVATION OF DEVELOPMENT

HOLDERNESS SCHOOL
PLYMOUTH, NH
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Richard Nuccitelli, *Chair*
Diana Myles, *Vice Chair*

THE MECHANISM OF SPERM ACTIVATION
G. Kopf
A. Darszon / C. Foresta / S. Meizel

PENETRATION OF EGG SURFACE COATS AND SPERM-EGG BINDING
V. Vacquier
C. Glabe / W. Lennarz / B. Shur / J. Callow

INITIATION OF EGG ACTIVATION
S. Stricker
K. Swann / F.-Z. Sun / H. Kuroda / B. Ciapa

EGG ACTIVATION PATHWAYS
S. Shen
C. Dumas / D. Carroll / A. Galione / P. Camacho

SPECIAL LECTURE
R. Shalgi
R. Yanagimachi

MEMBRANE FUSION MECHANISMS
P. Primakoff
J. Moore / M. Rose / T. Südhof

CELL CYCLE AND EARLY DEVELOPMENT
M. Whitaker
H. Kawahara / A. McDougall / B. Maro

CURRENT TOPICS AND CONTRIBUTED PAPERS
L. A. Jaffe

INTEGRINS AND DISINTEGRINS IN FERTILIZATION
D. Myles
J. Evans / F. Shilling

50 YEARS

FIBER SCIENCE

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Sheldon Kavesh, *Chair*
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FIBERS AT THE FRONTIER
A.S. Abhiraman
D. Reneker / J. P. O'Brien

NEXT GENERATION POLYESTER FIBERS
M. Jaffe
C. J. Nelson / J. van den Heuvel / B. C. Ward / C. Bennett / M. Yashimura / M. Asano / T Kuroda / M. Cakmak / J. C. Kim

ISSUES IN FIBER PHYSICS
P. Schwartz
C. Galiotis / A.S. Abhiraman / H. Davis / J. J. M. Baltussen / M. G. Northolt / M. Srinivasarao

FIBER AND YARN PHYSICS
B. Goswami
C. D. Rahn / T. Ghosh / S. Batra / W. Oxenham / B. Goswami / B. Fraser / L. Vangheluwe / P. Kiekens / Y.K. Kamath / J. Hearle

EXPLOSION CONTAINMENT AND SPECIAL TOPICS
J. Ward
Y. D. Kwon / G. Harpel / I. Paley

FORESTED CATCHMENTS, HYDRO-/GEO-/BIOLOGICAL PROCESSES OF

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Myron J. Mitchell &
Egbert Matzner, *Co-Chairs*
Sherry Schiff, *Vice Chair*

UNCERTAINTIES IN AIR/SURFACE EXCHANGE OVER FORESTED WATERSHEDS: DO WE ALWAYS KNOW WHICH WAY IS UP?
S. Lindberg

LINKING POPULATION AND COMMUNITY DYNAMICS TO WATERSHED FLUXES AND PROCESSES
T. Fahey / J. Anderson
P. Groffman / P. Grime / F. Berendse / J. Pastor

LEARNING FROM SPATIAL HETEROGENEITY: OPPORTUNITIES AND PITFALLS IN WATERSHEDS
L. Band / C. Neal
W. Hendershot / D. Wolock / J. J. Magnuson / P. Naden

WORKSHOP: FIELD MEASUREMENT TECHNIQUES—PROBLEMS AND SOLUTIONS
F. Bowles / G. Lawrence / J. McDonnell / J. Doolittle / S. Bailey / L. Rustad / J. Dowd

OPTIONAL FIELD TRIP TO HUBBARD BROOK EXPERIMENTAL FOREST
C. Eager

MOBILITY OF TRACE METALS IN THE ENVIRONMENT
J. L. Schnoor

PREDICTING THE UNPREDICTABLE? WATERSHED RESPONSE TO THE CHANGING ENVIRONMENT
T. Sullivan / K. Bishop
P. Högberg / D. Charles / N. Caraco / N. van Breemen

FREE RADICAL REACTIONS

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FREE RADICALS IN ORGANIC SYNTHESIS
D. Curran / Y. Guindon
M. Sibi / D. Crich / S. Zard / B. Maillard / A. Parsons

FREE RADICALS IN BIOLOGY
C. Chatgilialoglu / J. Lindsay-Smith
T. Tullius / E. Baciocchi / M. Greenberg / D. Edmondson / J. Heinecke

KINETICS AND MECHANISMS
A. L. J. Beckwith / H. Fischer / I. Ryu
M. Newcomb / J. Tanko / L. Johnston / H. Zipse / C. Schiesser

LIVING FREE RADICAL POLYMERIZATION
E. Rizzardo
C. Matyjaszewski / M. Georges / B. Barclay

"CHEVES WALLING LECTURER"
C. Walling
K. U. Ingold

GENETIC TOXICOLOGY

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Kenneth R. Tindall, *Chair*
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REPLICATION AND DNA DAMAGE
T. Kunkel
B. Glickman

DNA REPAIR
L. Samson
L. Samson / I. Mellon / J. Essigmann

DAMAGE-INDUCED CELL CYCLE EFFECTS
A. Fornace
N. Holbrook / J. Preston

TRANSGENIC MUTATION MODELS
N. Gorelick / J. Heddle
N. Gorelick / T. Skopek / P. Glazer

MOLECULAR MECHANISMS OF SKIN CARCINOGENESIS
F. Robertson / J. Mirsalis
F. Robertson / R. Cannon

NOVEL APPROACHES FOR ASSESSING DNA DAMAGE
M. Resnick
B. Van Houten / M. Justice / D. Gordenin

ENVIRONMENTAL GENOMICS
S. Wilson / T. Cebula
G. Evans / Wm. Thilly / S. Sommer

MOLECULAR EPIDEMIOLOGY
C. Harris

GENETIC VACCINATIONS (NEW)

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David B. Weiner, *Chair*

LESSONS FROM VACCINE/DEVELOPMENT IMMUNOLOGY
D. B. Weiner
H. Koprowski / S. Plotkin / J. White / B. Moss / J. Berzofsky / M. Rosenberg

DELIVERY AND VECTOR DEVELOPMENT
S. Johnston
H. Davis / S. Johnston / J. Norman / D. Carson / G. Ertyl / J. Haynes

VIRAL VACCINES-I
M. Liu
R. Whalen / B. Rouse / M. Liu / T. Higgins / L. Babiuck / J. Wands

VIRAL VACCINES-II
H. Robinson
S. Hoffman / J. Donnely / R. Ahmed / H. Robinson / B. Warren / D. B. Weiner / J. Warner

DNA CANCER VACCINES
R. Kennedy
D. Curiel / B. Wang / R. Kennedy / G. Nabel / W. V. Williams

GRAVITATIONAL EFFECTS IN PHYSICO-CHEMICAL SYSTEMS

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FLIGHT EXPERIMENTS ON CRYSTALLIZATION AND SOLIDIFICATION
S. Coriell / D. Hurle
J. J. Favier / M. W. Koss

PROTEIN CRYSTALLIZATION
F. Rosenberger
A. A. / Chernov / P. Vekilov / A. Ducruix

COMBUSTION IN MICRO-GRAVITY
H. Ross
W. S. Sirignano / F. L. Dryer

LOW-TEMPERATURE PHYSICS IN MICRO GRAVITY
M. Lee / R. Ferrell
R. Duncan / N. Bigelow / H. Maris

NOVEL COMPUTATIONAL METHODS APPLIED TO μG/PHENOMENA
J. McFadden / A.Zebib
D. Anderson / G. Tryggvason

SURFACE TENSION-DRIVEN FLOWS
M. Smith / A. Pline
S. Ostrach / M. Schatz / S. Garoff

FLIGHT EXPERIMENTS ON CRITICAL FLUID PHENOMENA
A.Wilkinson
R. W. Gammon / D. Swanson

INTERFACIAL INSTABILITY AND COALESCENCE
S. Lichter / M. Wargo
G. P. Neitzel / J. Jacobs / S. Putterman

G-JITTER AND CHAOS
M. Rogers
I. Alexander / J. Vinals

HETEROCYCLIC COMPOUNDS

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DISCOVERY AND SYNTHESIS OF HETEROCYCLE-BASED DRUGS
B. Bray / A. Bridges / A. Duplantier / J. Jacobsen / M. Tebbe / P. Wender / J. M. Williams / G. Wu

METHODOLOGY FOR THE SYNTHESIS OF HETEROCYCLIC COMPOUNDS
B. Coppola / J. Cossy / D. Curran

HETEROCYCLIC NATURAL PRODUCTS SYNTHESIS
D. Hart / A. Holmes / J. Rigby / E. Vedejs / S. Weinreb

ORGANOMETALLICS IN HETEROCYCLIC CHEMISTRY
F. McDonald / M. Mori / A. Padwa

HETEROCYCLES AS VEHICLES FOR SYNTHESIS
S. Kim / W. Murray

HIGH PERFORMANCE COMPUTING/ INFORMATION INFRASTRUCTURE

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Anthony Skjellum, *Chair*
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CONFERENCE THEME: PRACTICAL REVOLUTION OF SOFTWARE TO KEEP UP WITH EVOLVING ARCHITECTURE (AND VICE VERSA)

WHAT WILL INTERCONNECTION NETWORKS DO IN 10 YEARS, AND WHAT WILL THIS IMPLY FOR PRACTICAL SOFTWARE SYSTEMS?
R. George

NEW TYPES OF NETWORKING: ACTIVE AND BEYOND
A. Kanevsky

REAL-TIME ISSUES: HOW DO REAL-TIME ISSUES IMPACT AND ENABLE FUTURE HIGH PERFORMANCE NETWORKED COMPUTER SYSTEMS SOFTWARE?
A. Agrawala

MULTILEVEL MULTICOMPUTERS: ARCHITECTURES OF THE FUTURE?
A. Skjellum

OPPORTUNITIES AND SOFTWARE IMPACTS OF PROCESSOR IN MEMORY AND OTHER FINE-GRAIN COMPUTATION.
P. Kogge

IMPACT OF EVOLVING HARDWARE ON APPLICATIONS, I
E. Luke

IMPACT OF EVOLVING HARDWARE ON APPLICATIONS, II.
P. Worley

WHAT SOFTWARE ABSTRACTIONS HELP AND HURT PERFORMANCE AND WHY?
A. Lumsdaine

HORMONAL CARCINOGENESIS

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George W. Lucier, *Chair*
Shuk-mei Ho, *Vice Chair*

ROLE OF HORMONE METABOLISM AND OXIDATIVE STRESS IN BREAST AND PROSTATE CANCER
J. Li
J. Yager / S. Ho

RELEVANCE OF RECEPTOR VARIANTS TO HORMONAL CARCINOGENESIS
K. Korach
J.-A. Gustaffson / D. Lamb / T. Brown

REGULATION OF HORMONE RECEPTOR ACTION BY ACCESSORY PROTEINS
M. Gallo
G. Greene / N. Weigel

MOLECULAR DETERMINANTS OF BREAST CANCER
S. Sulumar
R. Wiseman / C. Rinker-Schaeffer / J. Russo

MOLECULAR DETERMINANTS OF ENDOMETRIAL CANCER
G. Cunha
J. Boyd / C. Walker

MOLECULAR DETERMINANTS OF PROSTATE CANCER
J. Norris
C. Chang / M. Bosland / N. Bruchovsky

DO ENVIRONMENTAL HORMONES CAUSE CANCER IN HUMANS?
G. Stancel
G. Lucier / J. Cook / M. Wolff

PREVENTION OF HORMONALLY-MEDIATED CANCER
L. Chung
A. Brodie / C. Portier / C. Lamartiniere / R. Santen

CONFERENCE ADDRESS
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HORMONE ACTION

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R. Palmiter

NUCLEAR RECEPTOR REGULATION AND ACTIONS
B. Katzenellenbogen / J.-Å. Gustafsson / M. Lazar / R. Evans

G PROTEINS AND G PROTEIN-COUPLED RECEPTORS
H. Hamm / J. Benovic / J. Dumont

MEMBRANE RECEPTORS AND CELL SIGNALING
J. Wrana / J. Florini / M. Lippman / C. Carter-Su

NEUROENDOCRINE INTEGRATION
W. Vale / J. Drouin / G. Schütz

HORMONES AND DEVELOPMENT
D. Linzer / S. Camper / H. Ingraham / S. Tsai

REGULATION AND TRAFFICKING OF STEROID RECEPTORS
D.Toft / D. DeFranco / N. Weigel

SIGNAL TRANSDUCTION MECHANISMS
M. Cobb / A. Saltiel / L. Hennighausen / P. Sassone-Corsi

HORMONAL CONTROL OF POST-EMBRYONIC DEVELOPMENT
C. Thummel / J. Tata

HUMAN MOLECULAR GENETICS

SALVE REGINA UNIVERSITY
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AUGUST 10 - 15, 1997
Robert Nussbaum, *Chair*

ADVANCES IN NEUROGENETICS

MOLECULAR CYTOGENETICS

DNA REPAIR

SIGNALING IN HUMAN DEVELOPMENT AND DISEASE

CANCER GENETICS

HYDROGEN-METAL SYSTEMS

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R. G. Leisure & L. Schlapbach, *Co-Chairs*
M. Gupta & A. J. Maeland, *Co-Vice Chairs*

HYDROGEN IN NANOCRYSTALLINE, AMORPHOUS AND QUASICRYSTALLINE MATERIALS
K. Tompa
K. F. Kelton / H. Fujii

RARE EARTH HYDRIDES: STRUCTURE, DYNAMICS AND SWITCHABLE OPTICAL PROPERTIES
P. Vajda
J. N. Huiberts / J. J. Rush

PHASE TRANSITIONS IN YTTRIUM HYDRIDES
M. Y. Chou
P. J. Kelly

HYDROGEN DYNAMICS AND SITE OCCUPANCY
R. G. Barnes
N. L. Adolphi / A. V. Skripov

HYDROGEN STORAGE AND BATTERY ELECTRODE MATERIALS I
A. Percheron-Guégan
R. C. Bowman, Jr. / A. Züttel

HYDROGEN STORAGE AND BATTERY ELECTRODE MATERIALS II
J. Bloch
H. Uchida

FUNDAMENTAL STUDIES/THERMODYNAMICS - DIFFUSION
R. Cantelli
R. B. Schwarz / H. Teichler

HYDROGEN IN MULTILAYERS
B. Hjörvarsson
A. Weidinger / R. Kirchheim / M. Strongin

HYDROGEN IN NOVEL MATERIALS
G. G. Libowitz
G. Auffermann / C. M. Jensen

HYDROGEN-DEFECT INTERACTIONS: EXPERIMENTAL
N. R. Moody
W. W. Gerberich / C. Buckley

HYDROGEN-DEFECT INTERACTIONS: THEORETICAL
D. K. Ross
M. I. Baskes

GENERAL INTEREST LECTURE
G. Sandrock
J. S. Cannon

ILLICIT SUBSTANCE DETECTION: EXPLOSIVES (NEW)

QUEEN'S COLLEGE
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John Daly & Steve Burmeister, *Co-Chairs*

EXPLOSIVES DETECTION PROBLEMS
P. C. Wilcox
B. Hoffman / D. Boyd / L. Malotky

X-RAY DETECTION TECHNIQUES
H. Martz
J. Gray / P. Rizo / I. Raitt

VAPOR PARTICLE SAMPLE COLLECTION
R. Strobel
G. S. Settles / D. Funk / E. Poziomek

OPTICAL TECHNIQUES
J. David
P. J. Hargis, Jr. / A. Lang / J. Steinfield / H. Funsten / R. Lacey

MISCELLANEOUS DETECTION TECHNIQUES (NQR, SAW, BIOSENSORS)
J. Pennella
A. Garroway / A. Kusterbeck / R. Hiley

SPECTROSCOPIES — MASS AND ION MOBILITY
K. Ward
P. Rodaci / W. Grietz / S. McLuckey

BIOLOGICAL DETECTION SYSTEMS
R. Dugan
L. J. Meyers / S. Nicklin / J. Petrousky

NUCLEAR DETECTION TECHNIQUES
R. Mintz
G. Vourvopoulos / J. Overly / H. LaFevre / A. DeVolpi

PANEL DISCUSSION: "WHAT HAVE WE LEARNED?"
P. Pluta / T. Fainberg / H. Whiteman / P. Rothstein / P. Griffin / N. Cartwright / J. Beauchamp / B. Perry

IMMUNOCHEMISTRY AND IMMUNOBIOLOGY

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Diane J. Mathis, *Chair*
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TCR STRUCTURE/ FUNCTION RELATIONSHIPS
I. Wilson
J. Kappler / K. Karjalainen

LYMPHOCYTE DEVELOPMENT
M. Owen
D. Mantis / M. Nussenzweig / TBA

GENERATION OF DIVERSITY
M. Oettinger
M. Neuberger / A. Radbruch

POSITIVE/NEGATIVE REGULATION OF SIGNALING
D. Fearon
J. Ravetch / K. Murphy / TBA

LYMPHOID ORGAN DEVELOPMENT
D. Chaplin
C. Clegg / T. Böehm

SIGNALING APOPTOSIS
C. Thompson
P. Marrack / V. Dixit / TBA

CHEMOKINES
C. Mackay
M. Baggiolini / N. Gerard

HOST/PATHOGEN INTERACTIONS
D. Littman
N. Glaichenhaus / H. Ploegh

SPECIAL TOPIC

INORGANIC CHEMISTRY

SALVE REGINA UNIVERSITY
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Andrew Barron, *Chair*
Dennis Riley, *Vice Chair*

THEMES:
1. THE INTERPLAY AND OVERLAP OF SUB-DISCIPLINES WITHIN INORGANIC CHEMISTRY
2. COORDINATION CHEMISTRY
3. ORGANOMETALLICS, BIO-INORGANIC AND MEDICINAL MATERIALS
4. SURFACE SCIENCE
5. ANALYTICAL AND SPECTROSCOPIC METHODS.

Speakers:
G. Bertrand / C. Kubiak / C. Riordan / B. Bursten / D. Crans / G. Somorjai / J. Lockmeyer / C. Kresge / W. Tumas / M. Green / M. Hampden-Smith / P. Hofmann / T. D. P. Stack / R. Waymouth / P. Ellis / M. Lattman / C. Lieber / A. Apblett / R. E. King III / L. Wilson / T. Ziegler / F. Bottomley / K. Dunbar / D. Reger / C. Mirkin / D. Morris / D. Rankin

INORGANIC GEOCHEMISTRY

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AUGUST 10 - 15, 1997

M. Reed, K. Shelton & R. Schafer, *Co-Chairs*

METALS IN THE SURFACE AND NEAR-SURFACE GEOCHEMICAL AND BIOGEOCHEMICAL ENVIRONMENT.
M. Schoonen / C. Alpers / G. Southam

FLUID ORIGINS AND FLOW PROCESSES IN THE CRUSTAL ENVIRONMENT
L. Cathles / B. Nesbitt

METAL SOURCES, ALTERATION AND PRECIPITATION PROCESSES IN SEDIMENTARY AND IGNEOUS-SEDIMENTARY SETTINGS
D. Haynes / A. Brown
M. Barton / M. Hitzman / T. Lyons / J.B. Maynard / S. Twyerould

HYDROTHERMAL SIGNATURES, METAMORPHISM AND TIMING OF GOLD PRECIPITATION IN LODE GOLD DEPOSITS IN METASEDIMENTS AND METAVOLCANICS
F. Robert / J. Hodgson

PORPHYRY COPPER SYSTEMS, EPITHERMAL SYSTEMS AND THE RELATIONSHIP BETWEEN THEM
S. Titley
J. Dilles / J. Hedenquist / P. Candela / A. Arribas / J. Lowenstern / J. Muntean

ION CONTAINING POLYMERS

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JUNE 22 - 27, 1997

C. W. Martin, *Chair*
R. K. Prud'homme & W. M. Risen, *Co-Vice Chairs*

NOVEL IONOMER MORPHOLOGIES
R. Moore
A. Eisenberg / M. Litt

STRUCTURE AND PROPERTIES OF IONOMERS IN SOLUTION
M. Pineri
G. Gebel / S. Schlick / S. Cooper

SYNTHESIS AND CHARACTERIZATION OF NOVEL ION CONTAINING POLYMERS
R. Weiss
W. Risen / D. DesMarteau

FUEL CELLS I: PEM STRUCTURE, MORPHOLOGY AND PERFORMANCE
T. Zawodzinski
G. Wnek / A. Steck / G. Scherer

POSTER SESSION
R. Prud'omme / W. Risen

SPIN-POLARIZED NEUTRON SCATTTERING / REINFORCED IONOMER MEMBRANES
K. Mauritz
B. Gabrys / B. Bahar

FUEL CELLS II: ION TRANSPORT IN POLYMER SYSTEMS
R. Savinell
M. Ratner / K.-D. Kreuer / J. Fontanella

SOLID POLYELECTROLYTE-SURFACTANT COMPLEXES / POLYION SOLUTIONS
R. Farinato
M. Antoniette / T. Seery

POLYELECTROLYTE COMPLEXES
W. MacKnight
B. Chu / V. Kabanov / R. Prud'homme

KALLIKREINS AND KININS

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BARGA, ITALY
APRIL 27 - MAY 2, 1997

W. Müller-Esterl, *Chair*
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G PROTEIN-COUPLED RECEPTORS - STRUCTURE AND FUNCTION
D. Proud
T. Schwartz / F. Leeb-Lundberg / C. Schroeder

TRANSDUCTION PATHWAYS - SIGNALING AND CROSS-TALK
E. Erdös
J. Schlessinger / H. Higashida / G. Burgess

KININ RECEPTORS - REGULATION AND EXPRESSION
D. Regoli
M. Bouvier / A. Faussner / F. Marceau

RECEPTOR ANTAGONISTS - CHEMISTRY AND PHARMACOLOGY
B. Schölkens
N. Inamura / T. Griesbacher

KININ SYSTEMS - DISTRIBUTION AND LOCALIZATION
T. Berg
F. Mendelsohn / C. Figueroa

CELL-ASSOCIATED SYSTEMS - RECEPTORS AND MEDIATORS
H. Fritz
A. Schmaier / B. Colman

TRANSGENIC ANIMALS - KNOCK-OUTS AND KNOCK-DOWNS
H. Margolius
C. Wahlestedt / P. Geppetti / J. Pesquero

LASER DIAGNOSTICS IN COMBUSTION

PLYMOUTH STATE COLLEGE
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Marshall Long, *Chair*
Katharina Kohse-Höinghaus, *Vice Chair*

DIAGNOSTICS AND COMBUSTION MODELING
R. Dibble
W. Dahm / Q.-V. Nguyen

WAVE MIXING
L. Rahn
P. Ewart / B. Attal-Tretout / B. Hemmerling

NEW EXPERIMENTAL APPROACHES AND FACILITIES
M. Aldén
W. Lempert / P. Paul / R. Farrow

DIAGNOSTICS IN MATERIALS
K. Kohse-Höinghaus
J. Jeffries / B. Atakan / R. Lucht

SENSORS AND CONTROL
M. Allen
R. Hanson / V. Ebert

PRACTICAL AND ENVIRONMENTAL DIAGNOSTICS
J. Seitzman
W. Meier / R. Santoro / P. Desgroux

SOOT DIAGNOSTICS
K. Smyth
A. Leipertz / R. VanderWal

EMERGING TECHNIQUES
J.-P. Taran
D. Rakestraw / C. Kaminski / N. Laurendeau

DIAGNOSTICS IN ENGINES
D. Greenhalgh
H. ter Meulen / M. Drake

LIGAND RECOGNITION AND MOLECULAR GATING IN TRANSMEMBRANE PROTEINS

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Kathryn Sandberg, *Chair*
Thue W. Schwartz, *Vice Chair*

SPECTROSCOPIC APPROACHES TO MEMBRANE PROTEIN-LIGAND INTERACTIONS
C. D. Strader
W. L Hubbell / A. Chollet / B. K. Kobilka

PHYSICAL ANALYSIS OF MEMBRANE PROTEIN-LIGAND STRUCTURE
S. O. Smith
T. M. Handel / T. A. Cross / J. J. Falke

ONWARDS TO THREE DIMENSIONAL STRUCTURES OF ION CHANNELS
R. B Rogart
J. Rosenbusch / D. A. Dougherty / R. H Guy

MOLECULAR DETERMINANTS OF ION CHANNEL GATING
W. A. Catterall
A. Karlin / S. A. Siegelbaum / D. M. Papazian

TRANSPORTER-LIGAND INTERACTIONS: BIOPHYSICAL APPROACHES
E. M. Wright
H. R. Kaback / M. P. Kavanaugh

TRANSPORTER-LIGAND INTERACTIONS: STRUCTURE/FUNCTION
S. G. Amara
T. H. Wilson / R. R. Kopito / J. Javitch / R. Edwards

HELIX-HELIX AND HELIX-MEMBRANE INTERACTIONS
J. Wess
D. M. Engelman / D. Oprian

SERPENTINE RECEPTOR-LIGAND INTERACTIONS: STRUCTURE/FUNCTION
K. Sandberg
J. Lanyi / M. Gershengorn / T. W. Schwartz

CONSTITUTIVELY ACTIVE TRANSMEMBRANE PROTEINS
S. Cotecchia
J.-C. Bonnafous / J. Konopka / L. Schild

LIPIDS AND LIPID MEDIATORS

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William L. Smith, *Chair*
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EICOSANOID METABOLISM
D. DeWitt
P. Isakson / D. L. DeWitt / R. Evans / L. J. Roberts

SPHINGOLIPID METABOLISM
A. Merrill
A. H. Merrill, Jr. / L. M. Obeid / S. Spiegel / G. van Meer / Y. Hirabayashi

NUCLEAR COMPARTMENTATION OF LIPID METABOLISM
C. Kent
C. Kent / D. Raben / M. L. Peters-Golden / M. Topham

PI KINASES AND PROTEIN BINDING DOMAINS FOR PHOSPHOINOSITIDES
J. Thorner
P. Sigler / R. Williams / J. W. Thorner / L. Cantley

PHOSPHOLIPASES A, C, AND D
E. Dennis
E. A. Dennis / A. Morris / R. L. Williams

METABOLISM OF UNSATURATED FATTY ACIDS
H. Schulz
H. Sprecher / J. Shanklin / G. P. Mannaerts / D. M. Lane

HOT TOPICS
S. Prescott
C. N. Serhan / H. Van den Bosch / K. Inoue / J. Chun

ACYL TRANSFERASES, TRANSACYLASES, LIPID TRANSPORT
F. Chilton
H. S. Sul / D. McGarry / F. B. Chilton / V. A Bankaitis / D. Voelker

LIPID MODIFICATIONS OF PROTEINS
R. Bishop
W. R. Bishop / M. Linder / J. Silvius

LIQUID CRYSTALS

TILTON SCHOOL
TILTON, NH
JUNE 8 - 13, 1997
Jay Patel, *Chair*
David Walba, *Vice Chair*

THEORETICAL ASPECTS OF LIQUID CRYSTALS
F. Leslie / H. Yokoyama

COMPUTER SIMULATIONS OF LIQUID CRYSTALS
C. Zannoni / A. Killian

FERROELECTRIC LIQUID CRYSTALS
A. Fukuda
I. Musevic / H. Takezoe / J. Maclennan

NOVEL LIQUID CRYSTALS STRUCTURES
J. Goodby / P. Barois

APPLICATIONS OF LIQUID CRYSTALS
C. Lee
R. Shashidhar / T. Bunning / G. Durand

PHASE TRANSITIONS OF LIQUID CRYSTALS
R. Pindak
J. Ho / P. Richetti

INSTABILITIES AND PATTERN FORMATIONS IN LIQUID CRYSTALS
O. Lavrentovich
R. B. Meyer

POLYMERIC AND MACROMOLECULAR LIQUID CRYSTALS
V. Percec

LIQUIDS, CHEMISTRY AND PHYSICS OF

HOLDERNESS SCHOOL
PLYMOUTH, NH
AUGUST 3 - 8, 1997
C. Austin Angell, *Chair*
Michael Klein, *Vice Chair*

FAST RELAXATION IN LIQUIDS
D. Chandler
M. Berg / R. Stratt / N. Scherer

PACKING, LANDSCAPES AND INHERENT STRUCTURES I: HARD SPHERES, ETC.
F. Stillinger
C. Dasgupta / R. Speedy / S. Sastry

LANDSCAPES II AND MICROINHOMOGENEITIES IN REAL LIQUIDS,
M. Klein
P. Harrowell / H. Wütke / W. Johnson / P. Madden

LIQUID AND GLASSY POLYAMORPHISM (PHASE CHANGES IN LIQUIDS
G. Stanley
P. Debenedetti / O. Mishima

MESOSCOPIC LIQUID POLYMORPHISM (FOLDING ETC.)
P. G. Wolynes / E. Shakhnovich

NEW EXPERIMENTAL REACHES TO HIGH P, HIGH Q AND LOW L
K. Nelson
G. Wolf / G. Ruocco

PHASE CHANGES OUT OF AND INTO LIQUIDS AND GLASSES
D. Oxtoby / R. McGraw

HOT NEWS SHORTS

MAGNETIC RESONANCE

NEW ENGLAND COLLEGE
HENNIKER, NH
JUNE 22 - 27, 1997
Allen N. Garroway, *Chair*
Regitze R. Vold, *Vice Chair*

BIOLOGY
S. J. Opella
S. J. Opella / R. S. Prosser / C. R. Sanders

CHEMISTRY AND PHYSICS
C. P. Slichter
W. P. Halperin / C. H. Pennington / Y. Wu

EARLY NMR
W. Edelstein
R. V. Pound

EPR
H. Thomann
J. H. Freed / D. Goldfarb

FIELD APPLICATIONS OF MAGNETIC RESONANCE
W. Edelstein
R. L. Kleinberg

MULTIPLE-QUANTUM ASPECTS IN SOLIDS
A. Pines
L. Frydman / S. Lacelle

OPTICS AND MAGNETIC RESONANCE
R. Tycko
A. G. Marshall / D. P. Weitekamp

QUANTUM AND CLASSICAL ASPECTS OF POPULATION AND COHERENCE TRANSFER
J. S. Waugh
M. S. Conradi / D. G. Cory / J. L. Jeener / W. S. Warren

SOLID STATE NMR
H. W. Spiess
B. H. Meier

SQUID-DETECTION: THE FUTURE?
E. L. Hahn
H. D. W. Hill / J. Clarke

MAMMARY GLAND BIOLOGY

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JUNE 15 - 20, 1997
Floyd L. Schanbacher, *Chair*
Margaret C. Neville, *Vice Chair*

ISSUES IN MAMMARY GLAND BIOLOGY
D. Medina
B. Vonderhaar / D. Medina / P. Newcomb.

GENETIC BASIS FOR BREAST CANCER
R. Jensen
L. Chodosh / W.-H. Lee / R. A. Jensen

ESTROGENS IN MAMMARY DEVELOPMENT AND CANCER
C. Teng
C. Teng / S. Safe / D. Kleinberg

PROLACTIN IN MAMMARY REGULATION
P. Kelly
C. Brooks / P. Kelly / B. Groner / S. Anderson

TRANSCRIPTION FACTORS & CELL SIGNALING IN MAMMARY REGULATION
Z. Werb
W. Doppler / C. Streuli / Z. Werb

AUTOCRINE AND PARACRINE FACTORS IN MAMMARY DEVELOPMENT
K. Carraway
Y. Friedmann / W. Birchmeier / K. Carraway / J. Wysolmerski

SECRETION OF MILK COMPONENTS
T. Keenan
M. Olivier-Bousquet / R. Burgoyne / T. Keenan

BIOACTIVE COMPONENTS IN MILK
D. Newburg
D. Newburg / J. Brock / P. Prieto / A. Mastro

KEYNOTE ADDRESS
F. Schanbacher
J.-C. Mercier

MATERIALS PROCESSES FAR FROM EQUILIBRIUM (NEW)

KIMBALL UNION ACADEMY
MERIDEN, NH
AUGUST 17 - 22, 1997

Eric Chason, *Chair*
Tomas Diaz de la Rubia, *Vice Chair*

SEMICONDUCTOR PROCESSING NEEDS AND CONSTRAINTS
S. T. Picraux
J. Plummer / P. Peercy

IMPLANTATION AND KINETICS OF DEFECTS AND DOPANTS
M. Current
D. J. Eaglesham / K. Jones / H. J. Wollenberger

QUANTIFYING DEFECT PRODUCTION AT SURFACES
H. Gossman
P. Bedrossian / T. Michely

THEORY AND MODELING OF DOPANT AND DEFECT KINETICS
M. Law
R. Averback / G. Gilmer / J. Nelson

ENERGETIC OXIDATION AND NITRIDATION
N. Herbots
J. Poate / L. Feldman

PRECIPITATION AND SEGREGATION UNDER NON-EQUILIBRIUM CONDITIONS
J. Phillips
S. Coma / H. Atwater / S. Myers

PHASE FORMATION IN DRIVEN SYSTEMS
M. Aziz
W. White / G. Martin

SURFACE MODIFICATION AND STIMULATED GROWTH
M. Thompson
T. Sigmon / S. Yalasove / B. Cooper / A. Polman

MAJOR CHALLENGES FOR THE FUTURE
J. Mayer
R. Fair / M. Pinto / J. Greene / P. Leon

MATRIX METALLOPROTEINASES

PROCTOR ACADEMY
ANDOVER, NH
JULY 13 - 18, 1997

Lynn M. Matrisian, *Chair*
Gillian Murphy, *Vice-Chair*

MATRIX METALLOPROTEINASE STRUCTURE
F. Woessner
H. Nagase / C. Overall

REGULATION OF MMP ACTIVITY
M. Seiki
V. Knauper / S. Apte

RELATED METALLOPROTEINASES
G. Murphy
J. White/ K. Kadler / A. Fujisawa-Shehara

REGULATION OF MMP EXPRESSION
C. Brinckerhoff
J. Saus / B. Toole / A. Henney

MMPS IN NORMAL SYSTEMS
Z. Werb
G. Ciment / L. Salamonsen

MMPS IN DISEASE STATES
H. Birkedal-Hansen
P. Libby / B. Parks

METALLOPROTEINASES IN INFLAMMATION
S. Krane
M. Moss / S. Shapiro / P. Brown

METALLOPROTEINASES IN CANCER
W. Stetler-Stevenson
Y. Okada / R. Khokha

HUMAN GENOME PROJECT: HIGHLIGHTING CHROMOSOME 11
G. Evans

MECHANISMS OF MEMBRANE TRANSPORT PROTEINS

HOLDERNESS SCHOOL
PLYMOUTH, NH
JUNE 22 - 27, 1997

Carolyn W. Slayman, *Chair*
Jack H. Kaplan, *Vice Chair*

WHAT THE YEAST GENOME HAS TAUGHT US ABOUT PUMPS, CHANNELS, & TRANSPORTERS
A. Goffeau

APPROACHES TO STRUCTURE
D. Engelman / C. Toyoshima / G. Scarborough / R. Kaback

MOLECULAR BASIS OF CATION SELECTIVITY
R. Fillingame / P. Dimroth / J. Lingrel / D. MacLennan

CHANNELS AND CHANNEL-LIKE TRANSPORTERS
M. Driscoll / A. Suprenant / E. Moczydlowski / M. Kavanaugh

PUMPS
J. Kaplan / R. Rao / H. Rudolph / S. Lutsenko

MULTIDRUG RESISTANCE PROBLEMS
E. Balzi / D. Clarke / P. Gros / C. Higgins

NOVEL TRANSPORTERS
T. Krulwich / W. Konings / S. Schuldiner / N. Carrasco

BIOGENESIS AND FUNCTION OF TRANSPORTERS
P. Ljungdahl / R. Kopito / J. Riordan / B. Forbush

HUMAN GENETIC DISEASES OF TRANSPORT
R. Lifton

50 YEARS

MEDICINAL CHEMISTRY

COLBY-SAWYER COLLEGE
NEW LONDON, NH
AUGUST 3 - 8, 1997

William Greenlee, *Chair*
James McCarthy, *Vice Chair*

SLEEP DISORDERS
G. Johnson
A. Pack / K. Takaki / D.Caignard / D. Boger

NEW AND OLD TARGETS IN ONCOLOGY
B. Balasubramanian
S. Graham / R. Kramer

NUCLEAR HORMONE RECEPTORS
A. Nazden
J. Katzenellenbogen / R. Chandraratna / M. Boehm

NPY
D. Gehlert
A. Beck-Sickinger / H. Zarrinmeyeh / C. Gluchowski

NEUROTROPHIC SMALL MOLECULES
J. Mallamo
D. Kaplan / U. Saragovi / G. Hamilton

COMBINATORIAL CHEMISTRY AS APPLIED TO DRUG DISCOVERY
J. Kiely
R. Root-Bernstein / J. Hodges / D. Flynn / S. Kaldor

NEW DEVELOPMENTS IN THE TREATMENT OF RESPIRATORY DISEASES
K. Cooper
V. Cohan / S. Adams / P. Rothman / F. Brown

SPECIAL TOPICS IN MEDICINAL CHEMISTRY

MEMBRANES: MATERIALS AND PROCESSES

PROCTOR ACADEMY
ANDOVER, NH,
AUGUST 3 - 8, 1997

Georges Belfort, *Chair*
Richard D. Noble, *Vice Chair*

SUPPORTED MEMBRANES AND BIOFUNCTIONALIZATION
G. Belfort
E. Sackmann

BIOTECHNOLOGY
R. Van Reis
A. L. Zydney / R. Bowen / P. Aimar

MEMBRANES AND POLYMERS
V. T. Stannett
S. Furusaki / K.-V. Peinemann / E. Kramer

GAS FRACTIONATION
W. J. Koros
L. M. Robeson / G. Sarti

SIMULATION OF ADSORPTION AND PERMEATION
E. L. Cussler
H. F. Ridgeway / D. Theodoru

CERAMIC AND ION EXCHANGE MEMBRANES
O. Kedem
C. Guizard

WATER TREATMENT
S. L. Matson
M. M. Clark / R. Rautenbach

ANALYTICAL METHODS
A. G. Fane / H. Strathmann

NOVEL MEMBRANES AND FILMS
J. A. Quinn,
T. Shimidzu / J. L. Anderson / S. L. Regen

POSTERS
R. D. Noble

MICROBIAL POPULATION BIOLOGY

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JULY 27 - AUGUST 1, 1997

Julian Adams, *Chair*
S. Rosenberg, *Vice Chair*

ANTIBIOTIC RESISTANCE AND EVOLUTION
S. Levy / B. Levin
J. Davies / F. Baquero / T. Palzkill

EVOLUTION OF VIRUSES, PHAGES AND ACCESSORY ELEMENTS
A. Campbell / R. Redfield
R Hendrix / S. Bonhoeffer / S. Nichols

EVOLUTION OF VIRULENCE/PATHOGENICITY
P. Reeves / R. Goldstein
T. Cebula / D. Dykhuizen / M. Waldon

EVOLUTION IN LONG TERM LABORATORY CULTURES
M. Blot / S. Rosenberg
R Kolter / R. Lenski

APPLICATION OF THE INFORMATION FROM GENOME PROJECTS TO QUESTIONS IN MICROBIAL EVOLUTION
P. Sharp / G. Weinstock
A. Danchin / S. Oliver / G. Olsen

GENOME STRUCTURE
J. Roth / H. Ochman
R. Hall

MACROEVOLUTION AND MICROBES
D. Hartl / M. Riley
N. Moran / P. Sax

HORIZONTAL TRANSFER
E. Raleigh / D. Shub
M. Lorenz / M. Radman

PLENARY LECTURE
J. M. Smith

MOLECULAR ELECTRONIC SPECTROSCOPY AND DYNAMICS

QUEEN'S COLLEGE
OXFORD, UK
AUGUST 31 - SEPTEMBER 5, 1997
David W. Pratt, *Chair*
Robert W. Field, *Vice Chair*
John P. Simons, *Chair of Local Organizing Committee*

ATOMS, DIATOMS, AND SMALL CLUSTERS

COHERENT CONTROL – INTENSE LASER FIELDS

MOLECULAR IONS AND RYDBERG STATES

POLYATOMICS AND LARGE CLUSTERS – STATE MIXING

SINGLE MOLECULES AND QUANTUM DOTS

CONNECTIONS TO THE CONDENSED PHASE – ENSEMBLE AVERAGING

SURFACES AND ADSORBATES – NONLINEAR OPTICS

MOLECULES IN LIQUIDS

BIOLOGICAL SYSTEMS

PROSPECTS FOR THE FUTURE
Speakers to be announced

MOLECULAR MECHANISMS OF BACTERIAL ADHESION AND SIGNALING

SALVE REGINA UNIVERSITY
NEWPORT, RI
AUGUST 3 - 8, 1997
Sharon R. Long & Staffan Normark, *Co-Chairs*

SIGNALING IN HOST CELLS I
J. Galan
B. Finlay / B. Baker / G. Cornelis

SYMBIOSIS
J. A. Downie
E.G. Ruby / G. Walker / P. Falk

BACTERIAL CELL-CELL SIGNALS
R. Kolter
P. Greenberg / B. Iglewski

SIGNALING IN HOST CELLS II
E. Tuomanen
K. Fullner / H.S. Wolf-Watz / C. Sasakawa

INTERACTIONS WITH HOST CELL DETERMINANTS
E. Ruoslahti
V. Clark / V Fishetti

PILI - ASSEMBLY, STRUCTURE, AND UNEXPECTED FUNCTIONS
S. Hultgren
J. Mekalanos / J. Tainer / J.-P. Zhang

BIOFILMS AND SURFACE SENSING
J. Costerton / J. Smit

MICROBIAL FACTORS AND PATHOGENICITY
T. Boren
R. Haas / F. Ausubel

APPLIED TECHNICAL ASPECTS OF ADHESION AND SIGNALING
S. Langerman
T. Trust / D. W. Holden

MOLECULAR MEMBRANE BIOLOGY

PROCTOR ACADEMY
ANDOVER, NH
JULY 6 - 11, 1997
Suzanne R. Pfeffer, *Chair*
Tom Rapoport, *Vice Chair*

ER TRANSLOCATION
B. Dobberstein / A. Johnson / C. Akey / L. Gierasch

ER QUALITY CONTROL AND SIGNALING
P. Walter / A. Helenius / H. Ploegh

ER-GOLGI TRANSPORT AND RETRIEVAL
R. Schekman / H. Pelham / S. Ferro-Novick / G. Waters / W. Balch

GOLGI TRANSPORT AND ASSEMBLY
J. Rothman / G. Warren / V. Malhotra / D. Brown

NUCLEAR IMPORT AND EXPORT
G. Blobel / P. Silver / D. Gorlich

ENDOSOME AND LYSOSOME TRAFFICKING
I. Mellman / S. Emr / S. Kornfeld / W. Wickner / M. Zerial

EXOCYTOSIS AND ENDOCYTOSIS
P. Novick / T. Martin / R. Kelly / P. DeCamilli / S. Schmid

MOLTEN SALTS AND LIQUID METALS

NEW ENGLAND COLLEGE
HENNIKER, NH
AUGUST 3 - 8, 1997
Charles L. Hussey, *Chair*
David L. Price, *Vice Chair*

ATOMIC AND ELECTRONIC STRUCTURE OF LIQUID METALS AND ALLOYS
S. A. Rice / K. Tamura / J. E. Enderby / S. Krishnan / R. Winter / M.-L. Saboungi

THERMODYNAMIC AND TRANSPORT PROPERTIES OF METALLIC FLUIDS
F. Hensel / F. Yonezawa

NOVEL SYNTHETIC REACTIONS IN MOLTEN SALTS
K. R. Seddon
H. Olivier / B. Ellis / A. M. Stacy

TECHNOLOGICAL APPLICATIONS OF MOLTEN SALTS
N. J. Bjerrum / G. R. Stafford
D. R. Sadoway / J. P. Winnick / N. Koura / H. A. Ye / Y. Ito / G. Kaptay

NEW OR UNUSUAL LOW TEMPERATURE MOLTEN SALT SYSTEMS
R. T. Carlin
P. Bonhote / J. L. Atwood

SPECTROSCOPIC STUDIES IN MOLTEN SALTS
B. Gilbert
S. Dai / T. R. Hughbanks

ACIDITY CONCEPTS IN MOLTEN SALTS
J. S. Wilkes
R. A. Osteryoung

MUSCLE: EXCITATION-CONTRACTION COUPLING

COLBY-SAWYER COLLEGE
NEW LONDON, NH
JUNE 8 - 13, 1997
Eduardo Ríos, *Chair*
David H. MacLennan, *Vice-Chair*

STRUCTURE AND ASSEMBLAGE OF E-C COUPLING COMPONENTS
B. Block / A. Jorgensen
L. Jones / C. Franzini-Armstrong

ION PERMEABILITY IN NORMAL AND DISEASED MUSCLE
S. Cannon / F. Lehmann-Horn
C. Fahlke / M. Sanguinetti / J. Imredy / A. Herrmann-Frank

CA HOMEOSTASIS, PUMPS AND FATIGUE
E. Murphy
A. Odermatt / R. Fitts / P. Volpe

VOLTAGE CONTROL OF CHANNEL GATING
K. Beam / E. Stefani
J. Nakai / B. Bean / L. Birnbaumer

