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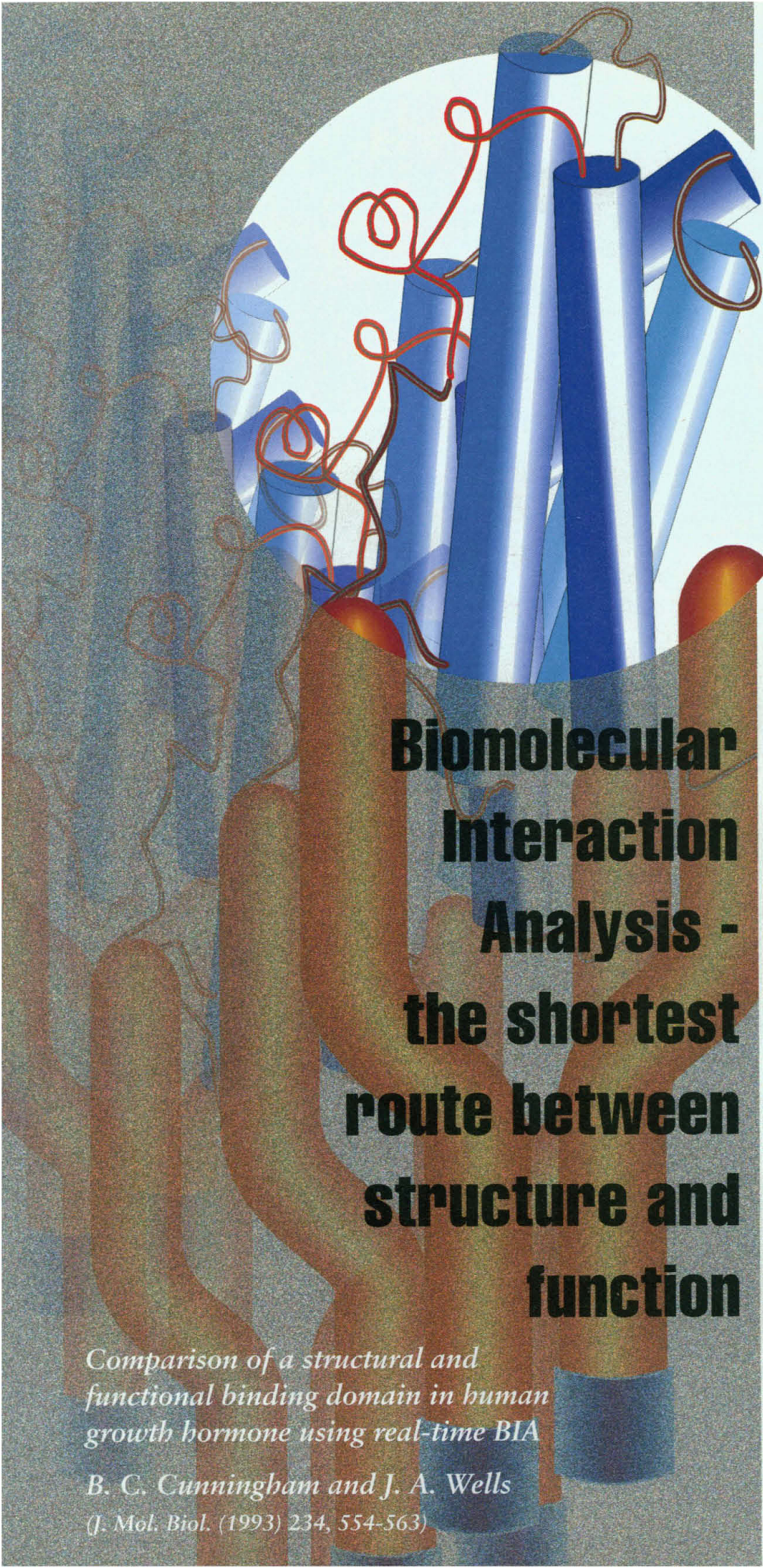
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Biomolecular Interaction Analysis - the shortest route between structure and function

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

B. C. Cunningham and J. A. Wells

(J. Mol. Biol. (1993) 234, 554-563)

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

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

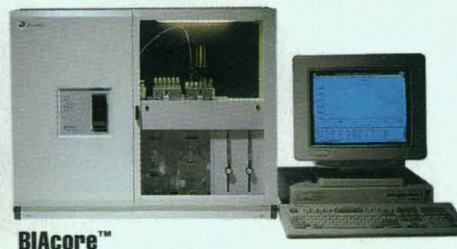
The results indicated that only one quarter of the residues account for the major part of the binding energy. Thus the functional binding domain is considerably smaller than the structural binding domain. The results are potentially valuable in the design of hormone analogues for therapeutic purposes,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

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

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20,000 nm/min for easy synchronous scanning. Extension of the standard instrument range (200 to 750 nm) to 900 nm (with optional red-sensitive photomultiplier) supports applications from ultraviolet to visible light, enabling use of chlorophyll and dyes that fluoresce at long wavelengths. **Shimadzu Scientific Instruments. Circle 141.**

Bibliography Management Software

Bookends Pro is bibliography management software for the Macintosh. The system can collect, manage, and format references, citations, and quotes. It automatically generates bibliographies and footnotes that conform to publication specifications. Users can import reference information from a variety of online database services, including Medline, Dialog, and BRS. Version 3.1 includes more than 90 pre-defined formats for generating references and footnotes. **Westing Software. Circle 142.**

Graphics Software

GraphiC is software that can produce linear and logarithmic X-Y plots; three-dimensional surfaces; polar, pie, bar, and Smith charts; and more. It includes nine different curve types with varied curve thickness and 16 different curve markers. It contains more than 240 functions, enabling users to write scientific graphing programs without having to learn graphical user interface programming. **Scientific Endeavors. Circle 143.**

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Literature

ATCC/NIH Repository Catalogue of Human and Mouse DNA Probes and Libraries lists available probes and cloned genes for human or murine loci, oligonucleotides, human chromosome-specific genomic libraries,

complementary DNA (cDNA) and genomic libraries, oncogene and transforming protein probes and clones, selected probes for detecting polymorphism, bacterial hosts for transformation or plating libraries, human brain cDNA clones, and more. **American Type Culture Collection. Circle 147.**

Dionex Solutions for Environmental Inorganics Analysis presents ion chromatography and capillary electrophoresis technologies. Highlights include column composition and chemistry and chemical suppression. **Dionex. Circle 148.**

Inside Chiu Technical Corporation provides information on quartz halogen light sources including single and double fiber optic illuminators, high-intensity halogen light sources, high-performance short arc xenon and mercury power supplies, adjustable ring lights, dark-field and bright-field examination bases, and a full line of fiber optic light guides. **Chiu Technical. Circle 149.**

Choosing the Correct Molecular Weight Cut-off for Concentration and Desalting is an application note with advice on selecting an appropriate ultrafiltration membrane or device. **Amicon. Circle 150.**

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POSITIONS OPEN

ASSISTANT PROFESSOR OF NEUROSCIENCE IN OPHTHALMOLOGY

A **TENURE-TRACK** position is available for a molecular neurobiologist with an interest in the biophysics of retinal neurons and glia. The successful candidate will have documented experience with cloning and expression of neuronal membrane proteins, including ligand-gated and/or gap-junctional channels. He/she will be expected to participate in on-going research projects of the Neurobiology Laboratories, and develop an independently funded research program. The candidate should have a Ph.D. in biochemistry or biology. The candidate is expected to merit a secondary appointment in a basic science department of the Graduate Faculty, where a modest teaching commitment will be required. Equipment, start-up funds, and a minimum of two years of initial support are available. Applicants should submit a letter of application, curriculum vitae, a one-page statement of career goals, and the names and full addresses of three or more references to:

Robert Hendricks, Ph.D.
Chair, Search Committee
Department of Ophthalmology and Visual Sciences
University of Illinois College of Medicine
1855 West Taylor Street (M/C 648)
Chicago, IL 60612

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MICROBIOLOGY

Assistant Professor (Tenure-Track)

The Medical College of Ohio invites applications for a **TENURE-TRACK POSITION** in the Department of Microbiology. Candidates must have a doctoral degree and postdoctoral research experience. Primary research interests should involve molecular aspects of pathogenesis, with emphasis on host-pathogen interactions. Teaching responsibilities include participation in a microbiology course for medical students and development of a graduate level course in molecular pathogenesis. The successful candidate is expected to develop an independent research program based on extramural support. Start-up funds and a state-supported salary are available. A curriculum vitae, future research plans, and three letters of recommendation should be sent to: **Chairman, Department of Microbiology, Medical College of Ohio, 3000 Arlington Avenue, Toledo, OH 43699.** *Medical College of Ohio is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS MOLECULAR ONCOLOGY Loyola University Cancer Center

Faculty positions are available at the **ASSOCIATE** and **ASSISTANT PROFESSOR** levels for applicants with interests in diverse areas of Molecular Genetics and Molecular Biology of cancer cells, including: study of oncogenes, tumor suppressor genes, genomic instability, cell senescence and immortalization, control of apoptosis, and other related areas. Successful applicants will be provided with laboratory and office facilities within the new 125,000 square foot Cancer Center building and a competitive compensation and start-up funds package. Interested applicants should submit a curriculum vitae, three professional references, and a description of current and future research interests by August 1, 1995. **Manuel O. Diaz, M.D., Molecular Oncology Program Leader, Loyola University Cancer Center, 2160 South First Avenue, Maywood, IL 60153.** *Loyola University Chicago is an Equal Opportunity Employer/Educator.*

ASSISTANT PROFESSOR Arthropod Population Biology/Ecology

TENURE-TRACK position with a 100% research responsibility to develop a program on innovative strategies for understanding and controlling biting arthropod populations and the diseases they carry. For information and a copy of position description please write to address below, or Email to jrr@gnv.ifas.ufl.edu. Application due July 15, 1995, and must include letter of interest, a complete curriculum vitae, copies of academic transcripts, and three letters of reference mailed directly to: **Jorge R. Rey, Search and Screen Advisory Committee, University of Florida-IFAS, Florida Medical Entomology Laboratory, 200 9th Street S.E., Vero Beach, FL 32962.**

The University of Florida is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

FACULTY POSITION Experimental Gravitational Physics

The Department of Physics at MIT is seeking candidates for a faculty position in experimental gravitational physics. MIT is collaborating with Cal Tech in developing the Laser Interferometer Gravitational Wave Observatory (LIGO). This will be a national facility dedicated to the detection of gravitational waves from astrophysical sources and will provide unique research opportunities in physics and astrophysics. The successful candidate will engage in undergraduate and graduate education and will establish an independent research program in experimental gravitational physics. He/she may also participate in the development of LIGO. Appointment at the **ASSISTANT PROFESSOR** level or, for an exceptionally qualified candidate, at the senior level will be considered. Given the developing nature of this field, candidates with varied experimental backgrounds will be considered. Applications are requested before October 1, 1995. Applicants should send a curriculum vitae, a brief description of current research, and three letters of recommendation to: **Professor Saul Rappaport, Center for Space Research, Room 37-551, MIT, Cambridge, MA 02139-4307.** *MIT is an Equal Opportunity/Affirmative Action Employer. MIT is a non-smoking environment.*

