**SCIENCE**

and HUGO Present

**HUMAN GENOME 1994**

**THE GENES AND BEYOND**

THE INTERNATIONAL CONFERENCE

OCTOBER 2-5, 1994

THE WASHINGTON RENAISSANCE HOTEL

WASHINGTON, D.C.

**CONFERENCE AGENDA**

**SUNDAY, OCTOBER 2**

Welcoming Reception

**MONDAY, OCTOBER 3**

Plenary Session I: Genome Analysis - The New Frontier

"Human Gene Identification by Positional Cloning"

Dr. Francis Collins, National Center for Human Genome Research

"Genetic Basis of Human Colorectal Cancer"

Dr. Bert Vogelstein, Johns Hopkins Oncology Center

"Mapping Genes and Genomes: Genetic Dissection of Complex Traits"

Dr. Eric Lander, Whitehead Institute/MIT

"Human Genome Diversity"

Dr. Mary Claire King, University of California, School of Public Health

"Manipulating Cancer Genes in the Mouth"

Dr. Harold Varmus, National Institutes of Health

"Intellectual Property: DNA and its Offspring"

Dr. Kate Murashige, Morrison & Foerster

"Presymptomatic Diagnosis of Self and Progeny"

Dr. C. Thomas Caskey, HUGO

**Concurrent Sessions**

**M1** "New Methods of DNA-Based Diagnosis"

Dr. Stephen P.A. Fodor, Affymetrix, Inc.

**M2** "Human Gene Identification"

Dr. Kay E. Davies, Institute of Molecular Medicine, University of Oxford

**M3** "Social and Scientific Issues in Genetic Testing"

Dr. Nancy Wexler, Hereditary Disease Foundation

**M4** "Gene Therapy"

Dr. Inder M. Verma, The Salk Institute

**TUESDAY, OCTOBER 4**

Plenary Session II: Development and Signal Transduction

**Special Guest: Donna Shalala, U.S. Department of Health and Human Services**

"MYOD & Myogenesis"

Dr. Harold Weintraub, Fred Hutchinson Cancer Research Center

"Genome Analysis in the Mouse"

Dr. Shirley M. Blighman, Princeton University

"Pax: Genes for Mice and Men"

Dr. Peter Gruss, Max Planck Institute of Biophysical Chemistry, Germany

"From an Interferon Clone to the Regulation of Oncogenesis"

Dr. Tadatsugu Taniguchi, Institute for Molecular and Cellular Biology, Osaka University

"C. elegans Genome Project"

Dr. Richard Wilson, Washington University Medical School

"Small GTPases – Switching on Biological Responses"

Dr. Alan Hall, MRC Laboratory for Molecular Cell Biology, U.K.

**Concurrent Sessions**

**T1** "Gene Targeting"

Dr. Elizabeth Robertson, Harvard University

**T2** "Sequence to Function"

Dr. Temple F. Smith, Biomolecular Engineering Research Center, Boston University

**WEDNESDAY, OCTOBER 5**

Plenary Session III: Mapping

"Toward the Ultimate Generation of an Integrated Map of the Human Genome"

Dr. Daniel Cohen, C.E.P.H., France

"Application of High Resolution Genetic Maps to Studies of Common Disorders"

Dr. Jeffrey C. Murray, University of Iowa

"Yeast Genome Project"

Dr. André Goffeo, Université Catholique de Louvain, Unité de Biochimie Physiologique

"The Drosophila Genome Project – a Progress Report"

Dr. Gerald M. Rubin, University of California

"Status and Prospects for the Complete Human Genome Sequence"

Dr. Richard A. Gibbs, Baylor College of Medicine

"High Speed DNA Sequencing: Present and Future Technologies"

Dr. Lloyd M. Smith, University of Wisconsin

"Towards a Complete Set of Human Genes"

Dr. J. Craig Venter, The Institute for Genomic Research

Plenary Session IV: Mapping and Applications

"Vertically Integrated Mapping and Sequencing of Human DNA"

Dr. Maynard Olson, University of Washington School of Medicine

"Interpreting Genes and Genomes"

Dr. David J. Lipman, NIH, National Library of Medicine

"Some Applications of a Genome Library"

Dr. Melvin Simon, California Institute of Technology

"Huntington Disease"

Dr. James F. Gusella, Massachusetts General Hospital

"Ancient DNA"

Dr. Svante Pääbo, Zoologisches Institut, Universität München

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**POSITIONS OPEN**

**BIOSCIENCE: VISITING ASSISTANT PROFESSOR** (one- or two-year appointment), with interest in innovative lower-division teaching. Research opportunities of departmental interest include molecular biology and ecology; the successful candidate should have expertise in one of these areas. Appointment does not preclude continuing tenure-track openings. Reviews will begin April 30, 1994. Send letter of interest, curriculum vitae, names and telephone numbers of three references to: Dr. J.V. Magee, Chair, Neuroscience Search Committee, University of Delaware, 23rd and Chestnut Streets, Philadelphia, PA 19104. Affirmative Action/Equal Opportunity Employer.

**NEUROBIOLOGIST**

Division of Neurosurgery
University of Maryland School of Medicine

Applications are invited for a tenure-track position as ASSISTANT/ASSOCIATE PROFESSOR in the Division of Neurosurgery. Candidates are sought with training and research experience in molecular neurobiology with interest in neuro-oncology research. Successful applicants will hold a secondary appointment in one of the basic science departments, and will be expected to participate in graduate and medical teaching programs and to develop and maintain an extramurally funded research program. There are excellent institutional programs in molecular and cell biology, membrane biology, and neuroscience that provide unique opportunities for collaborative, basic and translational research. Applications from minority and women candidates are especially encouraged. Please send curriculum vitae, a summary of research interests, and three letters of reference to:

**Dr. Howard Eisenberg**
Head, Division of Neurosurgery
University of Maryland School of Medicine
22 South Greene Street, Room S12D10A

Baltimore, MD 21201

Affirmative Action/ADA/Equal Opportunity Employer.

