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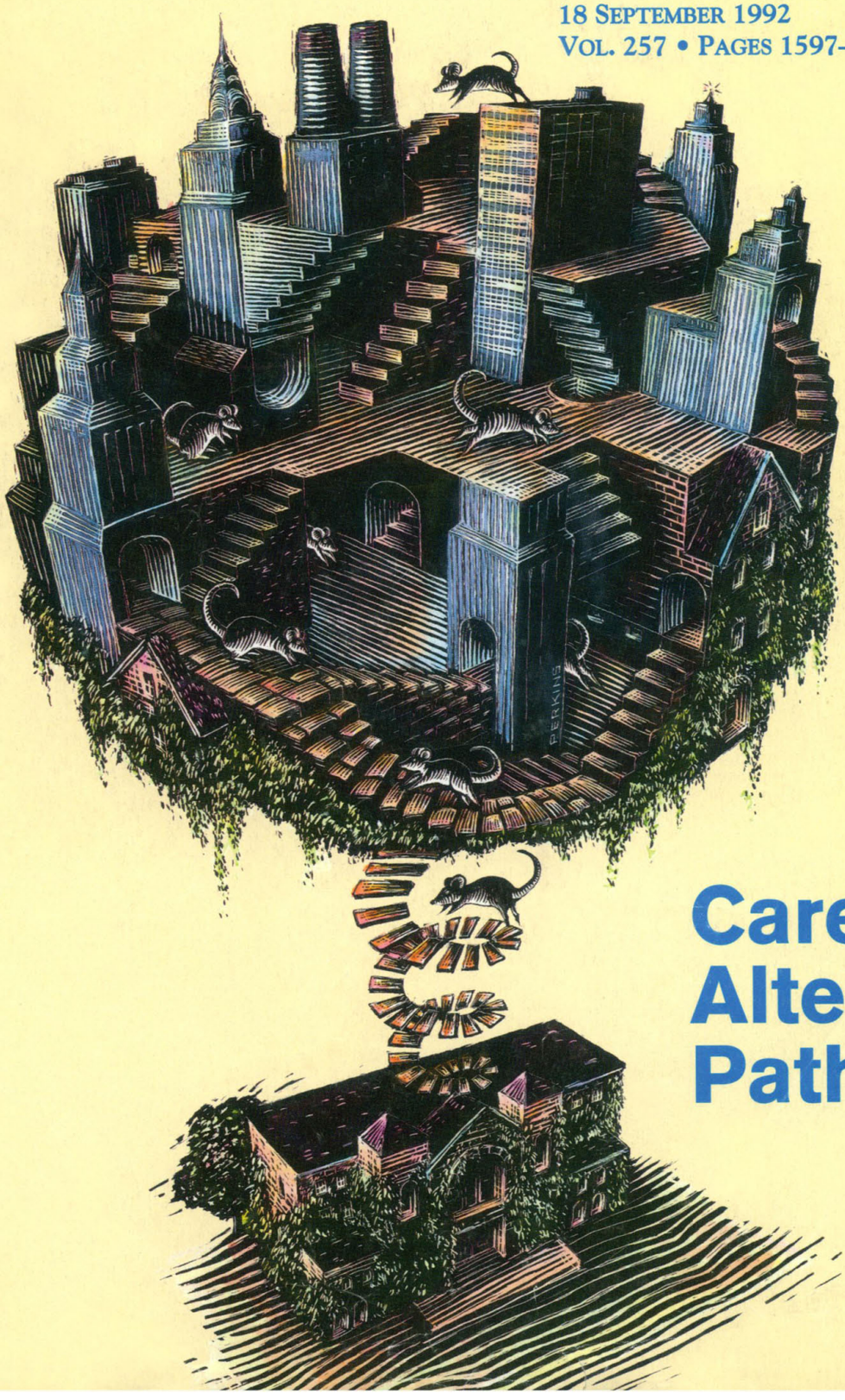
18 SEPTEMBER 1992 $6.00
VOL. 257 • PAGES 1597–1832



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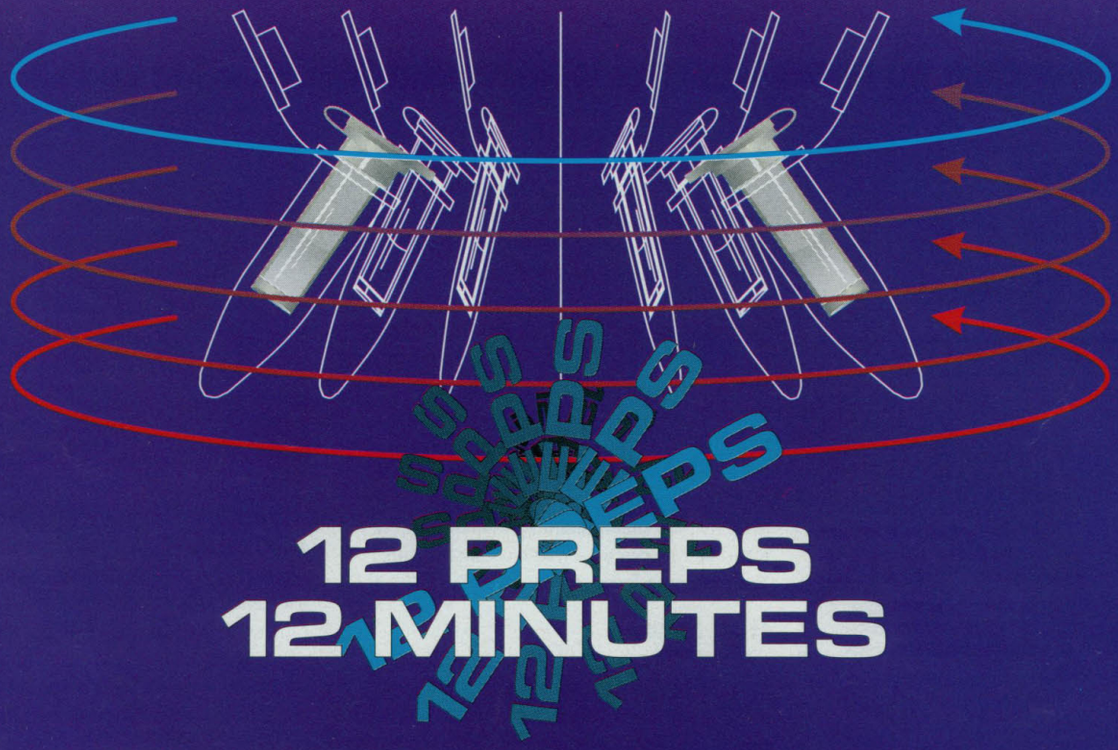

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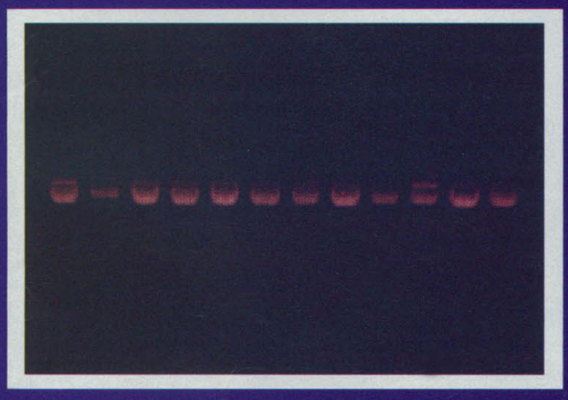