ZOOLOGY

Beginning September 1995, a nine-month appointment with the possibility of becoming tenure-track at the **ASSISTANT PROFESSOR** level. Responsibilities include teaching general biology and an advanced course in organismal biology, advising, and a research interest in some environmental science. Ph.D. required, teaching load of 15 credit hours per quarter. Augusta College is a 5,700 student, senior unit of the University System of Georgia. Application deadline 3 July 1995. Send curriculum vitae, a statement of teaching philosophy, and names, addresses, and telephone numbers of three references to: **Dr. Bruce Saul, Department of Biology, Augusta College, Augusta, GA 30904-2200.** *Augusta College is an Affirmative Action/Equal Opportunity Institution and specifically invites and encourages applications from women and minorities.*

FACULTY POSITION

The Department of Biochemistry and the Center for Molecular and Behavioral Neuroscience of the Universidad Central del Caribe is seeking to fill a faculty position at the rank of **ASSISTANT PROFESSOR**, which will be available starting June 1, 1995. The position is principally a research position with teaching opportunities in Biochemistry available. A Ph.D. or equivalent degree is required; interest and experience in neuroscience and molecular biology are desirable. The successful applicant will join an active group of neuroscience researchers. Contact: **Dr. Vesna A. Eterović** at telephone: 809-798-6904 or FAX: 809-798-6836, or mail curriculum vitae and names of three references to: **Dr. Vesna A. Eterović, Department of Biochemistry, Universidad Central del Caribe, P.O. Box 60-327, Bayamón, Puerto Rico 00960-6032.**

MICROBIOLOGY ASSISTANT PROFESSOR

TENURE-TRACK beginning January 1996. Postdoctoral preferred. Teach undergraduate microbiology and conduct M.S. and undergraduate research. Send application, curriculum vitae, teaching and research interests, transcripts, and three letters of recommendation to: **Department of Biology, Western Kentucky University, Bowling Green, KY 42101-3576.** Review begins August 15, 1995, until filled. *Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

Academic Scientist—The Pulmonary and Critical Care Medicine Division at the University of Maryland School of Medicine is seeking a scientist for a full-time **RESEARCH ASSOCIATE PROFESSOR** position. Interested candidates required to have Ph.D. degree with research experience in area of airway physiology and immunopharmacology. Send curriculum vitae to: **Lewis J. Rubin, M.D., University of Maryland at Baltimore, 10 South Pine Street (Suite 800), Baltimore, MD 21201.** *University of Maryland at Baltimore encourages women and minorities to apply and is an Affirmative Action/Equal Employment Opportunity/ADA Employer.*

POSITIONS OPEN

PROFESSOR AND CHAIRPERSON/HEAD Department of Microbiology

Oregon State University invites applications/nominations of accomplished scientists to provide leadership to the Department of Microbiology, in both education and research. This tenured, 12-month position is funded at 1.0 FTE. Salary is negotiable, commensurate with qualifications and experience. Appointee must have a doctoral degree in microbiology or a closely related field, and several years of experience at a senior level. Experience in securing and administering research funds is essential, and other administrative experience is desirable. For full consideration, send applications by September 1, 1995, to: **Dr. Christopher K. Mathews, Department of Biochemistry and Biophysics, Oregon State University, Corvallis, OR 97331-7305. Telephone: 503-737-4511; FAX: 503-737-0481; Email: mathewsc@bcc.orst.edu.** Oregon State University is an Affirmative Action/Equal Employment Opportunity Employer and has a policy of being responsive to dual-career needs.

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL (UNC-CH) School of Medicine Department of Pharmacology & Bowles Center for Alcohol Studies

The Department and Center have a joint interest in strengthening research in molecular neuropharmacology. Tenure-track faculty positions (**ASSISTANT to FULL PROFESSOR**) are open for applicants having a Ph.D. and/or M.D. degree with at least two years of post-graduate experience. The successful candidate will be expected to develop an independent research program, teach professional and graduate students and contribute to the mission of the Department of Pharmacology and the Bowles Center for Alcohol Studies. Positions offer a competitive salary and laboratory start-up package.

Applications received by August 1, 1995, will be given preference. Applicants should send a curriculum vitae and the names of three references to: **Dr. Fulton T. Crews, Chairman of the Search Committee, CB No. 7178, University of North Carolina, Chapel Hill, NC 27599-7178.** UNC-CH is an Equal Opportunity/Affirmative Action Employer. The University of North Carolina is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.

ASSISTANT PROFESSOR HUMAN CANCER GENETICS

The Lucille P. Markey Cancer Center and the Department of Obstetrics and Gynecology at the University of Kentucky is establishing a program in female organ-related human cancer genetics. A tenure-track position at the **ASSISTANT PROFESSOR** level is available for a Ph.D. candidate with expertise in molecular biology to develop a research program in the molecular aspects of ovarian and breast cancer. Interested applicants should include a description of research experience and interests, curriculum vitae, and the names of three references. Applications should be sent to: **Frank C. Miller, M.D., Chairman, Department of Obstetrics and Gynecology, 800 Rose Street, C375, Lexington, KY 40536-0084.**

The University of Kentucky is an Affirmative Action/Equal Opportunity Employer. Minorities and females are encouraged to apply.

ASSOCIATE/FULL MEMBER Pacific Northwest Research Foundation

Applications are being sought for a position of an established **INVESTIGATOR** whose interest is in the general area of molecular biology/molecular carcinogenesis. Applicants should have demonstrated accomplishment in research as evidenced by peer-reviewed publications and federal funding. Complementation to existing programs emphasizing alterations in glycoconjugate expression and/or oxidative DNA damage during oncogenesis is preferable. The position is highly competitive with regard to start-up funds, salary and laboratory space. Applicants should provide a curriculum vitae, brief summary of research accomplishments and future interests, and names and addresses of three references. Interested applicants should respond no later than August 1, 1995, to: **Dr. Eric H. Holmes, Pacific Northwest Research Foundation, 720 Broadway, Seattle, WA 98122.** An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR GERIATRICS AND GERONTOLOGY UNIVERSITY OF MICHIGAN

The Division of Geriatric Medicine is seeking applications for a **TENURE-TRACK FACULTY** position from researchers with interests in the genetics, cell biology, or molecular biology of aging and geriatric disease. The successful candidate will be expected to set up an independent, extramurally funded research program and to interact with other faculty researchers on projects of mutual interest. Opportunities for participation in the clinical programs of the Division of Geriatric Medicine are available for physician scientists. Minimum qualifications include an M.D. or Ph.D. degree and evidence of highly successful postdoctoral research in a relevant discipline. Excellent new space and start-up package. Send letter of application, curriculum vitae, publication list, summary of research plans, and names of three or more referees to: **Faculty Search, University of Michigan Geriatrics Center, 300 North Ingalls Building, Box 0405, Ann Arbor, MI 48109-0405.** An Equal Opportunity/Affirmative Action Employer.

MOLECULAR MODELING/ IMAGE RECONSTRUCTION SOFTWARE SUPPORT

The University of Virginia Information Technology and Communication-Academic Computing Health Sciences Center invites applications for a professional **FACULTY POSITION** (non-tenure-track) to provide support for molecular modeling and three-dimensional imaging. Individuals with training at the M.S. or Ph.D. level in molecular modeling, X-ray crystallography, three-dimensional image reconstruction, or low-light fluorescence detection are encouraged to apply. The individual will collaborate with faculty on modeling and imaging projects, participate in graduate courses on protein structure and image analysis, and support molecular modeling and image acquisition/analysis software. Send a complete curriculum vitae, representative publications, and three letters of reference to: **Ross Wayland ITC-ACHS, Health Sciences Center Box 555, University of Virginia, Charlottesville, VA 22908. FAX: 804-982-4030; Email: rlw@virginia.edu.** Review of applications will begin July 1, 1995. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

DENTAL EDUCATORS Division of Restorative and Prosthodontic Sciences

NYU College of Dentistry invites applications from dental educators with a D.D.S. or D.M.D. degree from an ADA-accredited dental school for two **FULL-TIME POSITIONS** in the Division of Restorative and Prosthodontic Sciences. All candidates must be eligible for licensure in New York State. Applicants for the first position must have teaching experience in Restorative Dentistry and Prosthodontics with postdoctoral training in Prosthodontics preferred. Applicants for the second position should possess an advanced degree (M.S., or preferably Ph.D.) in Dental Material Science or a Biological Science. Responsibilities for both positions include clinical and didactic instruction in predoctoral and/or postdoctoral programs, curriculum development, and clinical and/or basic science research in dentistry. Salary and academic rank will be commensurate with credentials and experience. Please submit curriculum vitae and letter of interest to: **Dr. Francis V. Panno, Head, Division of Restorative and Prosthodontic Sciences, NYU College of Dentistry, David B. Kriser Dental Center, 345 East 24th Street, New York, NY 10010.** NYU encourages applications from women and members of minority groups.

POSTDOCTORAL POSITION in immunology to study B lymphocyte activation, signal transduction and regulation of tolerance in mice and humans, using techniques of DNA recombination, protein chemistry and cell biology, in a small lab in an environment of excellence in immunology. Requires Ph.D. or M.D. This position will begin August 1995 for a minimum of two years. Submit letter describing research interests and experience, curriculum vitae, and three letters of recommendation to: **Dr. Robert Carter, Division of Clinical Immunology and Rheumatology, The University of Alabama at Birmingham, 409 LHRB, 701 South 19th Street, Birmingham, AL 35294-0007. Email: rheu031@uabdp.dpo.uab.edu.** The University of Alabama at Birmingham is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR PHARMACOLOGY/TOXICOLOGY College of Pharmacy, The University of New Mexico

CORRECTION: Application deadline is June 30, 1995, or until position is filled. For further information, call: 505-277-0920. Contact:

Scott Burchiel
Chair, Search Committee
Or See Science Issue of May 12, 1995

The University of Texas Southwestern Medical Center at Dallas has a vacancy for a **POSTDOCTORAL FELLOW** to explore an exciting new approach to developing drugs for the treatment of solid tumors. Antibodies to tumor endothelial cells are being used to target toxins or coagulants to tumor blood vessels, thereby inducing thrombosis and tumor infarction. Qualified candidates must have a Ph.D., M.D. or equivalent degree and have major experience in endothelial cell biology, *in vivo* techniques, immunohistochemistry, toxicology and/or histopathology.