The Department of Pediatrics, University of California San Francisco, in collaboration with the UCSF Program in Molecular and Cell Biology, seeks a distinguished scientist (M.D. or Ph.D.) with internationally recognized achievements in molecular oncology to establish and develop a top flight program to investigate the fundamental biology of pediatric malignancies. This is a tenured position at the ASSOCIATE or FULL PROFESSOR level. The successful candidate will be appointed to a Distinguished Professorship supported by University-endowed funds, will occupy newly developed laboratory space on the UCSF campus and will join a community of ongoing and interactive scientists. In addition to participating actively in graduate and postdoctoral training programs, the Department also has active clinical programs for the diagnosis and management of childhood cancer, and there is an opportunity to participate in these programs. Please address inquiries to: Larry J. Shapiro, M.D., Chairman, Department of Pediatrics, University of California San Francisco, San Francisco, CA 94143-0110. The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

**TENURE-TRACK POSITION**

The University of Missouri Department of Physiology in the Medical School will fill a tenure-track position at the ASSISTANT/ASSOCIATE PROFESSOR level with emphasis on Neurophysiology relative to established programs in cardiovascular physiology and molecular membrane biophysics. The department is very active in training cardiovascular physiology professionals. A campus-wide program in molecular biology provides state-of-the-art facilities. The successful applicant will be expected to establish an independent neurophysiology laboratory and to teach neuroscience in the medical curriculum and at the advanced graduate level. A Ph.D., M.D., or D.V.M. and at least 2 years of postdoctoral experience are required. Salary and start-up funds are competitive. Send current curriculum vitae and list of references to: Dr. Allan Jones, Chair, Department of Physiology, University of Missouri, MA415 Medical Sciences, Columbia, MO 65212.

Missouri University (MU) is an Equal Opportunity Employer with special initiatives to recruit and develop women and minorities. MU complies with guidelines of the Americans with Disabilities Act of 1990 making reasonable accommodations upon request. Contact Dr. Allan Jones, 314-882-4957.

**POSITIONS OPEN**

**POPULATION BIOLOGY**

Grinnell College invites applications for a one-year position as an ASSISTANT PROFESSOR of Biology (Associate Professor possible) to begin in August 1994, with a full search for a tenure-track position to follow during the 1994-95 academic year. Candidates should have expertise in population and evolutionary biology, with proficiency in quantitative methods of the discipline and a commitment to field research. The person hired will teach an advanced course in population biology (with lab) and two sections of an introductory-level course in population and community biology (with lab) for majors. We seek candidates with broad interests in biology who have completed the Ph.D. Support for student-faculty research and a 375-425 mile commute 11 miles from campus with a laboratory, pond, restored prairie, savanna, and an oak forest are available. Send curriculum vitae and a letter of application, including a statement of teaching and research philosophy to: Chair, Population Biology Search Committee, Department of Biology, Grinnell College, Grinnell, IA 50112-0806. FAX: SULLIVAC@AC.GRIN.EDU. To assure full consideration, applications must be received by May 13, 1994. Grinnell College is an Equal Opportunity/Affirmative Action Employer and especially seeks women and minority candidates.

The University of Wisconsin--Madison. Department of Human Oncology is recruiting two cell-molecular biologists with research interests broadly related to breast cancer. Areas of interest include but are not limited to: molecular genetics, signal transduction, breast cancer biology, breast cancer therapy and prevention, and molecular epidemiology. These are tenure-track or tenured positions at the ASSISTANT, ASSOCIATE or FULL PROFESSOR level. In addition to establishing a research program, this position also requires participating in departmental teaching and graduate student mentoring. Applications should include curriculum vitae, three recent publications and the name and fax number of three references. Send materials to:

**Dr. Michael N. Gould**
University of Wisconsin
Department of Human Oncology, K4/332
600 Highland Drive
Madison, WI 53792

The University of Wisconsin is an Equal Opportunity Employer. Unless confidentiality is requested in writing, information regarding the applicants will be released upon request. Finalists cannot guarantee confidentiality.

Virginia Commonwealth University's Department of Pharmacology and Toxicology announces a non-tenure track position of ASSISTANT PROFESSOR position to conduct CNS pharmacology research. Applicant must have a Ph.D. in pharmacology and at least two years of postdoctoral experience. The successful applicant must possess the ability to secure research funding and have peer-reviewed scholarly publications, as well as prior research experience with assessment of spinal and supraspinal pain pathways, nicotine holinergic neuropharmacology, and the role of calcium in pain processing. Must have background in teaching in graduate and professional schools. Send curriculum vitae, letter of research interests and three letters of reference, by May 29, 1994, to: Dr. Billy Martin, Box 980613, MCV, Richmond, VA 23298-0613. Virginia Commonwealth University is an Equal Employment Opportunity/Affirmative Action Employer and encourages women, minorities and persons with disabilities to apply. Position description available upon request.

**PROGRAM DIRECTOR—EDUCATION**

ATCC, a private, nonprofit institution dedicated to providing services to the science communities, seeks an experienced professional to manage its education program. Candidate will implement a multifaceted education program that includes establishing liaisons and alliances with external organizations, curriculum development, resource development, product marketing, workshop organization, and customer service. Send curriculum vitae, references and salary requirements. Equitable Employment Opportunity/FF/M.

ATCC
Attention: PDE
12301 Parklawn Drive
Rockville, MD 20852

736
Chair, Department of Microbiology

The University of Pennsylvania School of Medicine seeks outstanding candidates for the position of Professor and Chair of the Department of Microbiology. A major institutional commitment to this key basic science department supports the search.

The successful applicant will be of international stature in his/her area of research and will provide academic leadership in the broadly defined area of Microbiology. Applicants should have demonstrated qualifications in education and administration.