MOLECULAR STUDIES OF RYANODINE RECEPTORS
S. Hamilton / F. Zorzato
Y. Ogawa / M. Ronjat / I. Pessah / T. Wagenknecht

SR CA CHANNEL MODULATION IN CELLS AND MODEL SYSTEMS
A. Marks / G. Meissner
M. Fill / A. Tripathy / A. Williams

PHYSIOLOGICAL CONTROL OF CA RELEASE
S. Gyorke / G. Lamb
N. Suda / S. Hollingworth

ELEMENTARY EVENTS OF CA RELEASE
M. Schneider / G. Wier
M. Klein

INTRACELLULAR RELEASE CHANNELS. DISTRIBUTION AND DIVERSITY
M. Iino / J. Sutko
V. Sorrentino / G. Mignery

MYCOTOXINS AND PHYCOTOXINS

NEW ENGLAND COLLEGE
HENNIKER, NH
JUNE 15 - 20, 1997
W. M. Haschek-Hock, *Chair*
M. A. Poli & J. S. Ramsdell, *Co-Vice Chairs*

RECENT HUMAN INTOXICATIONS AND NEWLY DEFINED RISKS
I. R. Falconer
W. W. Carmichael / B. B. Jarvis / D. G. Dearborn

MECHANISMS OF TOXICITY
F. M. Van Dolah
C. Jones / R. E. Honkanen / V. L. Stevens

NEW DEVELOPMENTS IN ANALYSIS AND CHEMISTRY
P. D. Moeller
S. Naylor / A. J. Julian / R. Shaka / J. Apsimon

MOLECULAR TARGETS OF TOXIN ACTION
W. Norred
C. F. Holmes / P. D. Constable

UNVEILING THE COMPLEXITY OF TOXIN METABOLISM
J. Fink-Gremmels
R. W. Dickey / C. Schlatter

EMERGING AND RE-EMERGING TOXINS/TOXICOSES
TBA
G. J. Speiers / Holmes

EVALUATION OF TOXIN EXPOSURE: TOXIN IDENTIFICATION AND BIOMARKERS
TBA
C. P. Wild / S. Hall / M. Levassieaur / G. Bossert

NEUROBEHAVIORAL EFFECTS OF TOXINS
TBA
C. J. Gordon / D. B. Prelusky

IMPLICATIONS FOR FOOD SAFETY
J. D. Miller
P. C. Howard

NATURAL PRODUCTS

NEW ENGLAND COLLEGE
HENNIKER, NH
JULY 6 - 11, 1997

J. Clardy, *Chair*
S. Davidsen, *Vice Chair*

ROLE OF NATURAL PRODUCTS
T. Eisner / D. H. Williams / J. Handelsman

CHEMICAL BIOLOGY
S. Schreiber / T. Mitchison / C. Bertozzi

CHEMICAL SYNTHESIS
S. Danishefsky / E. Carreira / D. Boger / M. Shibasaki / K. Rupprecht / S. Shuker / R. Chandraratna / M. Kahn

BIOSYNTHESIS
P. Leadlay / L. Katz / D. Sherman

NEW STRUCTURES
W. Fenical / K. Rinehart / M. Goetz

PEPTIDES AND PROTEINS
P. Lansbury / B. Olivera / S. Kent / A. Braisted

NEURAL PLASTICITY

NEW ENGLAND COLLEGE
HENNIKER, NH
JULY 13 - 18, 1997

Susan Hockfield, *Chair*
Larry Katz, *Vice Chair*

NEUROTROPHINS AND SYNAPTIC PLASTICITY
L. Katz
T. Bonhoeffer / E. Schuman / B. Lu

NEURAL PLASTICITY IN DRUG ADDICTION
S. Amara
M. Caron / S. Hyman / P. Kalivas

COMMON PRINCIPLES OF LEARNING IN DIFFERENT VERTEBRATE MOTOR SYSTEMS
S. Lisberger
M. Mauk / J. Raymond / K. Pearson

PLASTICITY AT THE SINGLE CELL LEVEL: INSIGHTS FROM CELL CULTURE
D. Berg
M. Poo / D. Linden / R. Tsien

KEYNOTE SPEAKER
J. Sanes

IN VIVO LEARNING
J. McNamara
P. Goldman / D. Margoliash / M. Mayford

CREB: A POSSIBLE MOLECULAR SWITCH IN LONG-TERM MEMORY
T. Carew
J. Yin / D. Bartsch / M. Greenberg

REPULSIVE FACTORS IN AXON GROWTH
S. Hockfield
F. Bonhoeffer / J. Flanagan / A. Kolodkin

CIRCUIT PLASTICITY
A. Bekoff
J. M. Ramirez / P. Meyrand / D. Edwards

NEUROTROPHINS

SALVE REGINA UNIVERSITY
NEWPORT, RI
JUNE 8 - 13, 1997

David Kaplan & Story Landis, *Co-Chairs*

P75 AND CELL DEATH
M. Chao
Y. Barde / L. Greene / F. Miller

P75 SIGNALING MECHANISMS
E. Shooter
M. Bothwell / P. Barker / A. Ross

NEUROTROPHIN SIGNALING IN NEURONS
D. Kaplan
M. Greenberg / L. Rubin / R. Campenot / R. Segal

NEUROTROPHIN CELL BIOLOGY/DEVELOPMENT I
L. Reichardt
R. McKay / B. Barres / A. Davies

NEUROTROPHIN CELL BIOLOGY/DEVELOPMENT II
H. Thoenen
W. Snider / L. Parada / A. Silos-Santiago

PLASTICITY
R. Zigmond
L. Katz / E. Schuman / E. Kandel

GDNF/GGF TROPHIC FACTORS
C. Ibanez
D. Anderson / A. Rosenthal / J. Millbrandt

GUIDANCE FACTORS
L. Landmesser
G. Yankopolous / M. Tessier-Lavigne / T. Pawson

CLINICAL IMPLICATIONS
C. Theile
H. Phillips / J. Vaught / M. Schwab / R. Lindsay

NONLINEAR OPTICS AND LASERS

COLBY-SAWYER COLLEGE
NEW LONDON, NH
JULY 27 - AUGUST 1, 1997

Richart E. Slusher, *Chair*
Andrew M. Weiner, *Vice Chair*

QUANTUM OPTICS AND COMPUTING
Y. Yamamoto
C. Monroe

ULTRAFAST PHENOMENA
E. Ippen
S. De Silvestri / R. Trevino

STRONG LASER FIELD PHYSICS
R. Falcone
D. P. Umstadter / C. Joshi / D. D. Meyerhofer / H. C. Kapteyn

NEW SOURCES
H. Gibbs
A. Imamoglu / S. Koch / X. C. Zhang

ENGINEERED NONLINEAR OPTICAL STRUCTURES
A. M. Weiner
G. Stegeman / J. Sipe / M. Fejer

APPLICATIONS
L. Rothberg
W. Knox / T. Baer

BANQUET SPEAKER
C. Shank

NUCLEAR CHEMISTRY

COLBY-SAWYER COLLEGE
NEW LONDON, NH
JUNE 15 - 20, 1997

Kim Lister, *Chair*
Lee Sobotka, *Vice Chair*

REACTIONS, CLUSTERING AND STRUCTURE
A. Wuosmaa
W. von Oertzen / S. Aberg

THE DECAY OUT OF THE SECOND MINIMUM AND ITS PHYSICS
F. Hannachi
T. L. Khoo

NUCLEAR STRUCTURE IN THE SECOND MINIMUM: WHITHER NEXT?
M. Riley
I. Ragnarsson / D. LaFosse / S. Lunardi / H. Heenan

ELECTROMAGNETIC FINGERPRINTS OF EXOTIC STRUCTURE
N. Benczer-Kller
R. Clarke / S. Frauendorf / A. Jungclaus

THE PHYSICS OF NUCLEI ALONG THE PROTON DRIPLINE TO A = 100
C. Baktash
D. Rudolf / D. D. Warner / W. Satula / T. Otsuka / H. Grawe

THE PHYSICS OF HEAVY PROTON RICH NUCLEI
P. J. Woods
C. N. Davids / R. Schneider

TOWARDS THE NEUTRON DRIPLINE
W. Nazarewicz
T. Glasmacher / J. Mahrun / G. Smith / Y. Dobacewski / B. Sherrill

NEW INSIGHTS INTO STRUCTURE THROUGH TECHNICAL INNOVATION
D. Sarantites
I. Y. Lee / D. Ward / D. Cline

SPECIAL LECTURE
L. Sobotka
H. Robertson

NUCLEAR PHYSICS

SALVE REGINA UNIVERSITY
NEWPORT, RI
JULY 27 - AUGUST 1, 1997

Douglas Beck, *Chair*
Xiangdong Ji, *Vice Chair*

QCD AT LOW ENERGIES
B. Holstein / H. Stroeher

SPIN-DEPENDENT DEEP INELASTIC SCATTERING
Schaefer

J/PSI SUPPRESSION IN RELATIVISTIC HEAVY ION COLLISIONS
C. Lourenco / S. Gavin

SHORT RANGE DYNAMICS IN NUCLEONS AND NUCLEI
N. Isgur
T. Averett / M. Miller / A. Radyushkin

PHYSICS AT VERY LOW X
A. Mueller / A. De Roeck

FRONTIERS IN EXPERIMENT
R. McKeown
M. Pitt / I. Tserruya

SCIENCE POLICY
X. Ji
G. Garvey

FRONTIERS IN THEORY
A. Manohar / K. Rajagopal

DRELL-YAN: PRESENT AND FUTURE
G. Garvey
P. McGaughey

NUCLEIC ACIDS

SALVE REGINA UNIVERSITY
NEWPORT, RI
JUNE 22 - 27, 1997

Roy Parker &
Nancy Craig, *Co-Chairs*
Alan Lambowitz &
Carol Greider, *Co-Vice Chairs*

CHEMICAL APPROACHES TO PROTEIN-DNA INTERACTIONS
D. Crothers
D. Crothers / J. Maher / G. Verdine

DNA RECOMBINATION
M. Gellert
M. Gellert / K. Misuuchi / S. West / A. Lambowitz

RNA STRUCTURE
J. Doudna
J. Doudna / J. Williamson / K. Nagai

RNA PROCESSING
M. Moore
M. Moore / O. Ulhenbeck / J. Manley / A. Pyle

DNA REPAIR
E. Friedberg
E. Friedberg / T. Lindahl / R. Wood / R. Cunningham

MRNA TRANSPORT, TRANSLATION, AND DECAY
M. Wickens
M. Wickens / I. Mattaj / R. Singer / P. Anderson

DNA REPLICATION
D. Gottschling
D. Gottschling / B. Stillman / C. Greider / L. Beese

TRANSCRIPTION
C. Gross
C. Gross / A. Goldfarb / J. Roberts / R. Grosschedl

GENOMICS
P. Brown
P. Brown

OPTICAL SIGNAL PROCESSING & HOLOGRAPHY

KIMBALL UNION ACADEMY
MERIDEN, NH
JUNE 29 - JULY 4, 1997
Harold H. Szu, *Chair*
Henri Arsenault, *Vice Chair*

PANEL I: OPTICS R/D & FUNDING PERSPECTIVE
J. Goodman / J. Neff
A. Harvey / R. Guenther / L. Lome / A. Craig / W. Miceli / J. Downie / J. Lee / J. S. Fender / J. Horner

OPTICAL STORAGE & RETRIEVAL
J. C. Wyant / D. B. Carlin
G. Sincerbox / J. Caulfield / U. Wild / M. Halem

PANEL II: OPTICAL BUSINESS & EDUCATION RESEARCH
T. Li / M. M. T. Chang
T. Jannson / K. Johnson / D. B. Carlin / L. A. Weller-Brophy / R. Wagner / J. D. Kafka / G. C. Bjorklund

OPTICAL SIGNAL PROCESSING & PATTERN RECOGNITION
D. Casasent / A. A. Sawchuk
H. Barrett / A. A. VanderLugt / E. Leith / Y. Denisyuk / S. Lee / M. Morris

PANEL III: INTERNATIONAL OPTICS RESEARCH AND COOPERATION
F. T. S. Yu / D.Y. Y. Yun
S. Ishihara / J. Ojeda-Casteneda

OPTICAL TRANSFORMS & PROCESSING
H. Stark / J. Finups
A. Lohmann / C. Hester / W. T. Cathy / J. Ojeda-Casteneda / Y. L. Sheng

DEBATE TITLE: "TO BE ANNOUNCED"
H. Arsenault

ELECTRO-OPTICAL-NEURAL COMPUTING
D. Psaltis / R. Athale
J. W. Goodman / H. Arsenault / V. Morozov / H. Szu

NONLINEAR OPTICS & MATERIALS
J. C. Dainty / E. Wolf
R. Roy / N. Farhat / D. Pepper / A. D. Kelly

ORGANIC PHOTOCHEMISTRY

SALVE REGINA UNIVERSITY
NEWPORT, RI
JULY 20 - 25, 1997
David G. Whitten, *Chair*
Ian R. Gould, *Vice Chair*

GENERAL
G. Schuster / F. Saeva / J. Harris

INTRAMOLECULAR ELECTRON/ENERGY TRANSFER
K.P. Ghiggino / R. Schmehl / M. Zimmt / K. Deshayes

POLYMERIC AND ORGANIZED SYSTEMS
J. Crano / G. Bazan / K. Horn / F. H. Quina

ORGANIC
A. Weedon / W. Jenks / T. Miyashi

PHYSICAL ORGANIC
A. Myers / K. Peters / M. Van der Auweraer / C. Bohne

PHOTOBIOLOGICAL SYSTEMS
M. E1 Sayed / C. V. Kumar / S. Braslavsky / D. Falvey

PHOTOBIOLOGICAL SYSTEMS
R. Givens / G. Small

ORGANIC
P. Wan / L. Butler

ORGANIC REACTIONS AND PROCESSES

NEW ENGLAND COLLEGE
HENNIKER, NH
AUGUST 3 - 8, 1997
John L. Dillon, *Chair*
William Bailey, *Vice Chair*

ADVANCES IN THE SYNTHESIS OF COMPLEX MOLECULES
P. A. Grieco / D. G. I. Kingston / L. A. Paquette / P. Sinay / B. M. Trost

ASYMMETRIC REACTIONS
R. W. Hoffmann / G. Posner / M. Shibasaki

ORGANOMETALLIC AND FREE RADICAL REACTIONS
W. Crowe / G. Fu / R. J. Linderman / V. Snieckus

IMPROVED SYNTHETIC METHODOLOGY
A. Dondoni / H. Rapoport

BIOORGANIC REACTIONS
K. D. Janda / A. Klibanov

PHARMACEUTICAL PROCESSES DEVELOPMENT
P. J. Colson / J. Grosso / D. Hou / R. Mills / D. Tschaen / J. Walker

PERSONAL RETROSPECTIVE OF ORGANIC CHEMISTRY
J. D. Roberts

ORGANIC THIN FILMS

SALVE REGINA UNIVERSITY
NEWPORT, RI
JULY 13 - 18, 1997
Abraham Ulman, *Chair*

DNA SAMS
C. Mirkin / P. Alivisatos / M. Tarlov

WETTING
M. Rafailovich
D. Allara / B. Liedberg / Y. Shnidman / S. Garoff

POLYMERS AT INTERFACES
J. Rabolt
J. Sokolov / M. Rubinstein / T. Russel

ADHESION
Y. Shnidman
J. Klien / M. Tirrell / M. Chaudhury / L. Leibler

ELECTRONIC AND NLO FILMS
R. Williams
T. Marks / L Dalton / N Armstrong

ANALYTICAL TOOLS
G.-Y. Liu
R. Overney / M. Fujihira / S. Schwarz / L. Reven

PANEL DISCUSSION: SCIENCE POLICY
A. Ulman
K. Wynne / A. Lovinger / G. Wegner / H. Sasabe / J. Israelachvili

SAMS OF THIOLS
P. Fenter
A. Gedanken / P. Hammond / M. Grunze / U. Landman

SHORT PRESENTATIONS & CONFERENCE REPORT
J. Galvin
J. Isaelachvili

SELECTED 10 MIN. PRESENTATIONS FROM POSTER SESSION

ORGANOMETALLIC CHEMISTRY

SALVE REGINA UNIVERSITY
NEWPORT, RI
JULY 27 - AUGUST 1, 1997
Patricia Watson & Elisabeth Hauptman, *Co-Chairs*
Richard Schrock. *Vice Chair*

INTRODUCTION/WELCOME
R. Periana / R. Anderson

M-C AND M-H BONDS
O. Eisenstein / B. Chaudret / K. Theopold

MAIN GROUP AND EARLY TRANSITION METAL EXTENDED STRUCTURES
F. Feher / A. Barron / H. Roesky

LIGAND SYNTHESIS AND REACTIVITY
D. Glueck / M. Therian / W. Crowe

ASYMMETRIC CATALYSIS
T. V. Rajanbabu / A. Hoveyda / X. Zhang

PO1YMERIZATION CATALYSIS
L. Johnson / T. Rappe / C. Schaverien

MAIN GROUP REACTIVITY
J. Corey / D. Berry / K. Caulton

NOVEL APPROACHES TO ORGANIC SYNTHESIS
G. Fu / R. Grigg / A Echavarren

PRESENT GLORIES AND FUTURE VISIONS
H. Turner / L. Hegedus

ORIGIN OF LIFE

NEW ENGLAND COLLEGE
HENNIKER, NH
JULY 27 - AUGUST 1, 1997
John D. Rummel, *Chair*
J. William Schopf, *Vice Chair*

A CONTEXT FOR THE ORIGIN OF LIFE
J. Rummel
E. Chaisson / J. Tarter

BIOGENIC ELEMENTS: FROM STARS TO SOLAR SYSTEMS
S. Chang
D. Whittet / M. Fomenkova / D. Cruickshank

INTERPLANETARY EXCHANGE OF ORGANIC MATERIALS
C. Chyba
J. Burns / S. Clemett

PREBIOTIC CHEMICAL EVOLUTION
J. Ferris
A. Schwartz / E. Shock

GENETIC POLYMERS OF EARLY LIFE
J. Joyce
S. Benner / J. Szostak

THE EVOLUTION AND EXPLORATION OF MARS
C. McKay
B. Jakosky / J. W. Schopf / H. Holland

EUROPA AS AN ABODE FOR LIFE
K. Zahnle
S. Squyres / C. Van Dover

THE BIOLOGICAL RECORD OF EARLY EVOLUTION ON EARTH
R. Doolittle
K. Nealson / P. Gogarten / M. Riley

THE ROCK RECORD ON EARTH
A. Knoll
J. Grotzinger / S. Mojzsis

POSTER SESSIONS
J. W. Schopf

ORIGINS OF SOLAR SYSTEMS

NEW ENGLAND COLLEGE
HENNIKER, NH
JUNE 15 - 20 1997
John F. Kerridge, *Chair*
Alan P. Boss, *Vice-Chair*

CIRCUMSTELLAR DISCS
A. Sargent
J. Stone / S. Beckwith

METEORITES AS PROBES OF THE EARLY SOLAR SYSTEM
R. Jones
A. Rubin / L. Browning / D. Stevenson

DEPLETION OF VOLATILE ELEMENTS IN PLANETARY MATERIAL
H. Palme
R. Clayton / T. Esat

HISTORY AND GEOGRAPHY OF THE PROTOSOLAR NEBULA
F. Shu
G. Lugmair / G. Wetherill / F. Podosek

THE OUTER SOLAR SYSTEM
M. Zuber
T. Owen / A. Cochran

PRESOLAR GRAINS AS PROBES OF STELLAR CONDITIONS - 1
C. Alexander
E. Zinner / T. Bernatowicz

PRESOLAR GRAINS AS PROBES OF STELLAR CONDITIONS - 2
Y. Pendleton
H. Vanhala / B. Meyer

OTHER STARS, OTHER PLANETS - 1
G. Gatewood
G. Marcy / S. Kulkarni / E. Weiler

OTHER STARS, OTHER PLANETS - 2
D. Black
D. Saumon / C. Chyba

OSCILLATIONS AND DYNAMIC INSTABILITIES IN CHEMICAL SYSTEMS

SALVE REGINA UNIVERSITY
NEWPORT, RI
JULY 13 - 18, 1997
John Tyson, *Chair*
Raima Larter, *Vice Chair*

OSCILLATORY REACTIONS
P. Soerensen / M. Hauser

ELECTROCHEMISTRY
J. Hudson
K. Krischer / M. Eiswirth / M. Schell / M. Koper / N. Jaeger

SPATIAL PATTERNS AND WAVES, I
P. DeKepper
J. Boissonade / A. DeWit

SPATIAL PATTERNS AND WAVES, II
R. Imbihl / V. Petrov / J. Pearson

SHORT TALKS, I
R. Larter

BIOLOGICAL APPLICATIONS, I
D. Lauffenberger / B. Novak

THEORY
E. Meron / A. Mikhailov

BIOLOGICAL APPLICATIONS, II
J. Keizer / A. Goldbeter

SHORT TALKS, II
J. Tyson

PARASITISM

SALVE REGINA UNIVERSITY
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JULY 6 - 11, 1997
James McKerrow, *Chair*

POPULATION BIOLOGY OF PARASITES
K Day
J. Bull / M. Tibayrenc / K. Day / M. Woolhouse

PARASITE ATTTACHMENT AND INVASION
Norma Andrews
N. Andrews / J. Galan / P. Cossart / D. Sibley

INNATE HOST RESISTANCE
J. M. Blackwell
J. M. Blackwell / G. Bancroft / D. Kwiatkowski / A. Dessein

IMMURE PATHOGENESIS
D. Colley
D. Colley / C. Hunter / R. Tarleton / E. Pearlman / E. Secor

ADAPTATIONS TO INTRACELLULAR PARASITISM
D. Russell
D. Russell / J.-C. Antoine / A. Zychlinsky

ALTERATION OF HOST CELLS BY PLANT AND ANIMAL PARASITES
V. M. Williamson
V. M. Williamson / D. Despommier / G. Gheysen / R. S. Hussey / D. McK. Bird

PARASITE BLOOD FEEDING STRATEGIES
P. Hotez
W. Bode / E. Lerner / G. Vlasuk / M. Cappello / D. Goldberg

BIOCHEMISTRY AND DRUG DESIGN
J. Mottram
J. Mottram / W. Hunter / D. Schmatz

VECTOR BIOLOGY
T. P. Yoshino
B. M. Christensen / A. A. James / T. P. Yoshino

PERIODONTAL DISEASES

NEW ENGLAND COLLEGE
HENNIKER, NH
JULY 20 - 25, 1997
Thomas Van Dyke, *Chair*
Harvey Schenkein, *Vice Chair*

MICROBIAL VIRULENCE I
M. Curtis
F. Macrina / M. Wilson

MICROBIAL VIRULENCE II
C. Genco
J. Weiser / P. Fives-Taylor / R. Lamont

VACCINES
J. McGhee
M. Nahm / R. Page

PHAGOCYTES
S. Offenbacher
R. Winn / S. Takashiba / M. Pabst

KEYNOTE SPEAKER
T. Van Dyke
R. Genco

WOUND HEALING
P. Polverini
T. K. Hunt / D. Graves / M. Charette

CONNECTIVE TISSUES
H. Birkedahl
R. Diegelmann / C. Overall

BONE
B. Boyan
T. Einhorn / J. Glowacki / S. Goldring

BIOLOGY OF IMPLANTS
M. Fritz
L. Cooper / J. Keller

PHAGOCYTES

HOLDERNESS SCHOOL
PLYMOUTH, NH
JUNE 8 - 13, 1997
Robert A. Clark, *Chair*
R. Alan B. Ezekowitz, *Vice Chair*

HOST-MICROBE INTERACTIONS
A. Ezekowitz
P. Elsbach / R. Munford

CHEMOKINES AND CHEMOKINE RECEPTORS
P. Murphy
R. Koup / C. MacKay / C. Hebert

MYELOPOIESIS
H. Broxmeyer
D. Tenen / D. Wright

SIGNAL TRANSDUCTION
K.-H. Krause
P. Camacho / G. Berton / H. Korchak

PROTEIN BIOSYNTHESIS, PROCESSING AND TARGETTING
W. Nauseef
T. Ganz / N. Borregaard

THE RESPIRATORY BURST OXIDASE
L. McPhail
M. Quinn / M. Philips / E. Ligeti / H. Malech

THE NEUTROPHIL CYTOSKELETON
S. Zigmond
T. Stossel / A. Jesaitis

PHAGOCYTES AND TISSUE INJURY
S. Klebanoff
J. Heinecke / J. Beckman / C. Liles / D. Roodman

PHAGOCYTE ADHESION, LOCOMOTION AND VASCULAR EGRESS
S. Silverstein
R. McEver / P. Kubes

PHOTOACOUSTIC AND PHOTOTHERMAL PHENOMENA

QUEEN'S COLLEGE
OXFORD, UK
SEPTEMBER 14 - 19, 1997
Darryl P Almond, *Chair*
Robert E Imhof, *Vice Chair*

ULTRAFAST AND NONLINEAR PHENOMENA
M. Terazima / B. Perrin / V. Gusev

MEDICAL APPLICATIONS
T. Milner / A. Katzir / S. Prahl

NON-DESTRUCTIVE EVALUATION
L. D. Favro / G. Busse / R. Lehtiniemi

NOVEL TECHNIQUES
H. M. Pollock / J. B. Spicer

LAYERED SYSTEMS
B. K. Bein / C. Sibilia

SPECTROSCOPY
C. D. Tran / Z. Bozoki / F. Cusso

ELECTRONIC MATERIALS
A. Mandelis / D. Fournier

INDUSTRIAL APPLICATIONS
A. Rosencwaig / A. C. Tam

LASER GENERATED ULTRASOUND/ ABLATION
P. Hess / S. B. Palmer

PHOTOSYNTHESIS: BIOPHYSICAL ASPECTS OF

PLYMOUTH STATE COLLEGE
PLYMOUTH NH
AUGUST 3 - 8, 1997

Melvin Okamura, *Chair*
John Golbeck, *Vice Chair*

THE DESIGN OF PHOTOSYNTHETIC SYSTEMS - ARTIFICIAL AND NATURAL
J. Fajer
M. Grätzel / P. L. Dutton

REACTION CENTER STRUCTURE
J. Allen / R. Nechushtai
G. Feher / P. Fromme / W. Kühlbrandt

EXCITATION TRANSFER
R. Blankenship / V. Sundsrom
R. Van Grodelle / K. Sauer

PRIMARY ELECTRON TRANSFER
N. Woodbury / M. Wasielewski
J. Durrand / G. Beddard / W. Parson

SECONDARY ELECTRON TRANSFER
A. Crofts / W. Cramer
D. Xia / J. Onuchic

OXYGEN EVOLUTION
D. Britt / G. Babcock
G. Brudvig / B. Diner / W. Rutherford

PROTON TRANSFER
C. Wraight
W. Junge / M. Gunner

SPECTROSCOPIC METHODS
W. Lubitz / A. Hoff
K. Möbius / C. Berthomieu / V. Yachandra

LOOKING BACK ON 30 YEARS OF RESEARCH IN BACTERIAL PHOTOSYNTHESIS: A PERSONAL ACCOUNT
G. Feher

YOUNG INVESTIGATOR TALKS
R. Cogdell

PHYSICAL-ORGANIC CHEMISTRY

HOLDERNESS SCHOOL
HOLDERNESS, NH
JUNE 29 - JULY 4, 1997

J. Michael McBride, *Chair*
Maitland Jones, Jr., *Vice Chair*

FERROELECTRIC/FERROELASTIC MATERIALS
D. M. Walba / M. D. Hollingsworth

SUPRAMOLECULAR CHEMISTRY
M. R. Ghadiri / A. D. Hamilton

LIQUID AND SOLID SURFACES
J. M. McBride
G. M. Nathanson / J. Frommer

ORGANIC REACTION PATHWAYS
J. Gajewski
M. A. Garcia-Garibay / M. S. Platz / J. A. Berson

GAS-PHASE ION CHEMISTRY
S. T. Graul / T. B. McMahon

ELECTRON TRANSFER
P. Maslak
S. F. Nelsen / T. Suzuki / M. D. E. Forbes / E. M. Arnett / I. R. Gould

ORGANIC STRUCTURES
J. S. Siegel
T. T. Tidwell / R. A. Pascal, Jr. / K. B. Wiberg

SELECTED ORAL PRESENTATIONS
M. Jones, Jr.

PLANT CELL GENETICS AND DEVELOPMENT

NEW ENGLAND COLLEGE
HENNIKER, NH
JUNE 8 - 13, 1997

Joachim Messing, *Chair*
Michael Christianson, *Vice-Chair*

SYNTENY
J. Bennetzen
M. Gale / R. Schmidt / J. Doebley

RECOMBINATION
H. Dooner
J. Kermicle / J. Messing / H. Dooner / P. Schnable

CHROMOSOMES
R. Phillips
R. Phillips / Z. Cande / A. Brennicke / S. Tabata

SEQUENCING PLANT GENOMES
J. Ecker
T. Helentjaris / T. Sasaki / J. Ecker / I. Bancroft

MUTANT SCREENS/POSITIONAL CLONING
R. Martienssen
R. Martienssen / U. Grossniklaus / P. Ronald / P. Schulze-Lefert

GENE REGULATION
M. Christianson
B. Scheres / M. Freeling / D. Weigel / B. Hohn

EVENING SPEAKER
M. Christianson
W. Loomis

CONSERVATION OF GENE FUNCTION
L. Wilmitzer
U. Wienand / B. Staskawicz / B. Gengenbach / L. Wilmitzer

APPLIED GENETICS
P. Maliga
P. Maliga / B. Larkins, / C. Hannah / T. Voelker

PLANT CELL WALLS (NEW)

TILTON SCHOOL
TILTON, NH
AUGUST 17 - 22, 1997

Andrew Staehelin, *Chair*
Deborah Delmer, *Vice Chair*

PLASMA MEMBRANE - CELL WALL INTERACTIONS
N. Carpita
D. Kropf / B. Kohorn

CYTOKINESIS AND CELL PLATE FORMATION
A. Staehelin
G. Jürgens / P. Hepler

CELL WALL EXPANSION
D. Cosgrove
H. Edelman

BIOSYNTHESIS OF BETA-GLUCANS
D. Delmer
B. Henrissat / K. Mizuno / E. Cabib

PLANT CELL WALL POLYSACCHARIDES IN PAPER
R.I. Atalla
H. Nikko / T. Nguyen

STRUCTURE-PROPERTY RELATIONSHIPS OF INDUSTRIAL PLANT POLYSACCHARIDES
J. Soederberg
J. Bemiller / D. Boger / M. Rinaudo / J.-F. Thibeault

ARABINOGALATAN PROTEINS
A. Showalter
A. Bacic / A. Cheung

STRUCTURES AND INTERACTIONS OF CELL WALL POLYSACCHARIDES
K. Roberts
M. O'Neil / A. M. Emons / M. Jarvis

XYLEM DIFFERENTION
R. Sederoff
C. Haigler / B. Sundberg

PLASMID AND CHROMOSOMAL DYNAMICS

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JULY 13 - 18, 1997

V.A. Zakian & D. Chattoraj, *Co-Chairs*

CHROMOSOME ORGANIZATION AND DNA TOPOLOGY
N. Cozarelli
N. Cozzarelli / H. Nash / T. Richmond / B. Meyer

INITIATION OF DNA REPLICATION
N. Kleckner
N. Kleckner / C. Newlon / T. Kogoma / S. Bell

REPLICATION EVENTS
B. Brewer
B. Brewer / D. Bastia, / D. Chattoraj / K. Nordstrom / S. Gerbi

ENDS OF CHROMOSOMES
M. Salas
M. Salas / V. Zakian / S. Cohen / K. Collins / L. Wallrath

CHROMOSOME SEGREGATION
L. Clarke
S. Austin / J. Carbon / L. Clarke / G. Karpen / N. Trun

FORCES MOVING CHROMOSOMES
A. Hoyt
M. A. Hoyt / H. Erickson / F. Solomon / T. Orr-Weaver / S. Hiraga

DNA REARRANGEMENTS AND SITE SPECIFIC RECOMBINATION
J. Broach
J. Broach / P. Borst / M.-C. Yao / D. Sherratt / S. Lewis

TRANSPOSITION
J. Boeke
J. Boeke / T. Baker / H. Biessmann / G. Chaconas / A. Gabriel

CHROMOSOMES AND THE CELL CYCLE
T. Enoch
T. Enoch / G. Gorbsky / A. Grossman / F. Spencer / A. Wright

POLYAMINES

NEW ENGLAND COLLEGE
HENNIKER, NH
JUNE 8 - 13, 1997

John Mitchell & Olli Jänne, *Co-Chairs*
Philip Coffino & Kazuei Igarashi, *Co-Vice Chairs*

POLYAMINE HOMEOSTASIS, AND APOPTOSIS
H. Wallace / M. Desiderio
J. Cleveland / A. Pegg

ONCOGENES AND CANCER
P. McCann / S. Oredsson
E. Höltta / T. O'Brien / E. Gerner

CELLULAR EFFECTS OF POLYAMINES
O. Heby / C. Tabor
J. Jänne / K. Chen

TRANSPORT
S. Bardocz / C. Byus
R. Poulin / K. Igarashi / C. Porter

METABOLIC ENZYMES
P. Coffino / S. Hayashi
S. Matsufuji / R. Casero / M. Phillips

POLYAMINE ANALOGS - NEW CONCEPTS FOR ANTICANCER DRUGS
G. Luk / D. Kramer
N. Seiler / P. Woster / L. Marton / B. Frydman

PROTOZOAN PARASITES
C. Bacchi / L. Persson
A. Fairlamb / N. Yarlett

POLYAMINE SYNTHESIS AND FUNCTION IN PLANTS
S. Minocha / A. Tiburcio
R. Malmberg / R. Walden / A. Kumar

CONTROL OF ION CHANNELS
K. Williams / C. Nichols
M. Roy / M. Mayer / A. Delcour

POLYMER COLLOIDS

TILTON SCHOOL
TILTON, NH
JUNE 29 - JULY 4, 1997

Donald C. Sundberg, *Chair*
Françoise Candau, *Vice Chair*

PARTICLE NUCLEATION AND RADICAL CAPTURE
K. Tauer / M.S. El-Aasser

EMULSION POLYMERIZATION KINETICS
R. G. Gilbert / P. A. Lovell

PARTICLE-PARTICLE INTERACTIONS
N. Ise / A. Gast

LATEX PARTICLE MORPHOLOGY
J. M. Asua / K. Landfester / TBA

LATEX FILM FORMATION
S. Mazur / M. A. Winnik

BIOMEDICAL APPLICATIONS
C. Pichot / H. Kawaguchi

POSTER SESSION
F. Candau

NOVEL LATICES
S. P. Armes / R. H. Pelton / TBA

MICROEMULSION FUNCTIONALIZATION AND REACTIVE SURFACTANTS
C. Larpent / A. Guyot

50 YEARS

POLYMERS – EUROPE

CENTRE CULTUREL LES FONTAINES
CHANTILLY, FRANCE
JUNE 29 - JULY 4, 1997

J. P. Vairon & V. Percec, *Co-Chairs*

DYNAMICS AND MORPHOLOGY
H. Benoit
G. Wegner / E. L. Thomas

CONTROLLED REACTIONS AND MORPHOLOGY (1)
J. A. Put / P. Teyssie
R. H. Grubbs / J. F. Stoddart / K. Matyjaszewski / R. Stadler

SOFT ORDER VIA CONTROLLED ARCHITECTURE
M. M. Green
E. W. Meijer / H. Finkelmann / V. Percec

CONTROLLED REACTIONS AND MORPHOLOGY (2)
J. P. Kennedy / K. L. Wooley
E. Rizzardo / M. Fryd / C. J. Hawker / S. I. Stupp

SUPRAMOLECULAR CONCEPTS
V. Kabanov
R. J. M. Nolte / J. M. Lehn

SELF-ORGANIZATION AND FUNCTIONS
A. Mueller / J. P. Majoral
B. Novak / M. Sawamoto / Y. Gnanou / J. S. Moore

PROPERTIES OF ORGANIZED ASSEMBLIES
L. Monnerie
P. A. Pincus / L. Léger / L. Leibler

NANO-ARCHITECTURES
C. Pugh / C. D. Eisenbach
M. W. Hosseini / M. Möller / T. M. Swager / B. Goodall

LESSONS FROM AND TO BIOLOGY
R. R. Matheson
D. A. Tirrell / J. Prost

PROTEINS

HOLDERNESS SCHOOL
PLYMOUTH, NH
JUNE 15 - 20, 1997

P. A. Karplus & A. M. Gronenborn, *Co-Chairs*

KEYNOTE LECTURE
M. Karplus

PEPTIDE CONFORMATIONAL PROPERTIES
P. A. Karplus
J. Hermans / E. Friere / L Serrano

FOLDING PROCESSES
P. S. Kim
K. A. Dill / S. Marqusee / T. Oas / F. Schmid / P. Wolynes

PROTEIN EVOLUTION
E. V. Koonin
A. G. Murzin / C. Ponting / E. Shakhnovich

PROTEIN SWITCHES
J. Kuriyan
S. Pesik / J. Kuriyan / A. Newton

HYPERTHERMOPHILIC PROTEINS
R. Jaenicke
M. W. W. Adams / M. J. Danson / B. W. Matthews / T. Oshima

PORES AND CHANNELS
G. E. Schulz
H. Bayley / M. Montal

PROTEIN ENGINEERING
J. Wells
A. R. Fersht / B. Lazarus / L. Regan / J. Wells

PURINES, PYRIMIDINES AND RELATED SUBSTANCES

SALVE REGINA UNIVERSITY
NEWPORT, RI
JUNE 29 - JULY 4, 1997

Barbara Ramsay Shaw, *Chair*
Vasu Nair, *Vice Chair*

MECHANISMS OF ANTICANCER AND ANTIVIRAL AGENTS (I) AND UPDATE ON NUCLEOSIDES IN CLINICAL TRIALS (II)
T. Spector
W. Plunkett / Y. Pommier / K. Biron

TRANSPORT, DELIVERY, TOXICITY AND DRUG RESISTANCE
R. Schinazi
M. Wainberg / Y.-C. Cheng / J. P. Sammodossi

OLIGONUCLEOTIDES: GENOMIC TARGETING AND MUTAGENESIS
P. Miller
R. Meyer / P. Glazer

DNA REPAIR ENZYME ACTION AND DRUG RESISTANCE
J. Tainer / L. Samson

NEW INTERMEDIATES AND REGULATION IN BIOSYNTHETIC PATHWAYS
J. Secrist
J. Stubbe / B. Mitchell

CHEMICAL AND ENZYMATIC SYNTHESIS OF NOVEL NUCLEOSIDES AND BIOLOGICAL ACTIVITY
R. T. Walker
V. Nair / A. Matsuda / P. Herdewijn

IN VITRO-EVOLUTION OF CATALYTIC ENZYMES, RIBOZYMES AND THERAPEUTICS
N. Usman / A. Ellington

TOPOLOGICAL RECOGNITION AND BASE MODIFICATIONS
J. Chattopadhyaya
E. Kool / S. Freier / F. Seela

ANTISENSE EFFICACY, DELIVERY AND THERAPEUTICS
M.D. Matteucci
D. Cook / R. Juliano

SHORT TALKS TO BE SELECTED FROM APPLICANTS.

QUANTITATIVE STRUCTURE AND ACTIVITY RELATIONSHIPS

TILTON SCHOOL
TILTON, NH
AUGUST 3 - 8, 1997

Herschel Weintraub, *Chair*
Gerald Maggiora, *Vice Chair*

INVERSE QSAR AND QSPR
H. Kubinyi
D. Agrafiotis / V. Venkatasubramanian

PHARMACOPHORIC PATTERNS
V. Von Geerestein
J. Mestres / J. Mason / H. Villar

PROPERTY PREDICTION
K. Holloway
P. Jurs / P. Howard

QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS
J. Dearden
A. Kossoy / W. Dunn / A. Tropsha

NEW TRENDS - I
J. Blaney
A. Rusinko / H. van der Waterbeemd

MEMBRANE-ASSOCIATED PHENOMENA
P. Goodford
P. Nederkorn / T. Stouch / L. Herbette

NEW TRENDS - II
L. Balbes
P. Mezey / T. Clark

TOXICOLOGY PREDICTION
M. Johnson
D. Bristol / J. Devillers / G. Loew

EVENING 'WRAP UP' SESSION
H. Weintraub / G. Maggiora / R. Pearlman

QUINONE & REDOX ACTIVE AMINO ACID COFACTORS

IL CIOCCO
BARGA, ITALY
MAY 4 - 9, 1997

Peter F. Knowles, *Chair*
Joanna Stubbe, *Vice Chair*

OXYGENASES
J. D. Lipscomb / B. Eipper

OXIDASES
J. W. Whittaker / D. M. Dooley / H. J. Kagan / M. J. McPherson

PEROXIDASES
T. L. Poulos

REDUCTASES
M. Fontecave / J. Stubbe

DEHYDROGENASES
F. S. Matthews / C. Anthony

REARRANGEMENTS
P. F. Leadley / P. Frey

AMINO ACID RADICALS IN BIOLOGY AND MEDICINE
G. T. Babcock

BIOGENESIS OF COFACTORS; NEW COFACTORS
M. E. Lidstrom / K. Tanizawe / J. Retey

MODEL SYSTEMS
W. B. Tolman / S. Itoh

KEYNOTE ADDRESSES
J. P. Klinman / C. Luchinat

RADIATION ONCOLOGY, MOLECULAR CONCEPTS IN (NEW)

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JUNE 29 - JULY 4, 1997
jJ. Martin Brown, *Chair*

DNA DOUBLE-STRAND BREAK REPAIR
G. Chu
S. Jackson / C. Kirchgessner

ATAXIA TELANGIECTASIA
M. Lavin
Y. Shiloh / A. Wynshaw-Boris / M. Jung

P53 IN RADIATION RESPONSE
A. Lehmann
S. Powell / J. Little

APOPTOSIS IN RADIATION RESPONSE
W. Dewey
F. Uckum / R. Meyn / Z. Fuks

CELL CYCLE CHECKPOINTS
G. Wahl
R. Muschell / G. Iliakis

SIGNAL TRANSDUCTION FOLLOWING RADIATION DAMAGE
D. Kufe
M. Karin / M. A. Stevenson / A. Fornace

THE NUCLEAR MATRIX AND RADIOSENSITIVITY
N. Oleinick
J. R. Davie / J. Roti

THE TUMOR MICROENVIRONMENT IN RADIATION RESPONSE
N. Coleman
A. Giaccia / L. Hlatky / R. Hill

GENE THERAPY IN RADIOTHERAPY
W. McBride
R. Weichselbaum / M. Brown

REACTIVE POLYMERS, ION EXCHANGERS AND ADSORBENTS

NEW ENGLAND COLLEGE
HENNIKER, NH
JULY 20 - 25, 1997
Spiro D. Alexandratos, *Chair*
Stephen M. Cramer, *Vice Chair*

COMBINATORIAL CHEMISTRY: THE ROLE OF REACTIVE POLYMERS IN AN EMERGING FIELD
S. H. DeWitt
K. Russell / A. Mjalli

POLYMER-SUPPORTED REAGENTS IN ORGANIC SYNTHESIS
D. Sherrington
P. Hodge / N. Schore / J. Nasman

SYNTHESIS AND APPLICATION OF REACTIVE POLYMERS WITH NOVEL ARCHITECTURES
A. Warshawsky
H. Gibson / K. Jerabek

ADVANCES IN CHROMATOGRAPHIC BIOSEPARATIONS
S. Cramer
R. Carbonell / A. Schwarz / L.-E. Nystrom

INORGANIC POLYMERS
D. Clifford
A. Clearfield / R. Noble

ENVIRONMENTAL APPLICATIONS OF REACTIVE POLYMERS
K Raymond
A. Warshawsky / A. Jyo / K. Geckeler

SEPARATIONS IN THE GAS PHASE WITH REACTIVE POLYMERS
W. Koros
H. Foley / M. Rao

BIOLOGICAL APPLICATIONS OF REACTIVE POLYMERS
R. Carbonell
C. Martin / F. Svec / C. Horvath

SESSION HONORING DR. FRED HELFFERICH ON HIS 75TH BIRTHDAY
M. Streat

RED CELLS

TILTON SCHOOL
TILTON, NH
JULY 13 - 18, 1997
Mark Groudine, *Chair*
Phillip Low, *Vice Chair*

STRUCTURE, FUNCTION AND INTERACTION OF RED CELL MEMBRANE PROTEINS
J. Chasis
P. Williamson / S. Lux / M. Narla / M. Tanner

ERYTHROCYTE PROTEINS IN NONERYTHROID CELLS
J. Morrow
V. Fowler / V. Bennett / P. Agre / A. Chishti

HEMATOPOIESIS I: ORIGIN OF HEMATOPOIETIC STEM CELLS
E. Dzierzac
G. Keller / L. Zon / R. Patient / T. Graf

HEMATOPOIESIS II: HEMATOPOIETIC LINEAGE DEVELOPMENT
S. Orkin
N. Speck / K. Georgopoulos / H. Singh / Y. Zhuang / R. K. Humphries

SIGNAL TRANSDUCTION IN HEMATOPOIETIC CELLS
P. Low
Q. Li / Y. Takakuwa / H. Lodish / D. Anstee

CONTROL OF RED CELL GENE EXPRESSION I: OVERCOMING CHROMATIN REPRESSION
B. Emerson
D. Higgs / V. Pirotta / D. Martin / K. Zaret / J. Lasalle

CONTROL OF RED CELL GENE EXPRESSION II: CONTROL OF GLOBIN GENE EXPRESSION
M. Groudine
E. Whitelaw / J. D. Engel / F. Grosveld / G. Stamatoyannopoulos / J. Bieker

RED CELL DISEASES
G. Rodgers
C. Hillary / C. Patzy / I. Sherman / D. Baruch

SHORT PRESENTATIONS SELECTED FROM POSTER SESSIONS
P. Agre / N. Speck

ROCK DEFORMATION

COLBY-SAWYER COLLEGE
NEW LONDON, NH
AUGUST 10 - 15, 1997
Harry Green, *Chair*
Brian Evans, *Vice Chair*

PRESSURE SOLUTION AND COMPETING PHENOMENA I - FIELD OBSERVATIONS

PRESSURE SOLUTION AND COMPETING PHENOMENA II - THEORY AND EXPERIMENT

INTERACTIONS BETWEEN DEFORMATION AND HYDRATION AND DEHYDRATION MINERAL REACTIONS

DYNAMIC PARTIAL MELTING I - CONTINENTAL CRUST

DYNAMIC PARTIAL MELTING II - MANTLE

INTERACTION OF SOLID-SOLID PHASE TRANSFORMATIONS AND DEFORMATION

ROCK MEMORY — HOW DO ROCKS RECORD THE P-T-T-STRAIN-STRESS CONDITIONS OF THEIR HISTORY?