The selected individual will enjoy a competitive salary and benefits package including "state employee" privileges. If you are interested in this challenging and fulfilling career opportunity, please send curriculum vitae and salary history to: **The University of Texas Southwestern Medical Center at Dallas, Attn: Dr. Philip Thorpe, 5323 Harry Hines Boulevard, Dallas, TX 75235-8593.**

The University of Texas Southwestern Medical Center is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS—Two positions are available for studies of cell division in *E. coli*. The research involves the combined use of molecular biology and biochemistry to study the molecular mechanisms responsible for the cell division process, for the proper placement of the division site, and for the coordination of cell division with the partition of daughter chromosomes into progeny cells. There is a strong emphasis on molecular genetic approaches and on *in vitro* study of the functions and interactions of proteins involved in these processes. Send curriculum vitae, brief description of prior research experience, and the names of several references to: **Dr. L. Rothfield, University of Connecticut Health Center, Farmington, CT 06032.**

An Affirmative Action/Equal Opportunity Employer/Minority/Female/People with Disabilities/Veteran.

THE NEUROSCIENCES INSTITUTE LA JOLLA Cortical Neurophysiology

Applications are invited for the postdoctoral position of **JUNIOR FELLOW** in Experimental Neurobiology to study mechanisms underlying visual perception and sensorimotor integration in the cat. Applicants should have a background in neurophysiological techniques and data analysis. Fellows will receive stipends appropriate to their qualifications and experience. Submit a curriculum vitae, statement of research interests, and names of three references to: **Dr. Peter König, The Neurosciences Institute, 3377 North Torrey Pines Court, La Jolla, CA 92037. FAX: 619-554-9159.**

SIGNAL TRANSDUCTION/IMMUNOLOGY

POSTDOCTORAL POSITIONS are available to study the mechanisms of gene regulation and signal transduction in T lymphocyte activation. Current studies focus on the kinases/phosphatases regulating Rel/NFkB transcription factors, HIV/IL2 gene regulation, CD28 signaling, and cloning of JNK/SAPK kinase-binding proteins using yeast 2-hybrid system. Applications should be addressed to: **Dr. Tse-Hua Tan, Immunology Section M929, Baylor College of Medicine, Houston, TX 77030.**

POSTDOCTORAL POSITION—Neuropharmacology: July 1995 opening for a National Institute of Drug Abuse-funded position to study opiate neurobiology using brain slice and cell culture. Send curriculum vitae/ references to: **Kenneth Grasing, M.D., University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, One Robert Wood Johnson Place, CN 19, New Brunswick, NJ 08903-0019.** The University of Medicine and Dentistry of New Jersey is an Affirmative Action/Equal Opportunity Employer/Minority/Female/Disabled/Veteran, and a member of the University Health System of New Jersey.

NEW NIH/NCI TENURE-TRACK PATHWAY

Positions Equivalent to Assistant Professor

A new tenure-track pathway has been created within the intramural program of the National Institutes of Health, National Cancer Institute, to provide an opportunity for outstanding candidates completing postdoctoral training to establish themselves as independent investigators. Successful applicants for tenure-track positions will be provided with a long-term commitment of salary, personnel, and other research resources needed to conduct an independent research program. The following positions are available at a level equivalent to that of an Assistant Professor:

Drug Development for the Treatment of Childhood Cancers

Philip Pizzo, M.D.

Position available to develop new anticancer drugs for the treatment of childhood cancers with an emphasis on central nervous system and meningeal tumors, the study of the clinical pharmacology of anticancer and antiretroviral drugs in children, and the delineation of new approaches to the treatment of childhood acute lymphoblastic leukemia with an emphasis on effective, less toxic central nervous system preventive therapy. These new therapies are investigated in preclinical *in vitro* and animal models and in phase I, II, and III collaborative clinical trials. Resources include laboratory space, shared facilities, equipment and supplies, and support of two postdoctoral fellows and one technician. Candidate must have M.D. degree with training and experience in Pediatric Hematology/Oncology, clinical pharmacology (including pharmacokinetics) and drug development. Candidate should also have experience with preclinical animal models (including primates) and *in vitro* tissue culture models. **Pediatric Branch, NCI, Building 10, Room 13N240, 10 Center Drive MSC 1928, Bethesda MD 20892-1928.**

Late Radiation Effects

Paul Okunieff, M.D.

Position available to focus on the understanding and prevention of late radiation effects including fibrosis, organ dysfunction, vascular damage, and carcinogenesis. Resources include clinical and laboratory space, shared facilities, equipment and supplies, and support of two fellows and shared clinic personnel. Candidate must have M.D. degree and be board certified in radiation oncology. Candidate should have proven ability to develop clinical protocols that test hypotheses based on pre-clinical studies and have solid experience and understanding of radiobiological laboratory techniques, assays for repair of radiation damage, as well as molecular biological studies of growth factors and cytokines. The candidate would be expected to conceive and perform clinical and laboratory studies to better understand the interaction between radiation and cytokines in tumor and normal tissue.

Radiation Oncology Branch, NCI, Building 10, Room B3B69, 10 Center Drive MSC 1002, Bethesda MD 20892-1002.

Gene Cloning

Steven Rosenberg, M.D.

Position available to clone the genes that encode cancer antigens. The Surgery Branch, NCI, has begun a major program in which gene cloning will be an important step in developing effective cancer vaccines for the treatment and prevention of cancer. Resources include laboratory space, equipment and supplies, and support of one technician. Candidate must have M.D. or Ph.D. degree and be experienced in molecular biology and cellular immunology. Extensive experience in gene cloning and analysis of human cellular immune reactions is essential. **Surgery Branch, NCI, Building 10, Room 2B42, 10 Center Drive MSC 1502, Bethesda MD 20892-1502.**

Pharmacokinetics

Louis Malspeis, Ph.D.

Position available to perform basic and applied research on newly identified anticancer and anti-HIV agents to bring new chemotherapeutic agents to clinical trial. Pharmacokinetics research on new drug candidates will contribute to a basic understanding of their *in vivo* disposition and will support appropriate selections for development. The studies will contribute to the optimization of preclinical, and subsequently the clinical, efficacy evaluations. Resources include laboratory space, equipment, supplies, and technical support. Candidate must have Ph.D. degree and have demonstrated ability to (1) develop specific quantitative analytical and pharmaceutical chemistry methods for anticancer and anti-HIV drug candidates of broadly diverse chemical structures in biological fluids with sensitivity in the nanomolar to low micromolar concentration range; (2) design and conduct pre-clinical pharmacokinetic studies in rodents, dogs, and monkeys; (3) characterize and identify the major metabolites of the chemotherapeutic agents; (4) chemically synthesize identified and potential metabolites; and (5) employ pharmacokinetic parameters for the selection for the compound with the greatest potential for clinical efficacy among a series of congeners. **Laboratory of Pharmaceutical**

Chemistry, NCI-Frederick Cancer Research and Development Center, Fairview Center, Room 206, P.O. Box B, Frederick, MD 21702-1201.

Development of Novel Therapeutic Agents

Edward A. Sausville, M.D., Ph.D.

Position available to serve as the leader in the development of novel therapeutic agents directed at protein kinases that mediate signal transduction. The incumbent will be expected to acquire a nationally recognized prominence in the regulation of cell growth by protein kinase-dependent signaling pathways. In particular, delineation of structural motifs or regulatory relationships in kinase networks that could serve as a basis for drug discovery efforts will be approached at a fundamental level. Resources include laboratory space, shared equipment, supplies, and support of one technician and up to two postdoctoral fellows. Candidate must have M.D. or Ph.D. degree and must demonstrate capacity to develop assays for, clone, express, and purify protein kinases and have experience in biochemical pharmacology and pharmacokinetic methodology. **Office of the Associate Director, Developmental Therapeutics Programs, NCI, Executive Plaza North (EPN) Room 843, 6130 Executive Boulevard MSC 7458, Bethesda MD 20892-7458.**

Translation Studies

Dan L. Longo, M.D.

Position available to conduct pre-clinical and clinical studies designed to determine whether the immune system can be used to target cancer cells *in vivo*. Studies will target specific tumor antigens and use modern immunologic and genetic technologies to attempt to induce immunity and to monitor the results. Resources include laboratory space, equipment and supplies, and support of two postdoctoral fellows. Candidate must have M.D. degree and have a thorough understanding of basic science and possess the clinical acumen necessary to manage cancer patients and apply basic laboratory findings to clinical problems. **Clinical Research Branch, NCI, NCI-Frederick Cancer Research and Development Center, Building 576, Room 101, P.O. Box B, Frederick, MD 21702-1201.**

TO APPLY

Please send a cover letter, curriculum vitae, bibliography, and a two-page statement including research interests and career goals to the address listed with each position. In addition, arrange to have letters of reference sent to the same address from three scientists who can provide an evaluation of your qualifications. *Applications must be received within six weeks of the publication of this advertisement.*

The NIH/NCI is an Equal Opportunity Employer

POSITIONS OPEN

RETINAL NEUROBIOLOGY

A **POSTDOCTORAL POSITION** is available beginning July 1, 1995, to study synaptic plasticity in the vertebrate retina. The project employs electrophysiological (intracellular and patch clamp recording, ion-selective microelectrodes), pharmacological and anatomical techniques to investigate a circadian rhythm in neuronal light responses in fish and rabbit retinas. Experience in electrophysiology and/or anatomy/pharmacology is desirable. Please send curriculum vitae, a brief description of research experience and the names and addresses of three references to: **Dr. Stuart Mangel, Department of Ophthalmology, University of Alabama School of Medicine, Birmingham, AL 35294. Email: smangel@vision.vsc.uab.edu. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION. Electrophysiological experience required. Intracellular recording and brain slice work desirable. Fellow will study LTP and plasticity in hippocampal slices from mutant mice. Position available immediately; start date flexible. Up to four years of support possible. Salary commensurate with experience. Send curriculum vitae and names of three references to: **Dr. B. E. Alger, Department of Physiology, University of Maryland School of Medicine, Baltimore, MD 21201. The University of Maryland is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION

A research position is available for an experimental hematologist to collaborate with a multidisciplinary team investigating the role of altered stem and progenitor cell regulation in drug- and chemical-induced bone marrow toxicity and leukemogenesis. A recent Ph.D. with experience investigating differentiation of hematopoietic stem and/or lineage-committed progenitor cells at cellular and molecular levels is required. Specific background and interest in signal transduction events and changes in gene expression in response to regulatory cytokines is preferred. Send résumé by June 23, 1995, to: **Dr. Richard D. Irons, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Box C235, Denver, CO 80262. The University of Colorado is committed to Equal Employment Opportunity and Affirmative Action.**

VISITING POSTDOCTORAL RESEARCH PHYSICIST

A **POSTDOCTORAL POSITION** is available immediately to study the structure and motion of proteins with the Atomic Force Microscope. Experience with protein purification and activity analysis is essential. The successful candidate will be a talented biochemist or molecular biologist who looks forward to the challenge of learning Atomic Force Microscopy. No experience with Scanning Probe Microscopy or physics is necessary. Interested candidates should send curriculum vitae, research experience and interests and names of three references to: **Professor Paul Hansma, Department of Physics, University of California, Santa Barbara, CA 93106. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL ASSOCIATE