The University is an Equal Opportunity/Affirmative Action employer. Women, minority and international candidates are encouraged to apply. Letters of interest, CV, and names of three references should be sent to:

Paul J. De Weer, M.D., Ph.D.
Chair, Microbiology Search Committee
Chair, Department of Physiology
University of Pennsylvania
School of Medicine
B-400 Richards Building
37th & Hamilton Walk
Philadelphia, PA 19104-6085

NATIONAL INSTITUTES OF HEALTH
PUBLIC HEALTH SERVICE
DEPARTMENT OF HEALTH
AND HUMAN SERVICES

The National Institutes of Health (NIH) invites applications for five senior Health Scientist Administrators/ Medical Officers within the Office of AIDS Research, Office of the Director. These are Civil Service positions offering a salary ranging from GS-14 to GS-15 pay level per annum (currently $59,022 to $69,427). Medical Officers selected may be eligible for a Physicians Comparability Allowance ranging from $5,000 to $20,000 per year. A one year probationary period must be served by persons if not currently in the Civil Service.

These positions serve as the five Coordinating Chairs for the following AIDS working groups: Vaccine, Behavioral Research, Therapeutics, Etiology and Pathogenesis, and Natural History and Epidemiology. Each Chair is responsible for facilitating and coordinating efforts of an advisory committee in strategic planning, identifying scientific opportunities, setting research priorities, and enhancing trans-NIH coordination and collaboration.

The NIH vacancy announcement, OD-94-1034A, with mandatory/desirable qualifications can be obtained by calling (301) 402-4111.

Applicants must possess knowledge of and experience in AIDS-related research within the specific AIDS working group to be considered for that position, and must state the working group specialty to which they are applying on their applications. In addition, the applicants should address these desirable factors: (1) Knowledge of AIDS-related research in the specialty area for which the applicant is applying; (2) Experience in preparing budgets and budget narratives; (3) Demonstrated skill in preparing verbal and written reports on complex scientific issues associated with the specialty area for which the applicant is applying; and (4) Experience in facilitating and coordinating committees with the goal of identifying scientific opportunities and setting research priorities.

Applicants are required to submit an Application for Federal Employment (SF-171), available at Federal Job Information Centers and Federal Personnel Offices or an electronic facsimile. The application material must be sent to:

National Institutes of Health
Office of the Director Personnel Office
Building 31, Room 1C-27
9000 Rockville Pike
Bethesda, Maryland 20892

Applications must be postmarked no later than May 16, 1994.

Selection for this position will be based solely on merit, with no discrimination for nonmerit reasons such as race, color, religion, sex, national origin, political affiliation, marital status, disabling condition, age, or membership or nonmembership in an employee organization.

U.S. Citizenship required
NIH IS AN EQUAL OPPORTUNITY EMPLOYER
positions open

academic coordinator I

The University of California at Davis invites applications for an Academic Coordinator I and curator for the U.C. Davis Herbaria. This is a full-time academic position in the Plant Sciences Department, with an appointment beginning July 1, 2014. The University of California, Davis, is interested in candidates who are committed to the highest standards of scholarship and professional activity, and to the development of a campus climate that supports equality and respect for differences based on gender, cultural ethnicity, level of disability, and sexual orientation. The University of California is an Affirmative Action/Equal Opportunity Employer.

director

pre-clinical studies

New York Chiropractic College

Responsibility for pre-clinical courses including anatomy, pathology, physiology and neurophysiology. Supervision of Biomedical Services to include but not be limited to scheduling, budget review and coordination of academic counseling. Limited teaching responsibilities. Do not be a chiropractor but must have a minimum of ten years experience in a clinical research laboratory. Expertise in at least one specific clinical area. Send resume to: Director of Human Resources, New York Chiropractic College, 2500 Route 89, Seneca Falls, NY 13148-0800.

Director, Science and Research

National professional association seeks director to manage department, act as liaison to funding agencies and organizations for research in clinical and basic sciences and disorders; serve on task force at NIH, manage research conferences. Requires doctoral in Communication and Public Health or related field, 10 years of research experience and substantial record of research scholarship. Benefits include medical/life/dental insurance and 4 and one half weeks of vacation. Send resumes to: QED 2001, Rockville Pike, Rockville, MD 20852. Equal Opportunity Employer/Affirmative Action.

Director

DynCorp-PRI, (Program Resources, Inc.) has an opening in our Rockville, Maryland, office for a Director of Biomedical Services to lead a professional staff in providing contract laboratory research services. Applicants should possess a Ph.D., M.D., or equivalent and have a minimum of ten years laboratory research experience with five years of directing a technical laboratory group. A demonstrated record of achieving and maintaining independent funding support is also required. Send curriculum vitae to: DynCorp-PRI, 2000 Edmond Halley Drive, Reston, VA 20191, Attention: Angela Powell. We are an Equal Opportunity Employer, M/F/D/V.

Postdoctoral Position: Endothelial Biology and ACE Expression, Department of Pathology, Emory University. An NIH-funded position is immediately available to study the molecular regulation of angiotensin converting enzyme (ACE) expression by endothelial cells. ACE expression in endothelial cells is influenced by many factors and the current project involves the use of molecular biology and an interest in growth regulation or vascular biology. Send curriculum vitae, references and preferred employment date to: Dr. W. Moorehead, Department of Immunology, Campus Box B-164, University of Colorado Health Sciences Center, Denver, CO 80262. FAX: (303) 270-7642. The University of Colorado is an Equal Opportunity/Affirmative Action Employer. Applications from women and minority groups are encouraged.