SECOND MESSENGERS AND PROTEIN PHOSPHORYLATION

KIMBALL UNION ACADEMY
MERIDEN, NH
JUNE 8 - 13, 1997
Patrick J. Casey, *Chair*
Joseph A. Beavo, *Vice Chair*

CONTROL OF RECEPTOR FUNCTION
M. Freissmuth
M. Freissmuth / L. Limbird / M. Bouvier

SUBCELLULAR ORGANIZATION OF SIGNALING COMPLEXES
J. Scott
J. Scott / J. Beavo / J. Thorner / M. Sheng

SIGNALING PROCESSES INVOLVING LIPID METABOLITES
S. Spiegel
S. Spiegel / J. Exton

CYTOKINE AND SENSORY SIGNALING SYSTEMS
N. Stahl
N. Stahl / T. Wells / R. Reed / C. Bargmann

REGULATION OF PROTEIN PHOSPHORYLATION STATUS
G. Johnson
G. Johnson / J. Dixon / G. S. McKnight

STRUCTURE AND FUNCTION OF G PROTEINS AND THEIR TARGETS
E. Peralta
E. Peralta / H. Hamm / R. Taussig / T. Kataoka / R. Cerione

CROSSTALK IN GTPASE-MEDIATED SIGNALING
D. L. Barber
D. L. Barber / P. Casey

PARADIGMS IN CELLULAR SIGNALING
M. Simon
M. Simon / R. J. Lefkowitz / L. Birnbaumer / E. Neer

PLENARY LECTURE
A. G. Gilman

SOLID STATE CHEMISTRY

QUEEN'S COLLEGE
OXFORD, UK
SEPTEMBER 21 - 26, 1997
Peter D. Battle & M. Stanley Whittingham, *Co-Chairs*
Gerard Ferey, *Vice Chair*

TECHNIQUES FOR SOLID STATE CHEMISTRY
A. K. Cheetham
W. I. F. David / G. Van Tendeloo

POROUS SOLIDS
A. J. Jacobson
A. M. Chippindale / A. Corma / J. F. Haw

SYNTHETIC METHODS
M. S. Whittingham
A. Reller / J. A. Zubieta

CHALCOGENIDES AND PNICTIDES
F. DiSalvo
P. K. Dorhout / S. M. Kauzlarich / W. Schnick

INTERMETALLICS
J. Etourneau
B. Malaman / K. J. Range

MAGNETORESISTANCE
R. Cava
J. P. Attfield / P. G. Radaelli / M. A. Subramanian

OXIDES AND FLUORIDES
G. Ferey
A. W. Sleight / A. Tressaud

IONIC TRANSPORT
D. Murphy
H. J. M. Bouwmeester / R. Brec / J. M. Tarascon

ELECTRONIC PROPERTIES
J. Rouxel
P. P. Edwards / A. Simon

STAPHYLOCOCCAL DISEASES

PROCTOR ACADEMY
ANDOVER, NH
JULY 27 - AUGUST 1, 1997

Steven J. Projan, *Chair*
Keith G. H. Dyke, *Vice Chair*

GENOMICS
J. Iandolo
G. Stewart / K. Shaw / S. Shimer

CELL TARGETS/ RESISTANCE TO CELL WALL ACTIVE ANTIBIOTICS
B. Wilkinson
A. Tomasz / H. Labischinski / M. Pucci

CLINICAL AND MOLECULAR ASPECTS OF STAPHYLOCOCCAL PATHOGENS
S. Gatterman
J. Etienne / F. Vandenesch / A. Bayer

ANTIBIOTICS/RESISTANCE
N. Frimolt-Moller
B. Kreiswirth / D. Hooper / R. Skurray

SURFACE PROTEINS
M. Hook
O. Schneewind / F. Gok / G. Peters

TOXINS - STRUCTURE AND FUNCTION
T. J. Foster
P. Schlievert / S. Bakhdi

MLS ANTIBIOTICS
G. Archer
J. Sutcliffe / N. El Sohl

SIX POSTER PRESENTERS SELECTED BY THE VICE CHAIR TO GIVE ORAL PRESENTATIONS OF THEIR POSTERS
K. Dyke

GENE REGULATION & EXPRESSION
R. Novick
S. Arvidson / N. Freitag / W. Hillen

STATISTICS IN CHEMISTRY & CHEMICAL ENGINEERING

SALVE REGINA UNIVERSITY
NEWPORT, RI
JULY 6 - 11, 1997

Lyle H. Ungar, *Chair*
University of Pennsylvania
(215)898-7449

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SUPRAMOLECULES AND ASSEMBLIES, CHEMISTRY OF

SALVE REGINA UNIVERSITY
NEWPORT, RI
AUGUST 10 - 15, 1997

Laurence S. Romsted, *Chair*
Thomas Penner & Eric Kaler, *Co-Vice Chairs*

OPENING SESSION
A. Yatsimirsky / S. Granick
F. Menger / J. Israelachvili

NANOSIZED MATERIALS
T. Penner
M.-P. Pileni / J. Fendler / M. José-Yacamán

SHORT TALKS/ECLECTIC MIX
R. Mackay
S. Bhattacharya / G. Mancini / S. J. Bachofer / J. Perlstein / A. Kabalnov

STRUCTURE AND DYNAMICS
E. Baler
D. O'Brien / J. Holzwarth

CLEAN CHEMISTRY IN STRUCTURED SYSTEMS
T. C. Williamson
J. DeSimone / J. Warner

PHOTOCHEMISTRY IN ORGANIZED SYSTEMS
R. Weiss
M. Grätzel / D. Whitten / V. Ramamurthy

CHEMISTRY IN AGGREGATES
L. McGown / G. Savelli / F. Nome

MACROMOLECULAR ARCHITECTURE
K. Uhrich
J. M. J. Fréchet / T. W. Bell / J. S. Moore

BIOMOLECULAR ASSEMBLIES
N. Kimizuka
J. B. F. N. Engberts / D. Tirrell

THIN FILM AND CRYSTAL GROWTH MECHANISMS

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JULY 6 - 11, 1997

John Venables & Iwan Alexander, *Co-Chairs*
Leo Schowalter & Jim DeYoreo, *Co-Vice Chairs*

THERMODYNAMICS AND KINETICS OF THIN FILM AND CRYSTAL GROWTH
C. Handwerker
K. Jackson / G. Zinsmeister

STEP KINETICS IN CRYSTAL GROWTH
A. Chernov
A. Pavlovska / R. Tromp / P. Vekilov / E. Williams

STRAINED LAYER AND HIGH MISFIT EPITAXY
P. Voorhees
T. Kuech / D. Wolf

SURFACE PROCESSES IN THIN FILM AND CRYSTAL GROWTH
G. S. Bales / A. Zangwill
F. Besenbacher / H. Brune / B. Swarzentruber / M. Siegert

GROWTH ISSUES FOR DEVICE MANUFACTURE
M. Diguiseppe / J. M. Gibson
F. Capasso / R. Davis / J. Tersoff / S. Parkin / W. Schwarzacher

HOT TOPIC SESSIONS
K. Kern / K. Ploog

THREE-DIMENSIONAL ELECTRON MICROSCOPY OF MACROMOLECULES

NEW ENGLAND COLLEGE
HENNIKER, NH
JUNE 22 - 27, 1997

Ron Milligan, *Chair*
Bridget Carragher, *Vice Chair*

IDENTIFYING TOMORROW'S TECHNOLOGY FOR TODAY'S PROBLEMS
R. Milligan
D. DeRosier / R. Henderson

ELECTRON CRYSTALLOGRAPHY
W. Kuehlbrandt
H. Li / D. Stokes / V. Unger

ADVANCES IN TECHNOLOGY: HARDWARE
L. Melanson
A. Brisson / K. Downing / Y. Fujiyoshi / R. Grimm / R. Schroeder / J. Trinick

HELICAL STRUCTURES
E. Egelman
L. Amos / R. Beroukhim / M. Whittaker

LATE BREAKING RESULTS: TECHNICAL
S. Wolf

SELECTED POSTERS

SINGLE PARTICLES
H. Saibil
B. Boettcher / A. Roseman / H. Stark

ADVANCES IN TECHNOLOGY: SOFTWARE
A. Koster
B. Carragher / J. Frank / A. Koster / G. Oostergetel / K. Taylor

ALTERNATIVE TECHNOLOGIES AND VERY LARGE STRUCTURES
D. Agard
D. Agard / R. McIntosh / Z. Shao

LATE BREAKING RESULTS: BIOLOGICAL
E. Gogol

SELECTED POSTERS

COMPUTER WORKSHOP
R. Smith / B. Trus

VIRUSES AND CELLS

TILTON SCHOOL
TILTON, NH
JUNE 15 - 20, 1997

Dan Ganem & Peter Palese, *Co-Chairs*

VIRUS ENTRY
J. Young / S. Ross / P. Spear / H. Kasamatsu / R. Lamb / V. Racaniello

VIRAL PATHOGENESIS
E. Berger / L. Enquist / E. Mocarski / G. McFadden / D. Griffin

GENE EXPRESSION
T. Shenk / M. Green / R. Sandri-Goldin / R. Andino / B. Roizman .

VIRUS REPLICATION
M. Challberg / K. Kirkegaard / K. Berns / P. Ahlquist / G. Wertz / S. Sawicki / J. Taylor

VIRUSES, SIGNAL TRANSDUCTION AND ONCOGENESIS
D. Nuss / R. Schneider / E. Kieff / S. Goff

CYTOKINES AND ANTIVIRAL IMMUNITY
R. Silverman / F. Chisari / C. Biron / S. Huber

VIRUS ASSEMBLY AND STRUCTURE
E. Hunter / R. Garcea / F. Homa / J. Hogle

WOUND REPAIR

COLBY-SAWYER COLLEGE
NEW LONDON, NH
JUNE 8 - 13, 1997

Joe Leibovich, *Chair*
Fred Grinnell, *Vice Chair*

INFLAMMATION
S. Kunkel
J. Curnutte / T. Billiar./ M. Furie / T. Issekutz

CELL-MATRIX INTERACTIONS IN HEMOSTASIS
J. Schwartzbauer
R. Clark / L. Parise / B. Haimovich / D. Phillips

GROWTH FACTORS AND THEIR RECEPTORS
G. Grotendorst
M. Klagsbrun / S. Werner / J. Davidson / D. Danilenko

CONTROL OF ANGIOGENESIS
P. Polverini
N. Ferrara / S. J. Leibovich / D. Cheresh / L. Iruela-Arispe / D. Bielenberg

CONTROL OF MATRIX FIBROSIS
A. Roberts
J. McDonald / W. Border / N. Khalil

EPITHELIAL-MESENCHYMAL/ECM INTERACTIONS
M. Bernfield
B. Toole / J. Uitto / J. M. Sorrell / R. Gallo

EPIDERMAL RESPONSES TO INJURY
F. Grinnell
P. Coulombe / D. Donaldson / P. Jensen

STEM CELLS & FETAL WOUND HEALING
M. Ferguson
P. Martin / N. LeDouarin / N. Fausto / A. Caplan

ENDOTOXIN/LPS- BINDING PROTEINS & SIGNALLING
S. Wright
C. Raetz / B. Munford / D. Golenbock / R. Kolesnick

X-RAY PHYSICS

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
AUGUST 3 - 8, 1997

Massimo Altarelli, *Chair*
Sunil K. Sinha, *Vice Chair*

USE OF COHERENCE IN SCATTERING AND IMAGING
G. Grüdel / C. Jacobsen / A. Snigirev

X-RAY HOLOGRAPHY; X-RAY LASERS
G. Faigel / T. Gog / J. Schneider

X-RAY INVESTIGATIONS OF MAGNETIC SYSTEMS
R. J. Birgeneau / M. J. Cooper / J. Hill

X-RAY INVESTIGATIONS OF ELECTRONIC STATES
J. C. Campuzano / M. Krisch / J. Nordgren / G. A. Sawatzky

VIBRATIONAL EXCITATIONS
G. Ruocco / W. Sturham

LIQUIDS
B. Ocko

HELIUM SOLIDS
R. O. Simmons

ZEOLITIC AND LAYERED MATERIALS

PLYMOUTH STATE COLLEGE
PLYMOUTH, NH
JUNE 15 - 20, 1997

Charles T. Kresge, *Chair*
Prabir K. Dutta, *Vice Chair*

ZEOLITE NUCLEATION AND CRYSTALLIZATION
F. DiRenzo / W. Klemperer / L. Iton

LAYERED MATERIALS
W. Jones / K. Kuroda / L. Nazar

EMERGING APPLICATIONS
T. Bein / J. Caro / Y. Nozue

COMPUTATION/ MODELING
J. Sauer / A. Hess

EMERGING APPLICATIONS II
K. Balkus / H. Frei

CHARACTERIZATION
J. Schlenker / J. Haw / A. Cheetham

NEW MATERIALS
G. Ozin / R. Haushalter / S. Suib / O. Yaghi

NEW DIRECTIONS
K. Mueller / S. Lee / M. Tsapatsis

SELECTED SHORT TALKS FROM POSTER SESSION

SPECIAL TOPIC
A. Sacco

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☐ Research Director ☐ Program Manager ☐ Other

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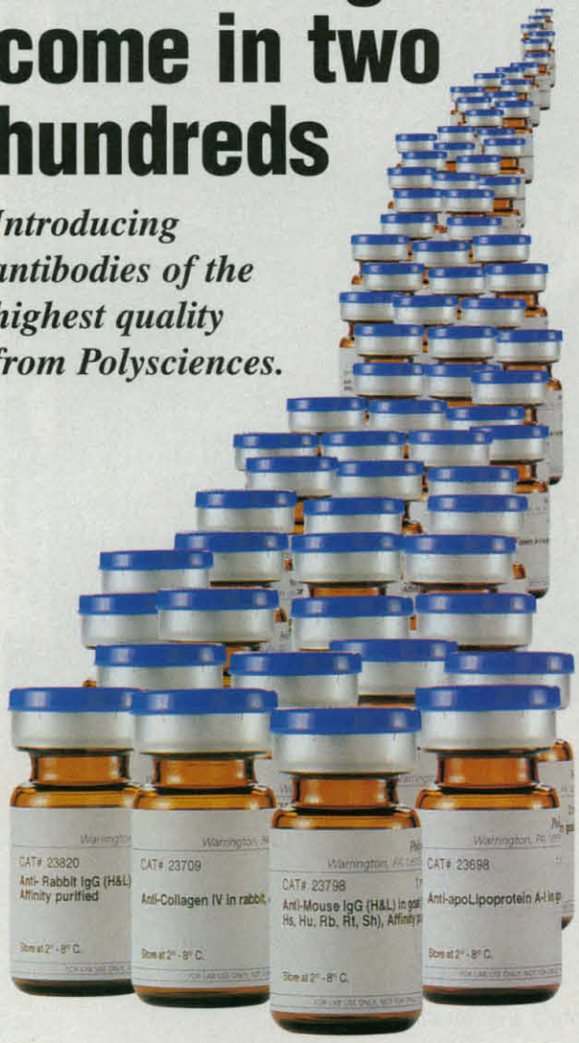

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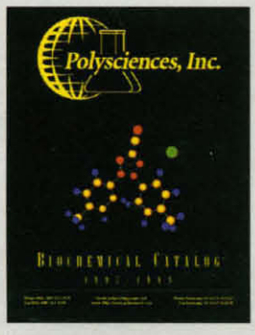

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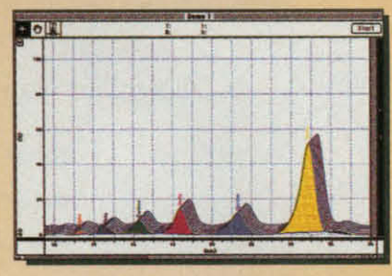

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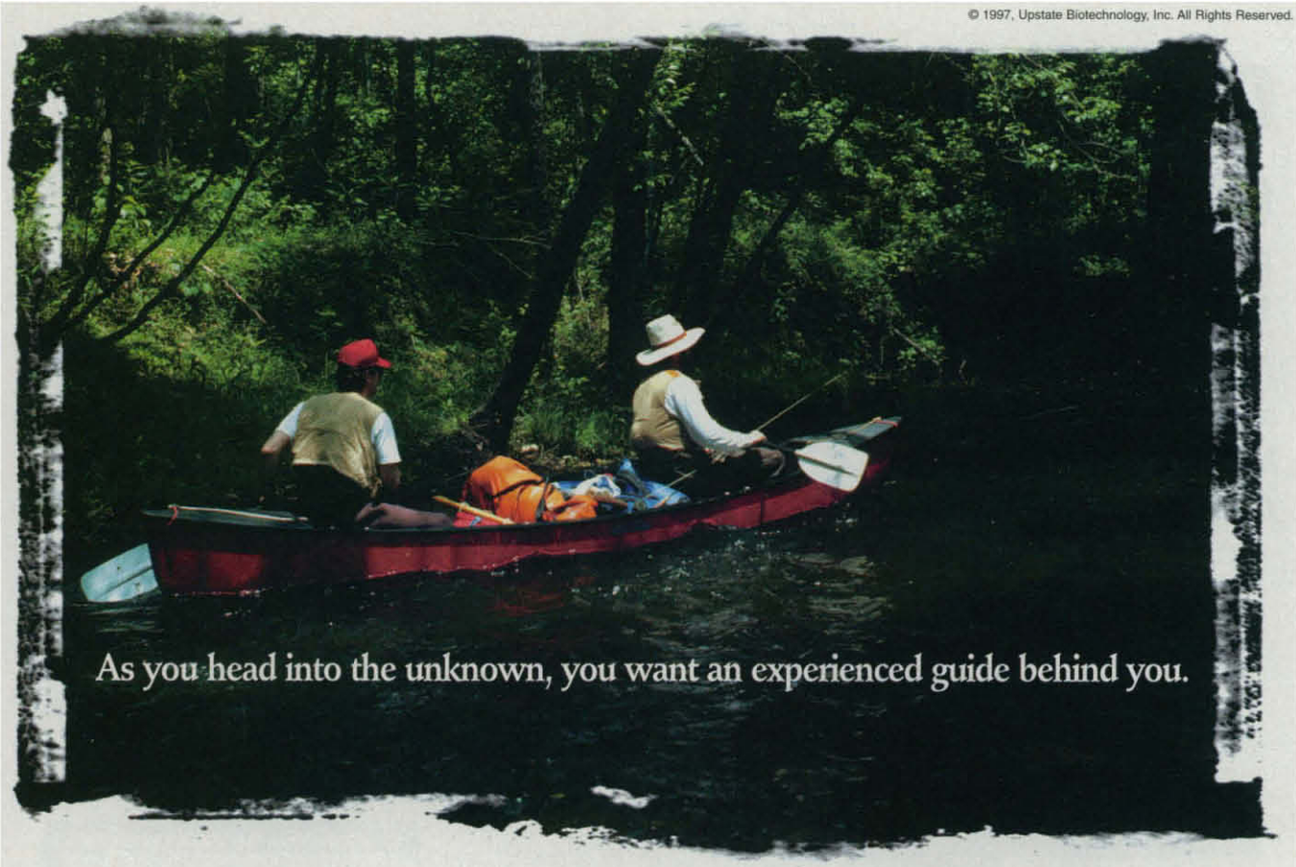

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PRODUCTS & MATERIALS

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DNA Extraction from Gels

The DNA-*Pure* Gel Extraction Kit provides a 12-minute protocol to elute DNA from any agarose gel. The kit works with either TAE- or TBE-containing gels and does not require the use of expensive LMP agarose. DNA fragments from 0.2 to 23 kb in length have been isolated using this kit, with recoveries between 75 to 90%. The resulting DNA is intact and suitable for use in restriction enzyme digests, ligations, and labeling. **CPG. For information call 201-305-8181 or circle 145 on the reader service card.**

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Image Analysis Software

Image-Pro Plus Version 3.0 for Windows and Windows 95/NT is an image analysis software package for researchers who use microscopes and other devices. It includes a full range of counting, sizing, statistical, and image enhancement tools. The new version provides full Internet support for electronic mail, Internet Relay Chat, and more. With the click of a mouse, users can compose messages and send them with images. A Report Generator allows users to create custom-formatted reports with images, data, and text. Reports can be exported to other applications and to spreadsheet programs such as Microsoft Excel. An updated database provides all the functions needed to acquire, organize, retrieve, and send images. The database allows users to print full-size images or a gallery of images. **Media Cybernetics. For information call 301-495-3305 or circle 146 on the reader service card.**

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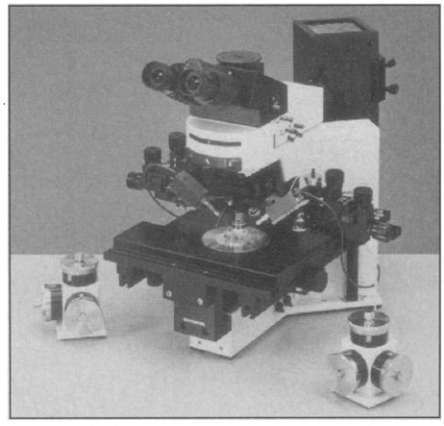

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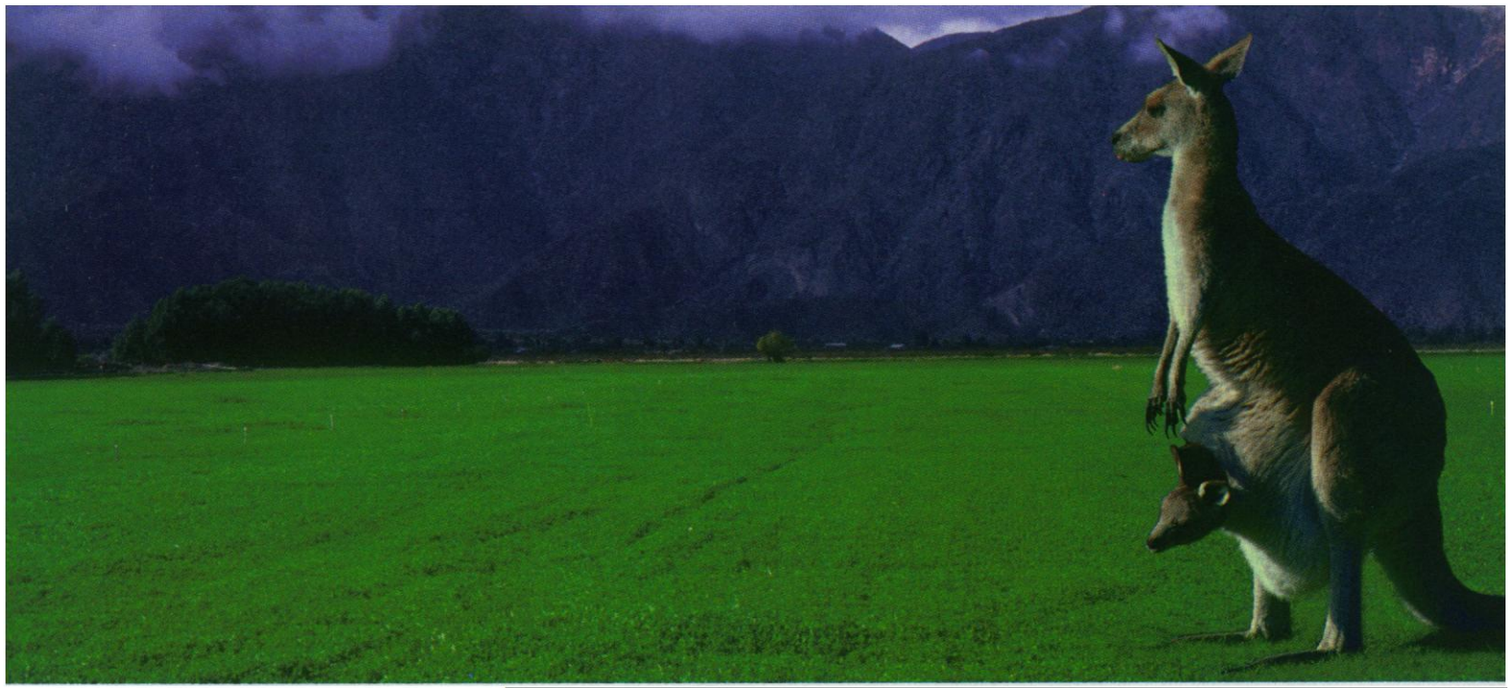

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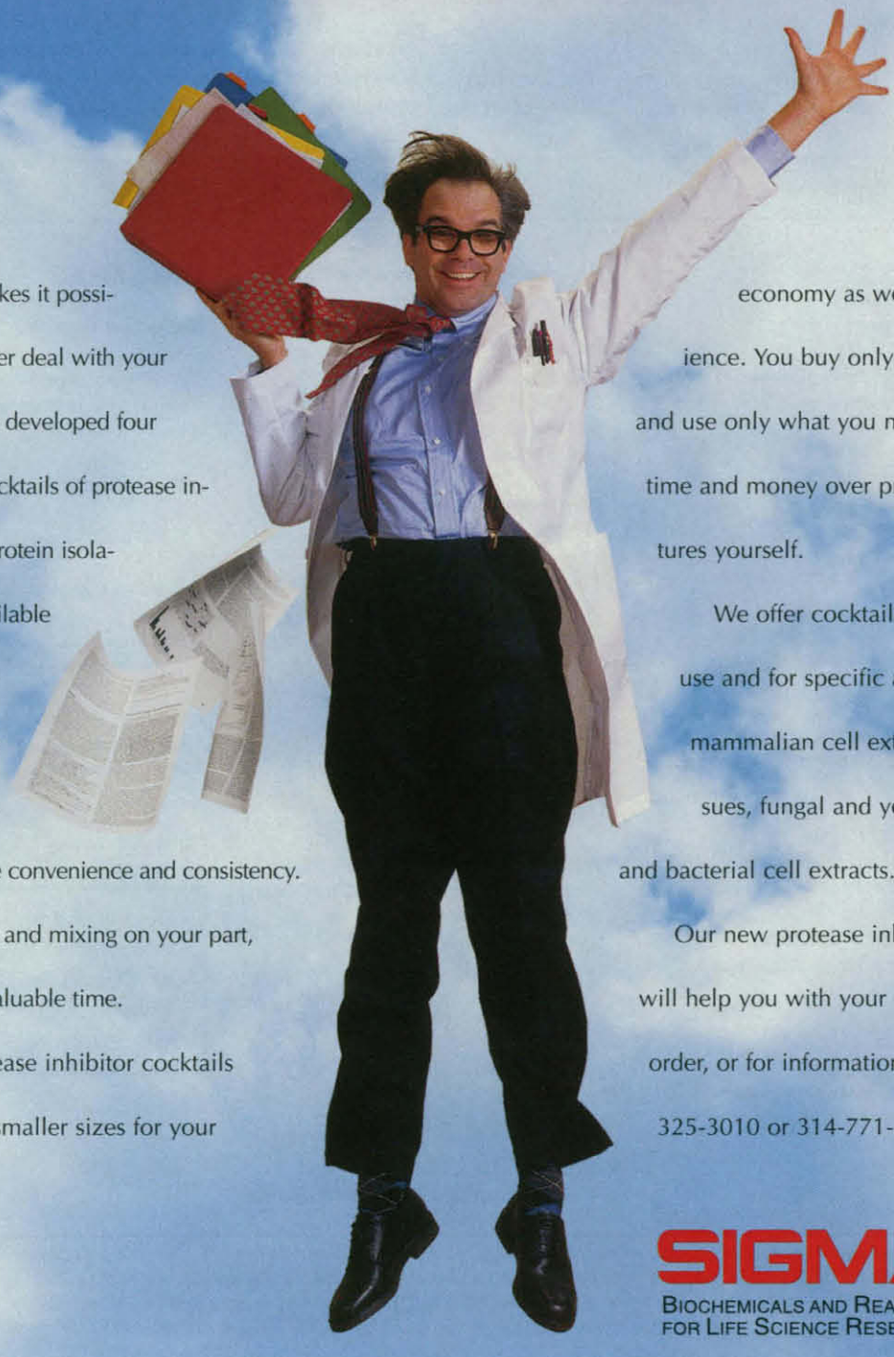

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Toward A Strategic View of Science and Technology

22nd Annual AAAS Colloquium on Science and Technology Policy

April 23 - 25, 1997 · The Omni Shoreham Hotel

The AAAS Science & Technology Policy Colloquium provides a forum in which federal and industrial policymakers and members of the scientific, engineering, and academic communities can participate in an open discussion of issues relating to science and technology policy.

The Colloquium occurs after the release of the President's budget but before final congressional action, thus allowing for the timely exchange of information about the budget and the consequences of various policy issues involving science and technology.

WHO SHOULD ATTEND: Scientists, administrators, industrial R&D managers, policymakers, academicians, association officials, federal grant recipients, students, and others with an interest in science and technology policy.

PROGRAM OVERVIEW

Wednesday, April 23
(registration opens 12 noon; program starts at 2 p.m.)

Keynote: John H. Gibbons, *Assistant to the President for Science and Technology,* and *Director, OSTP*

Budgetary and Policy Context for R&D in 1998
(Plenary Symposium)

- Entitlements and the Long-Term Economic Crisis
- National Politics and the Public's Expectations of the Political System (Sen. Bill Frist*)
- Overview of Federal Budget Proposals for R&D in FY 1998 (Stephen D. Nelson and Kei Koizumi, *AAAS*)
- U.S. Leadership in Science: Can It Survive Downsizing? (Kenneth M. Brown, *American Enterprise Institute)*

The William D. Carey Lecture
(public invited): Philip Hauge Abelson, *Science Advisor, AAAS*

Thursday, April 24

Re-Examining National Needs for Science and Technology
(Plenary Symposium)

- A Future-Oriented Perspective for U.S. Science and Technology
- Science and Technology for the Future: Industry's Perspectives
- New Models of Policy Planning for Science and Technology (Michael Crow*)
- Replacing the Myths of U.S. Science and Technology (Daniel Sarewitz)
- Steps Toward a New Ecology for Science and Technology (Radford Byerly, Jr.)

Luncheon Address: Daniel S. Goldin, *Administrator, NASA*

Concurrent Symposia

- Emerging Patterns in Cross-Sector Partnerships (Deborah Wince-Smith and C. Judson King, organizers)
- Science, Technology and Intellectual Property: Challenges for the 21st Century (Mark Frankel and Alex Fowler, organizers)
- The Future of American Research Universities (Irwin Feller, organizer)

Major R&D Agency Budgets for FY 1998
(Concurrent small group sessions)

4:30 DOD · NIH · NSF
5:15 DOE · NASA · DOC (NIST, NOAA)

Friday, April 25

Breakfast Address: To be announced

The Symbiosis of Science and Engineering in Policies for Innovation
(Plenary Symposium)

- In Academic Settings
- In Industry
- In Governmental Activities
- In State Economic Development Activities (Richard Bendis, *KTEC)*

Luncheon Address: Rep. James Sensenbrenner, Jr.*, *(Chairman, House Science Committee)*

*Invited speaker

Details and updated program information may be obtained by visiting the Colloquium Website, http:// www.aaas.org/spp/dspp/rd/colloqu.htm

Budget discussions will be supplemented by *AAAS Report XXII: Research and Development, FY 1998,* a comprehensive analysis of the proposals for the FY 1998 budget, prepared by AAAS and a group of its affiliated scientific, engineering, and higher education associations. Registrants will receive this report at the Colloquium and the *1998 AAAS Science and Technology Policy Yearbook* (containing most of the Colloquium addresses, plus other significant items) and *Congressional Action on R&D in the FY 1998 Budget* later in the year.

REGISTER NOW by completing and returning the enclosed form. For further information, contact: Directorate for Science and Policy Programs, AAAS, 1200 New York Avenue, NW, Washington, DC 20005. Fax: (202) 289-4950. E-mail: syoung@aaas.org. Phone: (202) 326-6600 (for information). To register phone (202) 326-7075 (automated service). Registration at the Colloquium Website (http://www.aaas.org/spp/dspp/rd/colloqu.htm) is also available, using your credit card number.

AAAS Colloquium on Science & Technology Policy

April 23-25, 1997 The Omni Shoreham Hotel, Washington, DC

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P.O. Box 630285, Baltimore, MD 21263.

TO REGISTER BY FAX, fax this registration to 202•289•4950.

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Deadline for advance registration is April 8, 1997[1]

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Regular	$260	$234
Nonprofit[2]	$200	$180
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Lunch (Fri. 25 April)	$38

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[1] After April 8, register in person at the Omni Shoreham beginning at 12:00 p.m., April 23. On-site registration fees are $15 higher than advance registration fees.

[2] Nonprofit rates apply only to employees of government, academic, and nonprofit organizations. Student rates apply only to full-time undergraduate and graduate students and retirees.

[3] Refund requests for registration fees and meal tickets must be submitted in writing (to the address or fax number above) by April 16, 1997, and will be processed after the Colloquium: no refunds will be made for cancellations received after April 16.

Publications: All registrants receive *AAAS Report XXII: Research & Development, FY 1998* at the Colloquium and the 1998 *AAAS Science and Technology Policy Yearbook* and *Congressional Action on R&D in the FY 1998 Budget* later in the year.

✂ -

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Full Page Recruitment Advertisement Directory

Careers For Women In Biotechnology and Pharmaceuticals

The following organizations have placed full page recruitment advertisements in the special advertising supplement in this issue of *Science* beginning on page 1176.

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Careers For Women In Biotechnology and Pharmaceuticals

by John Timpane

Is the test tube half empty or half full? Depending on how you look at it, the employment situation for women in science could appear either very heartening or very frustrating. The optimist might say that, according to National Science Foundation statistics, the numbers of women holding degrees and jobs in science is increasing every year, and has been since 1950; the pessimist might reply that they represent only 22 percent of the science labor force as a whole, compared with about half the total labor force.

More women are earning their doctorates, says the optimist. But they're less likely to find employment in their specialty, says the pessimist. The best get promoted, insists the optimist. Well, says the pessimist, where are the women in upper management in today's larger biopharmaceutical companies?

We won't presume to settle the argument. Instead, we'll speak to female scientists at Nanogen, Genetronics, Shaman Pharmaceuticals, Advanced Tissue Sciences, and Pfizer Inc. All of them are in love with the science life. Four are running the companies they work for, and one is in a crucial position in process research and development. They offer frank yet encouraging insights for women who want a career in science—frank because the challenges are different, encouraging because the opportunities are many. Their message: we need more women; the obstacles are worth facing; it's lovely at the top.

"Good Luck, Good Contacts, Good Mentors": Tina Nova of Nanogen

"Believe me, there have been times when you would have thought I wasn't in the room. It burned me up when I was younger, but it doesn't any more." Tina Nova, president and COO of Nanogen, is discussing how, "through good luck, good contacts, and good mentors," she came to be a driving force in a field with fewer women than men.

After a PhD in biochemistry at the University of California at Riverside, Nova did a postdoc at the New York University Medical Center and followed one of her technologies to Hybritech.

Two years after Eli Lilly's purchase of Hybritech, Nova took an offer to help start Ligand Pharmaceuticals, where she set up the high-throughput receptor-based assay that Ligand still uses for its screening system. After helping start Prizm Pharmaceuticals, Nova came to Nanogen three years ago—attracted "by the sheer opportunity to do it all again." The big excitement at Nanogen is the development of a medical diagnostic product based on electronic DNA chip technology.

Tina Nova

Business is something Nova has learned by doing—especially the fine art of fund-raising. She has had two advantages: great mentors and an uncommon flair for communication. Among her mentors, Nova names Andrew

John Timpane, PhD, writes frequently on the biotechnology and pharmaceutical industries.

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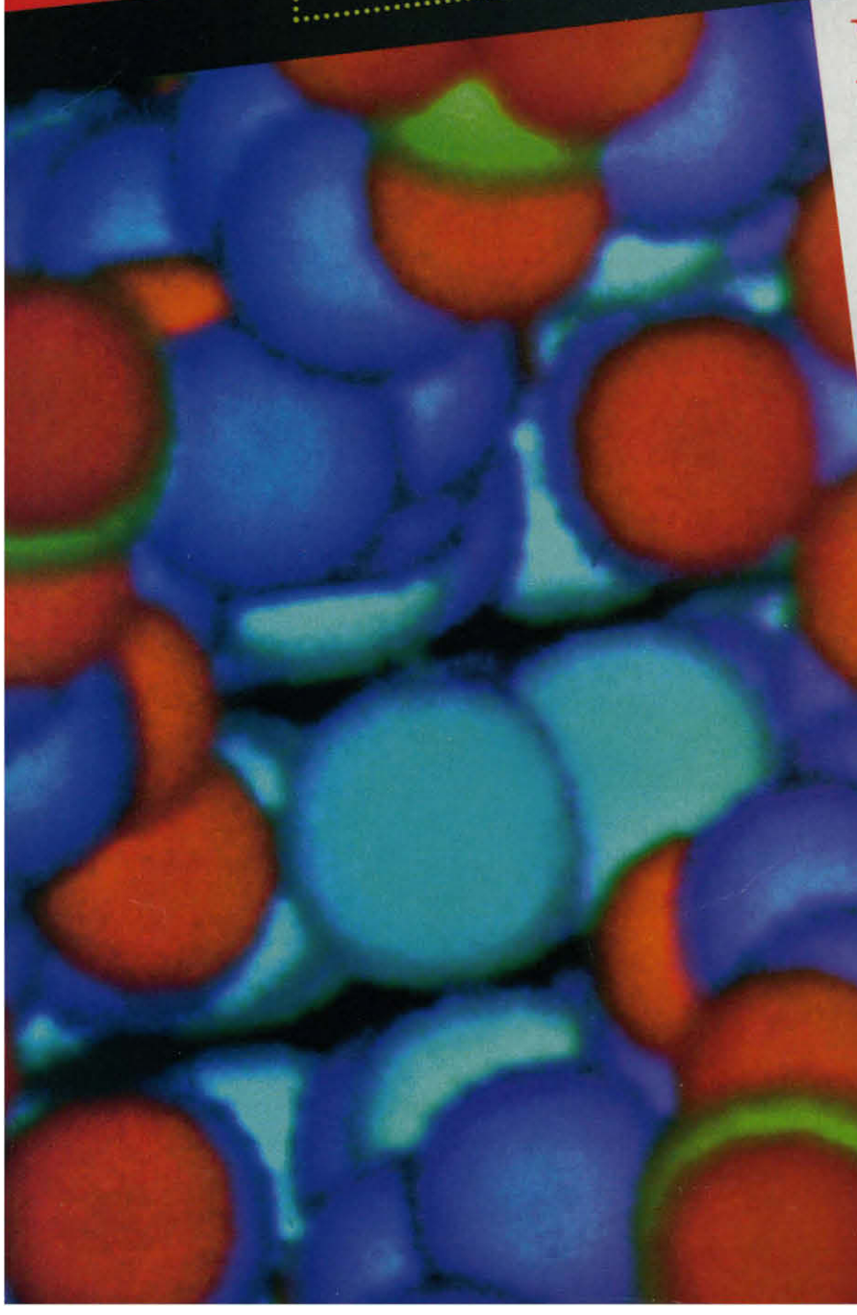

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We are seeking multiple individuals with proven expertise in cell biology, cellular biochemistry, receptor biology, signal transduction and gene targeting technologies for our expanded program in functional genomics. The applicants should have broad expertise in various aspects of mammalian cell biology and the use of molecular and cellular biology techniques to explore gene functions. Successful candidates also will perform research to develop cell-based technologies for screening new targets derived from genomics research, and develop methods for identification and functional characterization of secreted proteins.

Ph.D. for cDNA Library Production

For our expanding program in cDNA, genomic DNA library construction and high density screening, we seek a qualified candidate with demonstrated research experience in gene identification, isolation and analysis. Expertise in subtractive library construction, expression cloning, automated screening and vector development is desirable.

Ph.D. for ES Cell Gene Targeting

We are seeking a highly motivated individual with expertise in gene targeting in embryonic stem cells. This individual will join a team of scientists using genetically engineered mice to determine the function/disease roles of genes and to develop novel animal pharmacology models. The applicant will be responsible for setting up a laboratory for conducting whole animal and tissue-specific gene knock-out/in experiments and should have a proven track record of designing homologous recombination vectors and germline transmission of targeted loci. Experience with conditional transgenesis methods such as Cre/lox, tetracycline regulatory systems, etc., is highly desirable. An ability to work in multiple disease research fields and network with other members of our cross-functional genomics team will be essential.

BS/MS Micromanipulation Specialist

We are seeking a highly motivated individual with expertise in zygote and embryonic stem cell micromanipulation. This individual will join a team of scientists using genetically engineered mice to determine the function/disease roles of genes and to develop novel animal pharmacology models. The candidate should be skilled in zygote microinjection and ES cell injection into blastocysts. Experience with techniques such as embryo transplantation, ES cell-embryo aggregation, ES cell line derivation/differentiation and molecular biology procedures for identifying transgenic animals, is desirable.

Postdoctoral Scientists

We are looking for creative individuals in a variety of areas to explore the functional and biological roles of gene, gene products and biochemical pathways associated with human disease. A Ph.D. in molecular biology/cell biology/biochemistry is required. Positions are available in areas including DNA technology, cell biology, transcriptional regulation, gene transfer/vector technologies, receptor biology, and bioinformatics. Lilly Postdoctoral fellows gain sound practical experience and focused training that significantly expands their scientific knowledge and abilities in drug discovery.

Ph.D. and BS/MS for Therapeutic Protein Optimization

We are seeking multiple individuals with proven expertise in protein expression and purification and analytical and biophysical characterization of proteins. These individuals will work as part of a multidisciplinary team with the goal of optimization of proteins for therapeutic applications using a variety of techniques, including structure-function studies focused on improved biological activity, protein stability and suitability for delivery devices. Individuals in this group must be able to integrate projects as they move from a discovery setting towards product development.

Specifically, applicants should have:

- Proven expertise in the expression of foreign proteins in various host systems - Experience in mammalian cell expression strongly preferred
- Or proven expertise in the purification and analytical characterization of recombinant proteins
- Or significant experience with theoretical and experimental biophysical characterization of proteins
- Or knowledge of protein product formulation development

Ph.D applicants should have a minimum of two years post-graduate experience or its equivalent. We provide the salary, compensation and advancement opportunities you'd expect from an industry leader. For confidential consideration, please send your resume and cover letter indicating the position of interest to: **Eli Lilly and Company, Division of Research Technologies and Proteins, Corporate Recruitment, Lilly Corporate Center, Indianapolis, IN 46285.**

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Senyei, Bob Curry, Howard Birndorf, and Brook Byers. "They are great communicators who understand the business of doing science, and they are great teachers," she says. As for communications, she discovered a talent for translating science into terms nonscientists could grasp. "I was like a UN translator," she says, "explaining science to business people."

Working day to day at Nanogen, Nova doesn't feel that being female has been an issue. "But that's true, I think, of smaller companies," she says. "The important thing is getting the job done, not who does it." She loves being at a small company, especially the opportunity to stay "very much involved" in the discovery process. She meets constantly with Nanogen's top-level scientists, going over data, discussing experiments and strategy, planning next steps.

Why aren't there more women in top management positions at the larger companies? Perhaps there is more likely to be an old boys' club there, or perhaps it is simply harder for women to commit to the strenuous double and triple life of the woman/scientist/manager. "Some women have chosen not to go beyond a certain level because of the demands of the job," Nova says. "It's tougher to balance your life. And I'll admit that at times I haven't done it that well."