Position available (two to four years) to study the molecular pathogenesis of neuromuscular disorders associated with mtDNA mutations. Studies will include biochemical and molecular biology approaches to mammalian and/or yeast cells. Expertise in one of the above areas required. Send curriculum vitae and name/telephone number of three references to: **Carlos T. Moraes, Ph.D., 1501 N.W. 9th Avenue, Miami, FL 33136. Email: E-cmoraes@mednet.med.miami.edu. Equal Opportunity Employer/Affirmative Action.**

POSTDOCTORAL FELLOWSHIP is available immediately to study the pharmacology of potassium channel blockers using molecular biologic and electrophysiologic techniques. Ph.D. with training and experience in either area is required. Send or FAX curriculum vitae to: **Christopher T. Bever, Jr., M.D., Maryland Center for Multiple Sclerosis, Department of Neurology, University of Maryland Hospital, 22 South Greene Street, Baltimore, MD 21201. FAX: 410-605-7937.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS

Penn State University University Park

Center for Biomolecular Structure and Function

Penn State University, Center for Biomolecular Structure and Function has two **POSTDOCTORAL POSITIONS** to be filled between June 1 and September 1, 1995, for studies of enzyme mechanisms in eicosanoid metabolism. Applicants should have demonstrated, by refereed publications, expertise in two or more of the following areas: enzyme kinetics/mechanism studies; molecular biology with emphasis on site-directed mutagenesis and expression of recombinant proteins; and protein purification/characterization. Experience with stopped flow kinetics, EPR spectroscopy or molecular cloning and protein overexpression are especially desirable. Enzyme systems under investigation are a potato lipoxygenase as well as several glutathione-dependent transferases and peroxidases. Positions are funded for one year with strong prospects for extension.

Send curriculum vitae plus names and addresses of three references to: **C. Channa Reddy, Distinguished Professor, Department of Veterinary Science, Penn State University, 226 Fenske Laboratory, University Park, PA 16802.**

An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.

CARDIOVASCULAR DEVELOPMENT

The University of Medicine and Dentistry of New Jersey (UMDNJ)-Department of Cell Biology has a **POSTDOCTORAL POSITION** immediately available to study molecular and cellular mechanisms regulating early heart development in avian and mammalian embryos. Experience in molecular biology will be necessary. Experience with protein and immunological techniques would be an asset.

UMDNJ-Stratford provides an excellent research environment in a growing institution with new laboratories and modern research facilities. This campus is located in a pleasant suburb near Philadelphia. Please send curriculum vitae and names, addresses, and telephone numbers of three references to: **Dr. Kersti K. Linask, Department of Cell Biology, UMDNJ, Science Center, 2 Medical Center Drive, Stratford, NJ 08084. UMDNJ is an Affirmative Action/Equal Opportunity Employer/Minority/Female/Disabled/Veteran, and a member of the University Health System of New Jersey.**

POSTDOCTORAL POSITION

Apoptosis Research University of Pennsylvania

POSTDOCTORAL POSITION available immediately to continue project investigating molecular events in neural apoptosis including characterizing newly cloned cDNAs induced during neural cell death. Strong molecular background required. Send/FAX curriculum vitae and names of three references to: **Dr. Randall N. Pittman, Department of Pharmacology, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-6084. FAX: 215-573-2236. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITIONS to apply advanced Optical Mapping approaches to human genome analysis (see *Science*, 262:110-114, 1993; *Nature Genetics*, 9:432-438, 1995; *PNAS*, 92:165-169, 1995; *C&E News*, May 15, 1995). Develop new approaches to sequencing, applications of new genotyping methodologies, whole genome approaches to restriction mapping and gene hunting. Send curriculum vitae, summary of past research, and three letters of reference to: **Dr. David C. Schwartz, New York University, W. M. Keck Laboratory for Biomolecular Imaging, Department of Chemistry, New York, NY 10003.**

POSTDOCTORAL POSITION available immediately to study glutamate-receptor ion channels with patch-clamp techniques. The current focus of the work is on determining the properties of recombinant channels expressed transiently or stably in HEK 293 cells. We are also interested in developmental changes in the properties of native channels. Send curriculum vitae and the names of three references to: **Dr. James Howe, Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06520-8066.**

POSITIONS OPEN

POSTDOCTORAL POSITION available to study mechanisms regulating the beginning of gene expression and the process of neural differentiation during mammalian embryonic development. Experience in molecular biology/developmental biology preferred. Send curriculum vitae and names of references to: **Sadhan Majumder, Departments of Neuro-Oncology and Molecular Genetics, University of Texas M.D. Anderson Cancer Center, Box 316, 1515 Holcombe Boulevard, Houston, TX 77030. Telephone: 713-792-8920; FAX: 713-794-4999. Equal Opportunity Employer/non-smoking environment.**

POSTDOCTORAL RESEARCH ASSOCIATE.

Applicants are sought to study phytohormone receptors and ion channels. Candidate must have earned Ph.D. in the biological sciences and have experience in electrophysiological techniques. Successful candidate will become part of a NASA/NSF network of investigators studying plant signal transduction. Send curriculum vitae and three current reference letters to: **Dr. Fedora Sutton, South Dakota State University, Plant Science Department, Box 2108, Brookings, SD 57007. FAX: 605-688-4024; Email: SuttonF@mg.sdstate.edu. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION

Salmonella genetics

Available immediately. Second year of five year NIH project. Contig of lambda clones for the entire *Salmonella* genome was compared to *E. coli*. Point and deletion mutants in *Salmonella*-specific loops to be characterized by conventional methods and by RNA fingerprinting (differential display). Supervise technician. See *PNAS*, 91:639; *J. Bact.*, 176: 5729; *TIG*, June 1995. Inquiries to: **Dr. Michael McClelland, Director, California Institute of Biological Research, 11099 North Torrey Pines Road, La Jolla, CA 92037. FAX: 619-535-5472. Email: McClelland@lifsci.sdsu.edu.**

POSTDOCTORAL POSITION

RIBOSOME SYNTHESIS

Synthesis and processing of ribosomal RNA in *S. cerevisiae* and other eukaryotes; and regulation of ribosomal protein synthesis in *E. coli*. Strong background in molecular biology or biochemistry required. Send curriculum vitae, names of three references, and statement of research interests by July 1, 1995, to: **Lasse Lindahl, Department of Biological Sciences, UMBC, Baltimore, MD 21228-5398. FAX: 410-455-3875; Email: lindahl@umbc.edu. University of Maryland Baltimore County is an Equal Opportunity Employer.**

FILARIASIS RESEARCH

POSTDOCTORAL POSITION for NIH-sponsored studies of immunological aspects of filariasis with an emphasis on early diagnosis and targets of protective immunity. A strong background in molecular biology with experience in cloning and expression is required. Please reply with a letter and curriculum vitae to: **Dr. Gary J. Weil, Infectious Disease Division, The Jewish Hospital at Washington University Medical Center, 216 South Kingshighway, St. Louis, MO 63110.**

POSTDOCTORAL POSITION starting in July 1995 in the Department of Medicine, Division of Endocrinology at Cornell University School of Medicine, to conduct studies of molecular genetics of sexual differentiation, particularly 5 α -reductase deficiency. The project requires experience in basic molecular biology, including cloning techniques and DNA sequencing. M.D./Ph.D. in molecular biology or genetics or an M.D. with training in molecular medicine is preferred. Ability to work independently is strongly advantageous.

Please send curriculum vitae, name and telephone numbers to: **Dr. Julianne Imperato-McGinley, Cornell University Medical College, Division of Endocrinology, 525 East 68th Street, New York, NY 10021.**

POSTDOCTORAL POSITION

Available summer 1995 to study transcriptional regulation and identification of nuclear proteins which control TGF- β receptor gene expression in vascular tissues. Send curriculum vitae and three references to: **Dr. Alan Fine, Boston University School of Medicine, The Pulmonary Center, K-606, 80 East Concord Street, Boston, MA 02118.**

**READVERTISEMENT
FACULTY POSITION
ASSISTANT, ASSOCIATE OR FULL RESEARCHER
(One vacancy only)**

Position number 86062, Hawaii Natural Energy Institute, School of Ocean and Earth Science and Technology, full-time, general and extramural funds, 11-month, tenure track position. To begin approximately August 1, 1995, continuation dependent upon satisfactory performance and availability of funds. **DUTIES:** Plan, develop, organize and supervise activities in the biochemical areas of renewable hydrogen and ocean resource systems. Identify and seek new funding sources to conduct and manage research related to hydrogen, biopharmaceuticals, marine biotechnology and natural products. Serve as an international liaison for the Institute in marine biotechnology. Publish articles in journals and proceedings, make presentations to local, national and international audiences as appropriate. Develop program for teaching and training of graduate assistants and postdoctoral fellows in these areas. Direct and/or conduct research in the Bioresources Laboratory, home of the Mitsui-McKinley Marine Microbiological Memorial Collection. Perform related duties as assigned. **MINIMUM QUALIFICATIONS:** Ph.D. from an accredited college or university in biochemical or ocean science or engineering. Ten years (for Full Researcher level) of university, national laboratory or industrial experience in applied research on bioproduct development and/or marine biotechnology development. Proven ability to secure extramural funding. Familiarity with design, implementation and management of projects in these areas. **PAY RANGE:** R3-5, \$40,524 - \$101,880/annually (to be determined based on qualifications and experience.) **INQUIRIES:** Dr. Patrick Takahashi at (808) 956-8346. To apply: Submit statement of research interest, C.V., and three letters of recommendation from work-related references to Personnel Officer, Hawaii Natural Energy Institute, 2540 Dole Street, Holmes 246, Honolulu, Hawaii 96822. **CLOSING DATE:** June 27, 1995.

The University of Hawaii is an Equal Opportunity/Affirmative Action Institution and encourages women, minorities, handicapped, and veterans to apply.

The Department of Microbiology and Molecular Genetics and the Department of Medicine at the University of California, Irvine are jointly seeking applicants for faculty positions at the Assistant or Associate Professor level, depending upon qualifications. As part of our ongoing effort to expand our program in molecular pathogenesis, we are soliciting applicants who have demonstrated superior talent and productivity in the area of molecular mechanisms of microbial pathogenesis. His/her previous work should have been judged by peer review to have been scientifically rigorous and clinically relevant, and he/she should have been successful in obtaining sufficient funds from peer-reviewed grants to support these efforts. The latter can include postdoctoral fellowship support for Assistant Professor candidates.

Candidates must have an M.D./Ph.D. or M.D., and board eligibility in Infectious Diseases is required. The successful candidate will be expected to participate in teaching and research conferences in both departments.