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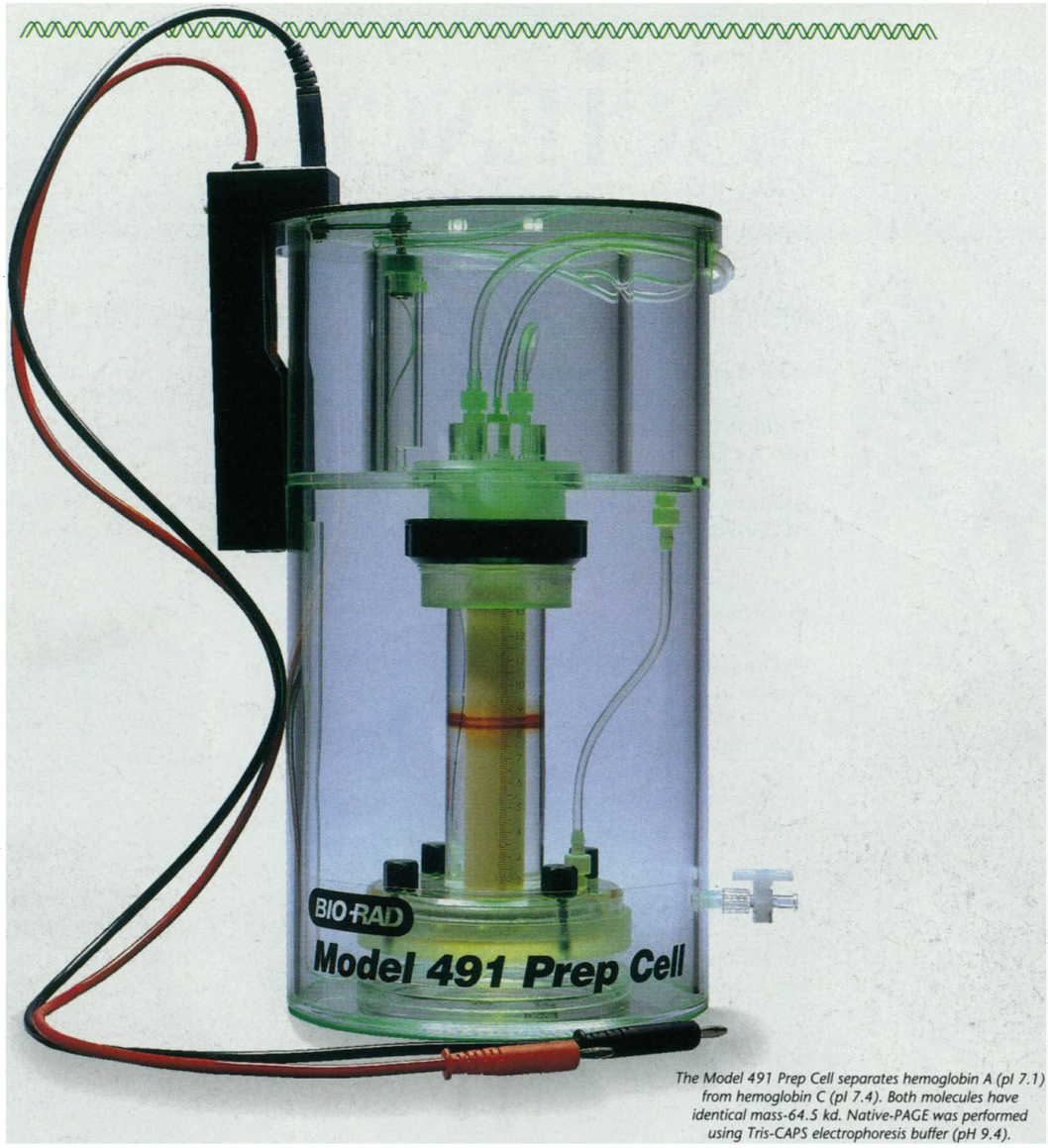

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BIO-RAD

ISSN 0036-8075
18 SEPTEMBER 1992
VOLUME 257
NUMBER 5077

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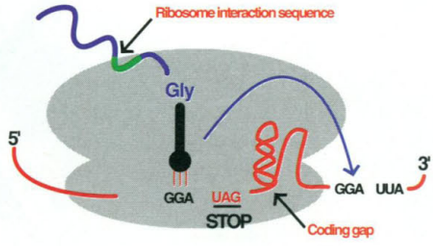
1622
How climate spurs evolution

NEWS

PERSPECTIVES

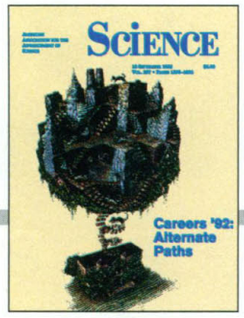


1640
Recoding: Another level of translational control

DEPARTMENTS

COVER

Funding is tight and jobs are hard to come by, but the scientific career ladder has never presented more options. Depicted by artist Ken Perkins, the paths for scientists are winding, steep, and interlinked, connecting the traditional, ivy-covered halls of academia with nontraditional scientific venues. Highlighted in the special section beginning on page 1707 are such career alternatives as corporate and biotech workplaces and environmental science ventures and such nontraditional career choices as patent law and scientific activism. [Illustration: Ken Perkins]



ARTICLES

RESEARCH ARTICLE

REPORTS

CAREERS '92: ALTERNATE PATHS 1707

Industry: Worth Considering in the '90s? • The Attractions of Biotech Careers Over Academia • Physics Famine: A Frenzied Search for Job Stability • The Greening of 'Green Science' Means New Jobs • Postdocs: Tales of Woe From the 'Invisible University' • The Euro-Postdoc: National Barriers Are Crumbling • Alternate Careers: Surviving off the Beaten Path • How Scientists View Their Profession • A Primer on Foundation Science Support

◩ Indicates accompanying News story or Perspective

■ **SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005**. Second-class postage (publication No. 484460) paid at Washington, DC, and additional mailing offices.

Domestic individual membership and subscription (51 issues): $82 ($50 allocated to subscription). Domestic institutional subscription (51 issues): $150. Foreign postage extra: Canada $46, other (surface mail) $46, air freight $90. First class, airmail, school-year, and student rates on request. Canadian GST Number: 125488122. **Change of address:** allow 6 weeks, giving old and new addresses and 11-digit account number. **Postmaster:** Send change of address to *Science*, P.O. Box 1723, Riverton, NJ 08077. **Single copy sales:** $6.00 per issue prepaid includes surface postage; Guide to Biotechnology Products and Instruments, $20. Bulk rates on request.

The identification code for *Science* is 0036-8075/83 $1 + .10. *Science* is indexed in the *Reader's Guide to Periodical Literature* and in several specialized indexes.