So women in science still face challenges men do not. Nova's peroration on those challenges would make a fine inspirational speech for women seeking jobs in science:

"Because it is tougher—we know that—and because the number of women is smaller, you have to be utterly qualified, have to be better, work harder, prove yourself over and over again. Beyond that, you have to show that your personal life isn't going to be an issue or get in the way. And you definitely need the advanced degree."

In terms of attitude, Nova advocates practical politics rather than confrontation: "No one woman will change society. Why try? It's much better to step back and see where you can be effective. You don't always have to be front and center. If you can change things from behind the scenes, what's the difference?"

She also counsels a thick skin and a willingness to endure the occasional insensitive or impolitic word or deed from male colleagues. "Men can say what they want to say in front of me, any way they want to say it. I'm comfortable with that, and that makes them comfortable," Nova says. "As long as it helps us all operate together, why make it an issue?"

"Everything You Do Will be a First": Lois Crandell of Genetronics

Lois Crandell, president and CEO of Genetronics, says she has no doubt that there are definite barriers to women at the top of the scientific company. "I've gone around rather than through them," she says. She had risen quickly in a Fortune 500 company and was being considered for promotion into the upper echelons. "I came up for review with a really good record," she says: "four promotions in four years, a $23 million P&L, performing at the top of my level. And they had nowhere for me to go. I left when I realized I'd hit the glass ceiling." She moved to a smaller high-tech company as executive vice president. From there, she became a partner in a venture capital company, and the next stop was a position in top management with Genetronics.

Lois Crandell

Crandell, whose technical background is mainly in electronics, picked up most of her scientific expertise on the job. When she came to Genetronics, she knew nothing about its star technologies, electroporation and genetic engineering. "Again, I had to pick it up as I went along," she says. Genetronics is developing a novel drug delivery system based on a platform technology of electroporation. Limited clinical studies are investigating this system in the treatment of cancer.

"I love it here," Crandell says. "I've watched it grow." Genetronics was eight years old when she joined in 1991. "Then we had just a handful of employees," she says. "But last year alone, we added 21 people. We're ensuring that the opportunities for women here are excellent. We have two women at the director level, and in overall management, the numbers of women and men are about equal. We look less at gender and more at ability."

She thinks that women and men alike should cultivate an interdisciplinary outlook. The chairman, founder, and chief scientific officer of Genetronics, Günter Hofmann, brought an interdisciplinary approach from the Max-Planck Institut to start the company in 1983. Biophysicists, MDs, and molecular and cell biologists are joining the mix to augment the company's core expertise in physics.

Crandell thinks there may be more opportunity for women in smaller companies, where despite the greater risk, there also are fewer established pathways for careers. "I still do believe," she says, "that women consistently have to exceed expectations. You really have to be better than good." A female scientist from MIT was hired at Genetronics and immediately began to do totally new work. Later, Hofmann said to her, "Do you realize that *everything* you do here will be a first?" Crandell says, "Dr. Hofmann was right. We expect scientists to do things never done before. The ability to come up with new ideas that translate into new products is vastly more important than gender."

What skills should the successful employee cultivate? "Creativity, innovation, the ability to put knowledge into action, and common sense," Crandell says. And she warns all scientists not to shirk communications courses: "I'd urge them to broaden more and make sure they have excellent communication skills." As women and men advance up the corporate ladder, they become more heavily involved in group management, team building, and communicating with decision-makers at the next level. Communication means not only being good with words, but also giving those words a form your fellow workers can use. "Scientists sometimes answer a question only within the very specific parameters of that question," Crandell says. "We understand the need to be precise and responsible, but we also need our scientists to communicate to us in ways we can move forward on.

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Central Nervous System

We are seeking a Senior Research Investigator experienced in the development and implementation of behavioral models of cognition. Candidates should have a Ph.D. in Behavioral Neurosciences and a minimum of 6-8 years of postdoctoral experience. Supervisory experience is preferred. **Reply to HDCNS573/SW.**

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These positions are located in our Wallingford, Connecticut research facility. If your skills and qualifications are aligned with our needs, please forward your resume with Dept. # to: Bristol-Myers Squibb Pharmaceutical Research Institute, P.O. Box 5101, 5 Research Parkway, Wallingford, CT 06492-7661. FAX: (203) 284-7762.

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Melissa Cooper, M.D.
Director, Cardiovascular Clinical Research

Laurie Smaldone, M.D.
Vice President, Medical Affairs

Pushpa Singh, Ph.D.
Director, Technical Registration Research

Biomolecular Screening
Microbial Molecular Biology

We are seeking candidates with an M.S. degree in a biological science and at least 2 years of research experience in molecular biology. Experience with all aspects of recombinant DNA technology and immunological techniques is essential; some familiarity with yeast genetics is preferred. The selected scientist will conduct research in the area of yeast molecular biology to help develop novel yeast based systems with application to drug discovery. **Reply to Dept. BMJG.**

Suzanne Moreland, Ph.D.
Associate Director, Project Planning and Management

Cardiovascular

We are seeking M.S./B.S. level scientists to work in our Cardiovascular Drug Discovery Department. Candidates should possess a Bachelor's degree or Master's degree in Biochemistry or Molecular Biology or relevant area and have a minimum of 6 years laboratory experience. Researchers will participate in the identification of molecular targets for cardiovascular drug discovery. Diverse skills including a wide range of science abilities including enzymology, tissue culture, molecular biology and protein expression systems are necessary along with willingness to work with radioactive materials and animals. Experience with protein purification and characterization, automated assay development and site-directed mutagenesis is a plus. Previous experience in a pharmaceutical company is preferred. **Reply to Dept. BMSS.**

These positions are located in our Princeton, New Jersey research facility. If your skills and qualifications are aligned with our needs, please forward your resume with Dept. #, to: Bristol-Myers Squibb Pharmaceutical Research Institute, Human Resources, P.O. Box 11279, Trenton, NJ 08620-0279. FAX: (609) 581-8841.

"Most studies suggest that women tend to be socialized at an earlier age than men are, and as a result they become better communicators, team players, and consensus builders," she says. "That could be one way women could be a true godsend for a company. If that's the case, I'd say use it for all it's worth."

Divergent Thinking: Lisa Conte of Shaman Pharmaceuticals

Lisa Conte was a PhD candidate at UC San Diego when she realized that, while she loved science, hands-on research did not suit her personal style. "Even in the labs, I tended to do all the grant writing and organizational work rather than the benchwork," she says. One day, she attended a presentation by a science company, and something clicked. "I thought it sounded wonderful," she says. "I thought to myself, 'I'll go to business school, work in venture capital.'"

Lisa Conte

That is close to the way things worked out. Conte completed her MS in physiology and pharmacology, took an MBA at Dartmouth Business School, and began a career culminating in her present position as president and CEO of Shaman Pharmaceuticals, Inc.

Divergent thinking has characterized Conte's career and life choices, down to the aims and methods of Shaman itself, where the watchword is ethnobotany. "Our drug discovery efforts leverage the traditional knowledge of how healers use plants as medicine in tropical areas," she says. Shaman currently has three products in the pipeline, including two lead products in late stages of clinical development: provir, an oral agent for treatment of watery diarrhea; and another agent for treatment of genital herpes infections. A third product now in the clinic is a promising antifungal. "The bulk of our basic research," says Conte, "is in type II diabetes, where our ethnobiological approach provides great advantages."

As a woman doing science, Conte noticed she was "in a definite minority, often the only person in a given classroom or lab." But in practice, science emphasizes data, where there is no gender. Not so in business, where gender-based differences range from obvious to subtle. On the obvious side is the fact that, in biopharmaceuticals, investment banking, and venture capital alike, a woman cannot belong to an old boys' club. "You can't make contacts, get introductions, and make headway in anything like the same way as a networked male," says Conte, "and you simply have to accept that. There's a different chemistry to male-female business relations, not all of it negative by any means. It means you take a different pathway. You can even use that chemistry to your advantage, if you know how."

Women should not focus on gender at all, in her view, but rather on doing "the absolute best, most credible job possible." Learn the company culture, and choose the road less traveled. You'll have to: "Success isn't gender-specific, though at times failure can be, when people think and act in stereotypical ways. Don't wait for career paths to be laid out for you—figure out the environment and decide where you want to go. Get to the level at which people will look at your data."

In addition to her outrider of a company, Conte is married with two children, ages four and one. "I wouldn't say we have a classical life right now; we have nothing like a normal schedule," she says. "They stay up late so I can see them, and I spend time with them every night. They travel with me quite a bit. They're wonderful, comfortable in lots of different settings. So far, it's working out all right, but school will be a big challenge. I'm amazed anybody can do this."

Conte is willing to spend the time and money to find helpers with whom she and her family are comfortable. "No one should begrudge a single dollar spent in that direction," she says. She has learned that it's all right to have other people clean your house and do your shopping, while you, in the meantime, are doing the most valuable thing for your company and family. "I like grocery stores," she says, "but it's more important for me to spend the best possible time with my kids."

"I Hate My Life; I've Never Been Happier": Gail Naughton of Advanced Tissue Sciences

"The two things I knew as fact when I started grad school was that I'd never work in industry and I'd never have children," says Gail Naughton, COO and president of Advanced Tissue Sciences. Then she went ahead and did both.

Gender, she says, has meant setting priorities regarding family, education, and work. Any woman scientist who wants marriage and children faces difficulties utterly different from those facing men. A major issue is planning children around your career. Industrial science jobs require not only showing up at the office but also traveling to scientific and professional meetings. "If you know you're going to have a hugely important presentation in seven months, you probably don't want to be seven months pregnant," Naughton says. Even given the perfect pregnancy, getting back into the job is hard, as is balancing work and home time: "How do you keep from missing out on the constant changes and advances in your field and in your company—AND at the same time fulfill your role as a mother?"

After hearing all that, it's amazing to learn that Naughton has three children, ages fifteen, twelve, and seven—"the first two planned, the last a bit of a surprise." The age spread means she has to go to three different PTA meetings: "I can honestly say, 'I hate my life; I've never been happier.'" In her spare time, Naughton serves on the local chapter of Women in Science, as well as the advisory boards at a number of universities.

Gail Naughton

In business, degrees of bias vary from company to company, culture to culture, even department to department. But that, too, is changing. At the smaller biotech company, the atmosphere is perforce egalitarian. "We have extraordinarily talented women applying here," Naughton says. "They're saying, 'We want to work at a place where there is no glass

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RESEARCH AUTOMATION ENGINEER

This position will provide support and training for automated laboratory systems, and collaborate with others in the development, modification and interfacing of new laboratory automation. The requirements for this position include a Bachelor's degree in Engineering, Life Sciences, or related field and typically 1-3 years of job experience in the troubleshooting, programming and personal computer interfacing of electromechanical systems. Other requirements include a basic knowledge of electronics, computer programming and electro-mechanical device operations to support pharmaceutical discovery efforts. Experience in PC programming (C, Pascal, Basic, or Fortran) for the purposes of instrument control and interfacing, and knowledge of basic electronics required. Candidates should have good time management skills, and the ability to plan and execute moderate size projects with minimal supervision. Candidates should also have the ability to work in a team environment and interact with people from varied disciplines. Familiarity with Macintosh and PC/Windows environments required as well. Preferred qualifications for this position include 5 years of experience supporting automation in a BioPharmaceutical research environment and an advanced degree in Engineering, Science or a related field of Technology, or the equivalent combination of education and experience. (Job Code: BPSC 10174)

INFORMATION CONSULTANT

This position acts as an information consultant who networks with internal Amgen, Boulder clients to provide access and training on appropriate information resources and consults with clients on their needs. The applicant will typically have a Bachelor's degree in Chemistry or related field, with a Master's in Library Science preferred, and 6-9 years of technical experience in a library setting including on-line searching experience. Experience should include the following: 3 or more years' searching chemical and biomedical databases; 3+ years' computing experience in Mac, Windows, or UNIX environments; and 2+ years' with presentations, demonstrations, or teaching, and two years' experience searching the Internet. Applicant must have the ability and confidence to search STN databases (including substructure, reaction, and market searching) in support of basic research and the licensing and patenting of new molecular entities. Must be able to work and make decisions independently, as well as perform effectively on corporate strategic teams. (Job Code: BPSC 4567)

SYSTEMS ANALYST

This position will provide process, systems analysis, technical support and training in support of small molecule chemistry, including sample banking and combinatorial chemistry. Responsibilities will include supplying systems analysis and project management methodologies to ensure that automation/information systems and procedures meet user requirements. The requirements for this position include a Bachelor's degree in Chemistry, Biology, Computer Science or a related field of engineering or technology, with a Master's preferred, and typically 5+ years of systems analysis experience, preferably in a biopharmaceutical research environment. The successful applicant will have experience in the use, integration and implementation of chemistry research applications marketed by MDL, Tripos and Oxford Molecular as well as custom applications of tools such as Excel and MS Access. Applicant must have good written, verbal, interpersonal and organizational skills, and the ability/desire to work in a strong team-based environment. Experience in systems analysis related to a combinatorial/synthetic laboratory/compound archival environment preferred. (Job Code: BPSC 10143)

ASSOCIATE MANAGER/MANAGER INFORMATION SERVICES

This position will be responsible for managing the Library and Associated Information Services for Amgen, Colorado. Responsibilities will include: determining users' needs, making recommendations, and implementing information delivery mechanisms and programs; maintaining and continuing development of reference and circulating book collections; performing information searches for clients; managing a document delivery service; maintaining a search update service program; and serving on research project teams or special research focus teams to provide strategic and/or patent information related to product development or technology. The requirements include a Bachelor's degree in Chemistry, Biology, Library and/or Information Management, or related field (with strong emphasis in chemistry/biology preferred, and typically 5 years' experience which includes searching chemical and biomedical databases including substructure and reaction searching, and management experience. The ideal candidate will have 3+ years' working with UNIX, Windows and/or Mac OS environments, excellent time management skills, the ability to work in a diverse cross-functional team environment, and good written and verbal communication skills. Preferred qualifications include a Master's degree in Chemistry, Biology, Library and/or Information Management, and experience providing information support for the licensing and patenting of new molecular entities. (Job Code: BPSC 7945)

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ceiling.' I ask, 'Why leave your job?,' and they say, 'I'm looking for a place where I can advance based on quality, merit, and ability.'"

Naughton calls 1996 "the most exciting time" in the history of Advanced Tissue Sciences. In 1996 the company received unanimous FDA approval of its first tissue-engineered product, finished clinical trials and completed a premarket application for a skin product for the treatment of severe diabetic foot ulcers, and submitted an IDE to begin clinical studies on a novel tissue-engineered cartilage. "On the coffee cups at our year's-end get-together, we listed all our firsts," Naughton says, "and the cups were covered. People once spoke of tissue engineering as science fiction, and we've helped make it science fact."

Another fact of science is collaboration among disciplines. Tissue engineering brings together polymer scientists, to create the scaffolds for the cells; cell biologists, to optimize cell growth; biochemists, to study the matrix proteins the cells secrete and to quantify growth factors; and bioprocess engineers, to develop bioreactors to grow tissues and control processes. Naughton, herself a PhD in cell biology, says, "We also need people in process development and chemical engineering."

Women in particular need to find a mentor, someone who "will not be threatened by you and will give you credit for your work." Naughton lists three: Albert Gordon, her graduate advisor at NYU; Jean-Claude Bystryn, her postdoc advisor; and Advanced Tissue Sciences CEO Art Benvenuto, who "is always raising the bar little by little, motivating and challenging, an advocate for women in science in particular." All of them taught her to persevere in the face of skepticism: "I've been told we'd never be able to compete, but we kept at it, and now we're the leader in the field."

"Looking for the Spark": Sarah Kelly of Pfizer

If gender has been an obstacle to her career, says Sarah Kelly, manager of the process research group at Pfizer Inc, she hasn't noticed it. "I've been fortunate," she says. "I found a mentor and a supportive group of colleagues and other women scientists."

Among her many vital functions, she coordinates and runs Pfizer's early candidate review system for all of process R&D. She also is in charge of tracking promising compounds as they make their way from discovery through process development. Kelly must stay in contact with discovery chemistry, analytical chemistry, pharmaceutical R&D, and the preparation lab to see what's speeding up, what's slowing down, what's coming in to

Sarah Kelly (left) and Janice E. Sieser of Pfizer

replace unsuccessful compounds, and what's going on in toxicology. "We have to keep track of all the issues in this shifting portfolio," she says. Despite the size of the task, the collaboration and strategy are Kelly's favorite parts of the job. "It's something I constantly am learning from," she says. "Each compound presents a new set of issues, a new set of logistical challenges. It's a great thinking game."

Kelly is cheered by the increasing number of good women in her field. "Since I arrived in 1986," she says, "The number of women at central research has tripled." As a person who does a great deal of candidate interviewing, she affirms that more women are seeking science jobs: "Enrollments have increased, and so has the quality of the graduates."

For Kelly, a "hot fields" mentality may produce some poor career decisions. "I'd never go into something because I thought it was 'hot,'" she says. "Hot fields can go cold quickly. Choose a field you enjoy. After all, you'll be doing it for the next 30 years—you'd better be happy with it." Using synthetic organic chemistry, her group designs the most efficient process for preparing drug candidates. This background provides "excellent generalist training from which you can branch out into many different career paths."

What does she look for when interviewing candidates? "I look for some spark," she says, "and some indication that this person is a good learner. As we take them for the tour, I watch to see who is observing, who's thinking on their feet, asking questions."

Kelly also advises job-seekers to work on their presentation skills. "Be able to articulate your work in front of a group," she says. "It's important to be able to communicate what you've done if you really want to excel." In the frank give-and-take of collaboration, women need to become their own advocates.

And what should you do once you land that job? Kelly has three pieces of advice:

- **Find a mentor as soon as possible after you get the job.** That mentor should be someone you respect, and someone who can give you good, bracing critiques. "I sure found one," Kelly says. "My close working relationship with my supervisor has really helped over the last ten years."
- **Establish a network of women in the company with whom you can discuss work-related and family-balance issues.** "That way you'll have some sense of belonging," Kelly says. "When I first started, I was the first female supervisor in my research group, a group I now head. Until I found other women at other departments at the same level, it was hard." She has also found ways, as she says, "to blend work and family," including a live-in au pair and a fairly flexible work schedule. While acknowledging that it takes some planning, Kelly says the combination of life and job has "worked fine."
- **Work to improve your value.** "Always be learning, improving your skills, and striving to be a good teacher to those who report to you," Kelly says. "You can't be self-centered—you have to give something back." ■

Join us for a discussion group on Women in Science at the SCIENCE Professional Network Web page. Our guest expert is Tina Nova, COO of Nanogen. Our URL is http://www.sciencemag.org

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Cambridge, MA
MIT CAMPUS • February 28-March 1, 1997

PROGRAM GUIDE

February 28: 11 am - 4 pm;
March 1: 11 am - 3 pm

The following organizations are interviewing at this bioSCIENCE Career Fair. See their recruitment ads in this issue for details on scientific career opportunities.

Participating organizations as of 2/14/97.

Upcoming bioSCIENCE Career Fairs

- **Palo Alto, CA** at Stanford University, 25-26 April 1997
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Please submit your resume or CV via fax: (202) 289-6742, or via e-mail: bioscience@aaas.org. Indicate for which career fair it is being submitted.

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We are seeking talented molecular and cellular biologists to join our research program focused on the identification of therapeutic proteins.

This group will apply genomics based technologies such as high-throughput sequencing, positional cloning, differential expression and automation, to discover and characterize novel proteins. Scientists should have completed their Ph.D. and at least two years of postdoctoral work and have experience in database analysis and mammalian expression cloning. Previous experience with growth factors is preferred. Postdoctoral Fellows should have completed a Ph.D. in molecular biology or protein biochemistry. Research Associates should have a Bachelor's and/or Master's and at least 2 years' experience. JOB CODE: 297-STPS

NEUROBIOLOGY

Scientists, Post-Doctoral Fellows and Research Associates

Opportunities are available for highly motivated neurobiologists ranging from BA/BS to Ph.D. to join a major new program in neuroscience. Candidates should possess a strong background in the molecular and cell biology and physiology of the nervous system.

The research program will focus on the molecular basis of major disorders of the CNS including neuropsychiatric diseases, epilepsy, and degenerative disorders. Novel genes and pathways identified through human genetic and cDNA-based approaches at Millennium form the basis for the functional biology to be conducted in this program. The research environment at Millennium is highly interactive, including groups to support and complement efforts of the neurobiology program in the areas of animal models (transgenic and knockout), molecular histology, protein biochemistry, signal transduction, large-scale DNA sequencing, genotyping, bioinformatics and automation. JOB CODE: 297-SCNSS

ONCOLOGY

Associate Scientist/Scientist

This Associate Scientist/Scientist (under Dr. Grace Wong) will identify new genes that regulate apoptosis, elucidate the mechanism of their action and examine novel genes responsible for drug resistance in cancer cells. A Ph.D and 3-5 years' lab experience in TNF/Fas/drug induced apoptosis fields is preferred. JOB CODE: 297-SOSS

RESEARCH MANAGEMENT

Program Managers

Leading the efforts in a disease program by building and leading a multidisciplinary team, you will be responsible for establishing and facilitating scientific and business relationships with a corporate partner to maximize the value of the collaboration and build additional value by identifying opportunities to exploit retained rights. Successful candidates will be responsible for the management of resources, performance of the Program Team towards achievement of goals, communication of goals and have a Ph.D., or M.D. and a background in oncology, endocrinology, or pharmacology. Drug development experience preferred. JOB CODE: 297-SPMH

GENOMICS

Human Genotyping

Participate in a group applying latest technologies in the field of genomics to identify genes important for major human diseases. Your primary responsibility will be leading R&D efforts for our high-throughput gene finding facility. Masters required, Ph.D. preferred; minimum of 4 years' molecular biology experience, demonstrated ability to work independently in addition to computer skills; familiarity with ABI machines, robotics and previous experience in genomics a plus. JOB CODE: 297-SHGJ

BIOINFORMATICS

Computer Scientist Human Genetics & Genetic Analysis

Develop state-of-the-art genetic analysis and image processing tools. Experience developing signal and image processing algorithms for noise reduction and pattern matching; edge detection, anti-aliasing, feature extraction and neural-net experience a plus. Must be capable delivering maintainable, production-quality solutions. OO design and development (Smalltalk & GemStone a *big* plus) and RDB technology experience. Ph.D. CS, or MS plus 5-10 years' post-graduate experience. JOB CODE: 297-SCSJ

Lead Senior Computer Scientist Computational Methods R & D

Ph.D. -Lead a group developing methods for assembly and analysis of genomic sequence related laboratory information. Work with an established group of SW engineers and computer scientists, interact with scientists working to produce and analyze genome sequence information. Familiarity with current methods and tools - min. 5 years post-doc experience, training in CS/applied math and experience developing algorithms in industry. JOB CODE: 297-SLRDJ

Make it possible. Send/FAX your resume to Human Resources, Millennium Pharmaceuticals, Inc., 640 Memorial Drive Cambridge, MA 02139 - 4815, Fax: (617)225-0884.

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Millennium seeks and cultivates a diverse workforce through equal opportunity employment and a collaborative team approach.

Human Genetics: Breakthrough Discoveries

The Human Genetics group seeks Ph.D., MS, and BS level scientists to expand our disease gene identification and analysis programs. Our focus is to identify and characterize genes involved in disorders such as osteoporosis, asthma, cancer, and atherosclerosis and to translate these discoveries into therapeutic breakthroughs. A combination of approaches is being applied to studying these disorders, including positional cloning, gene expression, mutation detection and functional analyses. Challenging and rewarding opportunities await those with expertise in biology and scientific computing.

Human Gene Discovery

Molecular Biologists

BS/MS and Ph.D. level positions are available for candidates interested in disease gene identification and analysis. Research involves an array of molecular techniques aimed at the isolation and characterization of candidate genes at chromosomal loci implicated in human genetic disorders and cancers. Candidates experienced in any of the areas of cDNA library construction and screening, transcript mapping, yeast two-hybrid screening, mutation detection, or functional analyses are encouraged to apply. Other opportunities involve the manipulation of established and primary cell cultures and complementary molecular approaches to study the function of disease genes. All positions require background in molecular/cell biology and a minimum of 2 years' laboratory experience. Familiarity with DNA sequence analysis software and data tracking preferred. **Job Code: HG-MB**

Gene Expression Analysis

Ph.D. with 2 or more years' postdoctoral experience sought. The successful candidate will lead a group applying gene expression profiling techniques to our research program. Hands-on experience with state-of-the-art nucleic acids techniques required. Familiarity with DNA sequence analysis programs and databases preferred. **Job Code: HG-GE**

Mutation Detection and Disease Gene Analysis

Ph.D. level position available for mutation detection and analysis of genes implicated in several human diseases. The research involves implementation and development of new methodologies, high-throughput assays, and mutation detection in a variety of samples. Candidate should have a demonstrated ability in mutation detection and analysis and be capable of leading and training scientists. Background in human genetics, computing (particularly databases) and/or high-throughput assays preferred. **Job Code: HG-MD**

Cell and Molecular Biologist

Ph.D. level position available to design and implement cell-based assays for analysis of genes implicated in human disease that have been identified via differential expression studies and positional cloning. Experience in evaluating gene function in cell culture systems preferred. Two or more years' postdoctoral experience required. **Job Code: HG-CB**

Postdoctoral Fellow-Transcriptional Regulation

Postdoctoral position available to identify genes regulated by a family of transcription factors involved in early development, inherited diseases, and cancer. Candidate should have experience in analysis of protein/DNA interactions, cell-based transcriptional assays, and cDNA and genomic cloning. A Ph.D. and 0-2 years of postdoctoral research experience is required. **Job Code: HG-TR**

High Throughput Genotyping

BS/MS and Ph.D. level positions are available for research on several human genetics projects involving genotyping. A Ph.D. level position is available to manage the development and production of a high throughput ABI genotyping laboratory. Successful candidates will be responsible for troubleshooting and the day-to-day operations of the laboratory, which includes overseeing a genotyping group, planning experiments, coordinating projects, training and supervising scientists, generating reports, tracking data and developing new protocols and methodologies. This position requires expertise in molecular biology genotyping, and/or ABI technology, a minimum of 2-5 years' direct experience, plus computer and/or automation skills. We also are seeking BS/MS level scientists, whose responsibilities will include DNA isolation, PCR, gel electrophoresis, genotype analysis, and/or supervision of other researchers. **Job Code: HG-HTG**

Scientific Computing

Human Genome Analyst/Programmer

BS/MS or Ph.D. candidates will develop software tools for cDNA sequence analysis, differential gene expression studies, and sequence annotation projects. Requires experience in C/C++, Perl, web interfaces, and programs to access sequence databases. Background in molecular biology or genomics and broad knowledge of protein function is desirable. **Job Code: HG-AP**

Statistical Geneticist

Ph.D. level scientist with expertise in the genetic mapping of complex disorders to contribute to the identification of human disease genes. Requires knowledge of developing appropriate study designs for analysis of complex traits and experience with non-parametric methods, linkage analyses, and related analytical techniques. **Job Code: HG-SG**

Linkage Analysis Programmers

Several BS/MS level positions are available to provide computational support for human linkage analysis projects. The successful candidate will work closely with scientists in the genetic mapping of complex disorders. Requires experience with parametric and non-parametric linkage analyses and statistical methods. Background in C, Perl, UNIX, and Macintosh is desirable. One position requires experience with SAS and C programming on UNIX. **Job Code: HG-LA**

Software Engineers

BS/MS in CS/EE positions available to provide flexible software support to research and production groups in molecular biology. Projects may have GUI, mathematical, or specialized data content. Must be able to work independently or as part of a team on large and small applications. Requires at least 2 years' professional programming experience, solid knowledge of C, and some experience with UNIX. Background in any of the following is desirable: C++, Perl, Java, GUI, databases, client/server, Macintosh, robotics, instrument interfaces, and molecular biology. **Job Code: HG-SE**

Database Programmers and Administrators

BS/MS and Ph.D. level positions are available to develop database applications to support DNA sequencing and disease mapping projects. Requires experience in relational databases, UNIX, Perl, and web interfaces. Familiarity with Sybase, C++, Macintosh or molecular biology is desirable. **Job Code: HG-DBA**

Macintosh Programmer

BS/MS programmer position available to develop Macintosh applications involving both GUI and data analysis to support a variety of genomics projects. Requires experience with C/C++ and web interfaces. Knowledge of molecular biology is desirable. **Job Code: HG-MP**

Genome Therapeutics Corporation is a leader in the exciting field of genome research and a major contributor to the Human Genome Project. We are a fast growing and financially successful biotechnology company--in the past two years we have initiated a $22 million alliance with Astra AB to develop genome based drugs and vaccines and a $43 million alliance with Schering-Plough to discover novel anti-infective agents effective against drug resistant organisms as well as a recently announced $67 million alliance to develop new asthma drugs. In addition, GTC has been awarded over $10 million by NIH to develop state-of-the-art DNA sequencing technology. Join us in 1997 and enjoy the discovery and developments of progressive science as well as a comprehensive salary and benefits package. Please send or fax your resume or curriculum vitae to: **Human Resources, Job Code_____, Genome Therapeutics Corporation, 100 Beaver Street, Waltham, MA 02154; Fax: (617) 893-9535; or see http://www.cric.com/jobs.** We are an equal opportunity employer M/F/V/H.

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CAREER OPPORTUNITIES

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Senior Clinical Research Associate • We're seeking a detail-oriented CRA to join our Clinical Affairs team. Candidates must possess a BS/MS in biology or health science; 3+ years of experience managing and/or monitoring clinical trials; and proven experience serving as a liaison with clinical sites, contract research and data management groups. The demonstrated ability to contribute in a team setting & strong written/verbal communication skills are essential. Frequent travel required. (Job# YUO796C-SF)

Associate/Staff Scientist, *Signal Transduction Anchoring* • We're seeking a hands-on Associate Staff Scientist or Staff Scientist to join our Signal Transduction Anchoring Program. You will design and execute experiments to elucidate the roles of enzyme anchoring in a variety of cellular processes. In addition, he/she will be involved in assay development and evaluation of high throughput screens that will help discover regulators of the anchoring process. A Ph.D. in Cell Biology, Pharmacology, or related field is preferred. The successful candidate will possess the ability to develop and lead projects examining the role of signal transduction enzymes in cellular processes, and will be skilled in protein purification, the analysis of protein-protein interaction and antibody generation and characterization, as well as high throughput assay development. A thorough understanding of signal transduction, excellent communication skills and enthusiasm for highly collaborative work are essential for this position. (Job# LAI1296-SCI)

Statistical Programmer/Application Developer • We have a great opportunity for a hands-on professional to support our Clinical Department. You will maintain all statistical & graphics software; analyze clinical data; and write applications to capture CRF data. You will also help maintain the clinical database system, and coordinate statistical services with CROs. Candidates must possess a BS/MS in statistics, biological science or closely allied discipline; 3-5 years of extensive statistical analysis experience using SAS, SPSS and S-PLUS; familiarity with the biotech and/or CRO environment; and the demonstrated ability to shift focus & work well under pressure. Experience with SAS programming, database programming and application development software (C++, Visual Basic, etc.) strongly preferred. Familiarity with BBN Clintrial and Oracle a plus. Knowledge of medical terminology desired. (Job# SAO0197-SF)

Quality Control Scientist • We're seeking a detail-oriented QC professional to join our Quality Control team. You will perform assays to ensure the identity, safety, purity and potency of drug products manufactured for preclinical/clinical use. You will also provide technical leadership to improve, design and implement assays for various projects and their transition into GMP. The position requires a Ph.D. in a scientific discipline or a BS/MS and 10+ years of QC experience; a strong technical background in protein characterization methods, including SDS-PAGE, IEF. HPLC, peptide mapping, carbohydrate analysis, mass spectrometry, amino acid sequencing, optical spectroscopy and immunoassays; experience with chemicals & radioisotopes frequently encountered in lab environments; and excellent organizational & written/verbal communication skills. (Job# HAD0197-SCI)

Quality Control Associates (2) • We're seeking a pair of hands-on QC Associates to join our Quality Control team. You will perform assays to ensure the identity, safety, purity and potency of drug products manufactured for preclinical/clinical use. You will also perform QC assays and evaluate results according to cGMP, develop & validate assays and create/update Stand Test Methods and SOPS. The positions require a BS/MS in a relevant scientific discipline; 3+ years of related lab experience (biotech or pharmaceutical QC setting strongly preferred); experience with LAL endotoxins, SDS-PAGE, IEF and HPLC and/or potency assays (activity, flow, etc.); knowledge of environmental monitoring & microbiology; and excellent written/verbal communication skills. (Job# LEY0197-SCI)

Associate Director of Regulatory Affairs • We're seeking a hands-on Associate Director to join our Regulatory Affairs team. Primarily, you will prepare submissions (INDs, ELAs, PLAs, NDAs, etc.); help develop and implement our regulatory policies; advise on strategies and governmental developments; represent various product development groups; and manage domestic activities in support of international submissions. The position requires a BS/MS in a scientific discipline; 3+ years of relevant regulatory experience (biological products preferred); demonstrated experience preparing regulatory submissions; and excellent analytical, interpersonal and written/verbal communication skills. The ability to problem-solve using scientific methodologies for regulatory issues a plus. (Job# CZA0196-SCI)

Staff Scientist • We're seeking a motivated Staff Scientist to join our Preclinical Research Group. You will design, conduct and interpret animal pharmacology and toxicology studies that support both late stage research programs and development projects. The position requires a Ph.D. and postdoctoral experience in immunology or pharmacology or equivalent work experience; demonstrated knowledge of preclinical animal pharmacology, pharmacokinetics, small animal models of inflammation, and animal handling techniques; and strong analytical, interpersonal and project management skills. (Job# PET0596-SCI)

Research Associate • We're seeking a skilled Process Development RA to join our growing Purification Group. You will scaleup and develop novel purification methods; run common protein characterization assays (protein determination, PAGE); and produce proteins for clinical trials with associated documentation (SOPs & batch records). The position requires a BS/MS in biochemistry or equivalent experience in purification of recombinant proteins for clinical use; working knowledge of common protein analytical techniques & purification methods/scaleup used in a biotech production facility; the ability to work independently & as part of a team; and strong written/verbal communication skill. (Job# THO0297-SCI)

Process Development Associate • We're seeking a hands-on Process Development Associate to be responsible for the design and scaleup of mammalian cell culture processes. You will scaleup and develop novel purification methods; run common protein characterization assays (protein determination, PAGE); and produce proteins for clinical trials with associated documentation (SOPs & batch records). Ideal candidates will have at least 3 years of experience in the following areas: sterile techniques, serum-free media development, perfusion, fed-batch and/or batch process development, process optimization, process scaleup (>100L vessel size), bioreactor/equipment operations & maintenance, and cGMP documentation & procedures. The position requires a BS/MS in microbiology or biology; demonstrated mechanical aptitude; the ability to life up to 50 lbs.; and availability to work some evenings & weekends. (Job# VAN0297-SCI)

We also have additional openings in the areas of Biochemistry, Chemistry, Quality Assurance, and Formulation/Pharmaceutical Development. All of our job postings may be referenced at www.bio.com/companies/icos.html, or by calling our Job Hotline at (206) 485-1900, ext. 2032. To learn more about an exciting career with ICOS, visit us at the ***bioSCIENCE Career Fair*** *being held at the MIT Campus in Cambridge Massachusetts on* ***February 28th,*** *11AM - 4PM, and* ***March 1st*** *,11AM -3PM.*

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For further details regarding these positions, refer to the SCIENCE Professional Network at www.sciencemag.org

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Qualified candidates please send your C.V. to:
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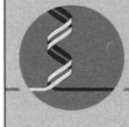

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Staff Scientists:

Synthetic/Combinatorial Chemistry: We are seeking outstanding synthetic chemists to design and synthesize organic molecules for pharmaceutical discovery. Experience in the areas of drug design, synthetic methodology development, combinatorial methods, or QSAR is preferred. Demonstrated laboratory expertise and excellent communication skills are required. Ph.D., with 0 to 3 years postdoctoral experience or 1-3 years industrial experience. Code: SCC-Ph.D.

Inorganic/Bioinorganic Chemistry: The successful individual will be involved in the development of novel compounds for use as MRI contrast agents. Demonstrated laboratory experience and publication record are required. Ph.D., with 0 to 3 years postdoctoral experience. Code: IBC-Ph.D.

Biochemistry/Biology: The position requires a strong background in molecular biology, particularly PCR, random and site-directed mutagenesis, DNA sequencing, and standard protocols. The successful candidate should have a good knowledge of protein structure and protein engineering. Experience with drug screening, gene cloning and expression and biological combinatorial approaches are a plus. First rate laboratory skills and a strong publication record are required. Ph.D. in biochemistry/chemistry, or M.S. with 2-4 years industrial experience. Code: BB-Ph.D.

Research Associates:

Synthetic/Combinatorial Chemistry: We are seeking chemists at the Bachelors or Masters level to design and synthesize organic molecules for pharmaceutical discovery. Strong academic background, excellent communication skills, and demonstrated laboratory skills are required. Undergraduate research experience in a chemistry laboratory is a plus. Requirements: B.S., B.A. or M.S. degree in Chemistry or related discipline. Code: SCC

Biochemistry/Biology: The successful candidate will study protein-ligand interactions and will assist in the development of drug screening assays. Strong academic background, excellent communication skills, and demonstrated laboratory skills are required. Undergraduate research experience in biochemistry or molecular biology lab is a plus. Requirements: B.S., B.A. or M.S. degree in Biochemistry, Biology or related discipline. Code: BB

Please send your resume, indicating appropriate position code, to: Epix Medical, Inc., 71 Rogers Street, Cambridge, MA 02142-1118; FAX: (617) 499-1414.

EPIX MEDICAL

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Albert Einstein College of Medicine

The Albert Einstein Cancer Center, in conjunction with the Departments of Neurology and Neuroscience, is seeking a neurobiologist to establish and lead a basic research program in neuro-oncology. The program will build upon the substantial strengths in the Neurosciences and the Cancer Center's interdisciplinary molecular-based cancer research programs. Development of this program will be supported by substantial start-up funding and the Cancer Center's extensive shared resources that include, among others, transgenic and gene targeting facilities, imaging and structural biology, and DNA and protein chemistry technologies.

The Albert Einstein College of Medicine complex is located in a residential neighborhood in Northeast New York minutes from Westchester County and in close proximity to Manhattan and Connecticut. Send curriculum vitae and references to: **Dr. John Kessler, Kennedy Center, Room 903, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461.** EOE.

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NEUROGEN CORPORATION OPPORTUNITIES IN RESEARCH

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I) **Research Associates:** In the department of Behavioral Biology. The qualified candidate should have a B.S. in Experimental Psychology or a related field and/or relevant industrial work experience. Knowledge of experimental design and statistics, a basic understanding of nervous system functioning and experience in a behavioral laboratory setting. Knowledge of psycho-pharmacology and drug injection is highly desirable.

II) **Postdoctoral Position:** In the department of Behavioral Biology. Candidates should be highly motivated and possess a Ph.D. in Psychology, Behavioral Pharmacology, or related field of Neuroscience and have expertise in psychopharmacology techniques, experimental design and analysis. Candidate will be working in the discovery and characterization of drugs for treatment of anxiety, stress, obesity and other CNS disorders.

III) **Research Associates:** In the department of Highthroughput Screening. The qualified applicants will need experience in utilizing radioligand neurotransmitter-receptor binding assays, reporter gene assays, and assay based on the uptake of radiolabled tracers by cells. The position involves the development of biological assay conditions, state of the art robotics in assay protocols, and the support and maintenance of robotic work stations. Candidates must possess either a B.S. or M.S. in biological sciences and have experience handling data output using computers. Candidates with prior lab or industrial experience preferred.

IV) **Research Associates:** In the department of Electrophysiology. Candidates will be involved in developing and implementing assays for evaluation of drug effects on neurotransmitter systems using electrophysiological approaches in Xenopus oocytes, cultured cells and brain slices. Qualified candidates must possess a B.S. or M.S. in a relevant discipline. Previous laboratory or industry experience is desired.

V) **Research Associates:** In the department of Pharmacology. This position requires a BS in neuroscience, pharmacology or neurobiology. Relevant industrial work experience is desirable. Qualified candidates should have an understanding of nervous system functioning, experimental design, basic laboratory techniques as well as experience in *in vivo* and *in vitro* laboratory techniques.

Neurogen is located in Branford, Connecticut, close to New Haven. We offer a comprehensive compensation program consisting of competitive salary, equity participation, 401K plan, health and medical programs.

Qualified Candidates are invited to send resumes with cover letter to **Human Resources, Neurogen Corporation, 35 Northeast Industrial Road, Branford, CT 06405.**

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Since opening our doors back in 1980, Genetics Institute has discovered a prodigious number of novel regulatory proteins. To date, nine of these have advanced to human clinical evaluation or commercialization. Fueling the pipeline, are R&D programs addressing blood cell growth and differentiation, coagulation, tissue growth and repair and immune modulation, among others.

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BIOPHARMACEUTICAL CHARACTERIZATION & ANALYSIS

RESEARCH STAFF

We seek a motivated professional with strong analytical, communications and time management skills to be involved in development, qualification, and implementation of carbohydrate analytical methods for glycoprotein therapeutics. To qualify, you must have an MS and/or experience with biomolecule analysis by HPLC. A knowledge of the following is highly desirable: carbohydrate (mono- or oligosaccharide) analysis, computerized data acquisition and analysis, HPAEC/PED, and GMP guidelines. **Job Code: SC221-PL-46.**

BIOASSAY GROUP HEAD

Manage the Bioassay Development and Support Group and be responsible for optimization of cell-based bioassays, as well as their validation and use. To qualify, you must have an MS or Ph.D. in biology or a related discipline, plus at least 5 - 8 years of experience working with cell-based bioassays. A knowledge of GMP sufficient to ensure compliance within the support laboratories is essential. Familiarity with the use of computers for data analysis and statistics is a plus. **Job Code: SC221-PL-A.**

DRUG PRODUCT DEVELOPMENT

STAFF SCIENTIST

We are seeking an individual for the development of novel delivery systems for several of our drug product candidates. Specific responsibilities include optimization of existing delivery devices, and participation in designing new delivery systems. You will also be involved with process development and scale-up to manufacturing. To qualify, you must have a Ph.D. in Pharmaceutical Sciences, Chemical or Biochemical Engineering, or a related discipline, or an equivalent combination of education and experience. Experience in novel drug delivery systems and protein chemistry is required. Familiarity with lyophilization is a plus. **Job Code: SC221-PL-B.**

PURIFICATION PROCESS DEVELOPMENT

STAFF SCIENTIST

Put your interest and expertise in the areas of protein purification and biochemistry to excellent use as you participate in the development and optimization of processes for purification of recombinant therapeutic proteins. A Ph.D. in biochemistry, biochemical engineering or related discipline, or the equivalent combination of education and experience is required. A solid background in protein analytical techniques is required, as is the ability to work well as part of an interdisciplinary team. Exposure to novel methods of protein purification and related technology development is desirable. Individuals with interest in studying protein solubility, protein-protein interactions, or interactions of proteins with chromatographic resins are particularly encouraged to apply. **Job Code: SC221-PL-417.**

STAFF ENGINEER

You will assist in all aspects of membrane separations technology, including process development, technology transfer, and manufacturing support. Specific responsibilities involve process optimization studies, design of appropriate lab and ultrafiltration equipment, development of additional data acquisition and monitoring techniques, testing of virus-retention filters, and evaluation of process changes for both ultrafiltration and microfiltration. To qualify, you must have an MS in chemical engineering and at least 5 years of experience, plus a fundamental and practical knowledge of tangential flow filtration. Ph.D.'s with 0 - 3 years of experience and a thesis in membrane separations are also encouraged to apply. **Job Code: SC221-PL-70.**

For consideration, please send or fax resume, suitable for scanning (see below), indicating job code, to: Human Resources Department, Genetics Institute, Inc., 87 CambridgePark Drive, Cambridge, MA 02140. Fax: (617) 876-8847.

Scannable resumes should be forwarded on plain white bond paper using standard types and fonts, and no bold or italic print. When faxing a resume, please also mail an original copy.

Genetics Institute offers competitive salaries and benefits, including comprehensive health care, dental and life insurance, three weeks' paid vacation, 401(k), relocation assistance, and an on-site exercise facility. Genetics Institute is dedicated to building strength through diversity.

GENETICS INSTITUTE®

Harnessing the Body's Power to Heal™

The Cutting Edge of Drug Discovery

Arris Pharmaceutical Corporation is focused on the discovery and development of a variety of small molecule therapeutics for existing markets where current therapies have significant limitations. As an innovative biopharmaceutical company, we are delivering promising pre-clinical drug candidates to our business partners that satisfy safety & efficacy criteria. At the same time, our integrated discovery technologies continue to broaden our rich product pipeline, creating a number of exciting career opportunities for a handful of talented researchers to join us at the cutting edge of drug discovery.