Please send curriculum vitae, summary of research interests and three letters of reference to:

Dr. Rozanne M. Sandri-Goldin
Search Committee Chair
Department of Microbiology and Molecular Genetics
College of Medicine
University of California
Irvine, CA 92717-4025

The University of California at Irvine is an equal opportunity/affirmative action employer. Women and minorities are encouraged to apply.

Department of Health and Human Services
Public Health Service
National Institutes of Health
National Institute on Deafness & Other
Communication Disorders

**CHIEF
LABORATORY OF MOLECULAR GENETICS**

Opening Date: May 22, 1995

Closing Date: July 7, 1995

(All applications must be postmarked by the closing date.)

The National Institute on Deafness and Other Communication Disorders (NIDCD) is recruiting for the position of Chief, Laboratory of Molecular Genetics (LMG), NIDCD. The Chief will be responsible for directing a Laboratory consisting of two sections within the Division of Intramural Research. The Chief, LMG, has responsibility for developing and directing research programs whose major goals are to identify, map, and clone genes of importance in the physiology of normal hearing, as well as genes altered by mutation involved in inherited hearing impairment as revealed in both human and animal model systems. The Chief, LMG, will oversee intramural research to determine the molecular basis for cell type specific gene regulation in auditory and olfactory systems. He/She will formulate the overall research goals of the laboratory, design and supervise all research projects, select the staff, and coordinate all activities within the general goals and policies of the NIDCD.

This is an interdisciplinary position within the Civil Service with a salary ranging from \$71,664 to \$93,166 per year depending on qualifications. It is anticipated that this position maybe included in the Senior Biomedical Research Service (SBRS) pending final approval. The SBRS has a salary range up to \$148,400 depending on qualifications. Physicians are eligible for a Physicians Comparability Allowance of up to \$20,000 per year. A recruitment bonus of up to 25 percent of base pay may be available to a nonfederal candidate selected for this position, subject to approval. A relocation bonus of up to 25 percent may be available to a permanent federal employee who must relocate to accept this position, subject to approval. Alternatively, applicants may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.

Further information about the position, qualifications and the knowledge, skills and abilities (KSA's) requirements may be obtained by contacting Ms. Christine A. Clements at (301) 402-0508 (Voice or TDD) or TDD (301) 402-1134. You may submit a resume, curriculum vitae, Optional Application for Federal Employment (OF-612), Application for Federal Employment (SF-171), or any other written format which provides the required information, and a bibliography to:

Ms. Christine A. Clements
Personnel Management Specialist
National Institutes of Health
Personnel Management Branch
31 Center Drive MSC 2320
Bethesda, Maryland 20892-2320

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Public Announcement Regarding an Industrial Science and Technology Frontier Program Project on "Femtosecond Technology"

*Announced by the New Energy and Industrial Technology
Development Organization on June 2, 1995*

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

Theme of the Research Project "Femtosecond Technology"

Outline of the Research and Development Work to be Entrusted

The objective of this project is to establish the fundamental technology needed for realization of ultrafast optoelectronics which will exceed the speed limit of current electronics and also encompass new functionality through research and development of technology that controls protons and electrons in the femtosecond time domain (10^{-15} to 10^{-12} seconds).

Procedure for Application

(1) Qualification Criteria

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

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

(2) Explanatory Meeting

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

Date: Monday, June 12, 1995
Time: 14:00 to 15:00
Place: NEDO's Head Office, Meeting Room 360
30th Floor,
Sunshine 60 Building,
1-1, Higashi-Ikebukuro 3-Chome
Toshima-ku, Tokyo 170

(3) Further Information

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

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

42nd Rachford Lectures
September 18 and 19, 1995

Transcriptional Control of Embryogenesis

An International Symposium
Children's Hospital Medical Center
Cincinnati, Ohio

Sponsored by

Perinatal Research Institute and Program of Excellence in Molecular
Biology of the Heart and Lung, Children's Hospital Medical Center,
Cincinnati, Ohio, and University of Cincinnati College of Medicine

Faculty:

Eddy DeRobertis, M.D., Ph.D.
University of California, Los Angeles
Professeur Denis Duboule, Ph.D.
Université De Genève
Brigid Hogan, Ph.D.
Vanderbilt University Medical School
Thomas Jessel, Ph.D.
*Columbia University College
of Physicians and Surgeons*
Joan Massagué, Ph.D.
Memorial Sloan-Kettering Cancer Center
Michael Rosenfeld
University of California, San Diego
Arthur Weiss, M.D., Ph.D.
University of California, San Francisco
Lewis Williams, M.D., Ph.D.
University of California, San Francisco
Kenneth Zaret, Ph.D.
Brown University School of Medicine

Abstracts (5 1/4" W X 6 3/4" H)
for poster presentation may
be submitted by registered
participants. Details will be
included with registration
materials. Please submit
abstracts before August 1.

For hotel information
or to register, contact:

Shirley Courtney
Division of Endocrinology
Children's Hospital Medical Center
3333 Burnet Ave.
Cincinnati, OH 45229-3039
Phone: 513-559-4209
Fax: 513-559-7486

Registration deadline: July 15
Registration fee:
Students and trainees \$50;
Faculty \$75



RESEARCH POSITIONS

The Trait & Technology Development Department of
Pioneer Hi-Bred International, Inc. is seeking appli-
cants to join our team in the area of crop protection.



PIONEER

PLANT BIOCHEMISTRY RESEARCH ASSOCIATE (JOB #1355-A)

Responsibilities include isolation and identification of plant metabolites,
protein purification, and enzymology. The successful candidate should
have a M.S. or B.S. with 2 years directly related work with plant metabolites
using TLC, HPLC, GLC, PAGE. Experience with quantitative analytical tech-
niques, laboratory data analysis and computer-based data handling is
essential. Communication, presentation development, and teamwork
skills essential. Review of applications will begin June 30, 1995 and will
continue until the position is filled.

SENIOR RESEARCH ASSOCIATE (JOB #1361-B)

Responsibilities include successful transformation of maize using genes
for herbicide, insect, and/or disease resistance. Minimum requirements
are a B.S. with 6 years directly related lab experience, M.S. with 4 years
relevant experience, or Ph.D. Strong knowledge of monocot tissue culture
and transformation techniques, cell biology and botany are preferred.
Team leadership, communication, and project management skills will be
important. Application deadline for this position is June 20, 1995.

We offer excellent compensation, benefits and career growth poten-
tial, as well as good facilities and a cooperative research environment.
Pioneer is an Equal Opportunity Employer.

Please send cover letter indicating job name and number, C.V., copies
of any published articles and names of three references to:
Pioneer Hi-Bred International, Inc.; Nancy Curry; 7300 NW 62nd
Ave.; P.O. Box 1004; Johnston, IA 50131-1004

The Inaugural

LEADERSHIP ALLIANCE SYMPOSIUM

The National Academy of Sciences
Washington, D.C.

July 6-8, 1995



Research + Diversity = America's Future

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SOME FEATURED GUESTS AND SPEAKERS

Bruce Alberts

President of The National Academy of Sciences
Who Are Scientists of Tomorrow?

Harold Varmus

Director of The National Institutes of Health
Research Funding for Future Scholars

Johnetta Cole

President of Spelman College
Educational Partnerships: A Collective Fate?

Eloy Rodriguez

James Perkins Professor of
Environmental Sciences at Cornell
*Wild Ape Uses of Medicinal Plants:
A Novel Approach to Drug Discovery*

Robert Simmons

Director of Doctorate Records Project at the National
Research Council
U.S. Minority Doctoral Production, 1980-1993

Gala celebration at the Mexican Cultural Institute

The Leadership Alliance is an educational partnership
of 23 research and teaching institutions
(Ivies, Johns Hopkins, New York University,
3 CUNY schools and 10 HBCUs)

Registration and Program Information

The Leadership Alliance, Executive Office
Box 1963, Providence, RI 02912
TEL 800 922-7993, FAX 401 863-2244

BURROUGHS WELLCOME FUND ANNOUNCES FIRST RECIPIENTS OF CAREER AWARDS IN THE BIOMEDICAL SCIENCES

Burroughs Wellcome Fund (BWF) is pleased to recognize the 14 outstanding young investigators who received the first round of Career Awards in the Biomedical Sciences for 1995. They will each receive approximately \$500,000 for up to six years of stipend and research support during their postdoctoral and beginning faculty years, representing a BWF commitment of \$7 million for the year.

The BWF Career Awards are intended to enhance the scientific development and productivity of exceptional young investigators at the postdoctoral level in the biomedical sciences in the United States and Canada.

Our congratulations to:

M.D. Awardees

Michael Eck, M.D., Ph.D. (Harvard)
Todd R. Golub, M.D. (Harvard)
Louis J. Muglia, M.D., Ph.D. (Harvard)
Charles E. Murry, M.D., Ph.D. (U. of Washington)
George A. Oyler, M.D., Ph.D. (Johns Hopkins)
Michael J. Thirman, M.D. (U. of Chicago)
Cassian Yee, M.D. (U. of Washington)

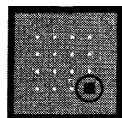
Ph.D. Awardees

Greg Beitel, Ph.D. (Stanford)
Steven Fiering, Ph.D. (U. of Washington)
Jeh-Ping Liu, Ph.D. (Columbia)
Inke S. Nathke, Ph.D. (Stanford)
Ilaria Rebay, Ph.D. (UC Berkeley)
Sylvia L. Sanders, Ph.D. (UCSF)
John York, Ph.D. (Washington U.)

The deadline for the 1996 Career Awards program is October 1. For information, contact Burroughs Wellcome Fund, 4709 Creekstone Drive, Suite 100, Morrisville, NC 27560-9771. Tel. (919) 991-5100 Fax (919) 941-5884 Email-cagyapong@bwfund.org. BWF is a private nonprofit foundation that provides financial aid for the advancement of medical knowledge by research, or for other scientific, scholarly, and educational purposes.

INTERNATIONAL MEETING

Amidon
Crommelin
Duncan
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Friden
Hashida
Hediger
Hirst
Kelly
Kramer
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Meijer
Merkle
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Robinson
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CRS IRELAND

Special
Symposium
on Current
Topics
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The largest gathering of the World's Leading Researchers in Peptide Delivery will be in Ireland this September.

You should be there too!