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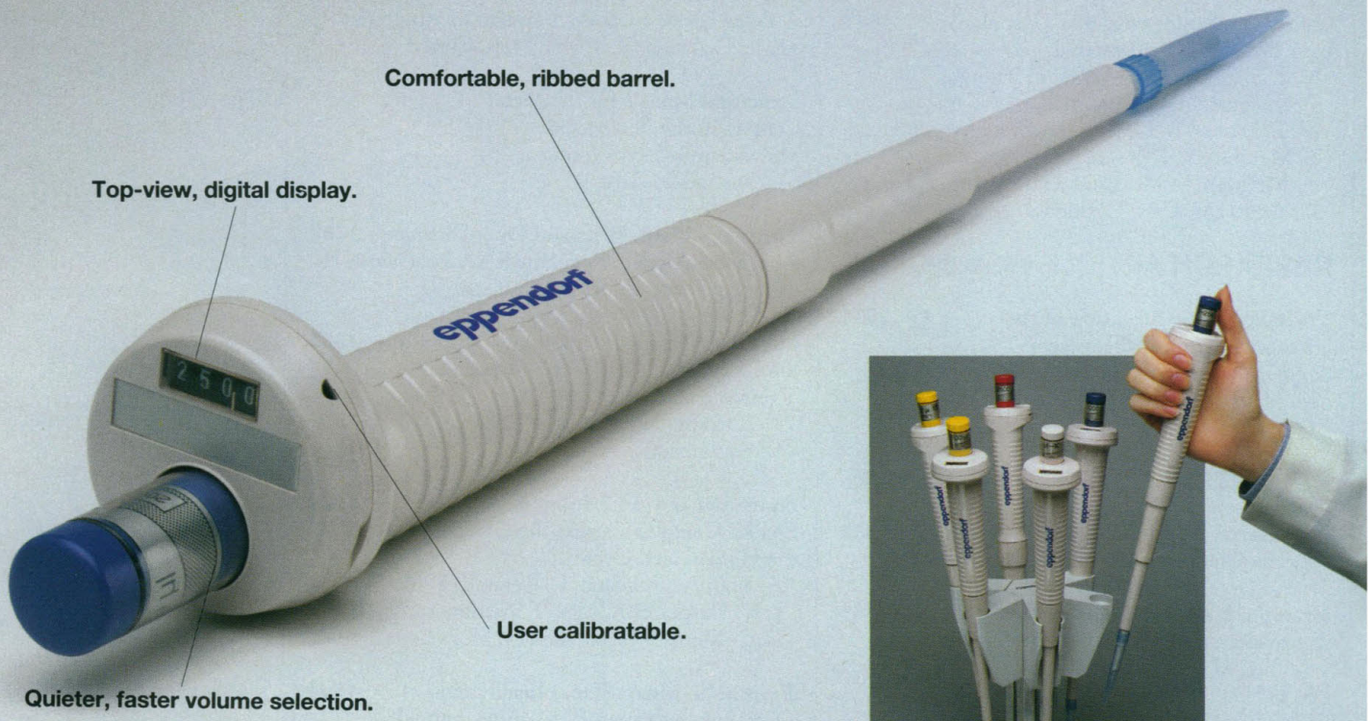

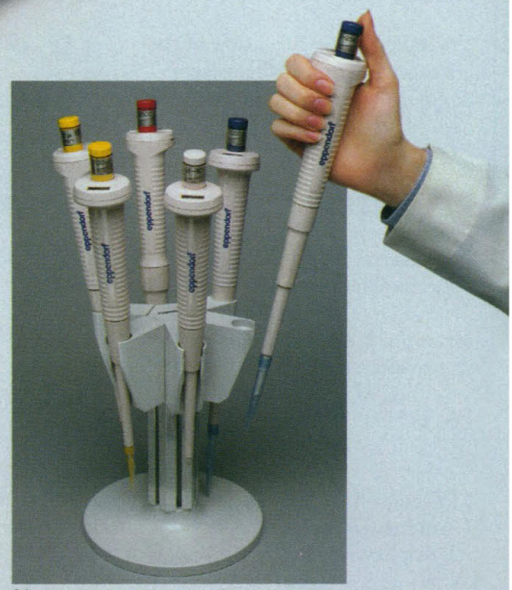

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edited by PHIL SZUROMI

Fixing nitrogen

Nitrogenase is the enzyme that makes atmospheric nitrogen biologically available by reducing it to ammonia. X-ray structural studies of its two component proteins have been performed by Georgiadis *et al.* (p. 1653) and by Kim and Rees (p. 1677). Overviews are presented in a news story by Moffat (p. 1624) and in a Perspective by Orme-Johnson (p. 1639).

■

C_{60} currents and C_{28} synthesis

When aromatic molecules, such as benzene, are placed in a magnetic field, the π electrons respond and produce a ring current, which results in the characteristic chemical shift of the benzene hydrogen atoms in nuclear magnetic resonance spectroscopy. Despite having a large π-bonded network, C_{60} showed a vanishingly small effect. Theoretical calculations by Pasquarello *et al.* (p. 1660), however, suggest that the currents around the five- and six-membered rings in C_{60} cancel, and that ring currents should be observed in chemical shifts in less symmetrical fullerenes. Stabilization of a small fullerene, C_{28}, has been achieved by Guo *et al.* (p. 1661). Laser "shrinkwrapping" of larger fullerenes containing uranium (U) resulted in the formation C_{28} surrounding a U atom ($U@C_{28}$). X-ray photoemission spectroscopy suggests that the U atom forms strong covalent bonds to C_{28}.

■

Merging droplets

Modeling the coalescence of liquid drops is difficult; for the most part, the combining fluids act like continuous media, but the rupture and rejoining of liquid surfaces occurs at the molecular scale. The equations of fluid flow are suited for continuous flow as opposed to the motion of individual molecules. Koplik and Banavar (p. 1664) have gotten around this problem by using molecular dynamics methods to simulate the merging of droplets containing about 10,000 particles. As the drops approach one another, molecules on the surface fluctuate into the shape of a tendril, which thickens as the bodies merge into one.

■

Close-up of an asteroid

Images obtained by the Galileo spacecraft have provided a detailed view of an asteroid, 951 Gaspra, as discussed by Belton *et al.* (p. 1647). This irregularly shaped object appears to be the product of a catastrophic collision of its parent body. Analysis of the cratering pattern suggests a surface age of 200 million years. Despite its small size and low gravity, Gaspra appears to have retained ejected matter from impacts to form a thin surface layer, or regolith. Variations in surface reflectivity and color correlate with surface morphological features, suggesting that regolith may have migrated down the slopes of some of the craters.

Finding fault

One of the primary areas of concern for the occurrence of a large intraplate earthquake in the United States is near New Madrid, Missouri. This area was hit by three magnitude 8 earthquakes in 1811 and 1812, but the recurrence interval and the degree that strain has accumulated since then has been uncertain. Liu *et al.* (p. 1666) have used the global positioning system to remeasure a triangulation network across the fault zone surveyed originally in the 1950s. Significant strain appears to have accumulated in the region of the network at a rate of about one-third that across the San Andreas fault zone. The rate of strain accumulation seems to be variable in this region, however, in that earlier results suggested that it is accumulating much slower, if at all, to the northeast.