SCIENTISTS (Ph.D. level) • Structural, Combinatorial, Synthetic/Medicinal Chemistry, Pharmacology, Pharmacokinetics, Drug Metabolism, Infectious Diseases, Genomics, Molecular Biology, Biochemistry, Cell Biology, and Protein Expression.

RESEARCH ASSOCIATES (BS/MS level) • Combinatorial, Synthetic/ Medicinal Chemistry, High Throughput Screening, Fermentation & Cell Culture, Purification, Pharmacology, Infectious Diseases, and Cell Biology

For more information on specific job openings, please stop and see us at the **bioSCIENCE Career Fair** being held at the MIT Campus in Cambridge, Massachusetts on **February 28th, 11 am - 4pm,** and **March 1st, 11am - 3 pm.**

Arris offers extremely competitive salaries, full benefits, attractive equity participation and career advancement opportunities within a progressive, growing company. For consideration, please forward your resume to:

Arris Pharmaceutical

Arris Pharmaceutical Corp.
Human Resources
Attn: Job# SM0221-RAS
385 Oyster Point Blvd., Suite 3
South San Francisco, CA 94080

www.arris.com

EOE

Breakthrough
OPPORTUNITY

GelTex Pharmaceuticals, Inc., an emerging pharmaceutical company developing novel polymer technology for therapeutic applications, is seeking an experienced professional for the following position:

Manager of Pharmacology Research

This position will supervise and manage *in vivo* research while working on multidisciplinary project teams to support the drug discovery effort. This candidate must be able to evaluate, develop and create new animal models to support drug discovery research, and also effectively manage external research projects. Other responsibilities include: managing the animal facility (includes IACUC), supervising associated personnel, and leading the *in vivo* biology effort for new research projects.

This candidate must have a Ph.D. in Pharmacology, Physiology or related field, along with post-doctoral research and 5 or more years of pharmaceutical experience. Knowledge of and experience with animal models of cholesterol and lipid metabolism is desired. GI research experience is an advantage. This individual must possess good written and verbal communication skills.

GelTex offers you the opportunity to work in an exciting research environment, allowing you to participate in the development of leading edge technology. For immediate consideration, please send your resume to: ***Human Resources, GelTex Pharmaceuticals, Inc., 303 Bear Hill Road, Waltham, MA 02154.*** *An Equal Opportunity Employer.*

GelTex
PHARMACEUTICALS, INC.

Leaders in the Search

Synaptic Pharmaceutical Corporation is a world leader in the cloning of G-protein coupled receptors and their functional analysis. Our goal is to translate basic science discoveries to novel therapies for human disease.

Synaptic
Pharmaceutical Corporation

Due to continued expansion of our research programs, we have an immediate need for the following qualified individuals:

G-Protein Biologist

Career opportunity for an experienced Ph.D. biologist who possess the leadership skills necessary to head a new interdisciplinary research group. Group focus is on signal transduction of G-protein coupled receptors. 8-12 years experience in the field of G-proteins is essential. **Send replies to: Dept 216**

Molecular Pharmacologist

Requires a Ph.D. in Pharmacology or related area along with a minimum of 5 years post-doctoral experience. Extensive training in pharmacological theory is essential, as is a proven experimental record in signal transduction pathways. **Send replies to: Dept 217**

Molecular Pharmacologist

In addition to a Ph.D. in Pharmacology (or related) you must possess a minimum of 3 years postdoctoral experience. Additional requirements include a background in native and/or transfected cell systems along with demonstrated expertise in receptor binding and signal transduction mechanisms. **Send replies to: Dept 218**

Electrophysiologist

Requires a Ph.D. in neuroscience or physiology, and a minimum of 5 years postdoctoral experience. Mammalian cell patch recording expertise in both cultured cells and tissue slices is essential. **Send replies to: Dept 219**

Electrophysiologist

Requires a Ph.D in Physiology (or related), along with 0-2 years postdoctoral experience. A solid background in electrophysiology especially in whole cell voltage clamp of mammalian cell lines and primary neurons is essential. Experience with isolation of primary neurons, cell culture, cDNA transfection or microinjection, and/or xenopus oocyte recording would be valuable. **Send replies to: Dept 220**

Neuropharmacologist

In addition to a related Ph.D. and a minimum of 5 years postdoctoral experience, the ideal candidate will possess an expertise in characterization of receptors regulating neurotransmitter release in brain and spinal cord. A solid working knowledge of quantitative receptor characterization is also essential. **Send replies to: Dept 221**

Protein Biochemist

Requires a Ph.D. in Biochemistry (or related area), along with a minimum of 5 years postdoctoral experience. A proven expertise in isolation of biologically active peptides from native tissues is essential. **Send replies to: Dept 222**

All positions require strong communications skills. We offer highly competitive salaries and a comprehensive benefits package. Please forward your resume/CV, indicating the appropriate Job Code, to: **Human Resources, Synaptic Pharmaceutical Corporation, 215 College Road, Paramus, NJ 07652.** An EOE M/F/D/V

Protein Biochemist

The Macromolecular Structure Laboratory, of the ABL-Basic Research Program, is seeking a creative and energetic Ph.D. (0-6 years experience) to assist with and oversee the purification of recombinant proteins for structural studies by x-ray and NMR. State-of-the-art equipment (AKTA, BioCAD) and some technical support is available. The successful candidate will also have an opportunity to engage in independent research geared toward the development of novel technology for protein engineering, expression and/or purification. A strong background in protein chemistry and excellent communication skills are required.

An interactive and exciting environment for learning and discovery, the ABL-Basic Research Program at the NCI-FCRDC is located close to both Washington and Baltimore in a beautiful small town setting that features excellent schools and varied recreational opportunities. We offer a competitive salary (commensurate with experience) and a comprehensive benefits package. Please send curriculum vitae, description of research experience, and names/addresses of three references to:

Dr. David Waugh
c/o Human Resources
ABL-Basic Research Program
NCI-FCRDC
P.O. Box B, Building 428
Frederick, MD 21702-1201

An Equal Opportunity/ Affirmative Action Employer

Howard Hughes Medical Institute

Research Specialist

The Howard Hughes Medical Institute, the nation's largest private philanthropic organization, conducts scientific research in leading academic medical centers throughout the United States. Currently, we are seeking a Research Specialist for our site at the Vanderbilt University School of Medicine in Nashville, Tennessee.

The selected individual will be responsible for the facility's daily operation and for training personnel from individual labs. The facility will be equipped with a FacsCalibur (Becton Dickinson) flow cytometer with dual lasers and a cell sorting module. Requirements include at least one year of experience in flow cytometry and excellent communication and organizational skills.

HHMI offers a competitive salary and excellent benefits package. Please send your CV and the names of two references to: **Mrs. Julie Morris, HHMI, Vanderbilt University School of Medicine, 802 Light Hall, Nashville, TN 37232. FAX: (615) 343-4726.** EOE.

http://www.hhmi.org

Vita Per HHMI Scientiam

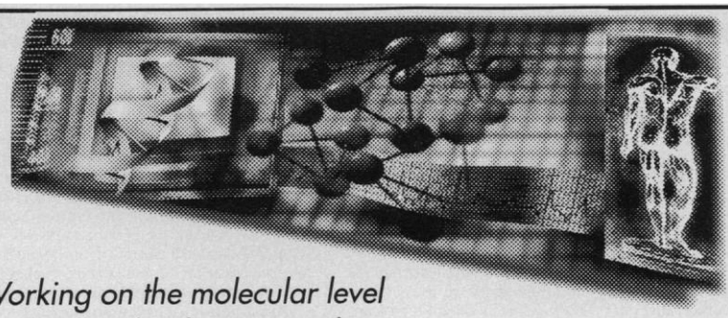
HUMAN GENETICS DIVISION CHIEF

The Medical College of Wisconsin/Children's Hospital of Wisconsin is seeking a dynamic academician to lead the Division of Human Genetics in the Department of Pediatrics. The candidate should be at the associate or professor level, BC/BE in Genetics and Pediatrics, and have demonstrated significant experience in investigative human genetics, clinical care of patients with genetic disease, and administration.

The position offers outstanding opportunities for collaborations in basic and clinical research. Human genetics is a major priority in our medical school's strategic plan. The hospital is in suburban Milwaukee and shares an outstanding campus with the medical school, the adult-based hospital, and the Blood Research Institute of Wisconsin. **Children's Hospital of Wisconsin** is an exciting academic environment and a full service children's hospital with over 17,000 admissions and 124,700 outpatient visits in 1996. The clinical service area includes Eastern Wisconsin, Northern Illinois and the Upper Peninsula of Michigan.

Send inquiries to: **Robert M. Kliegman, M.D., Professor and Chair, Department of Pediatrics, Medical College of Wisconsin, Pediatrician-in-Chief, Children's Hospital of Wisconsin, MACC Fund Research Center, 8701 Watertown Plank Road, Box SC, Milwaukee, WI 53226-0509.** The Medical College of Wisconsin is an equal opportunity/affirmative action employer.

MEDICAL COLLEGE OF WISCONSIN



Working on the molecular level to conquer, treat, or prevent debilitating diseases.

RECEPTOR RESEARCH
AT SCHERING-PLOUGH

At the Schering-Plough Research Institute, insightful scientists are discovering innovative therapeutic agents that challenge humankind's most debilitating diseases. If you are seeking an opportunity to be on the cutting edge of pharmaceutical discovery, we have several opportunities for talented scientists at all levels to join a multidisciplinary team focused on the identification and characterization of receptors and related proteins as potential therapeutic targets.

GROUP LEADER

We require a strong scientific background and experience in receptor molecular biology or signal transduction. Experience with characterization of orphan receptors is helpful. Candidates should have a PhD with at least 5 years of postdoctoral experience and a demonstrated ability to lead a multidisciplinary group. To be considered for this position, please respond to Dept. RC/GL-BG.

SENIOR SCIENTISTS

Positions are available for talented molecular biologists, molecular pharmacologists and biochemists with experience in the expression and characterization of receptors, transporters, G proteins or other signal transduction systems. Scientists with experience in the localization of gene expression by in situ hybridization and/or immunochemistry are also encouraged to apply. Candidates should have a PhD and at least 3 years of postdoctoral experience. To be considered for these positions, please respond to Dept. RC/SS-BG.

ASSOCIATE SCIENTISTS

We are seeking molecular biologists and biochemists with extensive experience in cDNA cloning, DNA sequencing, in situ hybridization and the expression of recombinant proteins in eukaryotic cell culture systems. Candidates should have a BS or MS degree and several years of laboratory experience. To be considered for these positions, please respond to Dept. RC/AS-BG.

We offer an excellent compensation package including a competitive salary and comprehensive benefits. For prompt, confidential consideration, we invite you to forward a resume indicating the Dept. Code for your position of interest and salary requirements to: Human Resources, Schering-Plough Research Institute, 2015 Galloping Hill Road, Kenilworth, NJ 07033-0539. You may also respond via e-mail to: spri@spcorp.com. Please include the Department Code for your position of interest in the Subject Line. *We are an equal opportunity employer. We regret we are unable to respond to each resume. Only those selected for an interview will be contacted.*

Schering-Plough Research Institute

Using Science for Human Advantage

POSITIONS OPEN

DIRECTOR
SCIENCE CENTER

The biology and chemistry departments at Agnes Scott College invite applications for a full-time faculty member in either discipline who will serve as the College's first **DIRECTOR** of the Atlanta Science Center for Women. A major strategic initiative of the College, the Center will promote the study of science by women through innovative pedagogies, undergraduate research, internships, interdisciplinary programs and outreach to high school teachers and students. The director will offer leadership in curriculum and faculty development for all the sciences and mathematics at Agnes Scott College—biology, chemistry, physics, and psychology—in part by conceptualizing and organizing visiting and resident scholars in science, mathematics and science education and symposia topics of interest to women, scientists and science educators. Although the sciences and mathematics departments will not report to the director administratively, the director will chair an advisory committee of departmental representatives and an advisory board of scientists from science-related institutions and colleges/universities of the Atlanta area.

To permit the director to continue her/his teaching and scholarship as well as undertake the responsibilities of the directorship, the director will have the support of a full-time administrative assistant and dedicated budget resources. During the first year, the director will receive released time for the special efforts of launching the Center. The successful candidate will qualify for senior appointment (associate or full professor) in biology or chemistry.

AGNES SCOTT COLLEGE, founded in 1889, is an independent, Presbyterian-affiliated liberal arts college for women located in metropolitan Atlanta, Georgia. Candidates should demonstrate a strong commitment to teaching and a record of scholarly achievement. Consideration of applications will begin in early spring 1997 and will continue until the position is filled. Send letter of application, curriculum vitae, and a list of references to the attention of: **Sarah Blanshei, Dean of the College, Agnes Scott College, 141 East College Avenue, Decatur, GA 30030-3797.** *Agnes Scott has a strong commitment to diversity and urges all members of underrepresented groups to apply. Agnes Scott College is an Equal Opportunity Employer.*

Science, technology, and international affairs: The Edmund A. Walsh School of Foreign Service of Georgetown University seeks a **SENIOR PROFESSOR** in the field of international science policy and **DIRECTOR** of the school's program in Science, Technology, and International Affairs. Area of specialization: international science policy, with preference given to an emphasis on communications, environment, health or biotechnology. Applicants should have a Ph.D. and substantial record of teaching, publishing, and administration in the relevant social and natural sciences and experience in the study or practice of international affairs. Experience in program development and administration is preferred. Please send a cover letter, curriculum vitae, sample publications, and three references to: **Dr. Allan E. Goodman, Executive Dean, Senior STIA Search, School of Foreign Service, 301 ICC, Georgetown University, Washington, DC 20057.** Deadline: open. Search continues until position is filled. Internet information available via **Email: inaf@gunet.georgetown.edu.** *Georgetown University is an Affirmative Action/Equal Opportunity Employer.*

ANIMAL REPRODUCTION BIOLOGIST

The National Research Initiative Competitive Grants Program of the U.S. Department of Agriculture seeks a qualified scientist to serve as **PROGRAM DIRECTOR** for grants administration in the area of animal reproduction. Candidates must have an advanced degree with major study in biological sciences, animal science, veterinary science, agriculture or a related field. It is preferable that the candidate have a Ph.D. or equivalent specialized experience.

Closing date is March 17, 1997. For information on the position, contact: **Dr. Peter Johnson, Division Director, National Research Initiative Competitive Grants Program, CSREES/USDA, STOP 2241, 1400 Independence Avenue, S.W., Washington, D.C. 20250-2241. Telephone: 202-401-1896; Email: pjohnson@reeusda.gov.** For information on application procedures/forms, contact: **Ms. Laura Farrior, Personnel Management Specialist. Telephone: 202-720-5770.** *USDA is an Equal Opportunity Employer.*

PROFESSOR AND CHAIR
DEPARTMENT OF PHARMACEUTICAL SCIENCES

Northeastern University seeks applications and nominations for a **CHAIR** of the Department of Pharmaceutical Sciences, Bouvé College of Pharmacy and Health Sciences. The department is the preclinical component of the Pharmacy Program, and houses the Ph.D. program in Biomedical Sciences. Northeastern University is a Carnegie II Research Institution, and benefits from its central Boston location. A competitive package of salary, benefits, and support facilities will be provided.

Applicants must have a Ph.D. or equivalent degree, and be eligible for tenure at the Full Professor level. An internationally recognized record of scholarly research and the ability to maintain a well-funded research program are required. Possible areas of expertise include: pharmaceutics, pharmacology, toxicology, medicinal chemistry, drug targeting, neuroscience, bioanalytical chemistry, immunology, cell biology, or any field appropriate to the preclinical department of a pharmacy program; the specific field is less important than is scholarly distinction within that field. Applicants must have a proven record of excellent administrative and leadership skills, with a commitment to the principles of diversity, and be able to provide outstanding leadership of teaching programs at both the undergraduate and graduate levels.

Applicants should submit a curriculum vitae, a letter describing their qualifications and interests, and three letters of recommendation to: **Jonathan E. Freedman, Ph.D., Associate Professor and Pharmaceutical Sciences Search Committee Chair, Faculty Senate Office, 442 Ryder Hall, Northeastern University, Boston, MA 02115. Telephone: 617-373-4201; Email: j.freedman@nunet.neu.edu.** Applications received by March 31, 1997 will be given full consideration. *Northeastern University is an Affirmative Action/Equal Opportunity/Title IX Employer. Women and minorities are encouraged to apply.*

DIRECTOR
MARINE AND ENVIRONMENTAL SCIENCES

Hawaii Pacific University, an independent, liberal arts university, invites applications for a **DIRECTOR** of marine and environmental sciences. The Director reports to the Dean of Arts and Sciences and is responsible for administering the Marine Sciences Program and overseeing implementation of a new Environmental Sciences Program. Applicants must have a Ph.D. in one of the following disciplines: biological, chemical, physical, or geological oceanography; marine biology; or environmental sciences. Applicants must also have strong administrative skills, experience in curriculum and program development, and a commitment to teaching undergraduates. Peer-reviewed research publications and a proven record in obtaining extramural funding are desirable but not required. Appointment may begin during the summer of 1997, with rank and salary commensurate with qualifications. Send letter of application, curriculum vitae, copies of transcripts, and the names, addresses, and telephone numbers of three references to: **Hawaii Pacific University, Human Resources Department, 1166 Fort Street Mall, Suite 201, Honolulu, HI 96813.** Visit the University's web site at **http://www.hpu.edu.** Screening of applications will continue until the position is filled. *Hawaii Pacific University is an Equal Opportunity Employer.*

INSTRUCTOR

The Department of Pathology, Anatomy and Cell Biology, Jefferson Medical College, Thomas Jefferson University has an opening for an **INSTRUCTOR** (potential for development into research- or tenure-track Assistant Professor level) to work on vector development for use in gene therapy. Ph.D. or equivalent degree and at least four years postdoctoral experience in molecular biology required. A background which includes cloning and manipulation of cloned DNA, cell culture, and Northern, Western and Southern analyses required; experience in molecular virology preferred. Prior work in the field of gene transfer/gene therapy is desirable. Initial responsibilities involve bench research in cell culture and experimental animals and a supervisory role; over time you will be expected to develop an independently funded investigative career. Curriculum vitae and names of three references should be sent to: **David S. Strayer, M.D., Ph.D., Department of Pathology, Jefferson Medical College, Thomas Jefferson University, 1020 Locust Street, Philadelphia, PA 19107 USA. FAX: 215-923-2218.** *Equal Opportunity Employer.*

JOINT FACULTY POSITION
DEPARTMENT OF NEUROBIOLOGY AND DEPARTMENT OF PHYSICAL MEDICINE & REHABILITATION

The Departments of Neurobiology and Physical Medicine & Rehabilitation at the University of Alabama at Birmingham (UAB), School of Medicine, invite applications for a tenure-track or tenured **FACULTY POSITION**. The Departments are seeking an outstanding individual with a strong record of achievement using modern approaches to neurobiology of brain/spinal cord injury and repair. The successful candidate should have a spinal cord trauma paradigm as part of their research portfolio, have an established record of independent NIH research grant support, have participated in program project efforts, and utilize innovative conceptual and technological approaches to fundamental neurobiological research. A substantial understanding and/or credentials in issues of clinical neuro-rehabilitation is desirable. The Departments have excellent research facilities and vibrant basic and clinical research programs. This position will be supported in part by the Joel Dinkler Lie Endowment.

Send curriculum vitae and statement of research plans, and have three letters of recommendation sent to: **Michael J. Friedlander, Ph.D., Professor and Chair, Department of Neurobiology, 1719 Sixth Avenue South, CIRC 516, University of Alabama at Birmingham, Birmingham, AL 35294-0021** by April 1, 1997. *UAB is an Affirmative Action/Equal Opportunity Employer.*

NEUROTROPHIC/TROPIC FACTORS IN DEVELOPMENT AND/OR REGENERATION
UNIVERSITY OF FLORIDA COLLEGE OF MEDICINE

The Department of Neuroscience in conjunction with the University of Florida Brain Institute and its program in Nervous System Trauma and Regeneration invites applications for a **TENURE-TRACK FACULTY POSITION** for individuals having a Ph.D. and/or M.D. degree. The position is supported in part by the Lucille P. Markey Charitable Trust. The successful candidate will be expected to develop an independent and interactive research program and contribute to the teaching of professional and graduate students. Applicants with demonstrated productivity using molecular and cellular approaches in studies of neurotrophic/tropic influences in nervous system development and/or PNS or CNS regeneration are encouraged to apply. The position offers a competitive salary, excellent research facilities, and an attractive start-up package. Applicants should send their curriculum vitae, a brief description of research interests, and the names of three references to: **Paul J. Reier, Ph.D., Chair, Search Committee for the Markey Faculty Scholars Program Department of Neuroscience, Box 100244, University of Florida, Gainesville, FL 32610-0244.** Application deadline is March 14, 1997 with a start date on or after September 1, 1997. *The University of Florida is an Equal Opportunity Employer, and minorities and women are especially encouraged to apply.*

FACULTY POSITION IN BIOMATERIALS

The School of Materials Science and Engineering and the Institute for Bioengineering and Bioscience of the Georgia Institute of Technology seek candidates for a tenure-track **FACULTY POSITION** in biomaterials. The new faculty position is supported by a Whitaker Foundation Biomedical Engineering Development Award, which focuses on tissue engineering. Candidates should have an engineering or scientific background with an emphasis on materials, a Ph.D., and demonstrated scholarship in an area compatible with the focus of the Whitaker Award. Examples of suitable research topics include biopolymers, controlled release systems, cell-surface interactions, cell encapsulation systems and scaffolds for cell growth. The successful candidate will have a primary appointment in the School of Materials Science and Engineering and must be willing to interact with the School's faculty, teach a materials course, and participate fully in the School's activities. Interested candidates should provide a complete curriculum vitae, a description of research interests, copies of three publications, and names and addresses of at least three references. Applications should be sent to: **Dr. Miroslav Marek, Chair, Faculty Search Committee, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332-0245.** The review process will start on March 1, 1997.

Georgia Tech is an Equal Opportunity Employer.

GRANTS FOR INTERNATIONAL JOINT RESEARCH IN THE AREAS OF MATERIALS AND GLOBAL ENVIRONMENT

The New Energy and Industrial Technology Development Organization (NEDO), a Japanese governmental implementing agency supervised by the Ministry of International Trade and Industry (MITI) of Japan, has been carrying out an International Joint Research Program since 1988. This program aims to contribute to the enhancement of the international level of industrial technology as well as to the advancement of international exchange by *supporting international joint research teams* which conduct superior research. In addition to supporting international joint research teams which conduct original and innovative *basic research in the materials area*, international joint research teams which conduct *practice research in the global environment area* will be provided with grants in FY 1997. The program in the global environment area will be conducted jointly with the Research Institute of Innovative Technology for the Earth (RITE).

Research grants will be provided to "International Joint Research Teams" which fulfill the following main requirements:

1. Each team, in principle, must be composed of four or more researchers;
2. Each team must consist of researchers of two or more different nationalities;
3. The research organizations where the team members' major activities take place must be located in two or more countries;
4. Each team must appoint a research coordinator and an accounting coordinator. The accounting coordinator must be responsible for accounting matters and function as the liaison between the team and NEDO.
   The accounting coordinator's organization and research site must be located in Japan, and he/she must be able to communicate with NEDO in Japanese about all accounting matters. The research coordinator can also hold the post of accounting coordinator.

FY 1997's program is shown below.

Research Area	Field of Research	Amount of Each Grant	Number of Themes to be Adopted	Recipients of Applications
Materials	**Basic research** concerning the investigation, elucidation and the practical use of materials	about 30,000,000 yen in FY 1997	4 themes	NEDO (Note a.)
Global Environment	**Practical research** concerning the production, generation and use of oil-alternative energy (excluding electric power generation technologies) which contributes to the conservation and improvement of the global environment	about 30,000,000 yen in FY 1997	1 theme	RITE (Note b.)

※International joint research teams which conduct research in the energy area and the global environment area (basic research) will not be provided with grants in FY 1997.

How to Receive and Send Application Forms

For those who wish to receive application forms, please make inquires at NEDO or RITE depending on your research field. Please send your application forms to the same organization where you made your inquiry.

Note a. Materials area
International Joint Research Division,
Industrial Technology Department
New Energy and Industrial Technology Development Organization (NEDO)
Address : PO Box 1151, 29F, Sunshine 60 Bldg.
3-1-1 Higashi-Ikebukuro, Toshima-ku, Tokyo, 170 Japan
Phone No. : 81-3-3987-9357
Telefax No.: 81-3-3981-1536

Note b. Global environment area
Research Proposals Reception Section,
Research Planning Department
Research Institute of Innovative Technology for the Earth (RITE)
Address : 9-2 Kizugawadai Kizu-cho Soraku-gun,
Kyoto, 619-02 Japan
Phone No. : 81-774-75-2302
Telefax No.: 81-774-75-2314

Please be informed that the amount of each grant and the number of themes to be adopted may be changed, and that this grant program is subject to government budget approval.

A research team may submit an application a maximum of two times for a grant on the same research plan.

The application period is from January 22, 1997 to April 8, 1997.

No applications will be accepted later than April 8.

ATTENTION: If there are some discrepancies in a submitted application—for example, it does not follow the Application Guidebook or the research contents are different from the proposed research area—it will be considered invalid.

POSITIONS OPEN

DIRECTOR OF SUSTAINABILITY PROGRAMS UNIVERSITY OF NEW HAMPSHIRE

Applications are invited for the newly created position of **DIRECTOR** of Sustainability Programs at UNH. The successful candidate will be responsible for the continued development of sustainability programs and activities which include oversight, facilitation, organization, development, and promotion of wide-ranging, sustainability-related initiatives. We are interested in candidates with a demonstrated ability to work with students, staff, faculty and administrators across departmental, school and college lines; an individual who recognizes the inter-connectivity and importance of contributions from each of our different disciplines. We seek an individual who can help to establish new relationships and work with our external community at the local, regional, and national levels. A doctoral level degree is desirable with six to eight years of relevant experience; international interest and experience would be helpful. Salary commensurate with qualification. Review of applicants will begin March 10, 1997 and will continue until the position is filled. Applications consisting of a curriculum vitae, statement of philosophy regarding the position and leadership style, and the names, telephone numbers, and addresses of five references should be sent to: **Marjorie Joy, Sustainability Director Search Committee, College of Life Sciences and Agriculture, University of New Hampshire, 59 College Road, Durham, NH 03824-3587.**

VICE PRESIDENT, ECOLOGY AND ECONOMICS RESEARCH

The Wilderness Society, a non-profit conservation organization located in Washington, D.C., seeks a **VICE PRESIDENT** to lead its Ecology & Economics Research Division. Incumbent will lead a critical team in the development of strategies, tactics, and implementation tasks needed to integrate TWS analytical work in ecology, resource economics, community economics, GIS, remote sensing, and legal analysis with other programmatic areas. Position will oversee forestry, biological science, economics, and law staff, as well as a related administrative staff. Ideal candidate will have at least 10 years experience in natural/social scientific research and analysis, policymaking, management experience with staff of at least 10 professionals, and budget experience of not less than $1 million. Must possess solid foundation, individual, and/or corporate funder relationships. Ph.D. in a natural or social science required. Compensation includes competitive base and benefits. Cover letter, résumé, and salary requirements to: **Steven Kallan, Vice President, The Wilderness Society, 900 17th Street, N.W., Washington, DC 20006.** *Equal Employment Opportunity Employer.*

ASSISTANT PROFESSOR (TENURE-TRACK)

The Institute of Chemical Toxicology at Wayne State University invites applications for the position of **ASSISTANT PROFESSOR** (tenure-track) in the area of immunotoxicology. Candidates should have a strong background in immunotoxicology, with evidence of mechanistic research on chemical effects on immune function, T-cell subpopulations, antigen presenting cells, intracellular signaling and/or apoptosis. Applicants should have high quality peer-reviewed publications, evidence of independent research and competitive funding. Applications, including a curriculum vitae, statement of research interests, and the names and addresses of three references, should be sent to:

Dr. Raymond F. Novak, Director
Institute of Chemical Toxicology
2727 Second Avenue, Room 4000
Detroit, MI 48201

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

Biological/Earth/Environmental Sciences: Texas A&M University (TAMU)—Commerce invites applications for the Head of a new Department of Biology and Earth Sciences at the rank of **ASSOCIATE/FULL PROFESSOR**. Contact: **Dr. Kay L. Coughenour, Associate Dean and Chair, Search for Head of Biological and Earth Sciences, College of Arts and Sciences, TAMU-Commerce, Commerce, TX 75429-3011. Telephone: 903-886-5169; FAX: 903-886-5199; Email: kay_coughenour@tamu-commerce.edu.** Further information at **http://tamu-commerce.edu/.** Completed application postmarked by April 7, 1997. *TAMU-Commerce is an Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

Wayne State University

The Department of Occupational and Environmental Health Sciences anticipates the availability of tenure-track positions at the rank of **ASSISTANT/ASSOCIATE PROFESSOR** to teach and conduct research in Toxicology, Industrial Hygiene or related disciplines. The applicant should have a Ph.D. and/or M.D. degree. The prime criteria for selection will be the outstanding record of accomplishments within the broad discipline of the Environmental Health Sciences. Qualified candidates should send curriculum vitae and a concise description of research interests to: **Deepak K. Bhalla, Ph.D. (Chair, search committee), Department of Occupational and Environmental Health Sciences, 628-Shapero Hall, Wayne State University, Detroit, MI 48202.**

Wayne State University is an Equal Opportunity/Affirmative Action Employer. Wayne State University—People working together to provide quality service. All buildings, structures, and vehicles at Wayne State University are smoke-free.

COMPARATIVE PHYSIOLOGY BUCKNELL UNIVERSITY

Applications are invited for an entry-level one-year temporary position in comparative animal physiology, with a strong background in environmental and/or evolutionary perspectives. Ph.D. required or pending. Teaching responsibilities will include advanced physiology courses and involvement in a non-majors general biology course. We anticipate an announcement of a tenure-track position in comparative animal physiology the following year. Curriculum vitae, evidence of teaching effectiveness, and three letters of recommendation should be submitted to:

Dr. Wayne F. McDiffett, Chair
Department of Biology
Bucknell University
Lewisburg, PA 17837
mcdifftt@bucknell.edu
Telephone: 717-524-1124
FAX: 717-524-3537

Review of applications will begin on March 20, 1997. *Bucknell University encourages applications from women and members of minority groups (Equal Employment Opportunity/Affirmative Action).*

UNIVERSITY OF ROCHESTER

Opportunity for a cell biologist to join a multidisciplinary glycobiology group as a **RESEARCH ASSISTANT PROFESSOR** (non-tenure-track). Initial appointment can be made for up to three years. We study the regulation and function of O-glycosylation. The successful candidate will have demonstrated expertise in characterizing the Golgi complex (e.g., transport, reconstitution, sorting). To apply send curriculum vitae with the names of three references, together with a brief statement of your research interests to:

Lawrence A. Tabak, D.D.S., Ph.D.
Professor and Chair, Department of Dental Research
School of Medicine and Dentistry
University of Rochester
601 Elmwood Avenue, Box 611
Rochester, NY 14642-8611
Email: ltab@medinfo.rochester.edu

The University of Rochester is an Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSISTANT PROFESSOR POSITION MOLECULAR VIRAL PATHOGENESIS

A **RESEARCH POSITION** is immediately available for candidates interested in viral pathogenesis. The research will focus on molecular mechanisms of viral persistence and virus-receptor interactions of Theiler's virus infection of mice. Ideally, candidates should have a strong research background in molecular virology, molecular biology or biochemistry. Those interested should send a curriculum vitae, description of research experience and names, addresses, FAX and telephone numbers of three references to: **Howard Lipton, M.D., Professor (Departments of Biochemistry, Molecular Biology & Cell Biology and Microbiology-Immunology, Northwestern University), Division of Neurology, Evanston Hospital, 2650 Ridge Avenue, Evanston, IL 60201-1750.** *An Equal Opportunity Employer.*

POSITIONS OPEN

LANDSCAPE ECOLOGY UNIVERSITY OF NEBRASKA

ASSISTANT PROFESSOR, tenure-track position with 60% teaching and 40% research responsibilities available in the Department of Forestry, Fisheries and Wildlife. Will teach and advise in the Natural Resources and Forestry, Fisheries and Wildlife programs including courses in Integrated Resources Management, Plant Community Ecology, and Landscape Ecology. Will also develop a new course to serve as the foundation course for the department dealing with ecology and field biology. Will focus research on the relationship between environmental patterns and ecological processes, including the pattern and distribution of habitat types and their influence on biodiversity. Requires Ph.D. in landscape ecology, forestry, botany, plant ecology, or related; strong communication skills; and commitment to undergraduate education. Important factors in the selection process include experience in the application of GIS to large-scale ecological problems, as well as remote sensing, vegetative community analysis, and biodiversity. A letter of application, complete résumé, statements of research and teaching interests, and the names, addresses and telephone numbers of three references should be postmarked by March 24, 1997 and sent to: **Dr. Gary L. Hergenrader, Head and State Forester, Department of Forestry, Fisheries and Wildlife, University of Nebraska, 102 Plant Industry Building, Lincoln, NE 68583-0814. Telephone: 402-472-2944.** *University of Nebraska is committed to a pluralistic campus community through Affirmative Action and Equal Opportunity; is responsive to the needs of dual career couples; and assures reasonable accommodation under the Americans with Disabilities Act.* Contact Dr. Hergenrader for additional information.

ASSISTANT PROFESSOR of plant pathology—Penn State: Applications invited for a 48-week, tenure-track position available July 1, 1997. This position has a 75% research and 25% teaching assignment with primary responsibility for conducting research that will significantly contribute to the understanding and management of turfgrass diseases. The individual will be expected to conduct research relating to foliar and root disease of turfgrasses and to contribute to an internationally recognized, interdisciplinary research program. The individual is expected to work closely with the turf industry to identify research needs and to secure external funding support. Candidate will be responsible for teaching an eight-week turfgrass disease course, developing a graduate level plant pathology course, and cooperatively teaching an undergraduate interdisciplinary course in turf. Ph.D. in either plant pathology or related field such as biology, botany, plant physiology, agronomy, horticulture, or microbiology required. Candidates must be strongly committed to a research and teaching career and must demonstrate the ability to collaborate with others. Salary is competitive and commensurate with background and experience. Applicants should submit a statement of research and teaching interests, curriculum vitae, and transcripts, and have at least three letters of reference sent to: **Dr. James W. Travis, Search Committee Chair, Department of Plant Pathology, 219 Buckhout Laboratory, Box R-705, University Park, PA 16802-4507.** Application deadline: May 1, 1997 or until position is filled. *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

FUNGAL MOLECULAR GENETICIST. The Department of Plant Pathology, Ohio State University, invites applications for a 12-month, tenure-track, 100% research position as **ASSISTANT PROFESSOR**, located at the Ohio Agricultural Research and Development Center campus in Wooster. Research will focus on molecular characterization of fungal plant pathogens and determination of the role of fungal genes and gene products in pathogenesis. Development of novel sources of disease resistance in crop plants is a primary goal. Graduate student advising and participation in team-taught courses is expected. A Ph.D. and postdoctoral experience in plant pathology, mycology, plant biology, molecular biology, molecular genetics or related area is required. Position available July 1, 1997; applications accepted until a suitable candidate is found. Submit curriculum vitae, statement of interests and goals, academic transcripts, copies of selected publications, and names and addresses (plus FAX and Email) of three references to: **Dr. Sally A. Miller, Department of Plant Pathology, The Ohio State University, 1680 Madison Avenue, Wooster, OH 44691. Telephone: 330-263-3838; Email: miller.769@osu.edu.** *Equal Opportunity/Affirmative Action Employer.*

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Globally active, research-driven, responsible:

Roche. A global pharmaceutical industry leader with a 100 year history of innovation and discovery. Our newly established Drug Metabolism and Pharmacokinetics (DMPK) Discovery group is charged with integrating drug metabolism and pharmacokinetics/pharmacodynamics into the earliest stages of the drug discovery process. We now seek the following scientists to join us in Nutley, NJ.

PhD, Principal Scientist, HPLC-MS/MS

You will coordinate the methods development in the DMPK-Discovery group. To qualify, you must have a PhD in Analytical Chemistry with 3+ years of relevant experience in developing analytical methods for drugs (including peptides and peptidomimetics) in biological fluids and for adapting HPLC-MS/MS methods suitable for high throughput Pharmacokinetic screening. Skills in *in vitro* or *in vivo* metabolism or in Pharmacokinetics are also desirable. **Dept. 7SS08TG**

PhD, Principal Scientist, Pharmacokinetics/Pharmacodynamics

Assist our Exploratory Research Project Teams in linking drug candidate exposure in preclinical animal models of disease with effect, and predicting the effect of the drug under different dosing regimens. You will also develop relevant animal models to investigate absorption and metabolism of the drug candidates. A PhD in Pharmacokinetics/Biopharmaceutics with 3+ years of relevant experience is required. **Dept. 7SS09TG**

BS/MS Scientists

Support our existing expertise in DMPK-Discovery by applying your background in analytical methods development (principally with HPLC-MS/MS and ELISA), and *in vitro* and *in vivo* models of pharmacokinetics and drug metabolism using radioisotopes, animal handling and small animal surgery skills. A BS/MS in Biology/Chemistry/Biochemistry and 3+ years of relevant experience in designing analytical assays for drug candidates in biological fluids and identifying metabolites of new molecular entities are required. **Dept. 7SS10RN**

Forward your resume, indicating department number from above for position of interest, to: Stella Strazdas, Hoffmann-La Roche Inc., 340 Kingsland Street, Building 76, 5th Floor, Nutley, NJ 07110-1199. Or visit us at the Bioscience Career Fair, February 28 - March 1 at the MIT Campus in Cambridge, MA. We are an equal opportunity employer.

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POSITIONS OPEN

BIOLOGY ASSISTANT PROFESSOR. A tenure-track position for a person who combines training in molecular biology with focused expertise in: microbial ecology, population biology, ecotoxicology, physiological ecology, or a related area. Responsibilities include a course in the area of expertise and the development and teaching of a one semester general biology course covering organismal diversity, distribution and interaction and participation in a team-taught introductory, modular Chemistry/Biology laboratory. Opportunities and support exist for research, and direction of undergraduate student research projects is expected. The Biology Department has close interactions with the Chemistry Department, the Raystown Field Station, and the Environmental Science Program to which this position will make a contribution. For further overview contact **http://www.juniata.edu**. Candidates should submit a letter describing qualifications and interest in teaching and involving students in research at a liberal arts college, curriculum vitae, a statement of teaching philosophy, an outline of research interests, graduate transcripts, and three letters of recommendation to: **Gail Ulrich, Director, Human Resources, Juniata College, Box S, Huntingdon, PA 16652**. Review of applications starts March 24, 1997 and continues until the position is filled.

RESEARCH ASSISTANT PROFESSOR—A Ph.D. Cell Biologist/Protein Biochemist is being sought to work in the laboratory of the Director of the Division of Diabetes, Obesity and Nutrition in the Department of Medicine at the University of Maryland at Baltimore. Qualified applicants should have at least five years of postdoctoral research experience in areas related to hormone receptor signal transduction, be fluent in methodologies that include expression of cell surface receptors, receptor binding, G protein coupling, phosphorylation, and other intracellular signaling events. Applicants should also be well-versed with molecular biological and protein biochemical procedures including site directed mutagenesis, cloning, subcellular fractionation, protein biosynthesis and intracellular trafficking. Interested persons should submit curriculum vitae and names of three references to: **Alan R. Shuldiner, M.D., c/o JoAnn Gibbs, Academic Programs Office, Department of Medicine, Room N3E10, University of Maryland Medical Center, 22 South Greene Street, Baltimore, MD 21201.** *The University of Maryland at Baltimore encourages women and minorities to apply and is an Affirmative Action/Equal Employment Opportunity/Americans with Disabilities Act Employer.*

PHYSIOLOGIST
TEMPLE UNIVERSITY
DEPARTMENT OF BIOLOGY

We anticipate hiring a tenure-track **ASSISTANT PROFESSOR** with research interests in physiology. The successful applicant will have had at least two years of postdoctoral training. The Department has a strong commitment to research and teaching both undergraduates and graduate students. For more information about the department, please visit our web site: **http://www.temple.edu/biology**.

Please send a curriculum vitae, a statement about your teaching philosophy and research interests, and copies of two recent publications along with three letters of recommendation to: **Dr. Joel B. Sheffield, Chair, Department of Biology, Temple University, Philadelphia, PA 19122**. We will begin to review applications on March 10, 1997. *Temple University is an Equal Opportunity/Affirmative Action Employer.*

Xavier University of Louisiana, a Historically Black University with a unique Catholic character, announces immediate availability of a full-time tenure-track position in Pharmacology at **ASSOCIATE PROFESSOR** or **PROFESSOR** level. Applicants should have a Ph.D. in Pharmacology and an established externally funded research program. Expertise in toxicology also considered. Responsibilities include maintaining an active independent research program and participation in teaching of pharmacology and toxicology. Endowment funds and ample laboratory space are available. Letter of application, curriculum vitae, statement of research/teaching interests and philosophy, and three letters of recommendation to: **Dr. Harold Komiskey, Chair, Faculty Search Committee, Xavier University of Louisiana, College of Pharmacy, 7325 Palmetto Street, New Orleans, LA 70125**. Application deadline: April 30, 1997. *An Affirmative Action/Equal Opportunity Employer. Minorities and women are encouraged to apply.*

POSITIONS OPEN

THE UNIVERSITY OF PENNSYLVANIA

The Institute for Human Gene Therapy, the Department of Medicine and the Cancer Center are recruiting a tenured **PROFESSOR** or **ASSOCIATE PROFESSOR** to lead a program in Cancer Gene Therapy. The individual will lead a campus-wide program in basic and translational research, as well as the design and implementation of clinical trials in Cancer Gene Therapy through the Institute for Human Gene Therapy. As Program Director, this individual will report directly to James Wilson, Director of the Institute for Human Gene Therapy. Candidates should have an M.D. ± Ph.D., and have demonstrated national recognition and leadership experience in tumor immunology and cancer gene therapy.

Interested individuals should send their curriculum vitae, along with three references, to:

Stephen G. Emerson, M.D., Ph.D.
Cancer Gene Therapy Search Committee
The University of Pennsylvania
Room 1013B Stellar Chance Laboratories
422 Curie Boulevard
Philadelphia, PA 19104

Equal Opportunity/Affirmative Action Employer. We encourage applications from minority and women candidates.

BIOLOGICAL CHEMISTRY
FACULTY POSITION
UNIVERSITY OF PUERTO RICO

The Departments of Biology and Chemistry of the Río Piedras Campus of the University of Puerto Rico seek candidates for a joint tenure-track appointment at the **ASSISTANT PROFESSOR** level in the area of enzyme biochemistry. Contemporary research in the general area of proteins will also be considered. Applicants should have postdoctoral experience and clearly demonstrate the ability to establish a vigorous, internationally recognized research program, as well as a commitment to excellence in teaching. Applications, including curriculum vitae and description of research plans should be submitted by April 15, 1997. Candidates should arrange for three letters of recommendation to be sent to: **José E. García, Chairman of Biology** and/or to: **Reginald Morales, Chairman of Chemistry, Río Piedras Campus, University of Puerto Rico, P.O. Box 23346, San Juan, PR 00931-3346.** *The University of Puerto Rico is an Equal Employment Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR (TENURE-TRACK)

The Institute of Chemical Toxicology at Wayne State University invites applications for the position of **ASSISTANT PROFESSOR** (tenure-track) in the area of immunotoxicology. Candidates should have a strong background in immunotoxicology, with evidence of mechanistic research on chemical effects on immune function, T-cell subpopulations, antigen presenting cells, intracellular signaling and/or apoptosis. Applicants should have high quality peer-reviewed publications, evidence of independent research and competitive funding. Applications, including a curriculum vitae, statement of research interests, and the names and addresses of three references, should be sent to:

Dr. Raymond F. Novak, Director
Institute of Chemical Toxicology
2727 Second Avenue, Room 4000
Detroit, MI 48201

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

ENVIRONMENTAL EPIDEMIOLOGIST

The Department of Preventive Medicine and Community Health (DPMCH) and the Center for Environmental Studies (CES) at Virginia Commonwealth University (VCU) seek applications for a joint faculty position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. The successful candidate will hold a Ph.D., M.D., or Dr.PH. in epidemiology or a related field, have a background in environmental risk assessment, urban environmental issues, and/or the health effects of environmental contaminants, and a commitment to interdisciplinary scholarship and teaching. Submit a letter of application, curriculum vitae, statement of teaching and research goals, and names of three references by April 5, 1997 to: **Dr. Greg Garman, CES, DPMCH, VCU/Medical College of Virginia, P.O. Box 843050, Richmond, VA 23284-3050.** *The university is an Equal Opportunity/Affirmative Action Institution and does not discriminate on the basis of race, gender, age, religion, ethnic origin, or disability.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR-MOLECULAR PHYTOBACTERIOLOGY

The University of Arkansas, Fayetteville, seeks applicants for a **TENURE-TRACK POSITION** in molecular biology and genetics of plant-host/bacterial-pathogen interactions or interactions associated with biological control of plant diseases using bacteria. The incumbent will develop a competitive and cooperative research program. Teaching will include a graduate level course in phytobacteriology, participation in other relevant courses and direction of M.S. and Ph.D. students. Candidates must be U.S. citizens or permanent residents with a Ph.D. in plant pathology or related discipline. Demonstrated experience in molecular biology and genetics of plant host-bacterial interactions or application of molecular techniques and genetics to biological control of plant diseases and teaching experience is required; relevant postdoctoral training is preferred. Rank of appointment and salary are commensurate with experience. Address inquiries to: **Dr. S. M. Lim, Head, 217 Plant Science Building, Department of Plant Pathology, University of Arkansas, Fayetteville, AR 72701. Telephone: 501-575-2445; Email: smlim@comp.uark.edu**. Send a letter of application, summary of research and teaching goals and interests, curriculum vitae, transcripts, reprints and/or manuscripts in press; and have three letters of reference sent to: **Dr. S. M. Lim**, as above. Application deadline is May 1, 1997 or until a suitable candidate is found. Official starting date is July 1, 1997 or as negotiated.