Postdoctoral Position in Molecular Biology, Department of Immunology, UCI. A team of researchers is expected to develop new DNA sequencing methods at the Barnett Institute of Northeastern University. Research on the sequence of genes of the major histocompatibility complex (MHC). Requires a Ph.D. or M.D. with experience in molecular biology and an interest in growth regulation or vascular biology. Send curriculum vitae, references and preferred employment date to: Dr. W. Moorehead, Department of Immunology, Campus Box B-164, University of Colorado Health Sciences Center, Denver, CO 80262. FAX: (303) 270-7642. The University of Colorado is an Equal Opportunity/Affirmative Action Employer. Applications from women and minority groups are encouraged.

Postdoctoral position in Molecular Biology, Developmental Immunology, M.D., Room 711 WMB, Emory University, Atlanta, GA 30322. Emory University is an Equal Employment Opportunity Employer.

positions open

temporary 1-year position for 1994-95 academic year, Wildlife Department, requires Ph.D. in near completion with demonstrated expertise in wildlife management. Required background in ecology or techniques and principles of wildlife management. Courses taught may include wildlife, upland habitats, wildlife rehabilitation, etc. Successful college teaching preferred. Salary Range $31,764 to $34,824. Submit curriculum vitae, transcripts of academic work, reference letters of recommendation, and materials to: David W. Inman, Professor of Wildlife, Humboldt State University, Arcata, CA 95521. Telephone: (707) 826-3953. Closing May 30, 1994, or until position is filled. Send letter of inquiry and Equal Opportunity/Affirmative Action/Title IX Employer.

The University of Alabama at Birmingham is currently seeking applicants for the faculty position of INSTRUCTONAL, non-tenure-earning. This position would be responsible for development and association of several years experience as a program director and for careers in the Division of Public Health. An Equal Opportunity/Affirmative Action/Title IX Employer.

Postdoctoral Training Positions

Johns Hopkins School of Hygiene and Public Health

Postdoctoral training positions are available for U.S. citizens and non-citizens. Interested individuals are encouraged to apply. Training Program in Environmental Health Sciences. Training positions are available with faculty conducting research in areas of biochemical and molecular toxicology including inorganic and organic compounds, molecular deminority and bioremediation, chemoprevention of cancer, identification of xenobiotic responsive genes, the genetics and mechanisms of cancer progression, immunotoxicity, the mechanisms of chemical activation, and immunotoxicity. Women and ethnic minorities are encouraged to apply. Interested individuals should send curriculum vitae, the names of three references, and a statement regarding current and future research interests to: Director, Training Program in Environmental Health Sciences, Johns Hopkins School of Hygiene and Public Health, Department of Environmental Health Sciences, Room 7052, 615 North Wolfe Street, Baltimore, MD 21205. Johns Hopkins University is an Equal Opportunity Employer.

Postdoctoral position available to study hormonal and cytokine regulation of plasminogen activator and plasminogen activator inhibitor gene expression in murine and human cells. Molecular biology experience is required. Send curriculum vitae, statement of research interests, and names of three references to: Dr. Thomas Harahap, Department of Epidemiology and Biostatistics, University of Michigan Medical School, Ann Arbor, MI 48109-0618. Equal Opportunity/Affirmative Action Employer.

Postdoctoral Position Available immediately to participate in ongoing cellular, biochemical and molecular biology studies on soluble T cell receptors and molecules and their role and function in immune regulation. Extensive training in cellular immunology is required and experience in molecular biology/biochemistry is desired. Send curriculum vitae, statement of research interests, and names of three references to: Dr. John W. Moorhead, Department of Immunology, Campus Box B-164, University of Colorado Health Sciences Center, Denver, CO 80262. FAX: (303) 270-7642. The University of Colorado is an Equal Opportunity/Affirmative Action Employer. Applications from women and minority groups are encouraged.

Postdoctoral Position: Available immediately to participate in ongoing cellular, biochemical and molecular biology studies on soluble T cell receptors and molecules and their role and function in immune regulation. Extensive training in cellular immunology is required and experience in molecular biology/biochemistry is desired. Send curriculum vitae, statement of research interests, and names of three references to: Dr. John W. Moorhead, Department of Immunology, Campus Box B-164, University of Colorado Health Sciences Center, Denver, CO 80262. FAX: (303) 270-7642. The University of Colorado is an Equal Opportunity/Affirmative Action Employer. Applications from women and minority groups are encouraged.

Postdoctoral Position: The Angiotensin II Receptor and Phosphorylation, Department of Pathology, Emory University. An NIH-funded position is immediately available to study the intracellular signaling initiated by angiotensin II receptor. Unlike the typical paradigm of G-protein coupled receptors, angiotensin II can stimulate an intracellular cascade of protein phosphorylation and activation. We are seeking Ph.D. or M.D. with experience in molecular biology/protein phosphorylation. Send curriculum vitae, references, and preferences to: Dr. Ken Bernstein, M.D., Room 711 WMB, Emory University, Atlanta, GA 30322. Emory University is an Equal Employment Opportunity Employer.

Biochemistry and Molecular Biology of Host Defense Systems, University of California, Irvine (UCI)

Four Postdoctoral Positions and a Faculty Assistant Professor Position are available in the UCI Department of Pathology for studies on cell-mediated and humoral host defense systems. This on-going project seeks to characterize the molecular basis of innate immunity provided by natural antibiotic peptides (e.g., indolicidin, defensins and p-defensins) produced by leukocytes and epithelial cells. These peptides are available for postdoctoral applicants with experience in (1) production and characterization of peptide libraries, (2) heterologous expression of bioactive molecules in bacteria and yeast, (3) biochemical characterization of peptide-bilayer interactions, (4) production of liposomal formulations of bioactive peptides, (5) tissue culture models of cellular injury, and (6) regulation of eukaryotic gene expression. Applicants for the Faculty Research Position should have at least 5 years of postdoctoral experience, a strong background in biochemistry and molecular biology, and demonstrated ability to direct and coordinate activities of more junior researchers. Send curriculum vitae, research experience and interests, and names of three references to: Dr. Michael E. Selsted, Department of Pathology, College of Medicine, University of California, Irvine, CA 92717-4800. The University of California is an Equal Opportunity Employer.