■

Effects of increased CO_2 in the tropics

An experimental study that artificially reconstructed a tropical ecosystem suggests that increased concentrations of carbon dioxide in the atmosphere can increase many aspects of plant growth but do not necessarily result in an increase in biomass. Other effects noted by Körner and Arnone (p. 1672) for increasing CO_2 concentrations included increased starch accumulation in the top of the canopy and increased CO_2 evolution and mineral leaching from the soil. Increases in CO_2 may lead to more rapid carbon turnover rather than to net carbon accumulation.

■

The forests of Antarctica

Fossilized remnants of a forest that grew during the Late Permian (about 250 million years ago) are described by Taylor *et al.* (p. 1675). Mineralized tree stumps were found in the central Transantarctic Mountains; the tree rings indicate that this forest was young and rapidly growing. During its growth it would have been at a latitude of 80° to 85° south. This finding provides a constraint for climate reconstruction models, which in some cases have suggested temperatures for this region that are too low for such forest growth.

■

Packaging is important

Certain aspects of transcriptional activation that are known to occur in vivo have been difficult to reproduce in vitro. For example, transcriptional enhancers can act in vivo at sites that are more than 1 kilobase from the site of initiation of transcription. Laybourn and Kadonaga (p. 1682) found that if a DNA template packaged into chromatin was used rather than naked DNA, long-distance activation could be detected in vitro. They were also able to reproduce a sharp, almost all-or-none response to a shallow concentration gradient of a transcription factor.

■

Regulating cystic fibrosis chloride channels

Cystic fibrosis (CF) chloride channels may fail to function normally in some patients because of defects in how they are stimulated by nucleotides such as ATP (adenosine-triphosphate). The gene that is defective in CF, the transmembrane conductance regulator (CFTR), is a chloride channel but is unusual in that it contains nucleotide-binding domains (NBDs). Anderson and Welsh (p. 1701) performed site-directed mutagenesis studies which show that the two NBDs are not functionally equivalent. Four mutations associated with rarer cases of CF were shown to reduce the ability of ATP to stimulate the chloride channel.

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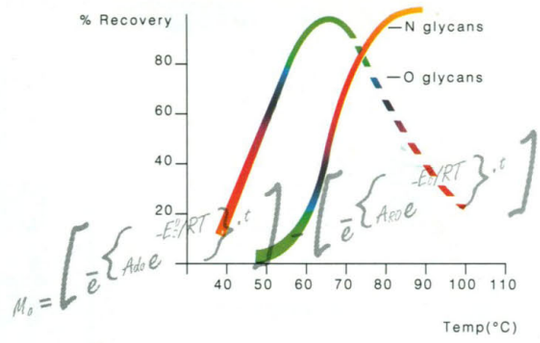

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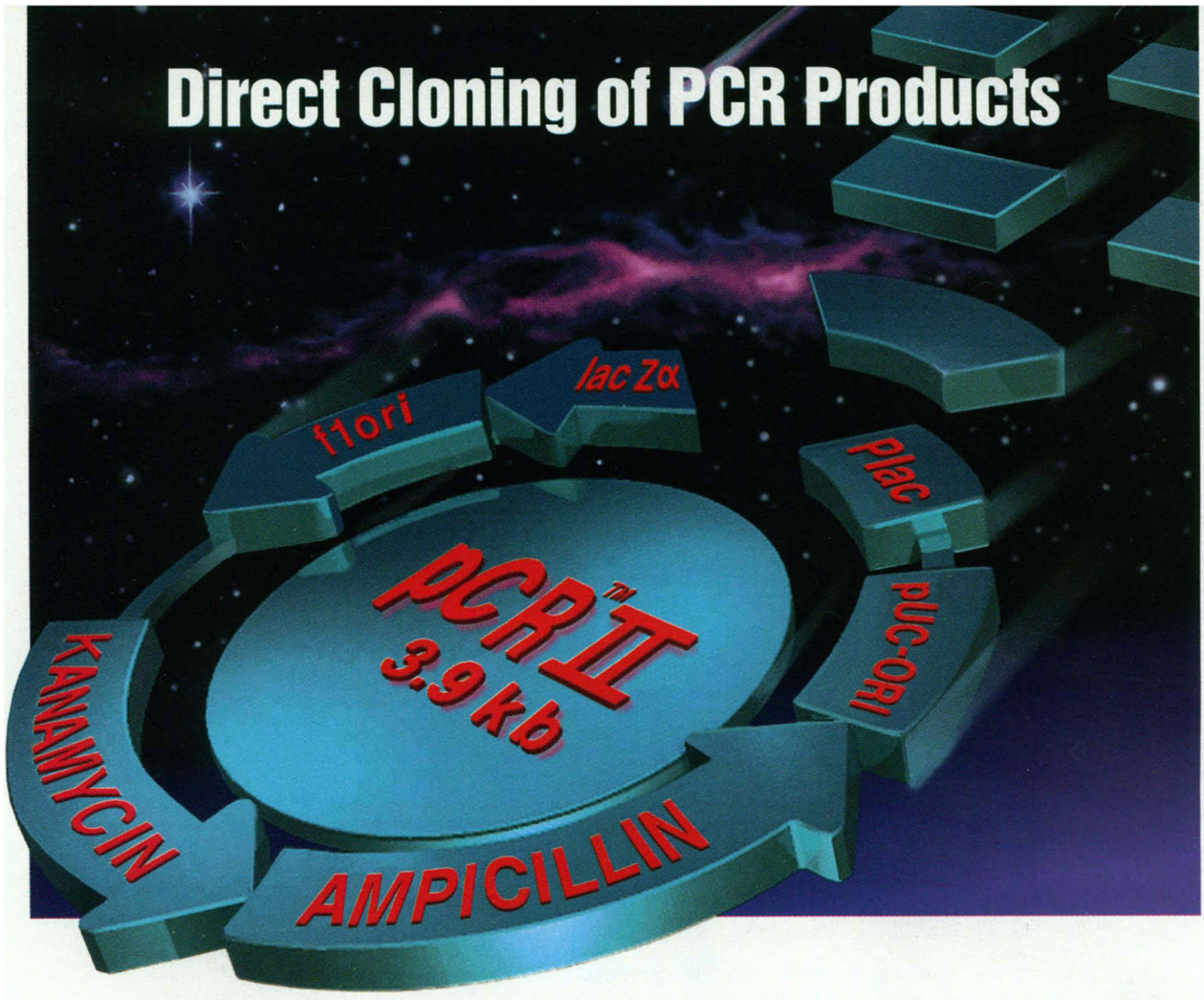

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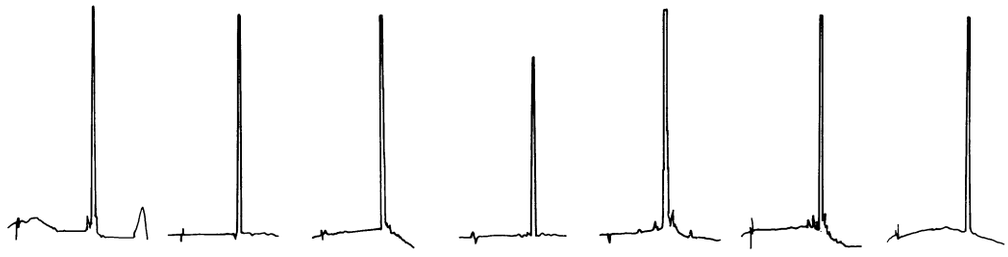