YALE UNIVERSITY
SCHOOL OF MEDICINE
DEPARTMENT OF CELLULAR AND MOLECULAR PHYSIOLOGY
Junior or Senior Faculty Position

Applications are solicited for a tenure-track position at the rank of **ASSISTANT** (term), **ASSOCIATE** (term or tenure) or **FULL PROFESSOR** (tenure) in the Department of Cellular and Molecular Physiology, Yale University School of Medicine. Candidate must hold a Ph.D., M.D. or equivalent degree, and have three years of postdoctoral experience in a relevant research area. The successful candidate is expected to develop an independent research program. Opportunities are available for collaborative research, as well as for graduate and medical student teaching.

Complete curriculum vitae, a statement of research interests and goals, and three letters of reference should be sent by April 1, 1997 to:

Dr. Walter F. Boron, Chair
Department of Cellular and Molecular Physiology
333 Cedar Street
P.O. Box 3333
New Haven, CT 06510

Yale University is an Affirmative Action/Equal Opportunity Employer. Qualified women and minority group members are encouraged to apply.

MOLECULAR BIOLOGIST

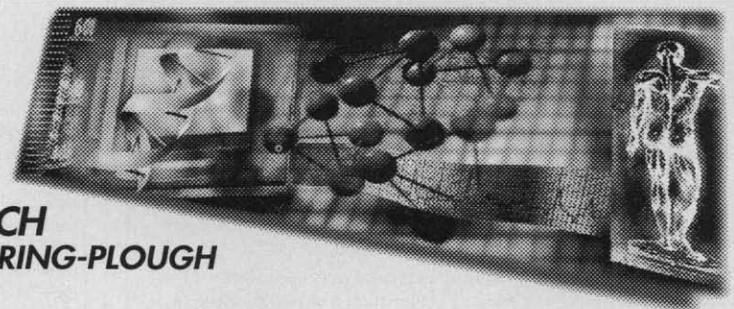
The Insect Control Group of Novartis Seeds, Inc., a world leader in agriculture biotechnology, is looking for a **MOLECULAR BIOLOGIST**. The successful candidate is expected to have ample experience in molecular biology techniques, with particular expertise in making cosmic libraries and oligonucleotide-based gene cloning. Experience in bacterial genetics and a strong record of scientific accomplishments would be highly advantageous. The successful candidate will join a multi-disciplinary, highly motivated team of scientists devoted to maintain leadership in the area of agriculture biotechnology. Novartis Seeds offers a competitive salary, an attractive benefits package, and a drug-free workplace. Please send a cover letter and résumé to:

Novartis Seeds, Inc.
P.O. Box 12257
Research Triangle Park, NC 27709-2257

We are an Equal Opportunity Employer, Minorities/Females/Disabled/Veterans.

RESEARCH ASSOCIATE available to study ion channels in smooth muscle cells. Experienced with patch clamp and intracellular calcium measurements required. Send curriculum vitae and letters of reference to: **Dr. Michael I. Kotlikoff, Professor, Department of Animal Biology, University of Pennsylvania School of Veterinary Medicine, 3800 Spruce Street, Philadelphia, PA 19104-6046.** *An Equal Opportunity/Affirmative Action Employer.*

Working on the molecular level to conquer, treat, or prevent debilitating diseases.



DRUG DISCOVERY RESEARCH AT SCHERING-PLOUGH

At the Schering-Plough Research Institute, insightful scientists are discovering innovative therapeutic agents that challenge humankind's most debilitating diseases. If you want to be on the cutting edge of pharmaceutical discovery, we now have an exceptional position for a recognized protein NMR expert.

LEADERSHIP OPPORTUNITY IN PROTEIN NMR

An exciting opportunity in protein NMR is now available for a scientific leader committed to the application of modern NMR techniques to drug discovery. The NMR group is well-equipped and housed in a state-of-the-art research facility at the Schering-Plough Research Institute. Members of the NMR group actively participate in multi-disciplinary project teams focused on current drug discovery targets.

The successful candidate must have demonstrated experience in the use of NMR to examine protein:inhibitor interactions, determine protein structures and/or decipher enzyme mechanisms. Other qualifications are a PhD, a strong publication record and at least 10 years of post-graduate research experience, including proven expertise in protein NMR. The candidate must have demonstrated leadership ability. Industrial experience and knowledge of small molecule NMR methods are desirable, but not required. Good communication skills and supervisory experience are also required.

We offer an excellent compensation package including a competitive salary and comprehensive benefits. For prompt, confidential consideration, we invite you to forward a resume with salary requirements to: Human Resources-BP, Dept.DD-96-49-BP, Schering-Plough Research Institute, 2015 Galloping Hill Road, K-15, Kenilworth, NJ 07033-0539. You may also respond via e-mail to: spri@spcorp.com. Please include the Department Code for your position of interest in the Subject Line. We are an equal opportunity employer. *We regret we are unable to respond to each resume. Only those selected for an interview will be contacted.*

Schering-Plough Research Institute

Using Science for Human Advantage

Astra is a pharmaceutical company in a phase of rapid growth. Operations, which are highly international, encompass research, production and marketing of pharmaceuticals through subsidiaries, agents and licensees around the world. The Group has approximately 17,000 employees, of whom 6000 are in Sweden. Sales in 1995 totalled 7 billion Canadian dollars.

Astra Pain Control in Sweden is a research company within the Astra Group with about 270 employees. Its products dominate the world market for local anaesthetics. The company has recently established a research and development centre in Montreal, a division of Astra Pharma Inc. Canada, and is actively recruiting for the following position:

Postdoctoral Research Associate

In this role, you will study the biochemical pharmacology of receptors involved in analgesia, including, but not limited to, coupling of opioid receptors to G-proteins and intracellular second messengers. You should have a Ph.D. in a relevant field (pharmacology, neuroscience, biochemistry, or molecular biology) and original publications in signal transduction research. Candidates whose experience combines pharmacology, molecular biology and knowledge of pain modulation are particularly encouraged to apply. Please send a résumé, a two-page research proposal and the names and phone numbers of three references **by March 31, 1997** to: **K. Payza, Ph.D., Department of Pharmacology, ASTRA Research Centre Montreal, 7171 Frederick-Banting (Edifice), St-Laurent, (Québec) Canada H4S 1Z9.**

We thank all applicants for their interest, however, only those being considered will be contacted. No telephone enquiries or agencies, please.

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ASTRA

ASTRA CANADA

SYSTEMS ADMINISTRATOR

Amgen, the world's largest biotechnology company, seeks the computational/analytical talents of an experienced UNIX System Administrator to support our Research staff at their **Southern California** facility.

In collaboration with current system administration staff, the selected individual will be responsible for administering the installation of UNIX systems in Research, while focusing on SGI systems and scientific applications in a graphical environment. Other duties involve recommending additional equipment purchases, participating in Disaster Recovery Planning/Testing and assisting the strategic planning for the use of computers in Research.

This position requires a BS/MS degree in Life Science, Computer Science or the equivalent. Three years of UNIX System Administration experience and a minimum of two years of IRIX experience are also essential. Familiarity with the Research Computing environment and the ability to work with multi-disciplinary teams are a must. Experience with other UNIX systems (HP, SUN, DEC Alpha), Macintosh, Wintel PCs and VMS are highly desirable.

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POSITION ANNOUNCEMENT

PLANKTON ECOLOGIST
THE COLLEGE OF WILLIAM AND MARY
VIRGINIA INSTITUTE OF MARINE SCIENCE
SCHOOL OF MARINE SCIENCE

The Virginia Institute of Marine Science of The College of William and Mary invites applications for a tenure-track faculty position in Phytoplankton Biology, in the Department of Biological Sciences. We seek qualified applicants with a primary research interest in, but not limited to, one of the following areas: phytoplankton ecology, physiology, or biophysics/biochemistry. Candidates familiar with molecular approaches, biooptical instrumentation and/or modeling approaches to the study of planktonic primary producers are encouraged to apply. The successful candidate will join an interdisciplinary team of oceanographers, ecologists, microbiologists and biogeochemists in studies of estuarine, coastal and oceanic plankton systems. The candidate must possess a Ph.D. degree in an appropriate field, and will be expected to demonstrate a commitment to classroom teaching and advising M.S. and Ph.D. students in the School of Marine Science. The position is open at all levels to Full Professor, with rank address and salary dependent on experience and professional accomplishments. Applicants should send curriculum vitae, a statement of research interests and the names and address information (including email) of three references to:

Hugh Ducklow, Chair,
Virginia Institute of Marine Science
College of William and Mary
Box 1346,
Gloucester Point, VA 23062

Review begins on March 10, 1997 and will continue until the position is filled. Search for additional plankton-related faculty positions is envisioned within the next few years. For further information about VIMS and SMS please visit our website at **http://www.vims.edu.**

The College of William and Mary is an Equal Opportunity/Affirmative Action employer. Members of underrepresented groups (including people of color, persons with disabilities, Vietnam veterans and women) are encouraged to apply.

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Research Scientists

Kimberly-Clark, a Fortune 100 Company and a leading manufacturer of consumer products, is seeking outstanding individuals to join its R&D organization in Neenah, Wisconsin.

Disciplines considered include polymer chemistry, materials science, and fluid mechanics. Qualified candidates will have either a Ph.D. with 1-3 years of relevant industrial experience or a M.S. with 3-5 years of relevant industrial experience in the area of absorbency and absorbent materials.

Candidates must be highly motivated, creative professionals with excellent communication and interpersonal skills.

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CBR

Faculty Positions

Center for Bioenvironmental Research

Tulane University and Xavier University of Louisiana

Departments of Chemistry, Cell and Molecular Biology and Basic Pharmaceutical Sciences

Two tenure-track positions at the Assistant Professor level are available for the fall of 1997 as part of a National Science Foundation Joint Faculty Appointment Program (JFAP). A generous two-year start-up package accompanies each position.

Faculty are sought in the areas of molecular modeling or computational biology/chemistry, with emphasis on hormonally active environmental chemicals. As part of the unique and prestigious NSF JFAP, these assistant professors will teach and conduct research at both Tulane and Xavier Universities. They will be jointly appointed at both institutions in the Basic Pharmaceutical Sciences Division of the College of Pharmacy at Xavier and the Department of Chemistry or the Department of Cell and Molecular Biology at Tulane. Talented research-oriented teachers are encouraged to apply.

Please send curriculum vitae and names of three references to:

John McLachlan, Ph.D.
Center for Bioenvironmental Research
1430 Tulane Ave., SL-3
New Orleans, LA 70112

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BioChem Therapeutic Inc., a subsidiary of BioChem Pharma Inc., is a Canadian-based pharmaceutical company located in Laval, Quebec, and dedicated to the research, development and commercialization of innovative products for the treatment of human diseases. We currently have two positions to fill.

Associate Director

VIROLOGY

Reporting to the Director, Biology, you will manage our virology group in order to support the drug discovery process and corporate research objectives. You will also be responsible for integrated planning and realization within the virology group.

This position calls for a PhD in Virology, at least five years of experience in this field, and three to five years of experience in managing a research group. You must also demonstrate an understanding of the research process of a drug. **(Reference R97-25)**

Associate Director

LEAD IDENTIFICATION

Reporting to the Director, Chemical Development and Research Administration, you will oversee our combinatorial chemistry department. Your responsibilities will include library synthesis by solid phase chemistry and the management of robotic automated synthesis instrumentation and sample bank.

You should have a PhD in Organic Chemistry or a related discipline, coupled with a minimum of three years' experience in combinatorial chemistry (solution and solid phase) and a thorough knowledge of modern synthetic chemistry. You should also have expertise in the synthesis of focused compound libraries and three to five years' experience in managing a research group. **(Reference R97-08)**

If you share our commitment to excellence and demonstrate a capacity for teamwork, kindly send your resume before March 7, 1997, indicating the appropriate reference number, to the **Human Resources Department, BioChem Therapeutic Inc., 275 Armand-Frappier Blvd., Laval, Quebec H7V 4A7. Fax: (514) 978-7992**

We offer a competitive salary, a full range of benefits and equal employment opportunities to all. Only candidates selected for an interview will be contacted.

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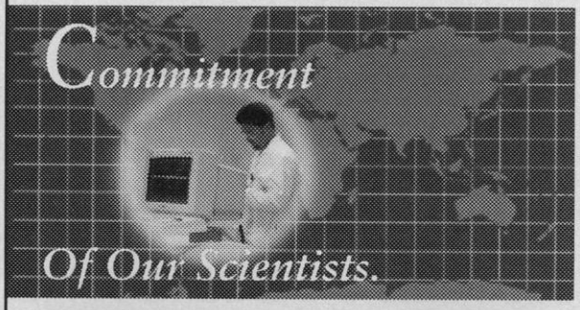
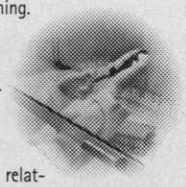


It takes world-class employees to make a world-class company.

At Abbott Laboratories, our professionals are researching, developing and marketing the health care products that will make a significant impact on generations to come. The Pharmaceutical Products Division of Abbott Laboratories is currently recruiting for scientists to join a newly formed Drug Discovery project team at Abbott. We believe that recent advances in the insulin action field have revealed important new molecular targets that may lead to development of novel therapeutic agents for treatment of non-insulin dependent diabetes. This new group will have significant interactions with key advanced technology groups at Abbott including genomics, structural biology, combinatorial chemistry, and high throughput screening. Abbott's Project Team approach to drug discovery provides an exciting, highly collaborative environment that has proven to be rewarding and effective.



BIOLOGY GROUP LEADER

The ideal candidate will have a PhD and/or MD with significant research experience (>6 yr post-doctoral) relating to the biochemical aspects of insulin action. Preference will be given to those candidates that are active in research, directed at understanding the fundamental mechanisms of insulin resistance. Industry experience is desirable. Demonstration of high quality research in this field will be essential. Critical thinking, interpersonal, oral and written communication skills, and demonstrated leadership ability must be apparent. It is expected that this person will provide program leadership consistent with establishing Abbott as a leader in the diabetes research field. **(Job #96-JKK-3220)**

POST-DOCTORAL OR SR. SCIENTIST

The ideal candidates will have a PhD and/or MD with research experience (0-8 yr post-doctoral) in the general field of molecular, biochemical, and/or cellular aspects of hormone action. Bench expertise related to tyrosine kinase receptors, signal transduction, vesicle trafficking, and/or glucose transporter function is preferred. Consideration will also be given to candidates who have expertise relating to lipolysis and/or fatty acid regulation of liver and muscle glucose metabolism. Critical thinking, interpersonal, and oral and written communication skills should be well developed. **(Job #96-LM-3221)**

ASSISTANT/ASSOCIATE BIOLOGISTS

Positions are open for qualified BS/MS candidates who have at least 2 years research experience with in vivo, cell biology, biochemical, or molecular biology studies. Preference will be given to those who have experience directly related to insulin action, metabolism and/or diabetes research. All candidates are expected to have strong analytical skills, be self-motivated, and able to communicate effectively with team members. **(Job #97-LM-04MA)**

RESEARCH SCIENTIST - BIOINFORMATICS AND MOLECULAR METABOLISM

The ideal candidate will have a PhD and at least three years of post-doctoral experience in Molecular Metabolism. Research focus may include diabetes, obesity, bone disorders and other metabolic diseases. Candidates must be highly skilled in the use of genomic information and bioinformatics to aid in the process of target discovery and development. Excellent communication skills are essential for effective functioning as part of an interdisciplinary team. **(Job #97-LAM-0172)**

With 50,000 employees worldwide, and more than $11 billion in annual sales, we've established ourselves as a respected global business and innovative leader in the changing health care industry. For consideration, please send your c.v. to: **Abbott Laboratories, Job #(please select), D583, AP9A, 100 Abbott Park Rd., Abbott Park, IL 60064.** Abbott is an Affirmative Action Employer/ Smoke-Free Environment.

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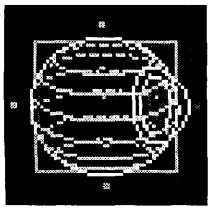

FACULTY POSITION

The Schepens Eye Research Institute
Harvard Medical School

The Schepens Eye Research Institute, an affiliate of Harvard Medical School, seeks well-qualified (M.D., M.D./Ph.D., or Ph.D.) applicants for a position at the advanced Assistant or Associate Professor level to develop a basic research program in immunobiology of retinal transplantation. Resources and newly renovated laboratory space for this program are provided by a generous gift that has enabled the creation of the Minda DeGunzberg Retinal Transplantation Center. Candidates should have experience at the faculty level in creating, sustaining and supporting an independent research program. The successful candidate should have expertise in areas such as transplantation immunobiology, immunogenetics, retinal and/or brain or spinal cord transplantation. Candidates are expected to establish their own independent research programs, and to develop substantive collaborations with other members of the Retinal Transplantation Center, as well as with Institute scientists currently working on retinal development and pathobiology, to be active in training of pre- and postdoctoral fellows, and to participate as a member of the Harvard Medical School faculty.

Applicants should send their curriculum vitae, a statement of research interests, and the names of three references by April 30, 1997, to :

J. Wayne Streilein, M.D.
President and Director of Research
Professor of Ophthalmology
and Dermatology
Harvard Medical School
20 Staniford Street
Boston, MA 02114

SERI and Harvard Medical School are Equal Opportunity/Affirmative Action employers. Women and minorities are encouraged to apply.

Receptor Technologies Inc.

bridging the gap between genomics and drug leads

Receptor Technologies is a development stage company specializing in the functional characterization of genes that encode drug targets (receptors). The company has developed a platform of breakthrough proprietary technologies that enable the high throughput assay of receptor function. Receptor Technologies recently launched a chemistry program, enabling the integration of its screening technology with combinatorial chemistry. Within the company, scientists in molecular genetics, receptor biology, combinatorial biology, computational chemistry, and combinatorial chemistry collaborate to discover compounds that effect newly discovered receptors. In support of a major new expansion, the company is now recruiting a number of scientists. The company provides competitive salaries and benefits. Biologists are being recruited to both our USA and Danish sites. The chemists will only be located at our Danish site.

Senior Scientists (Chemistry): A Ph.D. in organic chemistry/medicinal chemistry is required. Candidates from the pharmaceutical industry with an interest in combinatorial chemistry are strongly encouraged to apply.

Senior Scientists (Biology): A Ph.D. with broad experience in receptor biology and molecular genetics is required. Candidates with at least two years of postdoctoral experience are encouraged to apply.

Technologists (Chemistry): A BS or MS degree in chemistry and at least two years of practical experience in organic chemistry is required. Candidates with experience in combinatorial chemistry are preferred.

Technologists (Biology): A BS or MS degree in biology and at least two years of practical experience is required. Candidates with experience in molecular genetics and receptor biology are preferred.

Training fellowships: In collaboration with academic institutions in Vermont and Denmark, fellowships are available for advanced training in molecular genetics, receptor biology, computational chemistry and medicinal chemistry.

Please address a c.v. and three letters of reference to one of the individuals listed below:

Mark R. Brann, Ph.D.
President and Chief Scientific Officer
Receptor Technologies, Inc.
276 East Allen St. • Winooski • VT • 05404 • USA
E-Mail: receptor@together.net
http://www.together.com/~receptor/HPAGE.HTML

Peter H. Andersen, DM Sc., Ph.D.
Vice President and Director of Discovery
Receptor Technologies A/S
58 Fabriksparken • DK-2600 • Glostrup • Denmark

THE LEADER IN BIOINFORMATICS CONTINUES TO SET THE PACE.

SmithKline Beecham is an international leader in pharmaceutical research and development, a position built on the excellence and dedication of our employees. Our sizable Bioinformatics team will be part of a major new initiative in Anti-Infectives that includes computational analysis of the genomes of a number of bacterial pathogens. This will provide exciting and utterly novel opportunities for comparative genomics and functional analysis - and create exceptional opportunities for the following scientific professionals:

Microbial Bioinformatics Team Leader

You will direct a team of biologists and computer scientists involved in the computational analyses of microbial genomes, gene expression data, mutagenesis studies, and similar approaches to functional assignment, and the development of new therapeutic targets. You will also work closely with software engineers in the Bioinformatics Systems group who are developing software supporting high-throughput sequencing and standard sequence analyses, and sophisticated new tools for comparative genomics and automated annotation. A Ph.D. in a physical, computational, or biological science and 8+ years' experience in microbiological genomics and/or bioinformatics are required. Strong independent research skills and the ability to serve as a resource of world-class expertise in microbiological bioinformatics are musts. **Refer to Job Code A7-BI01**

Senior Computational Biologist

Available genomic database resources, both public and in-house, are already extensive, and their growth will continue to accelerate. For you, the biological interpretation of these data, and thier application to pharmaceutical discovery, presents a significant and highly rewarding challenge - as you play a vital role in linking scientists engaged in the laboratory-based discovery to the full spectrum of bioinformatics resources. A Ph.D. in the biological sciences and 2+ years' postdoctoral experience in the biochemical, genetic and/or evolutionary analysis of genome data (preferable from bacteria) are required; a solid publication record is highly desirable. Strong computer skills (in particular familiarity with genomic databases and DNA analysis software) are essential; lab experience in molecular biology and/or microbiology would be an asset. Good communication skills and the ability to work well on a team are highly important. **Refer to Job Code A7-BI02**

Computational Scientist

You will provide computational technical support to computational biologists and microbiologists by liaison with software developers, maintaining genomic databases, and developing specialized software tools for accessing and analyzing DNA data. An M.Sc. in computer science and/or biological sciences and 3+ years' experience are required. Expertise in maintaining and accessing relational databases (especially Sybase), Perl, UNIX, Windows, and C/C++ skills are essential. A strong background in the biological sciences (in particular molecular biology), and sequence analysis, is highly desirable. Strong communication and team-playing skills are essential. **Refer to Job Code A7-BI03**

Postdoctoral Fellow

You will computationally analyze novel genomic sequence data from a wide range of microorganisms. Research areas include but are not limited to multiple gene families, protein interactions, gene regulation and expression patterns, and DNA replication. This will involve working extensively with bench scientists and software developers while participating in the development of new bioinformatic approaches to biological problems. Applications from recent Ph.D. graduates in the biological and/or computational sciences are encouraged, and highly motivated individuals with a degree in one or the other of these areas, who now seek cross-disciplinary training, will be considered. Funding is for two years with strong possibility of renewal. **Refer to Job Code A7-BI04**

Located in a state-of-the-art research facility in suburban Philadelphia, SmithKline Beecham offers an exceptional compensation/benefits/relocation package as well as a stimulating work environment in which to grow and excel. For confidential consideration, please forward a resume and salary history, indicating desired Job Code, to: SmithKline Beecham Pharmaceuticals, Job Code ____, P.O. Box 2645, Bala Cynwyd, PA 19004. Indicating Job Code is essential. For more information on SmithKline Beecham, visit our Web site at http://www.sb.com. We are an Equal Opportunity Employer, M/F/D/V.

SB

SmithKline Beecham

Pharmaceuticals

Challenging the natural limits.

MARKETING OPPORTUNITIES IN THE GENOMICS AGE

At Incyte Pharmaceuticals, we are combining our bioinformatics expertise with high-throughput DNA sequencing to create information-based tools for drug discovery and development. Our genomic databases, software and biological reagents are rapidly becoming indispensable research components for pharmaceutical and biotechnology companies because they provide faster, easier and more powerful ways for scientists to perform experiments, evaluate data, and create drugs.

As our global customer base explodes — multiple database products are installed in over 30 sites, with thousands of scientists accessing Incyte's data and tools — we are aggressively expanding our Marketing and Customer Support groups to meet customers' needs.

We are seeking dynamic, motivated self-starters with excellent communication and interpersonal skills for the following positions.

Welcome to the world of point and click biology.

ACCOUNT DIRECTORS/MANAGERS/REPRESENTATIVES

Experienced account representatives and account managers needed for field-based positions on the east and west coasts of the U.S., plus Europe and Japan. You should believe in the power of building long-term business relationships, be an outstanding communicator and problem-solver with excellent diplomacy skills, have direct experience in the pharmaceutical (or related) industry, and possess a good working knowledge of modern drug discovery techniques and the relevance of genomics to their future. Life science degree or Ph.D. preferred. European/Japanese language skills desirable for relevant geographical areas. Extensive domestic and international travel required. REF: AMR

PRODUCT MANAGERS

Looking for molecular or cellular biologists with experience (or ambition) of commercial product development, especially in the software or database areas. Office-based, with significant travel. Life science degree or Ph.D. required, supported by a track record of project management, communication, and teamworking skills, plus the desire to see your product succeed in the marketplace. REF: PM

CUSTOMER TRAINING AND APPLICATION SPECIALISTS

Strong life scientists needed, preferably with experience in customer support or product-related roles, and with a demonstrated aptitude for teaching. Office-based, with extensive domestic and international travel. Life science degree or Ph.D. required, preferably in molecular biology, computational biology, or related discipline. Must have an enthusiastic approach to teaching, strong written and verbal communication and presentation skills, and be at home in the electronic world. REF: CTAS

CUSTOMER COORDINATORS

Seeking individuals with strong customer orientation, preferably with a science background supported by experience in a relevant industry (pharmaceutical or biotech a plus). Office-based, with some travel. Life science degree preferred. You should be a team player, with faultless attention to detail and unsurpassed follow-through, ready to go to bat for your customers. REF: CC

BIOANALYSIS SPECIALISTS

Data analysts with excellent teamworking and communication skills needed for this internal support role. Life science degree preferred; some knowledge of bioinformatics processes desirable. You should be detail-oriented, have experience with systems and procedures in a relevant area, and be ready to work with production teams to meet corporate commitments and to juggle conflicting priorities. REF: BS

MARKETING COMMUNICATIONS SPECIALIST

Hardworking, detail-oriented publications specialist needed to help produce marketing collateral, packaging, promotions, advertising, tradeshow exhibits, presentations, and newsletter. You must have a proven ability to manage publications projects and a solid understanding of the production process, including design and printing. Must have strong editorial and graphics skills — including demonstrated familiarity with Photoshop, Illustrator, PageMaker and Persuasion on the Macintosh — and the ability to work with diverse groups and juggle multiple projects with tight timelines. Degree in journalism or publishing preferred, plus a basic understanding of life sciences. REF: MCS

TECHNICAL EDITOR

Experienced technical editor needed to produce documentation and training materials for Incyte's rapidly expanding product line. This detail-oriented teamworker will have superior writing and editing skills and be able to gather, organize and present complex biological information in a clear, consistent and complete manner for an international audience. As a project manager, will implement the overall documentation strategy for multiple projects and edit the work of a technical writer. Must be able to produce online help files using HTML and printed materials using PageMaker. Requires a strong understanding of life sciences, particularly molecular biology and genetics, plus a degree in technical writing or journalism. REF: TE

WEBMASTER

Internet-savvy webmaster needed to develop Incyte's external website. Must have a demonstrated ability to build and maintain a professional-looking corporate website. Requires an extensive knowledge of HTML and Perl; expertise in creating and modifying graphics and documents for Web use, an understanding of Web protocols and security issues, and the ability to work with designers, programmers, and ISPs. Good editorial skills are a big plus. REF: WEB

If you recognize these qualities in yourself, we want to hear from you. Incyte offers competitive salaries, an outstanding benefits package and significant opportunities for professional growth. Mail/Fax your resume to Incyte Pharmaceuticals, Attn.: HR/REF:___; 3174 Porter Drive; Palo Alto, CA; 94304. FAX: 415/855-0572. e-mail: employ@incyte.com. website: www.incyte.com. EOE.

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Tel: (+61) 02 922-2977
Fax: (+61) 02 922-1100

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Genomics Short Course at NIH *for* Faculty at Minority Institutions

The National Human Genome Research Institute (NHGRI) at the National Institutes of Health invites applications for participation in the 1997 *Short Course for Faculty at Minority Institutions,* to be held August 4-8, 1997, in Bethesda, Maryland.

The annual *Short Course* updates college faculty from institutions with substantial minority enrollment on the latest developments in genetic technology, medical genetics, gene therapy and ethics. The course also assists attendees in incorporating this information into classroom teaching to cultivate minority student interest in genome research, and offers information on careers in genetics and grant writing skills. Participants will visit NHGRI laboratories and experience firsthand the latest technologies and research.

Applicants should submit a cover letter describing their research and teaching goals, a current curriculum vitae and a supporting letter from the candidate's department head (or equivalent). Most course costs, including per diem, are covered by NHGRI for participants.

Applications for the summer of 1997 should be submitted by March 31, 1997. Early application is recommended as *Short Course* class size is limited to foster an intimate learning environment. Women and minorities are strongly encouraged to apply.

For more information electronically, visit NHGRI's homepage at http://www.nhgri.nih.gov or e-mail edcore@nhgri.nih.gov.

Mail application to:

Paula Gregory, Ph.D., Short Course Coordinator
Office of Outreach and Education
National Human Genome Research Institute,
National Institutes of Health
Building 49, Room 3A82
49 Convent Drive, MSC 4470
Bethesda, MD 20892-4470
301-402-8621(voice)
301-480-3897 (fax)

POSITIONS OPEN

TENURE-TRACK FACULTY POSITION IN BIOLOGY
OHIO UNIVERSITY-LANCASTER

Applications are invited for a tenure-track **ASSISTANT PROFESSOR** position in biology at Ohio University-Lancaster to begin September 1, 1997. The primary responsibility of the position is to teach introductory biology, human anatomy, and physiology, including associated laboratory classes. Normal teaching load is 12 contact hours per quarter. A strong commitment to undergraduate teaching, a broad knowledge of the field, and an ability to integrate the latest educational technologies are required. Research and service are also expected. Applicants must have a Ph.D. in biology completed by January 1, 1998. The salary range is $32,880–$36,666.

Applicants should submit a letter of application, a current curriculum vitae, copies of graduate transcripts, and three letters of recommendation to:

Ms. Carolyn Bateson
Ohio University-Lancaster
1570 Granville Pike
Lancaster, OH 43130

Deadline for receipt of applications is April 1, 1997.

Ohio University is an Affirmative Action/ Equal Employment Opportunity Institution.

ASSISTANT PROFESSOR
EUKARYOTIC MOLECULAR BIOLOGY

The Department of Biochemistry and Molecular Biology of the University of Maryland School of Medicine invites applications for a tenure-track **ASSISTANT PROFESSOR** faculty position. We are interested in expanding our strength in eukaryotic molecular biology, regulation of gene expression and cell differentiation. The Department includes a number of leading research programs and is currently ranked among the 10% for NIH funding to U.S. medical school biochemistry departments. The successful applicant will develop a vigorous externally funded research program, participate in teaching first-year medical students and in graduate programs in biochemistry, cell and molecular biology, and muscle biology. Send a curriculum vitae, one to two page statement of research interests, and copies of three publications. References will be requested only after initial screening. Send to: **Search Committee, University of Maryland School of Medicine, Biochemistry and Molecular Biology Department, 108 North Greene Street, Baltimore, MD 21201** before March 31, 1997. *The University of Maryland is an Equal Opportunity/Affirmative Action Employer. Applications from women and minorities are encouraged, as are all others.*

WILDLIFE BIOLOGIST. The Department of Biology at Montana State University-Bozeman invites applications for a teaching/research position, tenure-track **ASSISTANT PROFESSOR**, starting August 15, 1997. $32,000 minimum depending on experience. Candidates must have a Ph.D. in a biological science, demonstrated potential to teach and develop extramurally-funded research program. Interest in application of physiological principles to natural resource issues and research experience with terrestrial carnivores preferred. Responsibilities: teach one or more undergraduate courses in introductory biology, physiology, or comparative anatomy, and develop a nationally competitive research program emphasizing carnivore ecology and other managed species in the region. Send letter of application; curriculum vitae; official transcripts; representative reprints; names, addresses, and telephone numbers of three references; and statements of teaching and research interests to: **Wildlife Search Committee, Biology Department, Montana University, Bozeman, MT 59717. Telephone: 406-994-4481**. Full position announcement at: **http://www.montana.edu/wwwbi**. Deadline March 21, 1997. *Affirmative Action/Americans with Disabilities Act/Equal Opportunity/Veterans Preferred.*

WATER QUALITY SCIENTIST
NATIONAL WILDLIFE FEDERATION
GREAT LAKES CENTER—ANN ARBOR, MI

The Great Lakes Natural Resource Center, a regional office of the National Wildlife Federation, has an immediate opening for a **RESEARCH SPECIALIST** with scientific expertise in water quality issues. Full application information is available at **http://www.greatlakes.nwf.org/misc/jobs.htm**. Deadline is March 14, 1997. *The National Wildlife Federation is an Equal Opportunity Employer.*

POSITIONS OPEN

NMR SPECTROSCOPIST
UNIVERSITY OF DELAWARE

The University of Delaware seeks an NMR **SPECTROSCOPIST** to manage its facility. For full details on the position and deadlines, check our Website: **http://www.udel.edu/dybowski/bhnmr.htm**.

ASSISTANT PROFESSOR
TULANE UNIVERSITY MEDICAL SCHOOL

The Department of Microbiology and Immunology invites applications from those having interests and experience in gram-positive bacteria for a tenure-track position at the **ASSISTANT PROFESSOR** level. Minimum requirements for the position include a Ph.D. or M.D. and no less than two years of postdoctoral experience. Establishment of an independent research program funded by extramural support is expected, as is participation in the education of both medical and graduate students. All major disciplines are represented within the Department, and unique opportunities exist for collaborative and interdisciplinary research. It is expected that the position will be filled on or before October 1, 1997. The search will remain open until a suitable candidate is found. To apply send a curriculum vitae, a brief overview of present and future research directions, and the names, addresses, and telephone numbers of three references to: **Faculty Search Committee, Department of Microbiology and Immunology, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, LA 70112.** *Tulane University is an Equal Opportunity/Affirmative Action Employer. Applications from women and ethnic minorities are strongly encouraged.*

ENVIRONMENTAL SCIENCES
RUTGERS—THE STATE UNIVERSITY OF NEW JERSEY

The Department of Environmental Sciences, Rutgers—The State University of New Jersey, invites applications for two positions in the areas of environmental chemistry and hydrology. The appointment level for each position is open although only one senior appointment will be made.

Environmental Chemistry: The Department seeks an individual who works at the interface between chemistry and biology with an emphasis on organic chemicals in aquatic and/or terrestrial ecosystems (especially bioaccumulation, food web transfer and dynamics, bioavailability). The ideal candidate has an earned Ph.D. and experience in the fields of environmental chemistry or biology, ecotoxicology, or related disciplines.

Environmental Hydrology: The Department seeks an engineer/scientist who works in the fundamental and applied aspects of surface and ground water hydrology and/or physical treatment processes. The ideal candidate has an earned Ph.D. in environmental engineering/sciences, or related disciplines.

These appointments carry the responsibility to teach at both the undergraduate and graduate level and develop a well-funded and nationally-recognized program. The appointees will have a strong record of teaching and research, and the senior appointee will be expected to have an exceptional record of research and mentoring. Applications should include a statement of research and teaching interests, a detailed curriculum vitae, and names and addresses (including electronic) and telephone numbers of three references to: **Prof. Roni Avissar, Chair of Search Committee, Department of Environmental Sciences, Cook College, Rutgers University, P.O. Box 231, New Brunswick, NJ 08903**. Review of applications will begin March 1, 1997 and continue until the positions are filled.

Rutgers University is an Equal Employment Opportunity/Affirmative Action Employer.

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POSITIONS OPEN

VETERINARY MEDICAL OFFICER
USDA, AGRICULTURAL RESEARCH SERVICE

The U.S. Department of Agriculture, Agricultural Research Service (ARS), Arthropod-borne Animal Disease Research Laboratory, located on the campus of the University of Wyoming in Laramie is seeking a **RESEARCH VETERINARY MEDICAL OFFICER**, GS-12/13/14 ($44,953 to $82,120 salary commensurate with experience) to conduct research on arboviral diseases and their animal hosts. Scientist will develop an independent research program on arboviral pathogenesis and epidemiology and participate in team projects with virologists and entomologists. All candidates must have a Doctor of Veterinary Medicine (D.V.M.) or equivalent degree from a school approved or accredited by the AVMA or a state government. In addition, candidates must have one year of specialized experience equivalent to the next lower grade in the Federal Government. A Ph.D. degree, although highly desirable, may be substituted for the specialized experience at the GS-12 level only. Specialized experience must be related to the knowledges, abilities and skills required for this position such as knowledge of virology/arbovirology, microbiology, immunology including host immune responses, molecular biology, pathology, epidemiology, entomology and ability to apply such in a research assignment. Skill in veterinary surgical procedures and knowledge of experimental design and statistical analysis is also required. This is a competitive, permanent appointment and U.S. citizenship is required. For information concerning the position please contact: **Dr. Walter J. Tabachnick, Research Leader, Telephone: 307-766-3600**. For application procedures/forms please call: **Bobbie Bobango, Administrative Officer, Telephone: 307-766-3606; FAX: 301-344-0363**, or write to: **USDA, ARS, HRD, WOB, 6303 Ivy Lane, Room 504, Greenbelt, MD 20770-1433**. Applications must be postmarked by April 26, 1997. *ARS is an Equal Opportunity Employer.*

STAFF SCIENTIST POSITION
WOODY PLANT PATHOLOGIST
PLANT MOLECULAR BIOLOGIST

The USDA Forest Service, Northeastern Forest Experiment Station, Delaware, Ohio, is seeking a woody plant pathologist/plant molecular biologist for a **STAFF SCIENTIST** position. The incumbent is to work in the area of tree pathogen/host interactions at the molecular level, and work towards the development of biological or biorational agents or methods for the control of tree diseases. A Ph.D. in plant molecular biology and U.S. citizenship are required. Salary is commensurate with experience (GS 12/13, $45,729 to $70,692). Send curriculum vitae and the names and addresses of three references to: **Dr. James Slavicek, USDA Forest Service, 359 Main Road, Delaware, OH 43015.** *The USDA Forest Service is an Affirmative Action/Equal Opportunity Employer.*

RESEARCH INVESTIGATOR
MID $30s

Eastside biomedical research center seeks **RESEARCH INVESTIGATOR** to investigate the pharmacological and antifertility activity of potential contraceptive agents. Requires Ph.D. in biology, biochemistry or animal physiology; experience in investigation of gonadal function in laboratory animals, radioimmunoassay, and radioreceptorassay; and familiarity with cell/tissue culture and molecular biology techniques. Excellent benefits. Please send up-to-date curriculum vitae and names and addresses of three individuals to whom requests for letters of recommendations can be sent to: **Dr. Kalyan Sundaram, Population Council, Center for Biomedical Research, 1230 York Avenue, New York, NY 10021.** *An Equal Opportunity Employer/Affirmative Action Employer. Minorities/Females.*

Major national patent law firm located in New York City seeks highly qualified **PH.D. SCIENTISTS** in biomedical and molecular biology fields interested in second career opportunities in Intellectual Property Law. Demonstrated technical writing skills essential. Competitive salaries and benefits, and opportunities for challenging assignments. Send résumé to:

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BIOCHEMISTRY AND MOLECULAR BIOLOGY

Excellent facilities, support, and research environment available for an established or highly promising research investigator in biochemistry, molecular biology, and/or cell biology. Candidates with an interest in the molecular genetics of higher or lower eukaryotic organisms are particularly encouraged to apply. An interest in teaching in Mayo Graduate School and/or Mayo Medical School is desirable. The level of the appointment will be commensurate with the qualifications. Women and members of minority groups are encouraged to apply. Research interests of current faculty may be found on our web site: **http://www.mayo.edu/mgs/biochem.htm**. Send curriculum vitae, bibliography, and three letters of reference to:

Eric D. Wieben, Ph.D.
Department of Biochemistry and
Molecular Biology
Mayo Medical School
200 First St. SW
Rochester, MN 55905

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

The Radiopharmaceutical Division of the DuPont Merck Pharmaceutical Company currently has the following opportunity:

DIRECTOR, CHEMISTRY RESEARCH
RADIOPHARMACEUTICAL R&D

We are seeking a Director of Chemistry Research who will be responsible for leading and directing a department of scientific personnel, including the direct supervision of senior scientists with advanced degrees in organic or inorganic chemistry. The responsibilities include establishing research strategies which are directed at key areas of business and technology interest, managing personnel and a budget of approximately $5MM, presenting and defending research programs to senior R&D and business staff, interacting with external and internal scientists in the general areas of chemistry and diagnostic imaging research, publishing and presenting scientific research to key external scientific organizations, and identifying and establishing key external research collaborations in the field.

The desired candidate will have a Ph.D in organic or inorganic chemistry, a minimum of 5 years' pharmaceutical research experience, and a proven track record of technical and leadership accomplishments. This individual must also be highly fluent in cross-functional research programs, such as pharmacology and chemical development, which will allow effective peer-to-peer interactions at the senior staff level within R&D.

We offer a competitive compensation package. Qualified candidates should send a letter/resume, with salary history to: Human Resources, Dept.: DCR-WT, The DuPont Merck Pharmaceutical Company, 331 Treble Cove Road, North Billerica, MA 01862.

DU PONT
MERCK

An Equal Opportunity Employer, M/F/D/V.

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

COMPUTATIONAL CHEMIST/PHYSICIST, ZP-1310/1320-III/IV The Physical and Chemical Properties Division of the National Institute of Standards and Technology (NIST) is seeking a research chemist or physicist to fill a permanent appointment to develop, implement and evaluate advanced quantum chemistry (QC) methods for predicting the properties of molecules such as thermochemistry, ground- and excited-state molecular structures, spectroscopy, reaction pathways, and kinetic rates. The researcher must have skill in the development of QC methods and experience in the application of a wide variety of QC methods to the prediction of molecular properties. Recent research experience is essential.

The salary range is $38,321-$83,883, depending on qualifications and experience. Travel for employee and immediate family, and shipping of household goods will be paid. Realty relocation expenses will not be paid. Applicants must request the vacancy announcement via the Vacancy Hotline Number (301) 926-4851 for specific requirements of the position. Technical contact is Dr. Walter J. Stevens (**walter.stevens@nist.gov**) Please send résumé or application, transcripts, and a summary statement of qualifications by the closing date, 03-14-97, to:

NIST/97-0006/CAH
Admin. Bldg., Room A-123
Office of Human Resources Management
National Institute of Standards & Technology
Gaithersburg, MD 20899

The Department of Commerce/NIST is an Equal Employment/Affirmative Action Employer located in Gaithersburg, MD. U.S. citizenship is required.

CHIEF, BIOSTATISTICS RESEARCH BRANCH DIVISION OF AIDS, NIAID

The National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, seeks an experienced mathematical statistician to serve as Chief, Biostatistics Research Branch, Division of AIDS. This position requires an individual with a doctoral degree in biostatistics or statistics or equivalent and with demonstrated experience and leadership in the design, conduct, and analysis of multicentered clinical trials. Experience with epidemiological investigations and laboratory experiments is also desirable. The incumbent must be able to direct and lead a staff of statisticians conducting research on the design and analysis of AIDS treatment and prevention trials, pre-clinical drug studies, epidemiological investigations of HIV pathogenesis, and models of the transmission dynamics of HIV. The Biostatistics Research Branch also collaborates with NIAID scientists and with others in the extramural AIDS research community.

This position is a GS-15 with salary range between $75,935 and $98,714 per year. To basically qualify, candidates must have at least one year of specialized experience equivalent to the next lower grade (GS-14) in the Federal government. Applicants should submit either an Application for Federal Employment (SF-171), an Optional Application for Federal Employment (OF-612), a curriculum vitae, or resume. Interested applicants may contact Jack Killen, M.D., Director, DAIDS, for more information, at (301) 496-0545. Applications should be sent to:

NATIONAL INSTITUTES OF HEALTH
NIAID PERSONNEL OFFICE
BLDG 31, ROOM 7A-27, 31 CENTER DRIVE MSC 2520
BETHESDA, MD 20892-2520; (301/496-4634)

U.S. Citizenship Required
Applications will be accepted until May 5, 1997.