At Trinity College, Dublin, Ireland, September 20th - 22nd 1995
the following topics will be addressed:

**Methods and Models for Peptide Delivery. Oral Peptide Delivery.
Peptide Targeting to Tissues. Peptide Targeting to Cells.**

For further information, registration and poster details, please contact:

CRS Ireland Secretariat,
Elan Corporation Research Institute, Trinity College, Dublin 2, Ireland.
Tel: +353-1-6710901 Fax: +353-1-6710920

**Medical Genetics and Research Genetics Positions
Atlantic Research Centre and Department of Pediatrics
Dalhousie University**

Applications are invited for two full time faculty positions within the Faculty of Medicine at Dalhousie University: (a) one medical geneticist to be appointed to a tenure track position at the level of Assistant or Associate Professor with primarily clinical responsibilities (>80% time), and (b) one molecular genetics researcher appointed at the Assistant Professor level on a limited term appointment with primary responsibilities in research (>70% time). For the medical geneticist position, clinical care participation would involve interaction primarily with clinical geneticists and a team of genetic counsellors and coordinators to serve the population of the Maritime Provinces. Expertise in clinical diagnosis, counselling and treatment including prenatal diagnosis and predictive testing is expected. Candidates for the medical genetics position should be certified or eligible in Clinical (Medical) Genetics by the Canadian College of Medical Geneticists, Royal College of Physicians of Canada or the American Board of Medical Genetics. Qualifications for the researcher position should be based on skills in experimental application of molecular techniques to investigations of human disease genes and animal models of disease. Research efforts will interact primarily with an established program focusing on regulation and alteration of signal transduction systems, lipid second messengers and lipid metabolism in normal and disease states, and molecular and epidemiological studies. Experience with neurological systems would be an asset. The candidate in this research position would be expected to compete successfully for external or internal sources of salary support within an initial three year appointment. Successful candidates for both positions will participate in some undergraduate, postgraduate and continuing medical education teaching (10% time) through Pediatrics, Biology, Biochemistry or Pathology. Collaborations with local experts in molecular genetics, biochemistry, perinatal medicine and pathology would be anticipated in both positions. The Atlantic Research Centre is the major clinical genetics referral centre for the Maritime provinces, providing comprehensive clinical genetics services, and operates in association with the Department of Pediatrics of Dalhousie University, the IWK Children's - Grace Maternity Hospital. Forward application including curriculum vitae and names, addresses and phone numbers of three references to: Dr. Harold W Cook, Director, Atlantic Research Centre, Dalhousie University, 5849 University Avenue, Halifax, Nova Scotia, Canada (fax 902-494-1394; E-mail h.cook@dal.ca) before July 1, 1995. Dalhousie University is an Employment Equity/Affirmative Action employer. The University encourages applications from qualified women, aboriginal peoples, racial minorities and persons with disabilities. In accordance with Canadian immigration requirements, this advertisement initially is directed to Canadian citizens and permanent residents.

GLOBAL CAREER OPPORTUNITIES

MDC MAX-DELBRÜCK-CENTRUM FÜR MOLEKULARE MEDIZIN BERLIN-BUCH

The MAX DELBRÜCK CENTER FOR MOLECULAR MEDICINE BERLIN-BUCH invites applications for

3 RESEARCH GROUP LEADER (C4, BAT I) POSITIONS

in the fields of

- Molecular genetics and genome analysis
- Experimental and molecular cardiovascular research
- Cell biology (developmental biology, cell growth regulation, signal transduction)

The MDC is a national research center supported by the Federal Government of Germany and by Berlin. Scientists in basic research are specifically encouraged to integrate into research programs at the Franz Volhard Cardiovascular Clinic and the Robert Rossle Cancer Clinic, both affiliated with the Humboldt University of Berlin.

The applicants should have an outstanding record of scientific accomplishment. Appropriate laboratory space, funds for laboratory set-up and operations, and salaries for post-docs and technicians will be provided.

Candidates should submit their curriculum vitae, list of publications, and a short description of their future research plans within 4 weeks to:

**Detlev Ganten, MD, PhD,
Max Delbrück Center for Molecular Medicine
(MDC) Berlin-Buch
Robert-Rössle-Strasse 10
D-13122 Berlin, Germany**

FUNDACION GENERAL DE LA UNIVERSIDAD COMPLUTENSE

COMPLUTENSE UNIVERSITY SUMMER SCHOOL

Rector: Prof. G. Villapalos

School Director: Prof. T. González Ballesteros

SCIENCE COURSES 1995

San Lorenzo de El Escorial (Madrid) SPAIN

July 3 - 7

AUTONOMOUS AGENTS ROBOTS INTELIGENTES

Director: J. Fernández Ostolaza
(U. País Vasco)
Secretary: F. Morán
(U. Complutense)

July 10 - 14

FOSSILES REGISTER AND THE HISTORY OF THE EARTH REGISTROS FÓSILES E HISTORIA DE LA TIERRA

Director: E. Aguirre
(Museo Nacional de Ciencias Naturales)
Secretary: J. Morales
(Museo Nacional de Ciencias Naturales)

July 17 - 21

NEW DRUGS OLD DRUGS NUEVOS FÁRMACOS, VIEJOS FÁRMACOS

Director: J. Tamargo (U. Complutense)
Secretary: R. Pagani (U. Complutense)

FUNDAMENTAL ASPECTS OF QUANTUM PHYSICS ASPECTOS FUNDAMENTALES DE FÍSICA CUÁNTICA

Directors: Ylya Prigogine (Université Libre, Bruselas)
A.F. Rañada (U. Complutense)
Secretary: M. Ferrero (U. Oviedo)

July 24 - 28

TWO HUNDRED YEARS OF RARE EARTHS 200 AÑOS DE TIERRAS RARAS

Director: P. Caro (Cité des Sciences, París)
Secretary: R. Sáez Puche (U. Complutense)

August 7-11

THE DEVELOPMENT OF THE BRAIN DESARROLLO DEL CEREBRO

Director: Constantino Sotelo
(Hôpital Salpêtrière, París)
Secretary: S. Martínez
(U. de Murcia)

August 14-18

COMPUTATIONAL KINEMATICS: MATHEMATICS AND COMPUTING FOR ROBOT POSITIONING CINEMÁTICA COMPUTACIONAL

Director: T. Recio (U. de Cantabria)
Secretary: J.M. González-López (U. de Cantabria)

SHORT COURSE:

August 14-15

THE MIOCARDIAL STRUCTURE

Directors: P. Zarco (U. Complutense)
P.P. Lunkenheimer
(Wesfälische Wilhelms-Universität)

Lectures will be in Spanish or English depending on the course. In some cases, simultaneous translation may be available.

Normal Registration including full board accommodation 60.000.- pesetas.

A number of grants covering full board accommodation will be attributed to postgraduate and postdoctoral students from Universities or Research Centers. A registration of 17.000.- pesetas is not included in the grant. Interested participants should send a letter of intention including C.V. and the names of two referees to: The registrar. Cursos de Verano de la Universidad Complutense, calle Donoso Cortés, 63, 28015 MADRID (SPAIN). Fax number 34.1.394.64.33.

Financial support: Fundación General Complutense. Banco Central Hispano.

Research Scientist

At Amgen, you'll discover a research environment that emphasizes collaboration, intellectual honesty, scientific integrity, and a supportive culture. This unique approach has helped us grow into a global biotechnology leader in just fifteen years. We currently seek a Research Scientist for our BOULDER, CO facility.

Candidates will have a Ph.D. in Biochemistry, Cell Biology, Biophysics, or a related discipline, postdoctoral training, and typically 2 years' industrial laboratory experience in assay development and high throughput screening. Experience with ELISAs, RIAs, receptor binding and cell activation assays is required. Background must also include a working knowledge of one or more robots made by Beckman, Hamilton, Tecan, Packard, HP, or Zymark. Solid data analysis and evaluation skills are essential. The preferred candidate will have implemented cellular signal transduction or transcription screening assays, and will have experience using luminescence, time-resolved/polarization fluorescence, and/or electrochemiluminescence for assay development.

At Amgen, you'll find our approach to scientific research as rewarding as it is effective. We offer a highly competitive compensation and benefits package. Please mail your resume to: Amgen Boulder, Human Resources Dept., Job Code: OXP-SC-2466, 3200 Walnut Avenue, Boulder, CO 80301. Principals only, please. EEO-Affirmative Action Employer M/F/D/V. We recognize that diverse perspectives are a key factor in the process of discovery.

AMGEN

Toxicologist/ Pharmacologist

Otsuka America Pharmaceutical, Inc., a company committed to improving the health of people worldwide, has an opening for a Toxicologist/Pharmacologist in the Clinical Research department at company headquarters in Rockville, Maryland.

The responsibilities for this position include reviewing, interpreting and reporting toxicology, pharmacology and drug disposition and metabolism data. Requirements include a Ph.D. in Toxicology or Pharmacology with 5 years or more experience in the evaluation of studies. Must include experience evaluating the preclinical toxicology, pharmacology and pharmacokinetics of drugs, preferably in the pharmaceutical industry. Familiarity with IND/NDA requirements and submissions and GLP regulations are also required for this position.

Otsuka America Pharmaceutical, Inc. offers an attractive benefits package which includes company paid health insurance, a 401(k) plan as well as a generous relocation package. Please forward your resume in confidence to **Dept. 283-04, Human Resources, Otsuka America Pharmaceutical, Inc., 2440 Research Blvd., Rockville, MD 20850.** An Equal Opportunity Employer.

Otsuka People
Creating New Products For
Better Health Worldwide.



GLOBAL CAREER OPPORTUNITIES

NATIONAL UNIVERSITY OF SINGAPORE

DEPARTMENT OF ANATOMY



Applications are invited for a **Lectureship appointment** in the **Department of Anatomy**.

Applicants should be recent graduates who have an approved basic science degree and a PhD degree, and who have taught Gross Anatomy and Embryology. Preference will be given to graduates with an approved basic medical or dental degree.

Gross annual emoluments range from S\$59,010 to S\$71,400. (US\$1.00 = S\$1.39 approx.)

The commencing salary will depend on the candidate's qualifications, experience and the level of appointment offered. In addition, a 13th month Annual Allowance (of one month's salary) and an Annual Variable Component (of normally 2 months' salary) are payable at year end, under the flexible wage system, to staff on normal contracts.

In addition, appointees who possess an approved basic medical degree and a recognised higher academic/professional qualification may opt to retain consultation fees under the Consultation/Outside Work Scheme, or to receive a Fixed Allowance, the annual rates for which is \$6,000/9,000.

Leave and medical benefits will be provided. Depending on the type of contract offered, other benefits may include: provident fund benefits or an end-of-contract gratuity, a settling-in allowance, subsidised housing or a housing allowance, education allowance for up to three children subject to a maximum of S\$16,425 per annum per child, passage assistance and baggage allowance for the transportation of personal effects to Singapore.