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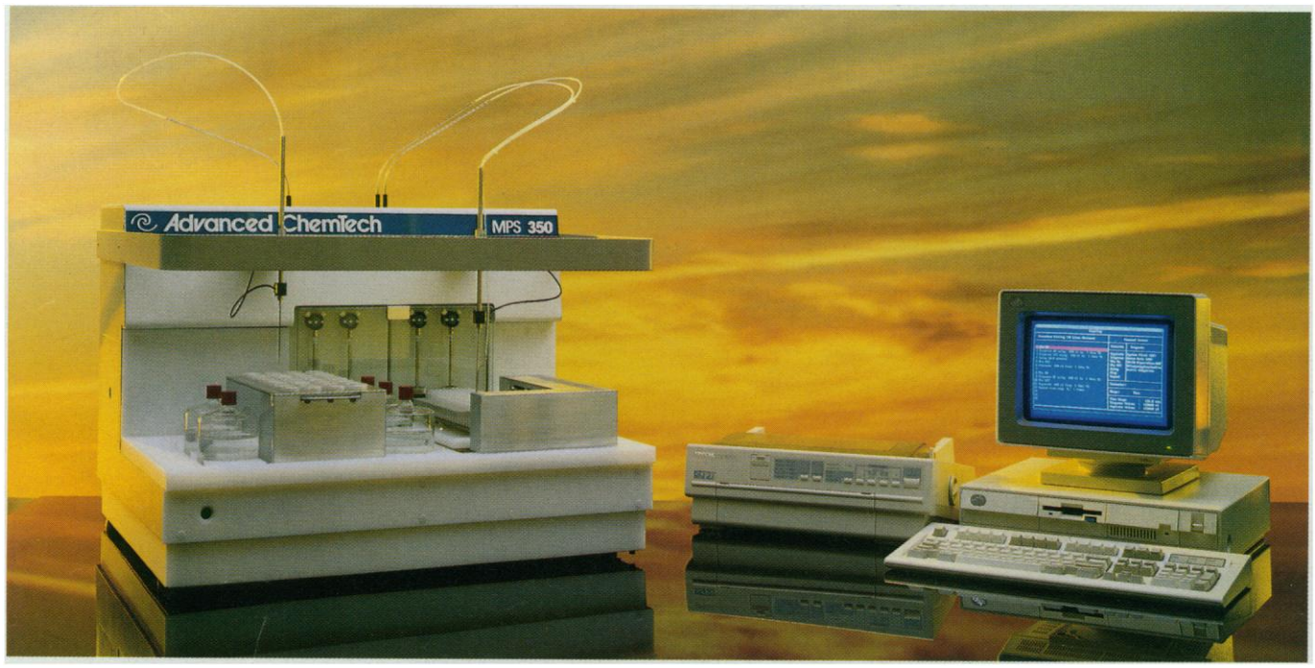

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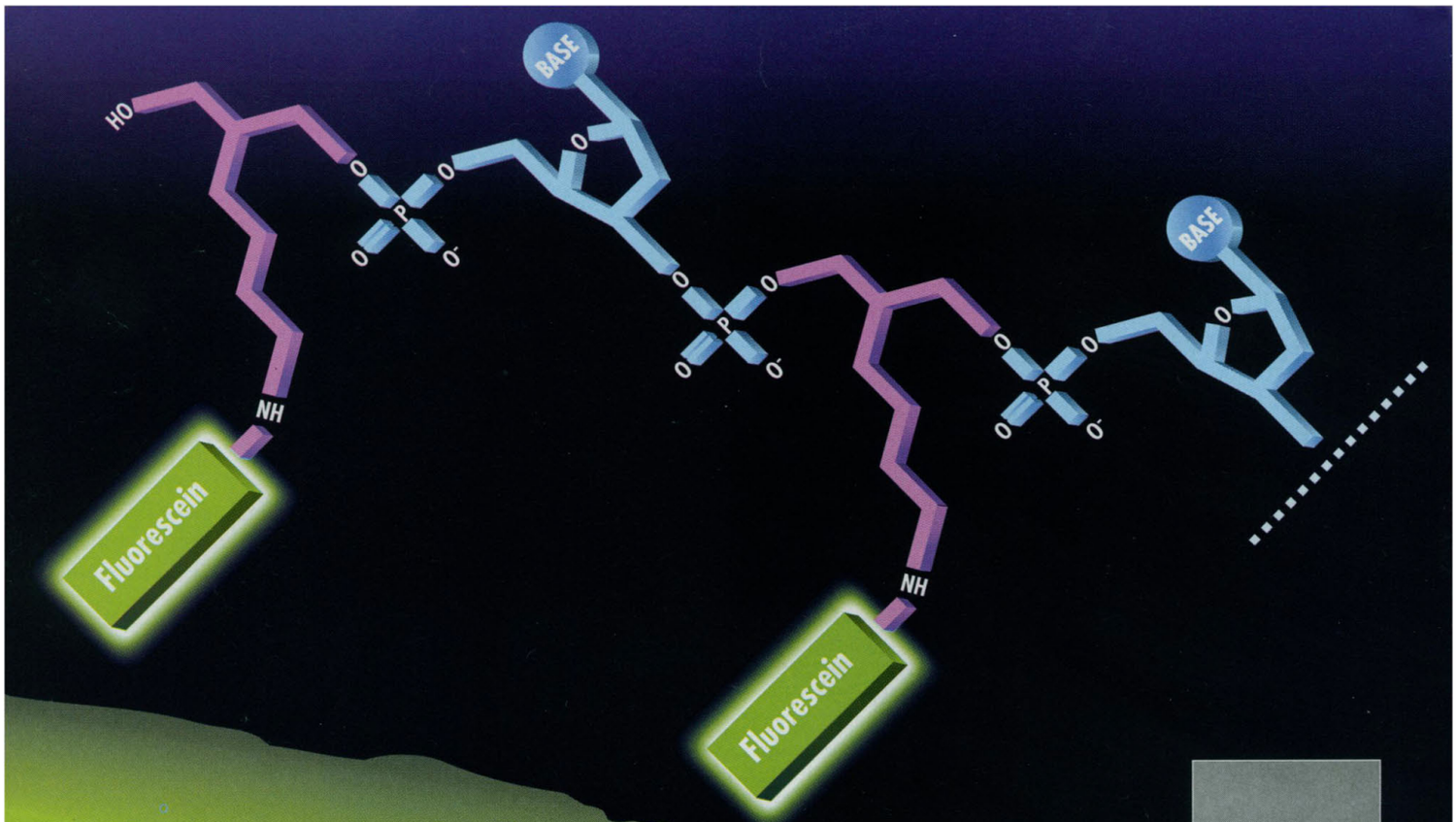

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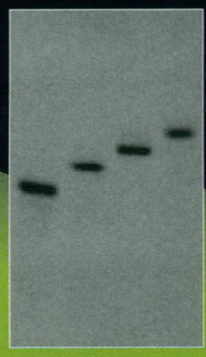