NIH is an Equal Opportunity Employer

POSITIONS OPEN

The Child Psychiatry Branch is seeking candidates for a tenure-track **RESEARCH POSITION** in the neurobiological basis of childhood psychiatric disorders. Candidates should have a Ph.D. degree and postdoctoral training in cognitive neuroscience, neuropsychology, or developmental psychology with an interest in brain imaging, or a M.D. degree with training in neurology, pediatrics, pediatric neurology, or child psychiatry, together with expertise in structural and/or functional brain imaging. The candidate is expected to develop an independent research program and will be provided with resources to conduct the research. The research will take place in a multidisciplinary setting. Populations currently under study in the Branch include healthy children and adolescents as well as those with schizophrenia, attention deficit hyperactivity disorder, and obsessive compulsive disorder. Send a curriculum vitae, statement of research interests, and have three reference letters sent by March 28, 1997 to: **Chair, Search Committee, Child Psychiatry Branch, National Institute of Mental Health, 10 Center Drive, MSC 1800, Building 10, Room 6N240, Bethesda, MD 20892-1800. Attn: Ms. Bell. Telephone: 301-496-6081.** *NIH is an Equal Opportunity Employer.*

MOLECULAR BIOLOGIST/GENETICIST PROSTATE CANCER RESEARCH

The Division of Urologic Surgery at Washington University School of Medicine seeks a highly qualified **MOLECULAR BIOLOGIST/GENETICIST** to join its multidisciplinary prostate cancer research team. This position requires a Ph.D.; postdoctoral experience desired. Salary and faculty appointment level will be competitive and dependent on experience. Please send curriculum vitae, statement of research interests, and three references to: **William J. Catalona, M.D., Professor and Chief, Division of Urologic Surgery, Washington University School of Medicine, 4960 Children's Place, St. Louis, MO 63110.**

MOLECULAR EPIDEMIOLOGY

The National Institutes of Health, National Institute of Neurological Disorders and Stroke, Laboratory of Experimental Neuropathology is seeking an Intramural Research & Training Award (IRTA) **FELLOW** (U.S. citizen or permanent resident) who has a recent Ph.D. (less than five years) or M.D. or equivalent degree with experience in molecular biology, virology, molecular genetics, or epidemiology. The appointee will work at the interface between molecular virology and epidemiology in a small group focusing on JC Virus genotypes and PML pathogenesis. The appointment will be for two years with a salary range between $25,000 and $38,000. Please submit a curriculum vitae and the names and addresses of three references by March 15, 1997 to:

Gerald L. Stoner, Ph.D.
LENP, NINDS
Building 36, Room 4A-29
Bethesda, MD 20892
Telephone: 301-496-6144
FAX: 301-402-1030
Email: stoner@helix.nih.gov

NIH is an Equal Opportunity Employer.

POSTDOCTORAL RESEARCH POSITION—DuPont's Haskell Laboratory for Toxicology and Industrial Medicine is seeking a qualified individual to participate in a research program involving the generation and analysis of fluoropolymer combustion aerosols. The successful applicant will be expected to develop and use low-level aerosol measurement and chemical analysis techniques to support ongoing toxicology studies of ultrafine perfluoropolymer aerosols; experience in toxicology is desirable. This full-time position is for one year with a competitive salary, commensurate with experience. Please send curriculum vitae and names of three references to: **Mary Jane Hudson, Haskell Laboratory, P.O. Box 50, Elkton Road, Newark, DE 19714.** *DuPont is an Equal Opportunity/Affirmative Action Employer.*

A **POSTDOCTORAL POSITION** is available to study covalent modifications of G proteins in relation to biosynthetic processing and cell replication. Projects will employ immunological and molecular biological techniques, including microinjection, cloning, site-directed mutagenesis, and DNA and protein expression analysis. A recent Ph.D. with training in basic molecular biological techniques is highly desirable. Please submit a curriculum vitae, including names and addresses of three references, to: **Dr. David R. Manning, Department of Pharmacology, University of Pennsylvania School of Medicine, 3620 Hamilton Walk, Philadelphia, PA 19104-6084.**

POSITIONS OPEN

Amersham
The Health Science Group

TECHNICAL REPRESENTATIVE

Amersham Life Sciences, Inc., the leading supplier of reagents for the labeling and detection of biological molecules, presently seeks a **TECHNICAL REPRESENTATIVE** to work in our Life Science Technical Services Department.

The selected candidate will provide technical support to customers about Amersham products and will handle customer complaints professionally to diffuse customer concern and help with solutions. Providing expert help to customers on the sequencing line of Amersham products will also be required.

A B.S. degree in biological sciences or related field; two to three years of laboratory experience in molecular biology, protein chemistry, immunology or related fields; and at least one year of sequencing experience are essential. Solid communication skills are also a must. Familiarity with computer databases, good organizational skills, and technical service/sales experience are preferred.

In return, we offer a growth-oriented professional environment and an attractive compensation package. For consideration, please send résumé to: **Amersham, Attn: Human Resources-TR, 2636 South Clearbrook Drive, Arlington Heights, IL 60005.** *An Equal Opportunity Employer. Minorities/Females/Disabled/Veterans.*

MEDICAL PHYSICIST: Yankton, South Dakota, 8:00 a.m.–5:00 p.m. Will apply knowledge and methodology of science or physics to all aspects of medicine to address problems related to diagnosis and treatment of human disease. Advises and consults with oncologists, physicians, technologists and hospital administration in such applications as use of ionizing radiations in diagnosis, therapy, treatment planning with externally delivered radiations as well as use of internally implanted radioactive sources; complete subject of X-ray equipment, calibration, and dosimetry; medical uses of ultrasound and infrared; bioelectrical investigation of brain and heart; mathematical analysis and applications of computers in medicine; formulation of radiation protection guides and procedures specific to hospital environment; development of instrumentation for improved patient care and clinical service. Will plan, direct, conduct and participate in supporting programs to ensure effective and safe use of radiation and radionuclides in human beings by physician specialist. Will teach principles of medical physics to physicians, residents, graduate students, medical students, and technologists by means of lectures, problem solving, and laboratory sessions. Will direct and participate in investigations of biophysical techniques associated with any branch of medicine. Will conduct research in development of diagnostic and remedical procedures and develop instrumentation for specific medical application. Acts as a consultant to education, medical research and other professional groups and organizations. $63,650/annually. Special requirements include Ph.D. in Medical Physics. Send résumé to: **Job Service of South Dakota, Attention: Bill Balvin, Post Office Box 568, 113 East Third Street, Yankton, SD 57078-0568. Telephone: 605-668-2900; FAX: 605-668-2916.**

MICROBIOLOGY/MOLECULAR BIOLOGY/PHYSIOLOGICAL ECOLOGY

Three temporary positions are available August 1997. One, a two-year position with the possibility of becoming tenure-track, in microbiology, includes teaching in our introductory biology sequence, an upper level course and a seminar in microbiology, and directing student research projects. Some expertise in plant biology is also desirable. We also seek one-year sabbatical replacements in molecular biology (teaching introductory cell/molecular biology, a seminar, and student research projects) and in physiological ecology (teaching introductory zoology, comparative anatomy, a seminar, and student research projects). Excellent teaching and research facilities are available. Evidence of excellence in teaching and research, and a commitment to liberal arts education is expected. Send curriculum vitae, statements of teaching and research interests, and three reference letters to: **Dr. Glen Wurst, Biology Department, Allegheny College, Meadville, PA 16335** by March 10. *Women and minorities are strongly encouraged to apply. Allegheny is an Equal Opportunity Employer.*

POSITIONS OPEN

SENIOR RESEARCH ASSISTANT. Graduate genetics degree and M.D. or three years of medical experience; four years of experience with PCR, PCR cloning, Southerns, hybridization analysis, polymorphic marker maps, sequencing, microsatellite genotype analysis, non-radioactive DNA analysis, standard DNA methods; one year of experience with human glaucoma molecular genetics, human gene expression, Northerns and mRNA methods, RT-PCR, differential display, library screening, non-radioactive protein analysis, Westerns, ECM proteins, GAGs and proteoglycans, growth factor receptors and binding proteins, primary and extended human trabecular and skin fibroblast cell culture, human anterior segment microsurgery, PC computers for genetic, sequence, probe hybridization, image and data analysis; yeast culture and genetics, viral and bacterial expression, purification and characterization of native and recombinant proteins; English writing, reading, and speaking fluency; ability to contact and converse with patients; collect and evaluate family histories and obtain tissue (skin biopsies) and blood samples; peer reviewed journal publications demonstrating skill in designing, organizing, analyzing, and interpreting molecular genetic studies; help teach Molecular/Medical Genetics Methods. Send résumé and three letters of reference to: **Ted Acott, Casey Eye Institute, 3375 Southwest Terwilliger, Portland, OR 97201.**

SCIENTIST POSITION

Microbiologist/Molecular Biologist (Bacteria), GS-12 (47K–61K commensurate with experience). Permanent **SCIENTIST** in a laboratory studying bacterial pathogens that cause human food-borne illness. M.S. degree or Ph.D. preferred, or extensive experience in molecular biology of bacteria. The incumbent will assist in a project to determine the basic mechanisms of attachment of human bacterial pathogens to surfaces of poultry, fruits and vegetables. Expertise in microbiology, biochemistry, and molecular biology is required. Any knowledge of: the virulence mechanisms of *Salmonella* spp., *C. jejuni* or pathogenic *E. coli* spp.; fluorescence or confocal microscopy; FISH; cell biology techniques; or phage display libraries would be desirable. Candidates must be U.S. citizens. Contact: **Dr. Robert Mandrell** for further position information; **Telephone: 510-559-5829; Email: mandrell@pw.usda.gov**. For a copy of the official announcement, contact: **Janis Lewis, USDA, ARS, WRRC, 800 Buchanan Street, Albany, CA 94710. Telephone: 510-559-6015**. Closing date for announcement is March 24, 1997. *USDA/ARS is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR DEPARTMENT OF OPHTHALMOLOGY

The Department of Ophthalmology at University of Texas Southwestern is pleased to announce an opening for an **ASSISTANT PROFESSOR**, non-tenured, research track position. We seek an outstanding individual with a Ph.D. in physics or physical chemistry with postgraduate studies in magnetic resonance spectroscopy and imaging. Experience required in various MR methodologies as applied to *in vitro* and *in vivo* systems, design and construction of surface coils and computer programming. Expertise in functional MR is desirable, particularly related to nervous system studies. Duties will include direct supervision of a laboratory dedicated to the application of MRI and MRS in retinal disease, design and implementation of MR experiments, training of ancillary laboratory personnel, preparation of grant applications, and interaction with clinical scientists.

Interested individuals should send curriculum vitae, with a cover letter to: **James P. McCulley, M.D., Chairman, Ophthalmology Department, The University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235-9057.**

WINONA STATE UNIVERSITY WINONA, MINNESOTA

ASSISTANT PROFESSOR, entry-level, full-time, probationary position beginning fall quarter, 1997 (pending final budgetary approval). A Ph.D. with emphasis in parasitology/immunology is required by September 1997.

Responsibilities: Teaching courses in immunology, parasitology, A&P, other courses, and directing undergraduate research.

Complete job description: **Telephone: 507-457-5639** or **Email: affaction@vax2.winona.msus.edu** or check out our web site **http://www.winona.msus.edu/grants/affirmativeaction/home.htm**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

SENIOR GRANTS ADMINISTRATORS

A&PC is a rapidly expanding biotech company seeking motivated individuals for the following positions:

Three **SENIOR GRANTS ADMINISTRATORS** having five years minimum experience.

Job requires self-starting individuals who are detail-oriented and have extensive experience in the administration of research grants and contracts from federal and non-federal sources.

A competitive fringe benefits package and pension plan is available. Salary will be commensurate with experience. Applicants should send a letter of interest and résumé by March 7 to:

A&PC
Attn. Human Resources
P.O. Box 130517
St. Paul, MN 55113

Equal Opportunity Employer.

POSTDOCTORAL POSITION: Study molecular mechanisms of cardiac and muscle development using transgenic mice with congenital cardiac malformations and "gene trap" methods to identify downstream targets of Pax and Hox transcription factors (*PNAS*, **93**:4213–4218, 1996; *JBC*, **270**:11719–11722, 1995). Strong background in molecular biology, genetics, and/or development required. Applicant must be permanent resident or U.S. citizen. Send curriculum vitae, research interests, and names of three references to: **Jonathan Epstein, M.D., University of Pennsylvania, 809 Stellar Chance, 422 Curie Boulevard, Philadelphia, PA 19104. Email: epsteinj@mail.med.upenn.edu**.

POSTDOCTORAL POSITIONS at the University of Florida Center for the Neurobiology of Aging are available May 1997. These are supported by NIH training grants and other sources. Potential projects include neuroendocrine regulation, transduction of trophic influences, somatic gene-therapy, neuropeptide brain-delivery, and receptor structure-function relationships. Please send a curriculum vitae to: **Ed Meyer, Ph.D., Department of Pharmacology, JHMHC Box 100267, University of Florida, College of Medicine, Gainesville, FL 32610-0267** or **James Simpkins, Ph.D., Deaprtment of Pharmacodynamics, JHMHC Box 100487, University of Florida, Gainesville, FL 32610-0487.** *University of Florida is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to study the function of winged helix transcription factors in mammalian liver and gut development via gene targeting in mice. Candidates should have experience in molecular biology. Please send curriculum vitae and the names of two references to: **Dr. Klaus Kaestner, Department of Genetics, University of Pennsylvania Medical School, 476 CRB, 415 Curie Boulevard, Philadelphia, PA 19104-6145. FAX: 215-573-5892; Email: kaestner@mail.med.upenn.edu.**

POSTDOCTORAL POSITION available immediately for a molecular biologist to study the nature of interprotein interactions between cyt P450 and its redox partners, cyt b5 and cyt P450 reductase. Mutant proteins will be generated and characterized to gain insight into their structure and function. Send résumé and three letters of reference to: **Dr. Waskell, Department of Anesthesia, University of California at San Francisco, VA Medical Center, San Francisco, CA 94121. FAX: 415-750-6946.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION in **Neuroscience, Harvard Medical School and Children's Hospital** in neocortical transplantation and development: cellular and molecular control over neural precursor differentiation; cellular repair and complex circuit reconstruction. Training in cellular and molecular neuroscience, neuronal/precursor culture or transplantation, and/or neocortical development required. Reply to: **J. Macklis, Neuroscience Division, 320 Longwood Avenue, Boston, MA 02115.**

POSTDOCTORAL POSITION
UNIVERSITY OF PENNSYLVANIA

Three-year position for a recent Ph.D. with strong experience in cell and molecular biology for studies on signaling in vascular cells, including platelets. Send curriculum vitae and references to: **Dr. Skip Brass, Department of Medicine, CRB678, 415 Curie Boulevard, Philadelphia, PA 19004.**

Molecular systematics **POSTDOCTORAL POSITION** available immediately for one to three years. Research topic is patterns and rates of cospeciation between birds and ectoparasitic insects. Candidates should have a Ph.D. and considerable experience with PCR, cloning, primer design, DNA sequencing and analysis. Experience with insects is desirable but not essential. Send letter of application, curriculum vitae and names and Email addresses of three references to: **Dr. Dale H. Clayton, Department of Biology, University of Utah, Salt Lake City, UT 84112. FAX: 801-581-4668. Email: clayton@biology.utah.edu.** Final review of applications will start 20 March 1997. *The University of Utah is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities and provides reasonable accommodations to the known disabilities of applicants and employees.*

POSTDOCTORAL POSITION
UNIVERSITY OF PENNSYLVANIA

Position available to study cell cycle control of cellular division. Specific areas of study include the control of s-phase and mitotic events using a *Xenopus*-extract based *in vitro* system, as well as the yeast *S. cerevisiae*. Qualified candidates should possess a Ph.D. and have a strong background in molecular biology and biochemistry. Please forward a curriculum vitae, research interests and background, and the names and telephone numbers of three references to: **University of Pennsylvania School of Medicine, Attn: Dr. Sandra L. Holloway, 446a CRB, 415 Curie Boulevard, Philadelphia, PA 19104-6145.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION to study the role of phagocyte oxidants in inflammatory response and tissue injury. Current projects use a wide range of approaches in knockout mice genetically deficient in superoxide production (*Nature Genetics*, **9**:202, 1995; *Journal of Clinical Investigation*, **97**:2680, 1996; *Journal of Experimental Medicine*, **185**:207–218, 1997), including impact of cytokines and gene therapy. Experience with transgenic mice and molecular and/or cell biology is preferred. Send curriculum vitae and the names of three references to: **Dr. Mary C. Dinauer, Wells Center for Pediatric Research, Indiana University School of Medicine, 702 Barnhill Drive, Room 2600, Indianapolis, IN 46202-5225.** *Indiana University is an Equal Opportunity/Affirmative Action Educator, Employer and Contractor, Minorities/Females.*

POSTDOCTORAL FELLOW
BIOGENESIS AND MOVEMENT OF SECRETORY VESICLES

POSTDOCTORAL POSITION available to investigate: 1) critical determinants in production of post-Golgi vesicles and alterations in protein kinase C binding proteins; 2) the role of nonconventional myosins in vesicle motility. Experience in signal transduction, molecular biology, and baculovirus expression protocols are preferred. Please send curriculum vitae and three references to: **Dr. David M. Terrian, Department of Cell Biology, East Carolina University School of Medicine, Greenville, NC 27858.** *Affirmative Action/Equal Employment Opportunity Employer—Accommodates individuals with disabilities.*

POSTDOCTORAL POSITION available immediately to study the role of the inositol phosphate cascade in phototransduction. Experience with single cell electrophysiological techniques such as intracellular recording, intracellular pressure injection and voltage clamping is preferred as is the ability to work independently. Send curriculum vitae, a statement of research interests, and the names of three references to: **Dr. Alan Fein, Department of Physiology, University of Connecticut Health Center, 263 Farmington Avenue, Farmington, CT 06030-3505. Email: afein@neuron.uchc.edu.**

An Affirmative Action/Equal Opportunity Employer. Minorities/Females/Persons with Disabilities/Veterans.

POSTDOCTORAL FELLOWSHIP in brain imaging and cognition. Three year appointment for recent Ph.D. in cognitive science, psychology, or neuroscience. Experience in modern functional imaging techniques desirable. Opportunity to participate in establishment of multi-institutional, collaborative experimental studies involving Oliver Sacks, Stephen Jay Gould, Rhonda Roland Shearer, Sam Williamson, Stephen Kosslyn and others in a new "virtual institute." Send curriculum vitae, brief description of research interests and names of three references to: **R. R. Shearer, 62 Greene Street, New York, NY 10012.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS
VOLLUM INSTITUTE, PORTLAND, OREGON
NEUROENDOCRINE CONTROL OF FEEDING AND METABOLISM

Positions available to study the role of POMC neurons in obesity and metabolism. The laboratory takes a multidisciplinary approach, utilizing molecular biology, pharmacology, transgenic and knockout technology, and physiology and behavior. Candidates with experience in physiology, feeding behavior, and/or transgenic mouse technology preferred.

Send curriculum vitae and three references to: **Dr. Roger D. Cone, Vollum Institute, Oregon Health Sciences University, Portland, OR 97201. FAX: 503-494-4534; Email: cone@ohsu.edu.**

POSTDOCTORAL FELLOWSHIP POSITIONS—Yale University School of Medicine. Ph.D.s or M.D.s. Spectrum of basic science disciplines, especially molecular and cellular neurobiology. Special interests include mechanisms of cell injury as a result of environmental stress such as low O_2. Expertise in either electrophysiology, molecular genetics or molecular biology is desirable. Must be U.S. citizens/permanent residents. Please send curriculum vitae to: **Gabriel G. Haddad, M.D., Department of Pediatrics, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06520. FAX: 203-785-6337; Email: haddadgg@maspo2.mas.yale.edu.** *Yale University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION to study various aspects of vertebrate limb development with emphasis on the roles of signalling molecules, regulatory genes particularly homeobox genes, and the extracellular matrix particularly heparan sulfate proteoglycans in regulating limb formation, outgrowth, patterning, and chondrogenesis. Send curriculum vitae and names of references to: **Dr. Robert A. Kosher, Department of Anatomy, University of Connecticut Health Center, Farmington, CT 06030. Email: kosher@sun.uchc.edu.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP
WASHINGTON UNIVERSITY
SCHOOL OF MEDICINE

Available position to study cellular protein trafficking and turnover (e.g., *EMBO J.* **14**:2269, 1995; **15**:3806, 1996). Provide curriculum vitae to: **Alan L. Schwartz, Box 8116, Washington University School of Medicine, St. Louis, MO 63110, U.S.A. FAX: 314-454-0537; Email: schwartz@kids.wustl.edu.** *An Equal Opportunity/Affirmative Action Employer, Minorities/Females/Disabled/Veterans.*

STANFORD UNIVERSITY MEDICAL SCHOOL

POSTDOCTORAL POSITION to study mechanisms of insulin signal transduction. Background in biochemistry, cell biology, and/or molecular biology. Applicant should have gained a Ph.D. within the last three years. Send curriculum vitae and names of three references to: **Dr. Richard Roth, Department of Molecular Pharmacology, Stanford University School of Medicine, Stanford, CA 94305. FAX: 415-725-2952; Email: rroth@stanford.edu.**

A **POSTDOCTORAL POSITION** is available in spring 1997 in a basic and clinical research team focusing on lung edema and pulmonary vascular responses in hypoxia at cellular and molecular levels as well as in animal and human physiological studies. The applicant should have some experience in and will be expected to utilize isolated perfused lung and/or whole animal models. Please send your curriculum vitae and names of three references to: **Professor Peter Bärtsch, Abtellung für Sport- und Leistungsmedizin, Hospitalstr. 3, D-69115 Heidelberg.**

POSTDOCTORAL POSITION available immediately in gene therapy and tissue engineering of the skin to manipulate autocrine/paracrine growth control as well as immunology of the skin. Strong background in cellular/molecular biology required. Please submit curriculum vitae, a brief summary of research experience and goals with the names of three references to: **Jeffrey R. Morgan, Ph.D., Shriners Burns Institute Research Center, One Kendall Square, Building 1400, Box S, Cambridge, MA 02139.**

POSTDOCTORAL POSITIONS
Genome Technology Branch
National Human Genome Research Institute
National Institutes of Health

Postdoctoral research positions are available for individuals interested in mammalian genetics and genome analysis at the National Human Genome Research Institute (NHGRI), formerly the National Center for Human Genome Research (NCHGR):

- **Isolation of genes associated with inherited diseases**
- **Human genetic linkage analysis**
- **Human chromosome mapping and sequencing**
- **Sequence and structure analysis using computational techniques**

More information on research programs and investigators within the Genome Technology Branch can be found at **http://www.nhgri.nih.gov/DIR/GTB**

Candidates should possess an MD and/or PhD and have less than five years of postdoctoral experience. Please send a letter, CV, and the names of three references to: **Renée Gamborg, Genome Technology Branch, NHGRI/NIH, 49 Convent Drive, Room 2C-72, MSC 4431, Bethesda, Maryland 20892-4431.** *The NIH is an Equal Opportunity Employer and applications by women and minorities are strongly encouraged.*

PENN
UNIVERSITY of PENNSYLVANIA

FACULTY POSITION
Microbial Immunology

The Department of Microbiology, University of Pennsylvania School of Medicine invites applications for a tenure-track Assistant Professorship. Candidates should have strong credentials in areas related to the immune response to or immunopathogenesis of microbial infections. Successful applicants will join an interactive group of researchers with interests in many areas of microbiology. Major responsibilities will include supervision of an active research program and the teaching of immunology and microbiology to graduate and medical students. Applicants should submit a curriculum vitae, summary of research accomplishments, description of future plans and three letters of reference by April 15, 1997 to:

Chair
Microbial Immunology
Search Committee
Department of Microbiology
University of Pennsylvania
807 Abramson Building
34th & Civic Center Boulevard
Philadelphia, PA 19104-4318

For further information about the department visit our website: http://www.med.upenn.edu/micro/

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CONFERENCE

BONE MORPHOGENETIC PROTEINS
Cell Biology to Clinical Applications
2nd International Conference
June 4 - 8, 1997
University of California, Davis
Sacramento, California

Organizer: A.H. Reddi

Sessions Include:

Cell and Developmental Biology, Molecular Biology and Regulation, Transgenic Approaches and Gene Knockouts, Receptors and Signal Transduction, Actions Beyond Bone, Cartilage Biology and Repair, Orthopaedic Craniofacial and Periodontal Applications, Delivery Systems and Future Trends

Registration

$400.00 - For Scientists from Academia
$700.00 - For Scientists from Industry

Registration fee includes: abstract book, lunch, coffee breaks and Conference Banquet

FOR FURTHER INFORMATION AND ABSTRACT FORMS
Ms. Lina Caparas
Conference Services
University of California
Davis, CA 95616
Tel: 916-757-3255
FAX: 916-757-7943
Email: lmcaparas@ucdavis.edu

ALPHAGENE, INC.

AlphaGene is a rapidly growing biotechnology company founded by scientists from Harvard Medical School. The Company is developing high-quality innovative gene libraries, ultra high speed DNA sequencing, high-throughput functional screening systems, and advanced bioinformatics and computational biology tools.

AlphaGene is recruiting results-oriented molecular biologists for the following positions:

SCIENTISTS/SENIOR SCIENTISTS

Candidates must possess a Ph.D. degree in molecular biology with extensive (3-5 years) experience in cloning, DNA sequencing, and expression of heterologous genes in prokaryotic and eukaryotic cells. Experience in the synthesis of gene libraries, PCR, site-directed mutagenesis, and genetics is highly desirable. Scientific creativity, commitment to organizational goals, communication skills, ability to work as a member of a team, and achievement focus are musts.

This opportunity provides an environment of excellence for both personal and professional growth. AlphaGene offers a competitive salary and benefits package. We are located in the greater Boston area, amidst strong academic institutions and a growing community of biotechnology companies. Qualified candidates are requested to submit, in confidence, a cover letter, their curriculum vitae, and two references to: **AlphaGene Resources, 260 West Cummings Park, Woburn, MA 01801.** *AlphaGene is an Equal Opportunity Employer M/F/D/V.*

AlphaGene

POSITIONS OPEN

POSTDOCTORAL POSITION
DANA-FARBER CANCER INSTITUTE AND HARVARD MEDICAL SCHOOL

POSTDOCTORAL POSITION available to study the molecular basis of human leukemia. In particular, the mechanism of transformation by oncogenic transcription factors will be investigated (*Cell* 77:307, 1994; *PNAS* 92:4917, 1995; *MCB* 16:4107, 1996; *Blood* 88:4252, 1996).

Applicants must have a Ph.D. and molecular biology experience. Please send curriculum vitae including names and references to:

Todd R. Golub, M.D.
Department of Pediatric Oncology
Dana-Farber Cancer Institute
44 Binney Street
Boston, MA 02115
todd_golub@dfci.harvard.edu

Two positions exist within the Department of Pediatrics, University of Southern California School of Medicine for highly motivated individuals. One position is available for a **POSTDOCTORAL CANDIDATE** with demonstrated expertise in molecular biology. The other position does not require a doctoral degree, but expertise in molecular biology is a necessity.

Both candidates will work on mechanisms of lung disease in premature human neonates.

Highly competitive salary and benefits.

Contact:

Parviz Minoo, Ph.D.
Director of Research
Women's & Children's Hospital, Room L-919
1240 North Mission Road
Los Angeles, CA 90033

DEVELOPMENTAL MOUSE GENETICS/ REPRODUCTION

A **POSTDOCTORAL RESEARCH ASSOCIATE POSITION** is available immediately to study various aspects of mammalian development, reproduction, and oncogenesis using transgenic mice (see *Nature* **360**:313–319, 1992; *Nature* **374**:354–363, 1995; *Nature* **383**:531–535, 1996). Applicants should hold a Ph.D. or M.D./Ph.D. by the time the position begins. The position requires strong training in genetics and/or molecular biology. Please send a curriculum vitae and reference letters to: **Martin M. Matzuk, M.D., Ph.D., Department of Pathology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030. Email: mmatzuk@bcm.tmc.edu.** *Baylor College of Medicine is an Equal Opportunity/Affirmative Action/Equal Access Employer.*

POSTDOCTORAL POSITION

A **POSTDOCTORAL POSITION** is immediately available for isolation of genes encoding membrane-associated enzymes involved in lipid synthesis. Experience in protein purification as well as molecular techniques is desirable. This position is for a minimum of two years with the possibility of extension. Publication of results is highly encouraged. Calgene is proud to offer competitive wages and a comprehensive benefits package. For immediate consideration, send your letter of interest, curriculum vitae, and names of three references to: **Calgene, Inc., 1920 Fifth Street, Davis, CA 95616, Attn: Human Resources. FAX: 916-753-1510.** Find out more at **www.calgene.com.** *Equal Opportunity Employer; Minorities/Females/Disabled/Veterans.*

POSTDOCTORAL/RESEARCH BIOCHEMIST POSITION available immediately to study protein-protein interactions by NMR. The structure and dynamics of the cyt b5-cyt c complex in solution will be evaluated. Experience with multidimensional NMR and protein purification desirable. Send résumé and three letters of reference to: **Dr. Basus, Department of Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA 94111. Email: basus@picasso.ucsf.edu.**

Two **POSTDOCTORAL POSITIONS** available immediately to study regulation of gene expression during sex gland development using transgenic mouse or zebrafish as models. Please send curriculum vitae and three letters of recommendation to: **Dr. Bon-chu Chung, Institute of Molecular Biology, Academia Sinica. FAX: 886-2-7826085; Email: mbchung@sinica.edu.tw; http://www.sinica.edu/tw/imb/chung.**

POSITIONS OPEN

PREDOCTORAL FELLOWSHIPS

GRADUATE FELLOWSHIPS leading to the Ph.D. degree in biophysics or biochemistry are available through the Roswell Park Graduate School, a component of the State University of New York at Buffalo, located on the campus of Roswell Park Cancer Institute, a comprehensive cancer center. The fellowships are sponsored by the National Cancer Institute and are limited to United States citizens and permanent residents. The annual stipend is $12,000 plus benefits.

Additional information and application forms are available from:

Chairman, Biophysics/Biochemistry Department
Roswell Park Graduate School
Elm and Carlton Streets
Buffalo, NY 14263

Roswell Park is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS HUMAN GENETICS

Two positions are available immediately to study novel tissue specific human proteases at the gene, protein and functional level. A major area of interest is the involvement of these proteases in normal and disease states. These positions require a strong background in cloning, sequencing, functional expression, gene regulation and basic enzymology. A strong interest in proteases and immunology is desirable. Please send curriculum vitae, a summary of research interests, and the names of three references to: **Dr. Dieter Bromme, Department of Human Genetics, the Mount Sinai School of Medicine, Box 1498, One Gustave L. Levy Place, New York, NY 10029-6574. FAX: 212-360-1809.** *An Equal Opportunity Employer. We foster diversity in the workplace.*

A **POSTDOCTORAL POSITION** is available on an NIH-funded project to investigate the mechanisms of endotoxin-induced signaling in vascular endothelial cells. Candidates should have a Ph.D. with a strong experience in basic cell biology/molecular biology techniques, mammalian tissue culture and cell transfection. Experience in signal transduction and use of gene manipulation to study signaling in mammalian cells is desirable. Send curriculum vitae, representative publications, a statement of research interests, and three letters of recommendation to: **Dr. Moshe Arditi, Childrens Hospital Los Angeles, Division of Infectious Diseases, MS #51, 4650 Sunset Boulevard, Los Angeles, CA 90027. Telephone: 213-669-2509; FAX: 213-660-2661; Email: marditi%smtpgate@chlais.usc.edu.** *Childrens Hospital Los Angeles is an Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS
Molecular and Cellular Immunology

TWO POSTDOCTORAL positions available immediately to study the molecular mechanisms of autoimmune disease and cytokine gene regulation. Candidates must have a Ph.D. and/or M.D. within the last six years and a strong background in immunology, molecular biology, and/or cell biology. Send curriculum vitae and names of three references to: **Timothy M. Wright, M.D., Division of Rheumatology and Clinical Immunology, University of Pittsburgh School of Medicine, E1157 Biomedical Science Tower, Pittsburgh, PA 15261. FAX: 412-648-7047; Email: wright@novell1.dept-med.pitt.edu.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

POSTDOCTORAL POSITION available to study regulation and function of neuropeptidases using cell transfection and transgenic mice. Experience in molecular biological techniques an asset. Send curriculum vitae and letters of recommendation to: **Dr. Louis B. Hersh, Department of Biochemistry MS607, University of Kentucky, Lexington, KY 40536-0084.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION. Immediate opening working on genetic network analysis of breast cancer in interdisciplinary environment. Must have strong background in molecular biology, PCR, and/or SAGE. U.S. citizen or green card required. Send curriculum vitae/résumé, three references, brief statement of interest to: **Zoltan Szallasi, M.D., Pharmacology Department, Room C2007, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814.** *Equal Opportunity Employer/Affirmative Action.*

POSITIONS OPEN

POSTDOCTORAL AND RESEARCH FACULTY
Chemical Physics and Physics Experimentalists and Theorists

FIVE POSITIONS for exceptionally talented scientists in the following areas: quantum control of chemical reactions with tailored ultrafast light pulses, ultrafast x-ray diffraction and absorption, dynamics of biomolecular and biological processes imaged with light pulses, and high intensity light driven physics, including x-ray lasers, high harmonics, and laser driven particle acceleration. For more information about these positions and the group, see our Web site: **http://www-wilson.ucsd.edu.**

Salaries and positions commensurate with experience and qualifications. Applicants please send curriculum vitae, statement of research interests, and one letter of recommendation to: **Prof. Kent R. Wilson** and **C. P. J. Barty, Department of Chemistry, University of California, San Diego, La Jolla, CA 92093-0339.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately for a highly qualified individual trained in molecular biology. Successful candidate will work within an interdisciplinary group of endocrinologists, neurobiologists, and molecular biologists within the Clinical Neuroendocrinology Branch of the NIMH, under the direction of Dr. Philip Gold, and the Laboratory of Mammalian Genes and Development of the NICHD, under the direction of Dr. Heiner Westphal. Salary range $25,000–$38,000 per year. Please send curriculum vitae, and names and telephone numbers of three references to: **Philip W. Gold, M.D., Chief, Clinical Neuroendocrinology Branch, Intramural Research Program, NIMH, NIH Clinical Center, Room 3S231, 10 Center Drive MSC 1284, Bethesda, MD 20892-1284. Email: philgold@condon.nih.gov.** *NIH is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION
IMMUNOLOGY

Highly motivated individual with experience in cellular and molecular immunology needed to study T cell development and function in the intestinal mucosa using mouse models including tissue-specific expression in transgenic systems. Areas of interest include antigen presentation in the mucosal immune system, TCRγδ specificity, and origin and selection of intraepithelial lymphocytes. Send curriculum vitae and names of three references to: **Leo Lefrançois, Ph.D., Department of Medicine, MC1310, University of Connecticut Health Center, 263 Farmington Avenue, Farmington, CT 06030. Email: llefranc@panda.uchc.edu.**

An Affirmative Action/Equal Opportunity Employer. Minorities/Females/Persons with Disabilities/Veterans.

POSTDOCTORAL ASSOCIATE—CORNELL MEDICAL COLLEGE

Position available immediately for a Ph.D. in biomedical sciences with research experience using molecular biology and cell culture techniques. Candidate is expected to participate in research activities of a large group of vascular biologies studying angiogenesis and the pathogens of artherosclerosis. Competitive salary and benefits available. Please send résumé, including publication list and three references, to: **Dr. Todd Rosengart, Department of Cardiothoracic Surgery, Cornell University Medical College, 1300 York Avenue, New York, NY 10021.** *Equal Employment Opportunity/Affirmative Action/Minorities/Females/Disabled/Veterans.*

POSTDOCTORAL POSITION is available immediately to conduct molecular genetics studies on transposition mechanism and insertional mutagenesis, using *in vivo* and *in vitro* assays in *E. coli*. Expertise in molecular biology techniques is essential. Send curriculum vitae and names of three references to: **Dr. Leslie A. Lewis, Department of Biology, York College of the City University of New York, 94-20 Guy Brewer Boulevard, Jamaica, NY 11451.**

POSTDOCTORAL POSITION is available to study the molecular biology of potassium channels in the auditory system. Experience with molecular biological techniques and/or patch clamping is desirable. Send curriculum vitae and names of three references to: **T. M. Perney, Center for Molecular and Behavior Neuroscience, 197 University Avenue, Newark, NJ 07102. Email: perney@axon.rutgers.edu.**

Rutgers is an Equal Opportunity/Affirmative Action Employer.

University of Missouri-St. Louis and The St. Louis Zoo Announce
The E. Desmond Lee and Family Fund Endowed Professorship in Zoological Studies

Nominations and applications are invited for a position of Endowed Professorship in Zoological Studies to be filled by an outstanding scientist with a strong background in the biology of small populations. Additional areas of study that may be relevant to this position include conservation biology, population genetics, behavioral ecology, and environmental physiology. This position has been created to enhance the partnership between the University of Missouri-St. Louis and the St. Louis Zoo. The endowed professor will be a faculty member in the Department of Biology at the rank of associate or full professor, with Scientist-in-Residence status at the St. Louis Zoo. Facilities at both institutions will be available to the successful applicant.

The University of Missouri-St. Louis is a leader in partnerships with key institutions in the St. Louis region, including the St. Louis Zoo and the Missouri Botanical Garden. The Biology Department has an outstanding graduate program in ecology, evolution, and systematics, which attracts top scholars from all over the world. The partnership with the St. Louis Zoo includes collaboration with the International Center for Tropical Ecology, an internationally eminent institute housed in the Biology Department and established to promote research and education in tropical biology and conservation. The St. Louis Zoo is a leader in the zoological community in both conservation and research. Its staff is actively involved in numerous national and international conservation programs, including service on the IUCN Species Survival Commission.

The E. Desmond Lee and Family Fund Endowed Professor in Zoological Studies will be expected to maintain a strong field-oriented research program with significant extramural funding and training opportunities for graduate students. The endowed professor also will be involved in appropriate teaching and service activities at UM-St. Louis, as well as in professional activities at the St. Louis Zoo.

The application review process will begin March 30, 1997, and continue until the position is filled. This position is available beginning late August, 1997, but the appointment can be deferred to a later date. Nominations and applications should be sent to **Dr. Stephen S. Mulkey, Chair, Zoology Search Committee, Department of Biology, University of Missouri-St. Louis, 8001 Natural Bridge, St. Louis, MO 63121-4499.** Applications materials should include: cover letter outlining qualifications and interests, curriculum vitae, and statement of current and future research plans.

The University of Missouri-St. Louis is an affirmative action, equal opportunity employer committed to excellence through diversity.

University of Missouri-St. Louis and The Missouri Botanical Garden Announce
The E. Desmond Lee and Family Fund Endowed Professorship in Botanical Studies

Nominations and applications are invited for a position of Endowed Professorship in Botanical Studies to be filled by an outstanding scientist in the area of plant molecular systematics with a strong background in molecular biology and biochemistry. This position has been created to enhance the partnership between the University of Missouri-St. Louis and the Missouri Botanical Garden. The endowed professor will be a faculty member in the Department of Biology (rank open) with research associate status at the Missouri Botanical Garden.

The University of Missouri-St. Louis is a leader in partnerships with key institutions in the St. Louis Region. Alliances and programs have resulted from collaborations with the Missouri Botanical Garden, St. Louis Zoo, St. Louis Science Center, Missouri Historical Society, St. Louis Symphony, and many others. The partnership with the Missouri Botanical Garden includes collaboration with the International Center for Tropical Ecology, an internationally eminent institute established to promote research and education in tropical biology and conservation, and joint participation in an outstanding graduate program in ecology, evolution, and systematics that attracts top scholars from all over the world. The Department of Biology also has an active research group in molecular biology and biotechnology. The Missouri Botanical Garden, with more than 50 Ph.D. scientists, has an internationally-renowned research program, an excellent library and a world class herbarium with more than 4.6 million plant specimens.

The E. Desmond Lee and Family Fund Endowed Professor in Botanical Studies will be expected to pursue an active program of research in plant molecular systematics and oversee a laboratory that facilitates the training of students in molecular techniques. The endowed professor also will be involved in teaching and service activities. In addition to laboratory and office space at UM-St. Louis, all facilities at the Missouri Botanical Garden will be fully available to the successful candidate.

The application review process will begin March 12, 1997, and continue until the position is filled. The position will be available starting Fall 1997. Nominations and applications should be sent to **Dr. Victoria Sork, Chair, Plant Molecular Biology Search Committee, Department of Biology, University of Missouri-St. Louis, 8001 Natural Bridge, St. Louis, MO 63121-4499.** Application materials should include: cover letter outlining qualifications and interests, curriculum vitae, and statement of current and future research plans.

The University of Missouri-St. Louis is an affirmative action, equal opportunity employer committed to excellence through diversity.

Global Career Opportunities

Novo Nordisk Biotechnology Research Center Beijing, Peoples Republic of China.

Director of research Research scientist.

Novo Nordisk has built a $10 million USD, 4000 sq. meter headquarters and research center close to Tsinghua and Beida Universities in Beijing's Haidian District. The building has been constructed according to the best North European standards, and the laboratory will be equipped with the necessary state-of-the-art equipment.

Research in the center will be focused on: Industrial Enzymes, Diabetes care and Biopharmaceuticals.

Publication of research results in Chinese and international Journals will be encouraged. Extensive collaborations with Chinese and overseas scientists is expected.

The local staff will be comprised of approximately 10 local scientists working on a temporary contract basis. In addition, there will be short term visiting scientists from Europe or the USA, plus the necessary technical assistance.

We seek applicants for the positions of Research Director and Research Scientist.

The Research Director:

Will have the responsibility for administrative and scientific activities of the center and will report to the president of Novo Nordisk China.

Necessary qualifications:

An experienced and broadly oriented scientist (Ph.D. plus over 7 years additional research experience) with a proven record of innovative research as demonstrated by publication in peer reviewed journals. Demonstrated leadership skills, as evidenced by prior supervisory experience and some research experience in an industrial setting. An inspiring and creative personality with a deep understanding of Chinese culture, as well as written and spoken Mandarin. Knowledge of enzyme technology or diabetes related research is an advantage.

The Research Scientist:

Will report to the Research Director and will be responsible for individual research projects.

Necessary qualifications:

A scientist (Ph.D. plus 0-3 years additional research experience) with an good publication record. Must be fluent in written and spoken Mandarin and have a good understanding of Chinese culture. Knowledge of enzyme technology, protein chemistry and industrial research is an advantage.

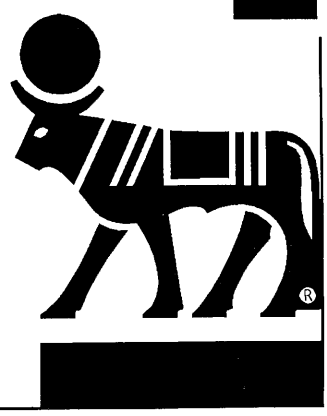
The successful applicants will be offered a 3 to 5 year contract with a competitive salary, plus housing and other benefits.

Please send your resume marked R&D to:

Novo Nordisk China
Rui Hong Building
Fourth Street no 9
Shangdi Zone, Haidian District
100085 Beijing
Fax Number +8610 62981283
E-mail ka@novo.dk

Novo Nordisk is one of the world's largest biotechnology companies. The main products are insulin for the treatment of diabetes and enzymes for use in industry. Novo Nordisk has offices in more than 140 countries and has an annual turnover of more than $2 billion USD. The number of employees world wide is more than 13000. In China, Novo Nordisk is investing more than $240 million USD in a new production plant in Tianjin. Other production facilities are in Shenyang and Suzhou. Novo Nordisk has sales offices in Shanghai, Guangzhou, Tianjin, Shenyang and Wuhan. In Beijing the company has its headquarters and research center.

Novo Nordisk



EXTRAORDINARY PEOPLE. EXTRAORDINARY SCIENCE.

In the twelve years since our opening, the Whitehead Institute has become a prominent resource in the world of biological research, and an integral part of MIT's teaching community. We attract the brightest scientists with promising research agendas, and then give them the freedom to pursue their own dreams. The results are nothing short of extraordinary. Join us.

RESEARCH SCIENTIST

High Throughput Genotyping Facility

The Whitehead Institute/MIT Center for Genome Research invites applications for a genetics/ genomics research scientist to direct the Center's high throughput genotyping facility. The Center is expanding its activities in the genetics of human diseases, particularly in the area of complex traits, including coronary artery disease, hypertension, asthma, inflammatory bowel disease, etc. The successful candidate will draw upon the unique strengths of the Genome Center in technology development and bioinformatics to develop a high throughput genotyping system.

Candidates should have a background in molecular biology and/or genetics. Applicants should also have a PhD or substantial experience in leading a genotyping group.

Interested parties should send their c.v., plus the names of three references, to: **Tom Hudson, Whitehead Institute, Nine Cambridge Center, Cambridge, MA 02142; or E-mail: thudson@genome.wi.mit.edu.** We offer excellent salaries, generous benefits, and a convenient Cambridge location. We are an equal opportunity employer.