Postdoctoral Position: Testis ACE and Development, Department of Pathology, Emory University. An NIH-funded position is immediately available to study the biochemistry and molecular biology of angiotensin converting enzyme (ACE) expression by male germ cells. Developing germ cells express large amounts of ACE due to the recognition of a small tissue-specific, intragenic promoter (MCB 13:18-27, 1993). The project is a wonderful opportunity to study tissue-specific gene expression. Applicants should have a Ph.D. or M.D. with experience in molecular biology and an interest in development. Send curriculum vitae, references and preferences to: Dr. Ken Bernstein, M.D., Room 711 WMB, Emory University, Atlanta, GA 30322. Emory University is an Equal Employment Opportunity Employer.

positions open

University of North Dakota Department of Surgery Grand Forks, North Dakota

The Department of Surgery has an opening for a POSTDOCTORAL FELLOWSHIP in vascular biology research involving shock or oncology. Applicants must have a Ph.D., experience and knowledge in molecular biology, interest/experience in graduates/undergraduate teaching. The research is ongoing in the Department of Surgery and is focused on the role of vascular inflammation in cancer. The position would be a D.C., required. Interested applicants should send curriculum vitae and the names of three references to: Dr. Michael D. Burke, D.C., Room 711, University Station, Bismarck, ND 58504-9668. UAB is an Equal Opportunity/Affirmative Action Employer.
Medicinal Chemist

Post-Doctoral Position
A post-doctoral research position is available immediately for a fixed term up to three years in the Drug Discovery unit in pharmaceuticals Division, Novo Nordisk A/S.

Current efforts in Drug Discovery are directed towards development of novel therapeutic approaches in the treatment of epilepsy, neurodegenerative diseases, schizophrenia and osteoporosis. The Drug Discovery unit is internationally recognized for pioneer work in the areas of amino acid and dopamine neurotransmission.

Candidates should have a Ph.D. degree with a strong background in synthetic organic chemistry, and an interest into the influence of organic molecules on biological processes. In addition, the role requires willingness to carry out independent and innovative research towards defined targets, within the context of interdisciplinary project groups. The position offers an opportunity to pursue a research career within an international context. The official company language is English.

Drug Discovery is located in new, state of the art laboratories at a greenfield site in Maaloev, just west of Copenhagen, approx. 10 km. from Novo Nordisk’s corporate headquarters.

Written application marked "Chemist 1044" and names of three references, and details of previous research experience should be sent to Human Resources HCG, Building 9Q, DK-2880 Bagsvaerd, Denmark.

Novo Nordisk is one of the world’s leading biotechnology companies. It is a major force in insulin manufacture and diabetes treatment and is the world’s largest producer of industrial enzymes. The company also manufactures and markets a variety of other pharmaceuticals and biopharmaceutical products. Headquartered in Denmark, Novo Nordisk employs more than 11,500 people in 47 countries.

ASSISTANT DIRECTOR

Cell Culture Section/Biological Process Sciences

SmithKline Beecham Pharmaceuticals, a world leader in pharmaceutical research, seeks a distinguished Process Development Scientist to lead our Cell Culture Section in the Biological Process Sciences Department in Biopharmaceutical R&D. The Assistant Director will provide managerial and scientific direction to a group of eight experienced and accomplished professionals responsible for the early development of cell culture systems which produce biopharmaceuticals for preclinical and clinical evaluation.

The successful candidate will have an advanced degree in Cell Biology, Microbiology, or other related field and at least 10 years of relevant experience which includes at least 5 years in the biopharmaceutical industry. Candidates need to have significant records of achievement in animal cell culture technology, knowledge of Good Manufacturing Practices, experience supervising scientific staff, and superior oral and written communication skills. Skills in cell line characterization and molecular biology are desirable.

Our state-of-the-art research facility is located in suburban Philadelphia near Valley Forge, PA. We offer competitive compensation/benefits/relocation package, as well as a stimulating work environment in which to grow and excel. For confidential consideration, please send your resume, along with three references, to: SmithKline Beecham Pharmaceuticals, #H0315, PO Box 401, Conshohocken, PA 19428. We are an Equal Opportunity Employer, M/F/D/V.

SmithKline Beecham Pharmaceuticals
Challenging the natural limits.
A Group Leader Position at the Deutsches Krebsforschungszentrum will be available for a qualified candidate working on Cancer Prevention.

Preference will be given to applicants who show promise of an innovative and vigorous research program on cancer prevention, including basic scientific research as well as research on epidemiological and clinical aspects and chemoprevention of cancer.

Close cooperation with existing Research Program on "Cancer Risk Factors and Prevention" and other research groups at the DKFZ and the University of Heidelberg is desired.

The appointment will be at the salary level BAT la, with appropriate equipment and support. The position is available for a five year period. Subsequent promotion to tenured position is possible.

Interested individuals should submit a curriculum vitae and bibliography, a short description of current and future research interests, and names and addresses of three referees by May 31, 1994 to the Deutsches Krebsforschungszentrum Wissenschaftlicher Stiftungsanspruch Im Neuheifer Feld 260 D-69120 Heidelberg, Germany.