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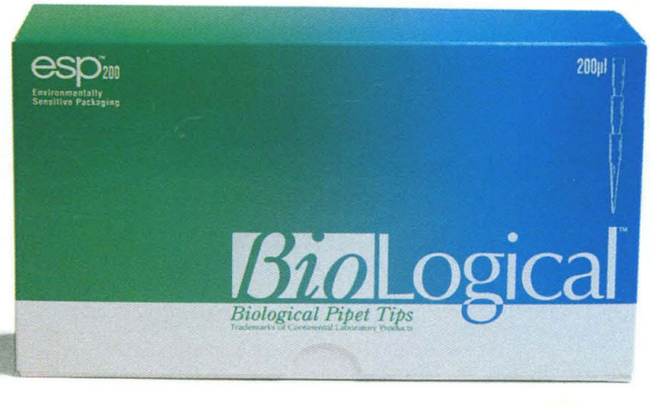

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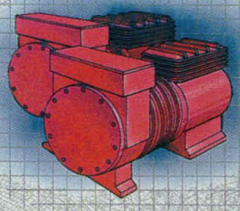

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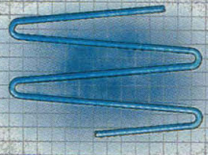

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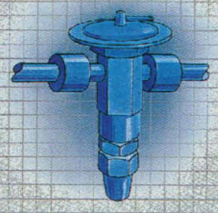

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Program

Mapping

Bertrand R. Jordan (chair), *INSERM-CNRS*

Jean Weissenbach, *CNRS, Inst. Pasteur,* "The second generation of human linkage maps: The Genethon linkage mapping project"

Daniel Cohen, *Ctr. d'Etude du Polymorphisme Humain*

Malcolm Ferguson-Smith, *Cambridge Univ.*, "Gene order by FISH and FACS"

Cassandra L. Smith, *Univ. of California, Berkeley,* "Progress and new approaches in making physical maps of human chromosomes"

Yoshihide Hayashizaki, *Natl. Cardiovascular Research Inst.*, "Restriction landmark genomic scanning method and its application"

Human Genetic Diversity

P. Fasella* (chair), *Comm. of European Communities*

L.L. Cavalli-Sforza, *Stanford Univ.*, "Genetic diversity and history of the human species"

Alberto Piazza, *Univ. of Torino,* "Population genetics of Europe"

Kenneth Kidd, *Yale Univ. School of Medicine*

Svante Paabo, *Univ. of Munich,* "Ancient and modern DNA sequences as a tool to reconstruct human history"

Julia Bodmer, *Imperial Cancer Research Fund,* "HLA allele and haplotype frequencies in world populations"

Model Organisms

Marc van Montagu, *Univ. of Ghent,* "The *Arabidopsis* genome"

Piotr Slonimski, *CNRS,* "The esoteric, elusive, but conspicuous genes of *Saccharomyces cerevisiae*"

Eric Lander, *Whitehead Inst.*

Michael Ashburner, *Cambridge Univ.*, "Genome mapping in *Drosophila*"

A.K. Raap*, *Univ. of Leiden*

Contributed Papers: Oral Presentations

(Speakers for this session will be chosen from among those submitting abstracts for poster sessions.)

Applications of the Human Genome Project

John Hardy*, *St. Mary's Hospital Medical School*

Yusuke Nakamura, *Japanese Fdn. for Cancer Research,* "The Human Genome Project and cancer genetics"

Ulf Landegren, *Univ. of Uppsala,* "Ligase-mediated gene detection"

cDNA Sequences and Intellectual Property

Lennart Philipson (chair), *EMBL*

J. Craig Venter, *Natl. Insts. of Health,* "Changing the pace of human gene discovery and public policy paradigms"

Kenichi Matsubara, *Osaka Univ.*, "Functional analyses of the human genome"

Rebecca Eisenberg, *Univ. of Michigan,* "Patenting the human genome"

Charles Auffray, *Inst. d'Embryologie du CNRS,* "The Genexpress cDNA Program: Towards an inventory of the repertoire of transcribed human sequences"

Andrei Mirzabekov, *Soviet Academy of Sciences,* "cDNA sequencing and sequence comparison by hybridization with oligonucleotide matrix: Advantages and implications"

*Invited, not yet confirmed

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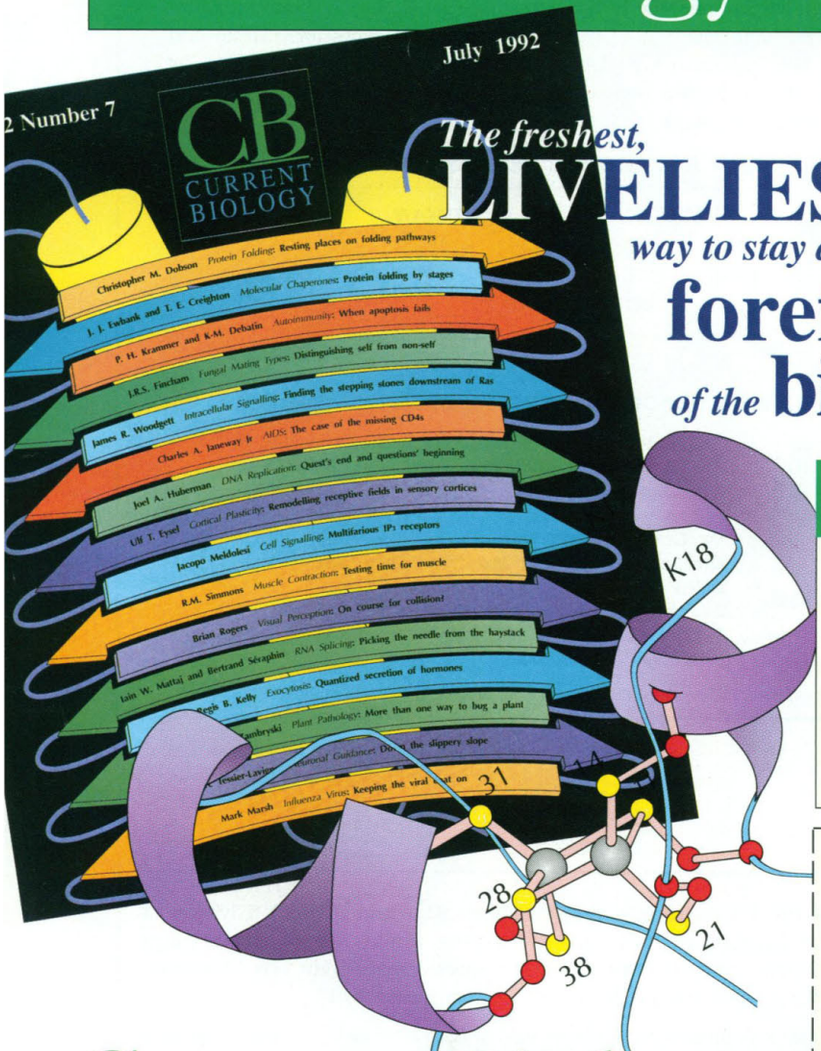

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Dr. Craig W. Reynolds
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Frederick, MD 21702-1201
FAX: 301-846-5429

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The repository of the Biological Response Modifiers Program (BRMP), Division of Cancer Treatment (DCT), NCI, NIH, announces the availability of recombinant human lymphokines IL-1α, IL-1β, and IL-2; the monoclonal antibody 11B.11 against mouse IL-4; and the monoclonal antibody 3ZD against human IL-1β.