WHITEHEAD INSTITUTE

PROTEIN CRYSTALLOGRAPHY AND PHYSICAL BIOCHEMISTRY

University of Oklahoma Health Sciences Center

The Health Sciences Center is in the process of expanding and enhancing its faculty and research programs in a variety of areas. Several full-time tenure-track positions are now available in the Department of Biochemistry & Molecular Biology at the Assistant, Associate, or Full Professor levels for investigators in Structural Biology, particularly the X-ray crystallography of macromolecules and structure-function analysis using biophysical approaches such as fluorescence, microcalorimetry, cryoEM image reconstruction, etc. The Department has expanded over the past two years with the appointment of Dr. Paul Weigel as Chair and the addition of five other new faculty members. Protein crystallographers are presently on the Health Sciences Center at the Oklahoma Medical Research Foundation and on the main Norman campus. NMR capabilities and facilities (400, 500, and 600 MHz) are available nearby and the Department has access to a new 300 MHz instrument on campus. A MALDI-TOF mass spectrometry facility was also recently installed in the Department. The Department expects to commit the resources needed to establish a state-of-the-art crystallography facility. Established protein crystallographers in particular are invited to inquire about details and, as successful candidates, could participate in the recruitment of the junior faculty, one of whom will also be a crystallographer. Successful candidates are expected to develop and lead independent research programs, to participate in graduate and professional teaching programs, to interact with colleagues on and off campus and to serve as a resource for other faculty and students. The University of Oklahoma has $100 million in research support, over half of which is at the Health Sciences Center. There are six colleges in the University of Oklahoma Health Sciences Center located on a 200 acre modern campus in Oklahoma City, with over 3, 300 students and 2,200 faculty. Within the last two years, new buildings for Biotechnology, Family Medicine, a health club, out-patient clinic and a Student Center have been completed. A Biomedical Research Center Building (100,000 sq. ft.) is under construction. Review of applications will begin March 20, 1997, with a possible starting date of June 1st, 1997. The positions will remain open until filled. A letter of application, curriculum vitae, outline of current and future research activities, selected reprints if appropriate, and names of four references should be sent to **Dr. Gillian Air, Chair, Search Committee, Department of Biochemistry & Molecular Biology, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190**. Information about the Department can be found in our web site at **http://www.uokhsc.edu/home/college/medicine.** *The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer.*

CASE WESTERN RESERVE UNIVERSITY

Faculty Positions
Department of Pharmacology
School of Medicine

The Department of Pharmacology at CWRU has immediate openings for positions at the Assistant Professor level although more senior candidates will be considered. Our research interests focus on the structure, function, and delivery of biologically active molecules with therapeutic potential. Specific areas of research include but are not limited to: protein structural biology; structure-function analysis of peptides and peptide mimetics; membrane chemistry; receptor-ligand interactions and analysis of signal transduction mechanisms; gene regulation, gene therapy and cell growth control; computational chemistry and molecular design and analysis of new drug candidates. Current faculty use an array of state-of-the-art molecular approaches including: a full range of thechniques in molecular biology, high resolution NMR, confocal microscopy, molecular modeling, and construction and use of transgenic animals.

Please send a C.V., up to three reprints, a short description of research interests, and names of three references to:

Dr. Michael E. Maguire
Chair, Pharmacology Faculty Search Committee
Department of Pharmacology
Case Western Reserve University
10900 Euclid Avenue
Cleveland, OH 44106-4965

CWRU is an EEO/AA Employer.

Scientist, Ph.D. - Molecular Biology

Regeneron Pharmaceuticals, Inc. is a leader in the application of molecular and cell biological approaches to the discovery of novel trophic factors.

A Scientist position is now available in the Protein Sciences group. This is a multidisciplinary group focusing on the expression, purification and characterization of recombinant proteins. We seek a highly motivated individual with a diverse background in molecular biology and protein biochemistry. The individual will initiate and participate in a wide range of projects that involve outstanding scientists throughout the company. The ability to work in a multidisciplinary team environment is essential.

Requirements for this position include a Ph.D. in Microbiology, Molecular Biology, or Biochemistry and at least 2 years postdoctoral experience. The preferred candidate should have some experience in *Saccharomyces cerevisiae* physiology and genetics.

Regeneron's modern research facilities are located in a suburban setting with ready access to the cultural and business centers of New York City.

Qualified candidates should send their resumes, including salary requirements, to: **Regeneron Pharmaceuticals, Inc., Bin JF, 777 Old Saw Mill River Road, Tarrytown, NY 10591. Fax: (914) 347-2847.** No phone calls please. Only those considered for interviews will be contacted. *EOE/M/F/H/V*

GLOBAL CAREER OPPORTUNITIES

Director, Max-Planck-Institut für Astronomie

The Max-Planck-Institut für Astronomie at Heidelberg invites applications for the position of one of the two Directors at the institute to be appointed following the retirement of Prof. Hans Elsässer in April, 1997. The MPIA has approximately 180 staff, student, and visiting positions. The MPIA runs the Calar Alto observatory in southern Spain with 3.5, 2.2, 1.2m and Schmidt telescopes and uses a substantial fraction of the observing time. It has a major role in the VLT project at ESO including VLTI, it runs a data center for ISO, and it expects to become a partner in the LBT project early in 1997. Candidates must have an outstanding international record of research in astronomy and demonstrated leadership ability. Astronomers or physicists with a strong interest in extragalactic research are preferred, although all fields of astronomical research will be considered. Applications should include a curriculum vitae, list of publications, and a cover letter outlining the current research goals of the candidate as they would be carried out with the resources of the institute. Applications should be sent by April 1, 1997 to the:

Chairman of the Search Committee
Prof. Gerd Buschhorn
Max-Planck-Institut für Physik
Föhringer Ring 6
80805 Munich
GERMANY

Further information may be found at the website: **http://www.mpia-hd.mpg.de**

Cardiovascular Research
Position for a Senior Scientist at Meharry Medical College

Applications are invited for an experienced investigator to develop a research group focused on cardiovascular disease at Meharry Medical College. The individual filling this position must be an established investigator who has received competitive research support, who has leadership ability, and who can recruit and develop faculty into an interactive team of investigators studying cardiovascular disease. The successful candidate will create and direct the Cardiovascular Research Program (CRP), a multidisciplinary, interdepartmental activity which unifies and expands the college's research projects in cardiovascular disease; enhances graduate education and faculty development; and which achieves national prominence in cardiovascular research at Meharry. The CRP director will be expected to encourage collaborative research and training relationships among faculty at Meharry, Vanderbilt University and the University of Alabama at Birmingham where current collaborations exist. The director will also seek funds to strengthen the research enterprise, and will attract other researchers, encourage others to submit research and training grant applications, and serve as a mentor to developing faculty.

Applicants considered for the position must have the M.D., and/or Ph.D. degree and qualify for a position in one of the basic or clinical departments at the level of associate professor or professor.

Meharry Medical College is a historically black health science center. It enrolls approximately 850 students in programs leading to the M.D., D.D.S., M.S.P.H., and Ph.D. degrees. Current cardiovascular research includes studies of the molecular mechanisms of fibroproliferative disease, genetic, clinical and epidemiological bases of hypertension, basic and clinical aspects of sickle cell disease, the role of infection in the pathogenesis of cardiovascular disease; and behavioral, preventive and outcomes studies of cardiovascular diseases. Meharry's commitment to training students from underrepresented groups is expressed in its mission statement.

Applicants are asked to submit a curriculum vitae, a description of research interest and three letters of reference to **Fred Jones, Ph.D., Chairman, Recruitment Committee, School of Graduate Studies, Meharry Medical College, Nashville, TN 37208.** Applications must be received no later than April 1, 1997.

Meharry Medical College is an equal opportunity, affirmative action employer. Women and members of underrepresented minority groups are especially encouraged to apply.

TECHNICAL WRITER

Promega Corporation, a world leading biotechnology firm, has an immediate opening for a scientist interested in technical writing who possesses excellent communication skills and a desire to help other scientists successfully use our products.

Promega Technical Writers:

- Collaborate with research and production scientists to generate and edit technical bulletins and manuals detailing the use of Promega products.
- Participate in the writing and editing of *Promega Notes, Neural Notes,* and the **Promega** *Protocols and Applications Guide.*
- Contribute to the maintenance and evolution of the **Promega** Home Page on the Internet.
- Manage and coordinate a variety of communications projects for Marketing and other corporate groups.

Applicants must have an M.S. or B.S. degree in molecular biology or a related field, 2-3 years related lab experience; one year experience in technical writing/editing or equivalent experience with demonstrated ability to organize scientific information and express it in writing clearly, concisely and with correct grammar. Prior experience in the use of Microsoft Word, Microsoft Excel, DeltaGraph, QuarkXPress, and html markup software preferred.

Promega strives to provide a rewarding work experience for our employees and to preserve a balance between work and life activities. We offer a comprehensive benefits package, as well as on-site fitness and daycare facilities. To apply for the above position, please send resume with salary requirements to: **Promega Corporation, Human Resources (14102), P.O. Box 7879, Madison, WI 53707-7879. e-mail: hr@promega.com**

Promega

To learn more about other career opportunities at **Promega,** please call our Career Opportunities Line at 800-356-9526, Option 9. EOE

POSTDOCTORAL FELLOWSHIPS
IN THE DEPARTMENT OF CLINICAL AND SCIENTIFIC AFFAIRS

The Department of Clinical and Scientific Affairs (CSA), Pfizer Central Research, New York City announces its annual competition for a Postdoctoral Fellowship in New Drug Development and the start of a new Postdoctoral Fellowship Program in the Drug Regulatory Submissions Group.

The Department of Clinical and Scientific Affairs offers a broad range of activities. It is responsible for designing and conducting clinical development programs for Pfizer-discovered compounds, as well as investigating and developing new claims and indications for marketed compounds. CSA also designs and conducts clinical development programs for new formulations and dosage forms of existing products in the following areas: allergy, central nervous system, gastroenterology, microbiology/infectious disease, oncology, pharmacology and urology.

The Postdoctoral Fellows will become members of project teams as clinicians or representatives of the Regulatory Submissions Group. Both candidates will gain experience in the design and implementation of clinical research programs. While no non-clinical or clinical studies are actually conducted at Pfizer in New York, the Clinician will interact with specialists in the chosen field to have studies performed at contract laboratories, universities and with individual investigators. Regulatory Submissions Fellows will support the team by preparing clinical reports and regulatory submissions such as INDs, NDAs and safety updates. Experience also will be acquired in FDA regulations and report and submission format and content by interacting with personnel in Regulatory Submissions, Regulatory Liaison and members of multidisciplinary global project teams and the FDA.

Two fellowships will be available this year. Candidates should possess a doctoral degree (MD, PhD or PharmD), have no more than one year of non-industry postdoctoral experience and be authorized to engage in employment in the US. Prior experience with clinical trials, regulatory affairs or the drug development process is desirable, but not a prerequisite. Candidates also must have excellent written, verbal and interpersonal skills. The deadline for applications is June 2, 1997.

For further information, contact: **Postdoctoral Fellowship in New Drug Development, Department of Clinical and Scientific Affairs, Pfizer Central Research, 235 East 42nd Street, 13th Floor, Stop #2, New York, NY 10017-5755; Attn: Michael Delicio, Sr. Manager, Employee Resources.** Pfizer is an equal opportunity employer.

Pfizer

POSITIONS OPEN

HARVARD MEDICAL SCHOOL MASSACHUSETTS GENERAL HOSPITAL THREE IMMUNOBIOLOGY POSITIONS AT MASSACHUSETTS GENERAL HOSPITAL

Applications are invited for three **POSTDOCTORAL POSITIONS** in the Immunobiology Laboratory. Promising researchers will be invited to study the basic biology of human disease as it relates to autoimmunity.

Position 1. Monoclonal antibody production and biochemical characterization. (M.S., B.S. or Ph.D. required.) Candidate most importantly must have track record in monoclonal antibody production. Position has benefit of learning flow cytometry techniques on a state-of-the-art flow cytometer. Possibility for advancement in laboratory management.

Positions 2 and 3. Molecular biology/molecular immunology. (Ph.D. required.) Candidates must have strong Ph.D. thesis and training and some past skills in some of the following areas: transcription assays, promoter assay, gene expression constructs, gene expression in eukaryotic cells, production and screening of cDNA libraries, intracellular eukaryotic protein processing and sequencing.

Applicants should send a curriculum vitae, brief statement of research interests, and have at least two letters of recommendation sent to:

Director/Immunobiology Laboratory
Massachusetts General Hospital-East
Building 149, 13th Street, CNY-3601
Charlestown, MA 02129

POSTDOCTORAL POSITIONS NUCLEAR HORMONE RECEPTORS

POSTDOCTORAL POSITIONS are available in a new laboratory in the Molecular and Cellular Endocrinology Branch of NIDDK at the NIH. Our laboratory will be studying transcriptional regulation by thyroid hormone and steroid hormone receptors. We will focus on identifying and studying human receptor mutations; identifying and characterizing nuclear co-repressors and co-activators; and studying dominant negative activity by mutant nuclear hormone receptors in transgenic mice. Background in molecular biology required. Previous experience with transgenic mice, yeast, or physiological studies would be helpful. Positions available August 1, 1997. Applicants must have a Ph.D. and/or M.D. as well as up to five years postdoctoral experience. Please send curriculum vitae and three references to: **Paul M. Yen, M.D., c/o Mrs. Margaret Hawker, NIDDK/NIH, 10 Center Drive-MSC 1818, Building 10-9N222, Bethesda, MD 20892-1818; Telephone: 617-732-5858; FAX: 617-732-5123; Email: yen@rascal.med.harvard.edu.**

POSTDOCTORAL POSITION

Available to study by microbial genomics, molecular genetics and biochemical/biophysical approaches the structure, function, regulation and biogenesis of cytochrome complexes involved in photosynthesis and respiration using phototrophic bacteria as model systems (see *J. Bacteriol.* **177**:608–613; *Biochemistry* **34**:15979–16012; *Biochemistry* **33**:3120–3127 and *J. Bacteriol.* **178**:5279–5290). Solid background and experience in molecular genetics or protein purification and spectroscopy are highly desirable. Salary and start date negotiable. Contact **Dr. F. Daldal** at: **Telephone: 215-898-4394; FAX: 215-898-8780; Email: fdaldal@sas.upenn.edu**. Send curriculum vitae, description of research accomplishments, and reference letters to: **Department of Biology, 204 Mudd Building, University of Pennsylvania, Philadelphia, PA 19104-6018.** *University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION STREAM ECOLOGY

Position available spring/summer 1997 to study the effects of flow on the ecology of benthic organisms. Desired attributes: knowledge of experimental design, statistical analysis, and taxonomy of freshwater benthic invertebrates; understanding of boundary-layer fluid dynamics; strong technical skills; excellent communication skills; ability to work independently and to direct the work of others. Competitive salary and benefits. Two year minimum commitment. Application deadline: March 21, 1997. Send letter of interest, curriculum vitae, and names, telephone numbers, and Email addresses of three references to: **Dr. David D. Hart, Director, Patrick Center, Academy of Natural Sciences, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103-1195. Email: hart@acnatsci.org**.

POSITIONS OPEN

POSTDOCTORAL FELLOW: Immediate opening for Ph.D. or M.D. to study signal transduction, molecular biology and immunohistochemistry of ion channels. Candidates must be citizens or landed immigrants for NIH training grant. Send curriculum vitae, references, and letter to: **S. E. Guggino, Division of Gastroenterology, Johns Hopkins University, 929 Ross Building, 720 Rutland Avenue, Baltimore, MD 21205. Email: sguggino@welchlink.welch.jhu.edu**.

POSTDOCTORAL POSITIONS (1) in Neuro/Psychopharmacology-Research Fellowship, The University of Georgia College of Pharmacy. To provide advanced training for a pharmacy graduate interested in an academic research career in the neuropharmacological and/or neurobehavioral sciences. Of interest is the development and pharmacological assessment of novel nicotinic-cholinergic receptor agonists for the treatment of degenerative disorders, and the effects of uncontrolled hypertension on cognitive function. Qualifications: Ph.D. with an undergraduate degree in pharmacy and/or Pharm. D. (2) in Molecular Neurobiology, The Medical College of Georgia. Studies will include the regulation of the genes encoding receptors, enzymes and transporter molecules of the cholinergic system in animal models of aging and Alzheimer's disease. Qualifications: Ph.D. with experience in molecular biology or cell signaling. Both positions will have access to core facilities of the Alzheimer's Research Center—the Animal Behavior Center (rodents and aged primates) and the Analytical Toxicology Laboratory (**http://www.mcg.edu/Centers/alz**). Contact: (1) **Alvin V. Terry Jr., Ph.D.** or (2) **Jerry J. Buccafusco, Ph.D., c/o Department of Pharmacology and Toxicology, Alzheimer's Research Center, Medical College of Georgia, Augusta, GA 30912.** *Equal Opportunity/Affirmative Action Employers.*

POSTDOCTORAL POSITION WASHINGTON UNIVERSITY SCHOOL OF MEDICINE Department of Medicine (Dermatology) and Department of Molecular Biology and Pharmacology

A **POSTDOCTORAL POSITION** is available to investigate **Notch signal transduction** in vertebrates. Applicants should have a background in molecular biology, ES cell culture, mouse embryo manipulation or biochemistry. Applications and letters of recommendation should be submitted to:

Raphael Kopan, Ph.D.
Washington University
School of Medicine
Box 8123, 600 South Euclid Avenue
St. Louis, MO 63110
Email: kopan@pharmdec.wustl.edu

POSTDOCTORAL POSITION available immediately to study the actions of pregnancy, sex hormones and hypoxia on endothelial and vascular smooth muscle function. NIH-funded research programs in the laboratory focus on the regulation of the nitric oxide/cGMP pathway in both the fetal and maternal circulations. The candidate will use a combination of biochemical and molecular biology techniques such as enzyme assays, mRNA isolation, PCR and RPA to study the mechanisms involved in gene expression and product formation. Send curriculum vitae, statement of research interests, and names of three references to: **Dr. Loren P. Thompson, University of Maryland School of Medicine, Department of Obstetrics, Gynecology, and Reproductive Sciences, Bressler Research Building, Room 11-040, 655 West Baltimore Street, Baltimore, MD 21201**.

POSTDOCTORAL RESEARCH POSITION is available immediately at the Guthrie Research Institute to study the control mechanisms of tumor necrosis factor- and Fas-mediated apoptosis (*JBC* **270**:7765, 1995; *BBRC* **227**:266, 1996). Ph.D. or M.D. with significant experience in molecular cloning and protein expression, plus a background in immunology or cell biology, is required. Send curriculum vitae and three reference letters to: **Dr. N.-S. Chang, Guthrie Research Institute, 1 Guthrie Square, Sayre, PA 18840. FAX: 717-882-5151. Email: nschang@inet.guthrie.org.** *An Equal Opportunity Employer.*

POSITIONS OPEN

Two **POSTDOCTORAL POSITIONS** are available immediately to study molecular, cellular, and tissue aspects of skin disease. The NIH-funded Postdoctoral Training Program in Dermatology in conjunction with the Vanderbilt University Skin Diseases Research Center offers preceptors engaged in active research on connective tissue metabolism, wound healing, hyperproliferative disorders of skin, cytokines and growth factors of special relevance to skin disease. Must have M.D., Ph.D., or M.D./Ph.D. degree and be a U.S. citizen. Research training may be coordinated with a clinical residency in dermatology. Send curriculum vitae, summary of research interest and experience, and names and telephone numbers of three references to: **George P. Stricklin, M.D., Ph.D., Skin Diseases Research Center, Division of Dermatology, Vanderbilt University School of Medicine, B3219 MCN, Nashville, TN 37232-2600. FAX: 615-343-4365; Email: sdrc@mcmail.vanderbilt.edu**.

Vanderbilt University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS MOBILE SELF-SPLICING INTRONS

Dynamics of self-splicing introns are studied at the levels of RNA, DNA, and protein accessories. Projects include analysis of catalytic RNAs and DNA-based intron mobility using genetic, biochemical and structural approaches. Broad choice of projects. Experience in genetics, DNA recombination mechanisms, RNA splicing, protein structure and/or nucleic acid chemistry desirable. Competitive, federally-funded salary (through Health Research, Incorporated).

Interested candidates should forward their curriculum vitae and have three letters of reference sent to:

Dr. Marlene Belfort
Wadsworth Center
New York State Department of Health and Department of Biomedical Sciences
State University of New York
Box 22002
Albany, NY 12201-2002

An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION in cellular and molecular neurobiology—The Department of Neurobiology has **POSTDOCTORAL POSITIONS** available to study various aspects of molecular, cellular and developmental neurobiology. Some major areas of interest are cell-cell and cell-substratum adhesion molecules, neurite outgrowth and nerve regeneration. Specific studies include: analysis of overexpression, mutation or deletion of adhesion molecules in animals, analysis of genes such as Hox and Pax, that control the expression of adhesion molecules and their subsequent roles in the formation of morphogenetic pathways during neural development; identification of signal transduction pathways and the gene programs activated by adhesion molecule binding. Applicants should have a strong background in cellular and/or molecular biology. Send curriculum vitae and three letters of reference to: **Dr. Gerald M. Edelman, Chairman, Department of Neurobiology, The Scripps Research Institute, 10550 North Torrey Pines Road, SBR14, La Jolla, CA 92037.** *Affirmative Action/Equal Opportunity Employer.*

MOLECULAR MICROBIOLOGY

POSTDOCTORAL POSITION is available immediately to study the structure/function and regulatory circuitry of competence-inducible proteins in the gram-negative bacterium, *Haemophilus influenzae*. Requires a recent Ph.D. with expertise in molecular biology and protein purification. Send curriculum vitae and names, with telephone and FAX numbers, or with Email addresses, of three references to: **Dr. Gerard J. Barcak, Department of Biochemistry and Molecular Biology, University of Maryland School of Medicine, 108 North Greene Street, Baltimore, MD 21201; Email: gbarcak@umabnet.ab.umd.edu**.

POSTDOCTORAL POSITION available to study novel human melanocyte and melanoma-specific genes. Experience in molecular biology/genetics and immunohistochemical techniques is desirable. Interested candidates should send their curriculum vitae and the names of three references to: **Dorothea Becker, Ph.D., Department of Pathology, University of Pittsburgh, BST E1050, 211 Lothrop Street, Pittsburgh, PA 15213-2582**.

Department of Biochemistry, Biomedical Centre, Uppsala University

UPPSALA UNIVERSITY

UPPSALA UNIVERSITY (founded in 1477) is the oldest and most prestigeous university in Scandinavia. It has seven faculties and about 25 000 students today. The roots of the **BIOCHEMISTRY DEPARTMENT** go back to Arne Tiselius, inventor of electrophoresis and first professor of biochemistry at Uppsala. The Department is located in the **BIOMEDICAL CENTRE** which houses 35 institutes and about 4 000 scientists in a multidisciplinary environment.

NEW PROGRAMME IN STRUCTURALBIOLOGY

We are seeking applicants (with a sparkle in the eyes) to embark on project at the **frontiers of structural biology**, including structural kinetics, time-resolved diffraction studies, synchrotron and free electron laser techniques, membrane protein crystallography, computational methods, electron microscopy/crystallography. The laboratory is a member of a **CONSORTIUM** incorporating **three X-ray laboratories** in the Biomedical Centre: the Department of Biochemistry (Prof. Janos Hajdu), the Department of Molecular Biology, (Prof. Alwyn Jones) and the Department of Molecular Biology, Swedish University of Agricultural Sciences (Prof. Hans Eklund). The laboratories are interconnected and provide a uniquely stimulating intellectual environment for education and research at all levels. Ski tracks start outside the building and the sauna is inside. We also share laboratory facilites and seminars.

COMPUTER FACILITY MANAGER/ X-RAY CRYSTALLOGRAPHER *(Ref.nr. 682/97)* **TENURED POSITION**

Applications are invited for the post of computer system manager (40% time) and computational crystallographer (60% time). Other possible areas of interests (like computational chemistry or biology) could also be considered.

The position is available immediately for a trial period of six months, after which it can be made premanent at the level of 'First Research Engineer'.

The successful candidate should have a degree in protein crystallography and experience in writing software and running computing systems. The laboratory has Silicon Graphics and DEC-Alpha UNIX, NT, and LINUX machines, Computing and X-ray facilities are shared with other members of the consortium. Good interpersonal skills and a solid background in computing are necessary.

Applications should contain a CV, list of publications, reprints of 5 selected papers, and 2 letters of reference.

POSTDOCTORAL POSITIONS *(Ref.nr. 683/97)*

1. Structure, function and catalytic dynamics of penicillin/cephalosporin biosynthetic enzymes with a view to altering catalytic specificity. The successful candidate should have a Ph. D. either in protein crystallography or in molecular biology. Experience with anaerobic, techniques, or timeresolved diffraction methods, or fungal genetics would be an advantage (Janos Hajdu).

2. Structural dynamics of haem-containing nitrite reductases. The successful candidate should have a Ph. D. in protein crystallograhy or molecular biology. Experience with kinetic crystallographic techniques would be an advantage (Janos Hajdu).

3. Crystallographic studies of membrane proteins in the respiratory chain; cytochrome c oxidases and quinol oxidases. The successful candidate should have a Ph. D. in protein crystallography. The post holder will take part in kinectic X-ray studies on cytochrome c oxidases and in the crystallisation of quinol oxidases. Experience with membrane proteins would be an advantage (So Iwata).

4. Development of new approaches in the crystallisation of membrane proteins. The successful candidate should have a Ph. D. in molecular biology or in biochemistry. The post holder will take part in the development of new crystallisation techniques, using antibody or phage display and will participate in the structural analysis of the crystals. Target membrane proteins, including respiratory enzymes and various receptors are available. Experience with protein engineering and phage display would be an advantage (So Iwata).

Applications should contain a CV, list of publications, reprints of 3 selected papers, and 2 letters of reference.

Ph.D. PROJECTS in STRUCTURAL BIOLOGY 4–8 places *(Ref.nr. 684/97)*

1. Development of new time-resolved diffraction techniques (Janos Hajdu).

2. Protein folding and catalysis (Janos Hajdu).

3. X-ray structural studies on nitrite reductases (Janos Hajdu).

4. X-ray structural studies on cephalosporin/penicillin biosynthetic enzymes (Janos Hajdu).

5. X-ray studies on enzymes utilising high oxidation state metal centres in catalysis (Janos Hajdu).

6. Development of new techniques in the study of the structure of membrane proteins (So Iwata).

7. X-ray structural studies on membrane receptors (So Iwata).

8. X-ray structural studies on respiratory membrane proteins (So Iwata).

9. Time resolved structural studies on respiratory membrane proteins (So Iwata).

Stipends (8.000 Skr/month net) are subject to the usual eligibility requirements, and will be offered on a competitive basis.

Applications should contain a CV, copies of degrees (if already obtained) and 2 letters of reference. Ph.D. positions can be taken up either immediately or later in the year.

APPLICATIONS should be sent to **The Registrar,** Uppsala University, Box 256, S-751 05 Uppsala, Sweden (fax: +46-18-182000) by **1 March 1997.**
For further information, please contact Prof. Janos Hajdu (tel: +46-18-174449, fax +46-18-536971, e-mail: janos@xray.bmc.uu.se)

The Bavarian State Ministry of Economics, Transportation and Technology and Boehringer Mannheim GmbH
are funding at the
Max-Planck-Institut für Biochemie, Martinsried, Germany

three positions as

Head of Junior Research Group in the field of Molecular Medicine

Preferred topics are:

1. Molecular mechanisms involved in apoptosis and cell cycle regulation. Specific targeting of biomolecules.
2. Gene function analysis in transgenic models.
3. Developmental biology with emphasis on bone formation, neurobiology and tissue repair.
4. Tumor proteins/antigens involved in tumor progression and metastasis.

Applications of candidates are invited who have had several years of postdoctoral experience, a strong record of achievements and should not be older than 35 years. They will be appointed as independent group leaders at the Associate Professor level (C3) for a period of five years.

Appropriate laboratory space, funds for laboratory set-up and operation and additional salaries for one scientist, two technicians and fellowships for postdoctoral fellows or graduate students will be provided.

Applicants should submit their curriculum vitae and publication list, a short description of their future research objectives and the names of three references to

Robert Huber, Geschaftsführende Leitung, Max-Planck-Institut für Biochemie, D-82152 Martinsried bei München

The deadline for applications is March 31, 1997.

The Max-Planck-Institut für Biochemie, Martinsried, Germany

offers a position as

Head of Junior Research Group in the field of Cellular Regulation

Applications of candidates are invited who have had several years of postdoctoral experience and a strong record of achievements in one of the following areas

Molecular Oncology
Analysis of Oncogenesis in Transgenic Animals
Tumor Immunology
Tumor Virology

Candidates should not be older than 35 years. They will be appointed as independent group leaders at the Associate Professor level (C3) for a period of five years.

Appropriate laboratory space, funds for laboratory set-up and operation and additional salaries for one scientist, two technicians and fellowships for postdoctoral fellows or graduate students will be provided.

Applicants should submit their curriculum vitae and publication list, a short description of their future research objectives and the names of three references to

Robert Huber
Geschaftsführende Leitung
Max-Planck-Institut für Biochemie
D-82152 Martinsried bei München

The deadline for applications is March 31, 1997.

THE UNIVERSITY OF NORTH CAROLINA
AT
CHAPEL HILL

POSTDOCTORAL TRAINEESHIPS BIOCHEMICAL TOXICOLOGY

Position 1: Research training and research in the biochemical and cellular effects of toxic substances in mammalian systems, including cultured cells. Research is conducted either on University of North Carolina campus or at the Environmental Protection Agency in Research Triangle Park, North Carolina.

Position 2: Research on environmental chemicals and endocrine disruption, with emphasis on ototoxicity and thyroid hormone metabolism. Developmental exposure to polyhalogenated aromatic hydrocarbons (e.g., PCBs and dioxin) causes ototoxicity via a disruption of thyroid hormones during critical periods of cochlear development. The project will explore the relationship between thyroid hormone depletion, caused by induction of liver enzymes and/or competition for transport binding proteins, and structural and functional alterations in the nervous system. Research advisor: **Dr. Kevin M. Crofton, Neurotoxicology Division, Environmental Protection Agency. Email: crofton.kevin@epamail.epa.gov.**

Position 3: Research on the evaluation of short- and long-term measures of internal urban air particle dose and focuses on 1) development of chemical/enzymatic methods that efficiently digest human lung tissue and lung cells without significant chemical alteration of lung-related air pollution particles, 2) chemical characterization of the particles using computer controlled energy dispersive scanning electron microscopy, and 3) DNA adduct analysis by 32P-postlabelling methodology to correlate DNA adduct level and lung concentration. Research advisor: **Dr. Jane E. Gallagher, Human Studies Division, Environmental Protection Agency, Chapel Hill. Telephone: 919-966-0638; Email: gallagher.jane@epamail.epa.gov.**

Position 4: Research on 1) quantitation of recombination events (translocations and deletions involving proto-oncogenes and surrogate markers) in humans by sensitive PCR methods, and exploration of possible environmental and/or occupational induction of such events, and their importance in cancer risk assessment, and 2) mechanisms of "non-genotoxic" carcinogens, especially with regard to protein targets of cell growth control pathways. Research advisor: **Dr. James C. Fuscoe, Environmental Carcinogenesis Division, Environmental Protection Agency. Telephone: 919-541-3918; FAX: 919-541-0694; Email: fuscoe@am.herl.epa.gov.**

Position 5: Study of the metabolism and fate of arsenic: enzymology of arsenic methylation, formation and toxicity of arsenic-thiol complexes, and interaction between arsenic and proteins. Background in protein purification and enzyme kinetics required. Research advisor: **Dr. David J. Thomas, Environmental Protection Agency. Telephone: 919-541-4974; FAX: 919-541-5394.**

Position 6: Research on the role of endocrine disruption in the development of cancer in animals exposed to environmental chemicals. Need a scientist who can apply the techniques of molecular biology to the study of steroid hormone modulation of liver cancer induced by drinking water disinfection by-products. Research advisor: **Dr. Anthony DeAngelo, Environmental Protection Agency. Telephone: 919-541-2568; FAX: 919-541-0694; Email: deangelo.anthony@epamail.epa.gov.**

Position 7: Research training in the construction of microbial strains by classical and/or recombinant genetics techniques that can detect different classes of genotoxicants. Ideally, the candidate could generate a battery of strains that could detect different classes of genotoxicants in complex mixtures (soil, water, air, etc.). Development of strains that contain genes expressing enzymes of metabolism to implicate a particular mechanism are desired. Research advisor: **Dr. S. Elizabeth George, Environmental Protection Agency. Telephone: 919-541-3918; FAX: 919-541-0694; Email: george.elizabeth@epamail.epa.gov.**

Funding sources limit awards to U.S. citizens or permanent residents.

Preliminary applications (curriculum vitae, names and addresses of three references) for all positions should be sent to: **David J. Holbrook, Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC 27599-7270. Telephone: 919-966-4685; FAX: 919-966-6357; Email: david_holbrook@unc.edu.**

TEXAS A&M UNIVERSITY
HEALTH SCIENCE CENTER
College of Medicine

POSTDOCTORAL POSITIONS

Positions are available in our new laboratory to investigate macromolecules with built-in triggers and switches including caged peptides and proteins for signal transduction research, the assembly and function of structurally defined membrane proteins, and biomolecular materials (elastomers, S layers, fibers). Recent papers include: *Chemistry & Biology* **2**:99–105, 1995; *Chemistry & Biology* **2**:391–400, 1995; *EMBO J.* **15**:1857–1864, 1996; *Nature Biotechnology* **14**:852–856, 1996; *Science* **274**:1859–1865, 1996. The projects are highly interdisciplinary and involved several productive collaborations.

Send your curriculum vitae and up to three letters of reference to: **Hagan Bayley, Professor and Head, Department of Medical Biochemistry & Genetic, 440 Reynolds Medical Building, Texas A&M University Health Science Center, College Station, TX 77843-1114** or contact me at: **Email: bayley@medicine.tamu.edu.**

Find out more about Texas A&M University at **www.tamu.edu** and our Department at **pauling.tamu.edu.**

POSTDOCTORAL FELLOWSHIP UTAH STATE UNIVERSITY

A **POSTDOCTORAL FELLOWSHIP** is available in the Department of Nutrition and Food Sciences at Utah State University to develop biosensors for food and environmental use. The successful candidate will be responsible for experiments to develop microbial sensors that are robust and rapid. In addition to the primary duties, the successful candidate will be expected to investigate microbial physiology related to detection in the environment. A Ph.D. in microbiology, biochemistry, immunology, chemical engineering, or a closely related field is required. Experience and knowledge regarding immunoassays, immobilization chemistry, microbial physiology, PCR, and the ability to work in collaboration is essential. Familiarity with fluid dynamics is strongly suggested. Applications will be accepted through April 30, 1997 or until the position is filled. The salary is commensurate with experience and includes benefits. Applicants should submit a letter of application, three letters of reference, graduate transcripts, and a curriculum vitae to: **Bart Weimer, Utah State University, Department of Nutrition and Food Sciences, Logan, UT 84322-8700. Telephone: 801-797-3356; FAX: 801-797-2379; Email: milkbugs@cc.usu.edu.** *Utah State University is an Equal Opportunity/Affirmative Action Institution. Minorities and women are encouraged to apply.*

POSTDOCTORAL POSITION

A **POSTDOCTORAL POSITION** at the Harvard Medical School is open immediately to conduct research in the areas of oncogenesis and signal transduction. The appropriate candidate would be involved in the functional characterization of novel tyrosine kinases and novel tyrosine phosphatases in hematopoietic and endothelial cells. A working knowledge of molecular and cell biology is essential for this project. Please send curriculum vitae and three references to:

Jerome E. Groopman, M.D.
Chief, Division of Experimental Medicine
Beth Israel Deaconess Medical Center
One Deaconess Road
Boston, MA 02215
FAX: 617-975-5243

POSTDOCTORAL POSITIONS available in breast cancer molecular therapeutics: i) targeting growth factor receptors at the genomic level, ii) studying DNA-liposome interactions for development of non-viral gene therapy vectors, and iii) designing novel targeted liposomal pharmaceuticals. Desirable qualifications: i) experience in cellular and molecular biology, ii) same, with interest in small animal preclinical therapeutics and iii) membrane biophysics with practical knowledge of organic chemistry and drug delivery. Send curriculum vitae and names of three references to: **Dr. Demetrios Papahadjopoulos, Department of Cellular and Molecular Pharmacology and Dr. Christopher Benz, Division of Hematology/Oncology, School of Medicine, University of California, San Francisco, CA 94143-0450. FAX: 415-476-5292.**

POSTDOCTORAL TRAINEESHIPS IN MATHEMATICAL MECHANISTIC MODELING OF BIOLOGICAL SYSTEMS, AND COMPUTATIONAL CHEMISTRY

Position 1: Postdoctoral research training to develop mathematical mechanistic models of development and neurotoxicological processes, and to investigate statistical inference issues in complex dynamic models. The position requires a Ph.D. in biomathematics, biostatistics, or biomedical engineering, with experience in quantitative modeling of biological systems or familiarity with statistical methodology. Research advisor: **R. Woodrow Setzer, Jr., Environmental Protection Agency. Telephone: 919-541-0128; FAX: 919-541-5394.**

Position 2: This research opportunity involves the application of computational chemistry and molecular modeling approaches to investigations of mechanisms of toxicity, and to the development of structure-activity relationships for modeling toxicities of environmentally relevant chemicals, with primary focus on mutagenic and carcinogenic endpoints, and interactions with DNA. Research advisor: **Dr. Ann M. Richard, Environmental Protection Agency. Telephone: 919-541-3934. Email: arichard@madmac.herl.epa.gov.**

Funding sources limit awards to U.S. citizens or permanent residents. Preliminary applications (curriculum vitae, names and addresses of three references) for all positions should be sent to: **David J. Holbrook, Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC 27599-7270. Telephone: 919-966-4685; FAX: 919-966-6357; Email: david_holbrook@unc.edu.**

POSTDOCTORAL POSITIONS DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY INDIANA UNIVERSITY SCHOOL OF MEDICINE

Applications are invited for several **POSTDOCTORAL POSITIONS** available immediately in the areas of cellular and molecular immunology, cell cycle control, regulation of gene expression, and gene transfer/gene therapy. The individual investigators and their areas of interest are listed below.

Janice Blum—antigen processing and presentation; autoimmunity and tumor immunity

Byoung Kwon—HIV pathogenesis and host factors: co-stimulation and chemokines

Ann Roman—human papillomavirus research: regulation of gene expression; interaction with cell cycle control components

Robert Schloemer—assembly and regulation of replication of hepatitis viruses; liver-specific vectors and gene therapy

Arun Srivastava—molecular biology of human parvoviruses (AAV and B19), and AAV and B19 vectors for human gene therapy

Please send your curriculum vitae and names and telephone numbers of three references to the appropriate individual above at: **Department of Microbiology and Immunology, Indiana University School of Medicine, 635 Barnhill Drive, Indianapolis, IN 46202-5120.**

Indiana University is an Equal Opportunity Employer.

SCIENTIFIC ADVISOR

Full-time **SCIENTIFIC CONSULTANT POSITION** available in a biotechnology patent law firm for an individual with a Ph.D. in molecular biology. Position requires strong, broad-based background in molecular biology and biochemistry including knowledge of nucleic acid hybridization principles and protocols. Excellent communication skills also required. Send curriculum vitae and a statement of interest to:

Campbell & Flores LLP
4370 La Jolla Village Drive, Suite 700
San Diego, CA 92122

POSTDOCTORAL POSITION to study the molecular genetics of human DNA replication. Epstein-Barr virus sequences and immunoglobulin, globin, and *myc* gene families are being used as model systems both *in vivo* and *in vitro* to define mammalian origins of replication and to study their cell cycle regulation. The role of the LCR in the regulation of replication is also being investigated. Apply by mail and a FAX copy to: **Dr. C. Schildkraut, Albert Einstein College of Medicine, Resnick Campus, 1300 Morris Park Avenue, New York, NY 10461. FAX: 718-430-8574.** *Equal Opportunity Employer.*

Department of Statistics

CHAIR OF BIOSTATISTICS/ BIOMETRICS

The University intends to proceed to the appointment of a Professor of Biostatistics/Biometrics as from 1st September 1997. Applications are invited from candidates with an established international reputation in research. Preference will be given to candidates who have experience of working in clinical trials or in other major collaborative research initiatives in the biomedical area.

The Department of Statistics is highly rated in research. It is one of the largest statistics departments in the UK and has successful undergraduate teaching programmes and a large cohort of postgraduate students. The new Professor will be expected to contribute to the Department's teaching and administration and, in particular, to take a leading role in the Robertson Centre for Biostatistics which is an important sub-unit of the Department of Statistics.

Salary will be in the professorial range.

Further particulars may be obtained from the Director of Personnel Services, University of Glasgow, Glasgow G12 8QQ, to whom applications (5 copies; 1 copy in the case of overseas applicants), giving the names and addresses of three referees, should be lodged on or before 28th March 1997. The Department's URL is http://www. stats.gla.ac.uk/ In reply please quote Ref: 63/SC. The University is committed to equality of opportunity in employment.

UNIVERSITY of GLASGOW

UNIVERSITY OF MANCHESTER
SCHOOL OF BIOLOGICAL SCIENCES

Lectureship in Molecular Pharmacology Ref: 72/97

This post will continue to develop our strengths in the application of molecular and cell biology to questions in pharmacology. Applicants should have a background in pharmacology, should preferably possess previous experience in molecular and cellular biology. The post is particularly suited to candidates who wish to integrate aspects of their work with those interested in physiology, pharmacology and whole animal biology. The School of Biological Sciences at the University of Manchester is the single largest Biology Department in the United Kingdom offering ample opportunities for collaboration. It is well equipped and includes excellent facilities for macromolecular synthesis, electron microscopy, NMR, flow cytometry, and transgenesis.

The position is for a fixed term of five years with a minimal teaching load during the first two years and a variable load thereafter, depending upon research effort. Salary on the Lecturer Grade A or Lecturer Grade B scale: £15,154 - £26,430 (under review) per annum according to experience.

Informal enquiries may be made to Professor John Hickman; Tel 0161 275 5440, Fax 0161 275 5600.

Application forms and further particulars available from Office of the Director of Personnel, The University of Manchester, Oxford Road, Manchester, M13 9PL. Tel: 0161 275 2028; Minicom (for the hearing-impaired) 0161 275 7889; Fax: 0161 275 2221, email: Personnel@man.ac.uk Closing date for applications 17th March 1997. Please quote the reference number.

As an equal opportunities employer, the University of Manchester welcomes applications from suitably qualified people from all sections of the community regardless of race, religion, gender or disability.

KUWAIT PRIZE 1997
Invitation for Nominations

The Kuwait Foundation for the Advancement of Sciences institutionalized the **Kuwait Prize** to recognize distinguished accomplishments in the arts, humanities and sciences. The Prizes are awarded annually in the following categories:

A. Basic Sciences
B. Applied Sciences
C. Economics and Social Sciences
D. Arts and Letters
E. Arabic and Islamic Scientific Heritage

The Prizes for 1997 will be awarded in the following fields:

1. Basic Sciences—Biophysics
2. Applied Sciences—Water Resources Development
3. Economic and Social Sciences—Crime and Delinquency and their Dimension in the Arab World
4. Arts and Literature—Modern Studies in Ancient Arabic Prose
5. Arabic and Islamic Scientific Heritage—Studies on the role of Moslems in Human Civilization

Foreground and Conditions of the Prize:

1. Two prizes are awarded in each category: A Prize to recognize the distinguished scientific research of a Kuwaiti citizen, and, a Prize to recognize the distinguished scientific research of an Arab citizen.
2. The candidate should not have been awarded a Prize for the submitted work by any other institution.
3. Nominations for these Prizes are accepted from individuals, academic and scientific centers, learned societies, past recipients of the Prize, and peers of the nominees. No nominations are accepted from political entities.
4. The scientific research submitted must have been published during the last ten years.
5. Each Prize consists of a cash sum of K.D. 30,000/- (approx. U.S.$100,000/-), a Gold medal, a KFAS Shield and a Certificate of Recognition.
6. Nominators must clearly indicate the distinguished work that qualifies their candidate for consideration.
7. The results of KFAS decision regarding selection of winners are final.
8. The documents submitted for nominations will not be returned regardless of the outcome of the decision.
9. Each winner is expected to deliver a lecture concerning the contribution for which he was awarded the Prize.

Inquiries concerning the Kuwait Prize and nominations including complete curriculum vitae and updated lists of publications by the candidate with four copies of each of the published papers should be received before 31 October 1997 and addressed to:

The Director General
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CONFERENCE

April 4–6, 1997, Philadelphia, PA

International Conference: Challenges in the Study of Encephalomyopathies of Mitochondrial Origin. Topics will include: Mitochondrial Genetics; Diagnosis of Mitochondrial Cytopathies; "Non-Invasive" Techniques in the Diagnosis of Encephalomyopathies; Therapy of Mitochondrial Diseases; and Leigh Syndrome Conference. There will be a concordant meeting for parents. For further information contact: **Section of Neurology, St. Christopher's Hospital for Children, Erie Avenue at Front Street, Philadelphia, PA 19134-1095. Telephone: 215-427-5484; FAX: 215-427-4393.**

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