POSTDOCTORAL POSITION:
Available immediately to study the etiology of altered vascular response in benign and malignant neovascular proliferative events. Emphasis will be placed on the potential role of nitric oxide, ANF, angiotensin-II, and prostacyclin receptor physiology and transmembrane second messenger signalling systems in modulating the neovascular growth and/or vascular reactivity. Candidate should hold a recent Ph.D. or MD with molecular/cellular biology. Please send curriculum vitae with names, addresses, and telephone numbers of three references to: James V. Sitzmann, M.D., Division of Surgical Endocrinology, The Johns Hopkins Hospital, 600 North Wolfe Street, Baltimore, MD 21287-4665. The Johns Hopkins University is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS (two) are available immediately to investigate (i) the structure-function relationship of the components of the pyruvate dehydrogenase complex (PDC) using site-directed mutagenesis and (ii) the regulation of the promoter regions of the PDC genes using cultured cells and transgenic animals. Experience in molecular biology is desirable. Send curriculum vitae and names of three references to: Mulchand Patel, Department of Biochemistry, State University of New York, 140 Farber Hall, 4345 Main Street, Buffalo, NY 14214. The State University of New York is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

POSTDOCTORAL POSITION available immediately to study neuroadaptations resulting from chronic administration of, and withdrawal from, cocaine and other drugs of abuse. The current focus of the work is on neurophysiological alterations in the mesoaccumbens dopamine system and its excitatory amino acid afferents. Electrophysiological approaches include current, voltage and patch clamp recordings of neurons recorded in brain slices or in acutely dissociated preparations. Experience with these techniques is preferred. Please send current curriculum vitae and names of three references to: Dr. F.J. White, Department of Neuroscience, FHHS Chicago Medical School, 3333 Green Bay Road, North Chicago, IL 60064-3099. Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION IN MOLECULAR IMMUNOLOGY.
Research on the role of major histocompatibility complex (MHC) genes in early embryonic development using recombinant DNA techniques and transgenic mouse production and analysis. Ph.D. in molecular biology or immunology or biochemistry. Recombinant DNA experience required. Applicants should send completed application, including three letters of reference, to: Dr. Carol Warner, Department of Biology, 414 Mugra, Northeastern University, Boston, MA 02115. Northeastern University is an Equal Opportunity/Affirmative Action, Title IX University.

POSTDOCTORAL POSITION IN THE MASS SPECTROMETRY ANALYSIS OF MHC CLASS I PEPTIDES.
MAYO CLINIC
A postdoctoral position is available immediately in the sequencing of MHC class I peptides involved in autoimmune disease. Expertise in both sector and ion trap mass spectrometry, as well as immunology, desirable. Please send curriculum vitae, a summary of research experience, and the names and addresses of three references to: Dr. Stephen Naylor, Director, Biomedical Mass Spectrometry Facility, Guggenheim CO69B, Mayo Clinic, Rochester, MN 55905. USM Mayo Foundation is an Equal Opportunity and Action Educator and Employer.

POSTDOCTORAL POSITION.
SOLID STATE NMR IN BIOLOGY
A postdoctoral position is available immediately to work on lipids in membranes (biomembranes and model systems) by solid state NMR techniques with a Bruker AMX 400. The objective is to develop high resolution NMR techniques on lipids in order to measure lipid asymmetry and lateral organization as well as lipid-protein interactions in N/M preferentially in solid state techniques is required. Experience in biology is not necessary. The candidate will have to collaborate with a senior postdoctoral candidate for a second year. Send curriculum vitae names and addresses of three referees to: Dr. P.F. Devaux, Institut de Biologie Physico-Chimique, 13, rue Pierre et Marie Curie; 75005 Paris, France. FAX: (+33) 1 40 51 85 17; E-mail: deva@ipb.fr.

POSTDOCTORAL POSITION.
Drosophila vision and signal transduction. Position is available to study the mechanisms underlying vision using a combination of molecular biological and neurobiological techniques (see Science, November 1993, Vol. 262, Pg. 1028-1042). Applicants should have a strong background in molecular biology, biochemistry, or genetics. Please submit curriculum vitae and three letters of recommendation sent directly to: Dr. Craig Montell, Department of Biological Chemistry, The Johns Hopkins University School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205. The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION is available to study the newly discovered adipose tissue specific β3-adrenergic receptor. Towards this end, the latest techniques of cell biology, biochemistry and molecular biology including DNA cloning, gene expression and transgenic animals are used. Applicants should have a diploma in biochemistry or biology, and a good background in molecular biology. The position, funded by the University, is available starting August 1, 1994. Please send curriculum vitae with names of three references to: Prof. Jean-Paul Glicobino, Departement de Biochimie medicale, C.M.U., 1, rue Michel Servet, 1211 Geneva 4 Switzerland.

CLINICAL CHEMISTRY POSTDOCTORAL FELLOWSHIPS.
The laboratories of Dr. Jim Gaffney and Dr. Robert Korinis offer two-year ComAACC-approved fellowship directed toward qualified individuals (Ph.D. or M.D. required) pursuing careers in clinical chemistry. Individuals will participate in a fully funded program of clinical and research education by the American Board of Clinical Chemistry. Applications on file by October 31, 1994, will be considered for appointment beginning in July 1995. The position will be in the Department of Pathology. For further information contact: Dr. Mary F. Buczek, Ph.D., Division of Clinical Biochemistry, Mayo Clinic, Rochester, MN 55905, for more information. Mayo Foundation is an Affirmative Action and Equal Opportunity Educator and Employer.

POSTDOCTORAL POSITION to perform structure/function studies on the recombinant cystin fibrosis transmembrane conductance regulator protein. The main approach entails characterization of wild-type and site-directed mutants of CFTR expressed in and purified from insect cells using the baculovirus expression system. The ideal candidate will have a background in molecular biology, biochemistry, and experience in the characterization of recombinant proteins. Please send curriculum vitae and arrange to have three letters of recommendation sent to: Elmer M. Price, Ph.D., Dalton Cardiovascular Research Center, Research Park, University of Missouri-Columbia, Columbia, MO 65211. Affirmative Action/Equal Opportunity Employer/ADA Institution.