Use of these materials is limited solely to *in vivo* and *in vitro* basic research studies and is **not** intended for administration to humans.

The lymphokine materials are aliquoted in 100 µg amounts (>10^6 units) and are available to investigators with peer-reviewed support. However, manufacturers' restrictions prohibit distribution of these materials to for-profit institutions or commercial establishments.

The monoclonal antibodies are available to peer-reviewed investigators, for-profit institutions or commercial establishments. The 11B.11 antibody is available in either 3 or 50 mg vials. The 3ZD antibody is available in 5 or 20 mg amounts.

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Dr. Craig W. Reynolds
Biological Response Modifiers Program
NCI-FCRDC
Building 1052, Room 253
Frederick, MD 21702-1201
FAX: 301-846-5429

All requests should be accompanied by:

(1) A brief paragraph outlining the purpose for which materials are to be used, (2) the amount desired, (3) description of investigator's peer-reviewed support. Recipients will be required to sign a Materials Transfer Agreement and to pay shipping and handling costs. Please allow 4 to 6 weeks for delivery.

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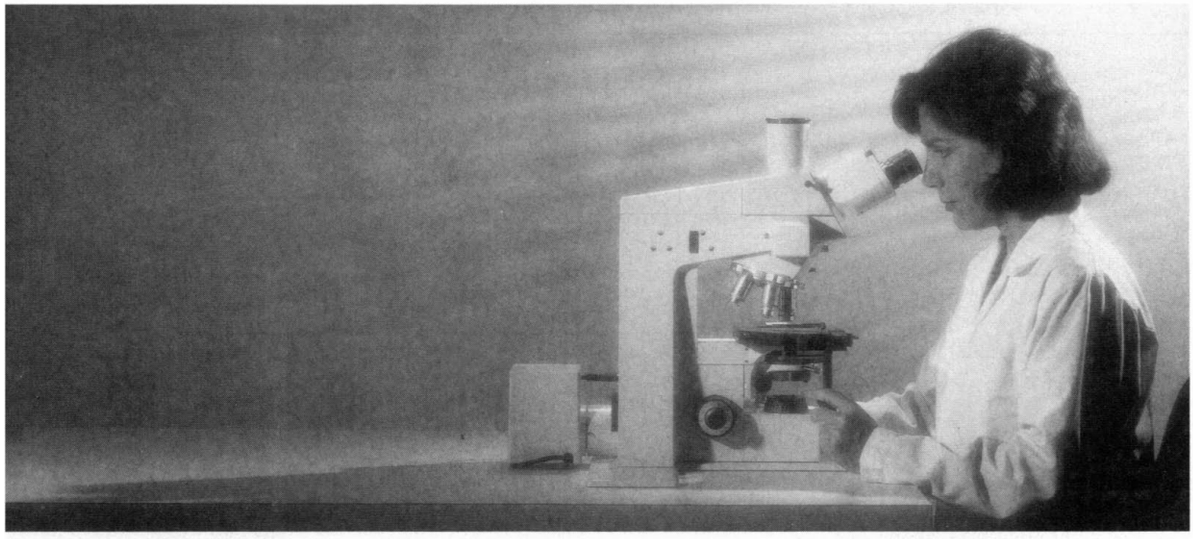

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Research Triangle Park, NC 27709-2700

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Deadline for abstract submission and registration is November 1, 1992.

Participants:

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C. Evans
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D. Hanahan
M. Hilleman
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The Employment Exchange is an on-site job referral service for job candidates and employers, providing position posting, résumé referral, a message center, and interview facilities (including private interview booths) during the week of these AAAS-sponsored meetings.

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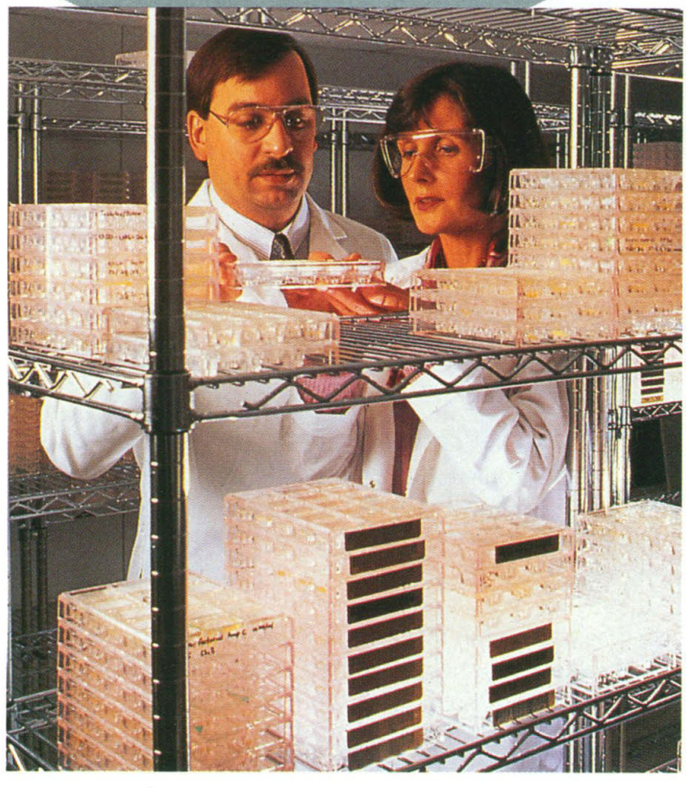

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The following descriptions are provided to introduce the various educational opportunities available at the National Institutes of Health.

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Postdoctoral opportunities are available in a variety of disciplines in the basic biomedical sciences at the NIH. Candidates should have either a graduate doctoral degree (e.g., PhD, MD/PhD) or a professional degree (e.g., MD, DO, DDS, DMD, or DVM) accompanied by previous laboratory research experience.

A catalog featuring descriptions of NIH research laboratories and other postdoctoral opportunities is available through the NIH Office of Education. Current postdoctoral openings may be accessed through the NIH EDNET Bulletin Board's POSTDOC conference via modem (1,3014922221 or 1,8003582221). The settings for modem access are "7,Even,1". When connected to NIH, type in ",vt100" at the connect message, "F5E" at initial, and "AJL1" at account.

In addition, individuals interested in pursuing research training through the Clinical Investigator Pathway of the American Board of Internal Medicine may contact the NIH Office of Education for additional information.