Application forms and further information on terms and conditions of service may be obtained from:

**The Director
Personnel Department
National University of Singapore
10 Kent Ridge Crescent
Singapore 0511**

**The Director
North America Office
National University of Singapore
55 East 59th Street
New York, N.Y. 10022, U.S.A.
Tel: (212) 751-0331**

Enquiries may also be sent through BITNET to: **PERLIMMJ@NUS3090**, or through **Telefax: (65) 7783948**



COLLEGE OF PHARMACY DEAN

The University of Florida invites applications and nominations for the position of Dean, College of Pharmacy. The College of Pharmacy is one of six professional colleges in the University's Academic Health Science Center. The University of Florida is an AAU and land-grant institution serving an enrollment of 38,000 students. The College has an enrollment of approximately 300 entry doctor of pharmacy students, 25 non-traditional doctor of pharmacy students, 90 bachelor of pharmacy students, and 55 students in graduate doctoral programs.

Applicants should have demonstrated leadership qualities and administrative experience to assume the management of the College. Candidates should have a terminal degree in a pharmacy/health related field, experience in the academic environment, and a record of research, scholarly and professional achievements and/or other accomplishments suitable for a tenured faculty appointment. A professional degree in pharmacy is highly desirable as are the interpersonal skills necessary to interact effectively with faculty and multi-disciplinary constituencies external to the College. A strong commitment to the professional development of students and a zest for fostering the highest level of research and scholarship are essential attributes for applicants.

The University of Florida is an affirmative action, equal employment opportunity employer and invites applications and/or nominations of all qualified individuals regardless of race or gender.

Nominations and applications, accompanied by a complete *curriculum vitae* and the names/addresses of three references must be received by August 30, 1995, and should be mailed to:

**Frank A. Catalanotto, D.M.D.
Chairman of the Pharmacy
Dean Search Committee and
Dean, College of Dentistry
P.O. Box 100405, JHMHC
University of Florida Health Science Center
Gainesville, FL 32610-0405
Telephone: 904-392-2911 or
Fax: 904-392-3070**

Tenure-Track and Postdoctoral Opportunities.

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

Tenure-Track Positions Assistant Professor Equivalent

Genetic Marrow Failure Syndromes Neal Young, MD

Position available for a junior research scientist to initiate an independent tenure-track program of laboratory and clinical research in the area of Fanconi's anemia and related genetic syndromes, including paroxysmal nocturnal hemoglobinuria and constitutional cytopenias. Laboratory experience in molecular biology, especially the design of gene transduction vectors, and training in hematology or oncology is desirable. Applicant will be a clinically responsible physician for gene therapy protocols. A brief statement of research interests and goals should be submitted in addition to three letters of recommendation. Applications must be received within six weeks of the publication of this advertisement. Office of the Scientific Director (OE-83), NHLBI, Building 10, Room 7N214, 10 CENTER DR MSC 1668, BETHESDA MD 20892-1668.

Parvovirus-Based Gene Therapy Neal Young, MD

Position available for a research scientist for independent laboratory and clinical investigation of gene therapy based on parvovirus vectors. Applicants should have sufficient clinical understanding to design, assist, or execute clinical protocols in gene therapy of hematologic diseases. Laboratory expertise in the area of virology, especially with parvoviruses such as adeno-associated virus, is highly desirable, as well as a variety of molecular biology techniques, including plasmid and recombinant virus construction. A brief statement of research interests and goals should be submitted in addition to three letters of recommendation. Applications must be received within six weeks of the publication of this advertisement. Office of the Scientific Director (OE-83), NHLBI, Building 10, Room 7N214, 10 CENTER DR MSC 1668, BETHESDA MD 20892-1668.

Postdoctoral Positions

Calcium Signal Transduction Seung Hyun Yoo, PhD

Biochemical and molecular biological approaches are used to study the calcium signal transduction mechanisms. Ongoing projects include studies of the inositol 1,4,5-trisphosphate receptor, the calcium storage protein chromogranin, and the secretory vesicles. Applicants should have training in molecular biological and biochemical techniques and have less than five years of postdoctoral experience. Laboratory of Neurochemistry (OE-83), NIDCD, Building 5 Research Court, Room 2A37, Bethesda, MD 20892-3320.

Glucose Transporters Ian A. Simpson, PhD

The transport of glucose into the mammalian brain is mediated by a family of transporter proteins. The role of these transporters in cere-

bral development and metabolism is currently under investigation. Altered expression of these proteins in humans is associated with a variety of neuropathological conditions. Candidates must have a strong background in molecular biology/genetics with a clear interest in neuroscience and must have less than five years postdoctoral experience. Diabetes Branch (OE-83), NIDDK, Building 10, Room 5N102, 10 CENTER DR MSC 1420, BETHESDA MD 20892-1420.

Insulin-Like Growth Factors Matthew M. Rechler, MD

IGF binding proteins (IGFBPs) modulate the mitogenic actions of IGFs. The mechanism of this regulation, including formation and function of plasma IGF:IGFBP complexes, interactions of IGFBPs with target cells, and regulation of IGFBP promoter activity is being studied. A strong background in molecular biology, protein chemistry or cell biology is required. Molecular and Cellular Endocrinology Branch (OE-83), NIDDK, Building 10, Room 8D14, 10 CENTER DR MSC 1758, BETHESDA MD 20892-1758.

Tumor Suppressor Genes

W. Marston Linehan, MD/Richard D. Klausner, MD

The role of the recently identified human VHL tumor suppressor gene is under investigation. Study of the subcellular localization, identification of associated proteins and function of the VHL protein are underway. Applicants should have a strong background in molecular biology, cell biology or protein chemistry and must have less than five years of postdoctoral experience. Surgery Branch, (OE-83), NCI, Building 10, Room 2B47, 10 CENTER DR MSC 1502, BETHESDA MD 20892-1502.

Additional Postdoctoral Fellowship Opportunities

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

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

To Apply

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



National Institutes Of Health

Office of Education

The NIH is an Equal Opportunity Employer

Pioneer Hi-Bred International, Inc. is a world leader in agricultural genetics. Founded in 1926, we are a publicly held corporation with research, production and sales organizations worldwide. Our Trait and Technology Development Department has an immediate opening in research and product development.

RESEARCH MANAGER, MOLECULAR BIOLOGY

Job #1051

The successful applicant will join a multi-disciplinary team that is responsible for optimizing the expression of recombinant proteins in plants. The individual will initiate, design and conduct research projects including cloning genes and designing plasmids for optimal expression in plants. Qualifications include a Ph.D. or equivalent experience in Molecular Biology, 3 or more years directly related laboratory experience, and knowledge of cloning DNA sequences, PCR, building expression vectors, site directed mutagenesis, use of signal sequences, and proper codon usage. We also require good working knowledge of computers and experience in goal setting and time lines for research projects. Good data organization and interpersonal skills are essential.

Applications received by June 16, 1995 will be assured of consideration. However, applications will be considered until the position is filled. Please send cover letter indicating job name and job number, with two complete sets of resumes/applications to: **Jon Day, Pioneer Hi-Bred International, Inc., 6800 Pioneer Parkway - Box 212, Johnston, IA 50131-0212.** We are an Equal Opportunity Employer.



PIONEER HI-BRED INTERNATIONAL, INC.

Executive Director Energy & Environmental Engineering Center Desert Research Institute Reno, Nevada

The Energy & Environmental Engineering Center (EEEC) of the Desert Research Institute (DRI) seeks an Executive Director of internationally recognized distinction in air quality and/or environmental sciences/engineering with proven administrative and personnel management skills. Candidate must have (1) Doctorate in science or engineering (2) 10 years experience in scientific research beyond doctorate (3) Proven ability to obtain significant research funding air quality and/or environmental sciences/engineering (4) Record of noteworthy, peer-reviewed national and international scientific publications (5) Demonstrated creativity in identifying environmental research issues (6) Proven experience managing and guiding research programs (7) Strong administrative, scientific, team leadership and personnel management skills. As a member of DRI's senior management team, Executive Director promotes the needs of EEEEC; serves as a professional collaborator with and mentor for EEEEC faculty; and interacts with sponsors to further strategic goals of EEEEC and DRI. Salary is highly competitive, commensurate with qualifications/expertise and includes an excellent benefits package. Application review begins 7/17/95 and continues until position is filled. Submit a letter of interest describing your qualifications, a current vita and a listing of 5 references. Applicants not meeting all requirements will not be considered. Send to: Recruitment Office, Desert Research Institute, University & Community College System of Nevada, P.O. Box 19040, Las Vegas, NV 89132-0040. *An Affirmative Action/Equal Opportunity Employer, employing only U.S. citizens and persons authorized to work in the U.S.*



National Institutes of Health
National Center for Research Resources / Veterinary Resources Program

PHYSIOLOGIST

The National Center for Research Resources (NCRR) at the National Institutes of Health is currently recruiting for the position of Physiologist, GS-413-13, salary range of \$51,557 to \$67,021 per year.

This doctoral-level position is located on the Bethesda, MD campus of the National Institutes of Health and the successful applicant will become a permanent staff member of the NIH Animal Genetic Resource Office. Major responsibilities include the management of an embryo cryopreservation program designed to improve cryopreservation technology and to establish, maintain, and utilize a bank of frozen embryos and/or gametes from all of the animal models maintained by the NIH Animal Genetic Resource Program.

Applicants must have a degree in one of the basic animal sciences or physiology; or related discipline or field of science that included at least 24 semester hour requirement in the basic animal sciences. In addition, applicants must have one year of specialized experience at the level of difficulty and responsibility comparable to the next lower grade in the Federal Service. Applicants may apply with a resume, Optional Application for Federal Employment (OF-612), Application for Federal Employment (SF-171) or any other written format you choose. This position is included in the Federal Equal Opportunity Recruitment Program (FEORP) and is therefore targeted for EEO recruitment efforts. Consideration is limited to citizens of the United States. **Applications must be postmarked by July 10, 1995.**

Further information and qualification requirements can be obtained by contacting:

Ms. Rosemary Carter
National Center for Research Resources
National Institutes of Health
Building 31, Room 3B-38
9000 Rockville Pike
Bethesda, MD 20892
Telephone: 301-496-5621; Fax: 301-402-2110

NIH is an Equal Opportunity Employer

FACULTY POSITIONS IN THE CENTER FOR GENE THERAPY TENURE TRACK

The Center for Gene Therapy at Baylor College of Medicine is seeking qualified candidates with Ph.D. or M.D. degrees interested in basic and clinical studies of Gene Therapy. Established scientists and new investigators are invited to apply. Appointments will be made at an academic grade appropriate to the experience of the candidate. The Center wishes to identify scientists capable of pursuing independent study of basic gene transfer technology and vector biology, as well as clinical investigators interested in patient studies of gene therapy efficacy and safety. All areas of Human Gene Therapy will be considered including but not limited to inherited disease, cancer, cardiovascular disorders, neurological disorders, infectious diseases and gene vaccines.

Interested candidates should submit their curriculum vitae and bibliography, a statement of research goals, 1-3 representative publications, and the names of three references to:

John W. Belmont, M.D., Ph.D.
Chair, Faculty Search Committee
Center for Human Gene Therapy
Baylor College of Medicine
Room T826, One Baylor Plaza
Houston, TX 77030
Tel: (713) 798-4634
Fax: (713) 798-5386
belmont@bcm.tmc.edu

Baylor of Medicine is an Equal Opportunity/Affirmative Action Employer. Women and members of minority groups are strongly encouraged to apply.