STANFORD UNIVERSITY POSTDOCTORAL FELLOWSHIPS.
Postdoctoral fellowships are available for study of the molecular and cellular basis of gastrointestinal disease. Faculty’s current interests include: Christine Cartwright: Src oncogene; molecular mechanisms of carcinogenesis in the colon; intestinal cell growth control. Anson Lowe: Protein sorting in the exocrine pancreas; organelle biogenesis. Suzanne Matsui: Molecular biology and pathogenesis of gastroenteritis. Richard A. Meuer: Gene expression and regulation. Bihr Omary: Cytoskeletal intermediate filament phosphorylation and glycosylation, and associated proteins, from a functional genomic perspective. National research service awards will be funded by an NIH training grant. Requirements are Ph.D. or M.D. and U.S. citizenship or permanent residency. Send curriculum vitae, date of availability and three references to: Dr. Peter G. Green, Gastroenterology MSLS F304, Stanford University, Stanford, CA 94305-5487. Stanford University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIP available immediately to investigate the effects of alcohol on hepatocyte fibroblast interaction and gene regulation. Applicants should have an M.D. or Ph.D. degree, and be citizens or permanent residents of the United States. Send curriculum vitae and the names and telephone numbers of two references to: Dr. Esterban Mezey, Professor of Medicine, 921 Ross Research Building, The Johns Hopkins University School of Medicine, 720 Rutland Avenue, Baltimore, MD 21205.

CORNEAL BIOLOGY.
Two positions are available immediately to study corneal wound healing in the cornea specifically, fibroblast control mechanisms. Experience in mammalian cell biology or tissue culture. Send curriculum vitae and three letters of recommendation directly to: Dr. Craig Montell, Department of Biological Chemistry, The Johns Hopkins University School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205. The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE POSITION.
Available immediately to study the cell biology of normal and malignant mammalian cells. The laboratory is interested in extending our mechanistic understanding of the biology of normal and malignant mammalian cells. Applicants should hold a Ph.D. and have experience in cell biology, cell culture, or molecular biology. Candidates should have experience in cloning and expression of cDNA libraries or other recombinant DNA techniques. Send curriculum vitae with names of three references to: G. J. Schroepfer, Jr., Department of Biochemistry and Cell Biology, Rice University, P.O. Box 19099, Houston, Texas 77251-1999. Rice University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH POSITION is available at the Laboratory of Cell Growth at the VA Medical Center, San Francisco, and UCSF to work on regulation of gene expression in colon cancer. Prospective candidates should have a Ph.D. or M.D. with previous experience in recombinant DNA technology including cDNA library construction and screening. PCR analysis, sequencing, fragmenting, and protein purification experience are desired. Please send curriculum vitae and names of three references before May 15, 1994, to: Dr. Millie Hughes-Fulford, VA Medical Center, Lab of Cell Growth (15SF), 4150 Clement Street, San Francisco, CA 94121. FAX: (415) 476-1267. U.S. citizenship is required. VA/UCSF is an Equal Opportunity Employer.
The School of Medicine is seeking applicants for a Surgical Pathologist at the Assistant Professor level to fill a position at the West Haven Veteran's Hospital with a faculty appointment at Yale Medical School. The successful candidate will contribute to medical student/resident, and fellow teaching, and develop a focused and robust program in investigative oncology. The candidate must be board certified in Anatomic Pathology. A record of demonstrated productivity/investigative skills is desired.

Send current CV to: Dr. José Costa, Professor and Vice Chair Department of Pathology 310 Cedar Street New Haven, Connecticut 06510

Deadline for application is May 30, 1994.

If you have submitted your CV in the last 16 months, your application is on file.

Yale University is an equal opportunity, affirmative action employer. Minority and women candidates are urged to apply.

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You should have at least three years of general histology experience and one year in preferred biomaterial processing in the area of material/tissue/implant interactions. Familiarity with light and scanning electron microscopy is important; experience with EXAKT and/or qualitative microscopic evaluation of undecalcified sections would be a plus.

Howmedica offers a competitive salary commensurate with qualifications and experience, along with a comprehensive benefits package. For confidential consideration, please send your resume, indicating salary history and requirements, to: Ms. Caroline Eppich, Personnel Associate, Dept SRA, Howmedica Inc., Division of Pfizer Hospital Products Group, 359 Veterans Boulevard, Rutherford, New Jersey 07070. No phone calls, please. We are an equal opportunity employer, and are proud to provide a smoke-free work environment.

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**SECTION OF MUSCULOSKELETAL BIOLOGY DEPARTMENT OF BIOMEDICAL ENGINEERING RESEARCH INSTITUTE THE CLEVELAND CLINIC FOUNDATION**

The Section of Musculoskeletal Biology, Department of Biomedical Engineering is seeking candidates for appointment at the Assistant Staff/Associate Staff or Staff level. Applicants must have a Ph.D. degree or equivalent and demonstrated experience in independent research in the areas of cell biology, biochemistry, molecular biology, glycobiology and/or biomechanics of the musculoskeletal system at the cell or tissue level. Applicants should have in-depth experience in one or more of the following: connective tissue cell biology and microscopy; structure, function and metabolism of connective tissue macromolecules; roles of cytokines and growth factors in connective tissue development; tissue engineering and orthopedic biomaterials.

Successful candidates will receive start-up seed funding, and are expected to develop independent research programs, secure extramural funding to support these activities, and participate in the graduate education program. Graduate students from several academic centers conduct research activities in the Department. The Section of Musculoskeletal Biology currently has programs in matrix proteins in connective tissue repair (George Muschler, M.D.), growth plate cell biology (Robert Miller, Ph.D.) and connective tissue proteoglycan (Vincent Hasball, Ph.D.). The Cleveland Clinic Research Institute is organized into eight interactive departments (Biomedical Engineering, Biostatistics & Epidemiology, Cancer Biology, Cardiovascular Biology, Cell Biology, Immunology, Molecular Biology and Neurosciences) with 270 staff and junior scientists and receives funding from the NIH, philanthropic and industrial sources, and external support from the Cleveland Clinic Foundation. Applicants should send resume in confidence to:

V.C. Hasball, Ph.D., Chairman, Search Committee Section of Musculoskeletal Biology Department of Biomedical Engineering (W63) The Cleveland Clinic Foundation 9500 Euclid Avenue, Cleveland, Ohio 44195 Telephone: (216) 445-5676 FAX: (216) 444-9198

The Cleveland Clinic is an Equal Opportunity/Affirmative Action Employer.
POSTDOCTORAL/RESEARCH ASSOCIATE

A position is available to study the coordinate regulation of genes of heme and iron transport and metabolism with that of genes involved in protection against oxidative damage. Experience in purification, molecular biology (including DNA-protein interactions), and cell culture is desirable. Stipend commensurate with experience. The School of Biological Sciences is a Program of Emmerence of the University of Missouri faculty whose research focuses on molecular recognition. Please send curriculum vitae with names, addresses and telephone numbers to: Dr. Ann Smith, Ph.D., Division of Molecular Biology and Biochemistry, School of Biological Sciences, University of Missouri-K.C., Kansas City, MO 64110. FAX: 816-238-5158. The University of Missouri is an Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE

A position is available for an applicant who has substantial experience in molecular biology and who can apply molecular biological techniques to the study of toxins that act on the nervous system. The successful applicant will run a multidisciplinary research group investigating toxins that act on voltage-dependent ion channels. The successful applicant can choose from a variety of projects, such as constructing synthetic genes for toxins and designing or performing selectivity measurements of toxins and channels. Applicants should provide curriculum vitae, list of publications, and names of three references to: Dr. Lance Simpson, Room 314-JAH, Jefferson Medical College, 220 Locust Street, Philadelphia, PA 19107. Jefferson Medical College is an Affirmative Action/Equal Opportunity Employer.

RESEARCH ASSOCIATE

(Contract, full-time, annually renewable)

UNIVERSITY OF MINNESOTA,
DEPARTMENT OF MEDICINE

Applications are invited for an M.D. or Ph.D. prepared individual in a well-established stem cell transplantation biology laboratory for an investigator with 3 plus years of experience in cell biology with an emphasis in normal and leukemic hematopoiesis. Required experience: superior skills in stem cell selection using FACS and other immunological selection procedures, stem cell culture, short-term progenitor assays and long-term culture and knowledge of molecular biology techniques, including reverse transcription PCR. Duties will include responsibility for stem cell selection using FACS and other procedures, stem cell cultures using a variety of techniques, designing and altering selection procedures and cultures and supervising FACS technician and lab technicians. Salary commensurate with experience. To apply, please send curriculum vitae together with a brief summary of professional experience and three professional references to: Catherine M. Verfaillie, M.D., Department of Medicine/Division of Hematology, Box 194 UMHC, University of Minnesota, 420 Delaware Street, S.E., Minneapolis, MN 55455.

Last date for receipt of applications: May 27, 1994. Start date: As soon as possible.

The University of Minnesota is an Equal Opportunity Educator and Employer.

RESEARCH ASSOCIATE POSITION

for mass spectral studies of steroid and sphingolipid metabolism. Significant experience in operation of quadrupole and magnetic units in GC-MS mode required. Send resume and names of three references to: G. J. Schroepfer, Jr., Department of Biochemistry and Cell Biology, Rice University, P.O. Box 1892, Houston, Texas 77251. Rice University is an Equal Opportunity/Affirmative Action Employer.

RESEARCH SCIENTIST/POSTDOCTORAL POSITIONS available immediately at Yale University to investigate molecular and physiological regulation of K-ATPase/active K transport in laboratory studying colonic ion transport. Ph.D. with strong background in molecular biology required. Experience in cell biology and physiological systems desirable. Salary commensurate with experience. Send curriculum vitae, summary of research interests and names of 3-4 references to: Dr. Henry J. Binder, Department of Medicine, 333 Cedar Street, New Haven, CT 06510. FAX: 203-785-7273.

Yale University is an Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATE

Research Associate position available immediately in an expanding program in viral vaccine immunology. Experience in cellular immunology preferred along with broad background in molecular biology. Requirements: Ph.D. in immunology or virology; postdoctoral experience desirable. Send curriculum vitae with references to: Dr. Ann Arvin, G-312, Department of Pediatrics, Stanford University School of Medicine, Stanford, CA 94305-5119.

CENTRIFUGATION SCIENTIST

Beckman Instruments, Inc., the world's leading producer of centrifuges, is seeking a research scientist to help develop new instrumentation based upon centrifugation. Identify new opportunities for the use of centrifugal field in separating and manipulating biomolecules and cells, perform exploratory research to validate these concepts, and support the marketing effort with applications expertise. A Ph.D., 3 to 5 years of experience in molecular or cellular biological techniques, excellent interpersonal skills, and the ability to establish external collaborations in addition to performing in-house research required. For consideration, please send or FAX your resume to: Stanford Beckman Instruments, Inc., 1050 Page Mill Road, Palo Alto, CA 94304: FAX: 415-859-1526. Equal Opportunity Employer. Principals only, please.

NMR SPECTROSCYPISTS. As part of a major commitment to the development of structural biology at the University of Pennsylvania's Biomedical and Biophysics and invites applications for tenure-track positions in NMR spectroscopy. Applicants should have demonstrated expertise in the interpretation of modern multidimensional NMR with a strong background in protein and/or nucleic acid structure, dynamics, and function. Please forward curriculum vitae and a statement of background and future scientific interests, and have 3 letters of recommendation sent to: Ms. Caryn Stiwerlma, John Research Foundation, B501 Richards Building, University of Pennsylvania, Philadelphia, PA 19104-6089. The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer. Applications from women and minorities are encouraged.

TOXICOLOGISTS/EPIDEMIOLOGISTS

Growing company seeks toxicologists/pharmacologists and epidemiologists with experience evaluating health effects data and testing methodologies. Position provides a friendly work environment and interesting and diverse responsibilities commensurate with capabilities. Send salary requirements, resume, and one writing sample to: HR Department A01.

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