Expanding Minds

Improving Bodies

Here at Chiron, we are on the leading edge of biotechnology research and scientific advancement, producing an array of therapeutic and diagnostic tools to advance potential cures for cancer and serious infectious diseases. We have the following opportunity:

Sr. Scientist

You will supervise staff and assist in the development of immunological and biological-based assays to support vaccine and therapeutic product development. You will develop product quantitation, potency, host impurity and antibody assays; write proposals and validation reports; and transfer assays to QC and other groups.

To qualify, you must have a Ph.D. and 8+ years' experience developing immunological assays in the pharmaceutical industry. The preferred candidate will have extensive experience with ELISA, HPLC affinity, as well as bio- and antibody-based assays. The preferred candidate will also have managerial experience.

If you have the dedication, spirit and flexibility to rise to our many challenges, send your resume to: Chiron Corporation, Human Resources, Box MG, 4560 Horton Street, Emeryville, CA 94608. We are an equal opportunity employer.



CHIRON

WHERE GREAT CAREERS COME TOGETHER

NEUROSCIENCE AND CELL BIOLOGY

New tenure track positions at junior and senior ranks are available in Neuroscience and Cell Biology at The University of Medicine and Dentistry of New Jersey's Robert Wood Johnson Medical School. Scientists will be located at Robert Wood Johnson Medical School on the scientific Busch Campus in the New Brunswick/Piscataway area. Investigators with interests in neural plasticity, molecular neurobiology, cellular neurobiology and the relationship of biology to behavior and mentation are encouraged to apply. Positions will be available from the Fall of 1995.

Please submit a curriculum vitae, summary of scientific interests and goals, and 3 letters of reference to: **Dr. Ira B. Black, Chairman, Department of Neuroscience and Cell Biology, UMDNJ-Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, New Jersey 08854-5635.** UMDNJ is an Affirmative Action/Equal Employment Opportunity Employer, M/F/D/V, and a member of the University Health System of New Jersey.

UMD
NEW JERSEY
25
1970-1995

Research Scientists

New Approaches to Crop Protection

The DuPont Company is seeking highly motivated research scientists to join a multidisciplinary team working to exploit modern biological methods in the discovery and development of novel products for the control of weeds and plant diseases. Applicants should be proven problem solvers, capable of working and communicating effectively in a diverse group of biochemists, chemists, molecular geneticists and biologists. Strong computer skills are a must. Successful candidates will join teams in Wilmington and Newark, Delaware. Our Mid-Atlantic location offers a wide range of academic, cultural and recreational activities.

DUPONT AGRICULTURAL PRODUCTS

Molecular Biologist

The Biochemical Discovery Section is searching for a Molecular Biologist with a strong background in biochemistry and analytical methods. The individual will work with a team that has the objective of discovering new herbicides and fungicides through the design of novel screening technology and the elucidation of biochemical modes of action. Minimum requirements for the position include a Ph.D. in the biological sciences (e.g. molecular biology, biochemistry, fungal or plant physiology) with experience in intermediary metabolism and analytical techniques. Training in the biology of filamentous fungi and plant-fungus interactions is desirable. Applicants should respond to: DuPont Human Resources, P.O. Box 30-MB, Newark, DE 19714.

Analytical Biochemist

The Biochemical Discovery Section is seeking an Analytical Biochemist to join a team working to identify new molecular targets for crop protection chemistry. The successful applicant will aid in the discovery of biologically active compounds that interact specifically with these targets. Responsibilities for this position include characterizing metabolic flux in selected pathways, as well as determining rates of uptake, translocation and metabolism of xenobiotics in plants and fungi. Minimum requirements for the position include a Ph.D. in the biological or chemical sciences (e.g. biochemistry, fungal or plant physiology) with experience in intermediary metabolism and analytical techniques. Familiarity with HPLC, GC, NMR and/or mass spectrometry is strongly recommended. Some knowledge of organic chemistry, enzyme mechanisms and molecular biology is highly desirable. Applicants should respond to: Human Resources, P.O. Box 30-AB, Newark, DE 19714.

DUPONT CENTRAL RESEARCH & DEVELOPMENT

Yeast Molecular Geneticist

The Biological Sciences Section is searching for a Molecular Geneticist with demonstrated ability to develop an active research program in yeast molecular and cellular biology. The objective will be to apply the power of modern yeast biology to the identification and characterization of molecular targets for novel crop protection products. The successful candidate will join an interdisciplinary team that includes scientists in DuPont Agricultural Products. Information generated will be applied to the discovery and development of herbicides and fungicides by screening combinatorial chemistry libraries and by designing target-directed inhibitors. Minimum requirements for the position include a Ph.D. and postdoctoral research experience. Experience in biochemistry is also desirable, along with the ability to establish effective interactions with biologists, chemists and specialists in bioinformatics. Applicants should respond to: DuPont Human Resources, PSS-0106, Wilmington, DE 19898 or you may fax to: (800) 631-2206, Attn: PSS-0106.

For all positions, interested candidates should forward their resumes and a list of references by July 3, 1995. An Equal Opportunity Employer.



ACCEPT THE NAVY CHALLENGE

Become a member of an elite research and development community involved in basic and applied scientific research and advanced technological development for tomorrow's Navy.

Listed below are anticipated career opportunities at various Naval Activities for Senior Scientists and Engineers to perform a variety of theoretical research, technology development, analytical studies, and consultative services:

Naval Research Laboratory Bay St. Louis, MS

- **Senior Scientist for Marine Molecular Processes (95-037)**
Provides scientific expertise and leadership for the Navy's research on material/chemical/biological interactions in the marine environment. He/she is an internationally recognized expert who conducts research in marine molecular processes including absorption, microfouling, macrofouling, and corrosion. He/she coordinates multidisciplinary, multi-institutional research that results in major documentable advances in science and technology of critical importance to Navy operations.
Apply to:
Naval Research Lab HRO-Code 1870A
Attn: Louann Lott
Stennis Space Ctr, MS 39529-5004
(601) 688-5092

Naval Surface Warfare Center Dahlgren, VA

- **Senior Scientist for Complex Systems (ST:055:95PA)**
Conducts research and technology development to expand the state of the art in the multidisciplinary sciences associated with complex systems. The goal is more fundamental understanding of such systems which will support a foundation for the engineering of large Navy systems. Serves as a consultant for top level systems engineers throughout the Naval Surface Warfare Center, Navy, Defense, private industry, and academia. Requires a national reputation, as evidenced by successful accomplishments, publications, awards, and other recognition in the field of large scale, complex systems engineering such as, systems architecture, control systems (cybernetics, stochastic processes, etc.), scalability, mathematically intractable systems, interactions between the human and the systems, etc.
Apply to:
NSWC-Dahlgren Division
Attn: Vicki Warner, Code P-30
17320 Dahlgren Road
Dahlgren, VA 22448-5100
(703) 663-8051

Naval Command Control and Ocean Surveillance Center San Diego, CA

- **Senior Research Computer Scientist or Engineer (40-12-95)**
Serves as Computer Scientist or Operation Research Analyst responsible for stimulating, planning, coordinating, and reviewing the full spectrum of RDT&E efforts applicable to the Navy's role in Reliance and Joint DoD applications of high performance computing to multiple areas including advanced distributed simulations, real time simulations and information processing.
Apply to:
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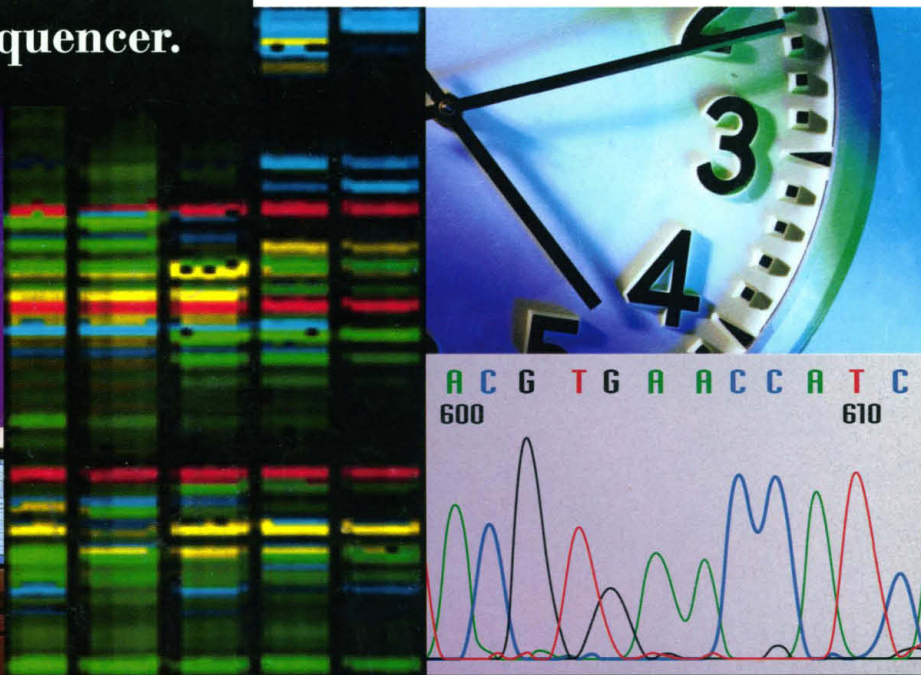
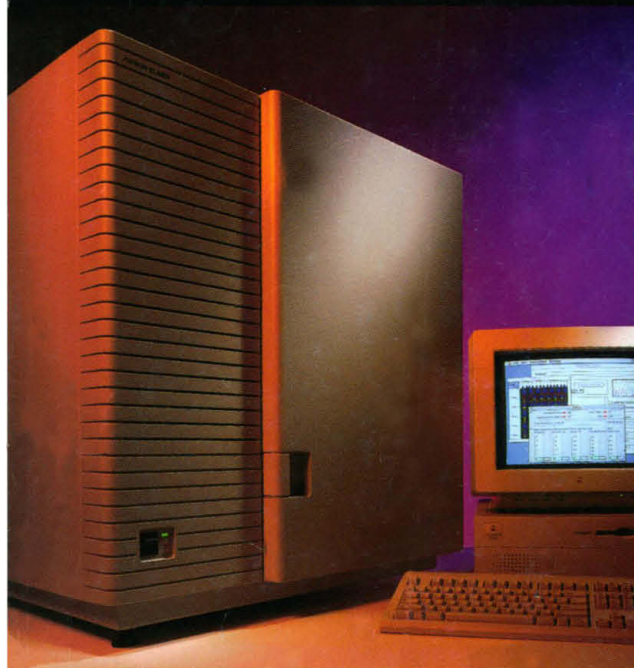
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