Subspecialty and Clinical Research Training

Subspecialty training at the NIH allows physicians to become board-certified specialists who are also prepared for careers in academic medicine. In-depth training in clinical and or basic research complements the fellow's clinical training and all 18 programs are accredited by the Accreditation Council on Graduate Medical Education or by boards in their respective disciplines. Programs include: Allergy and Immunology, Anatomic Pathology, Critical Care Medicine, Dermatology (third year), Endocrinology and Metabolism, Gastroenterology, Hematology, Infectious Diseases, Medical Genetics, Medical Oncology, Nuclear Medicine, Oral Medicine, Pediatric Endocrinology, Psychiatry (fourth year), Radiation Oncology, Reproductive Endocrinology, Rheumatology, and Transfusion Medicine. Programs in Pulmonary Diseases, Pediatric Hematology/Oncology, Clinical Chemistry, and Clinical Microbiology offer credit toward board certification on an individual basis.

Re-Entry Postdoctoral Training

A new program is being developed at the NIH to assist individuals with terminal degrees (e.g., MD, PhD, MD/PhD, DDS, DMD, etc.) who have had to delay or postpone their research career because of family responsibilities. Research training, workshops, for-

To Training on Of Scientists And esearchers.

mal course work, and mentoring will be provided to assist participants in their retraining and eventual re-entry into a research career. Plans are to appoint the initial class in the fall of 1993 or 1994, and inquiries concerning this program are welcome.

Graduate Program in Genetics

Students interested in doctoral training in genetics are encouraged to consider the NIH-George Washington University (GWU) Graduate Genetics Program. NIH and GWU faculty will provide didactic instruction at GWU, and dissertation research will be conducted in NIH laboratories. Full tuition and stipend support is provided.

Medical and Dental Student Programs

The Summer Research Fellowship Program provides 8 to 10 weeks of basic research training for students in the summer following their first or second year. In addition, nineteen different Clinical Electives are available for third and fourth year students, providing clinical and clinical research experiences unduplicated elsewhere.

Undergraduate Student Programs

Students can participate in state-of-the-art biomedical research through either the Summer Internship Program or the fall Research Semester for Undergraduate Students in the Biomedical Sciences. In addition, juniors or seniors who are preparing for careers as secondary science teachers may participate in the Pre-Service Teacher Program to gain experience in biomedical research, the use of new technologies, and the teaching of bioethical issues.

College and University Faculty Programs

To help improve the opportunities available to groups underrepresented in the biomedical sciences, plans for a summer institute are under development for faculty from women's colleges and two- and four-year institutions with a significant minority enrollment. Faculty will be able to enhance their personal scientific development as well as gain assistance in updating their courses in molecular and cellular biology.

Secondary School Teacher Programs

Several summer programs provide opportunities for teachers to participate in laboratory research, including an In-Service Program which offers an in-depth course in molecular biology before the research experience begins and training in the teaching of bioethics and use of electronic databases.

To find out how the NIH can play a role in your research training, please contact the NIH Office of Education for information on any of these programs.

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Working independently, your innovative and creative solutions to complex problems will be extremely instrumental. We require an MS degree in a scientific discipline and 5+ years' experience or a Ph.D. and 3+ years' experience in the design, execution and analysis of research in support of a variety of projects.

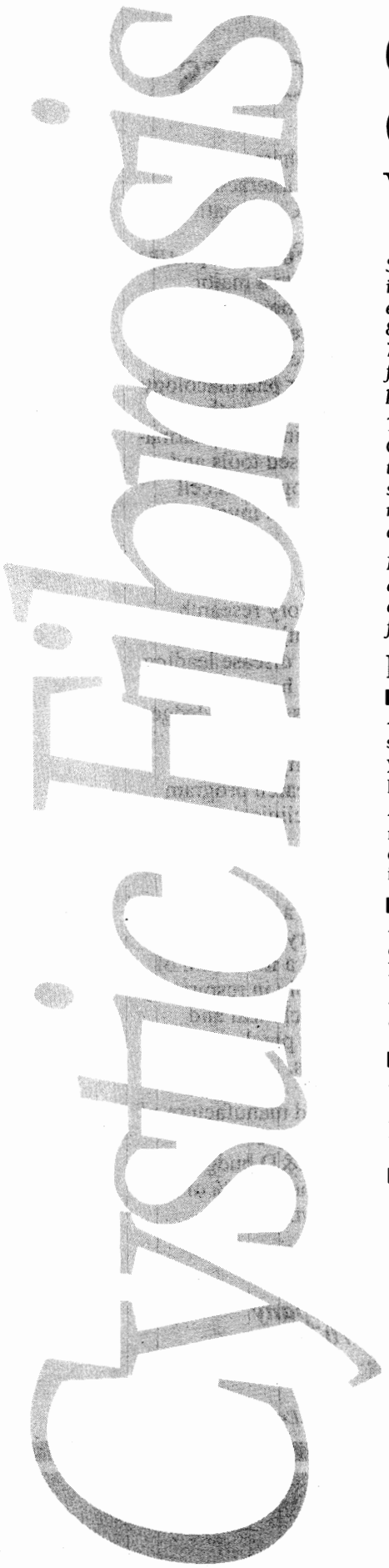
Associates

You must possess a Bachelor's degree in a scientific discipline plus 3+ years' experience and be computer competent. An MS is preferred. These positions also require a meticulous attention to detail and excellent organizational and interpersonal skills. The ability to work well in a multidisciplinary team environment is also essential.

As a U.S. subsidiary of an international Fortune 500 company, Berlex offers competitive salaries and a full complement of benefits, including relocation assistance. If you'd like to be a part of our scientific team, please send your resume today to: BERLEX BIOSCIENCES, HUMAN RESOURCES, 213 E. GRAND AVE., SOUTH SAN FRANCISCO, CA 94080. We are an equal opportunity employer.

BERLEX

THE BEST IS YET TO COME



Opportunities In Cystic Fibrosis Research With Genzyme

Since the discovery of the gene responsible for the defect in cystic fibrosis was identified, Genzyme scientists have intensively studied the gene and the protein it encodes. (Nature 347, 382-386, 1990, Nature 347, 358-363, 1990, Cell 63, 827-834, 1990, Science 251, 679-682, 1991, Cell 66, 1027-1036, Bio/Technology 10, 74-77, 1992) Genzyme has made significant technical progress that should facilitate development of both a protein replacement product and a gene therapy product for the treatment of cystic fibrosis patients.

Through the development of its Ceradase® enzyme to treat Gaucher disease, Genzyme has gained extensive experience in the application of protein replacement therapy in the treatment of protein deficiency diseases. In addition, Genzyme scientists and their collaborators have demonstrated that the defective ion transport mechanism present in airway cells taken from cystic fibrosis patients can be corrected in vitro *by the insertion of normal CFTR genes into the cells.*

Now, due to a major increase in resources committed to cystic fibrosis research and development, Genzyme has opportunities for individuals with a proven track record of accomplishment and contributions in areas directly or indirectly related to cystic fibrosis research.

Research Scientists

■ Protein Formulation and Delivery

- Devise new ways to purify analytical and reagent amounts of membrane proteins such as CFTR and fusogenic proteins. Candidates must have a Ph.D. with 4-10 years of post-doctoral experience including demonstrated expertise in the purification and analysis of membrane proteins. **(Code SG1A)**

- Explore delivery of CFTR using liposomes, with or without targeting. Candidates must have a Ph.D. and 3+ years of post-doctoral experience including experimental experience in designing, constructing, and analyzing liposomes and liposome-cell interactions, especially as they relate to membrane fusion. **(Code SG2A)**

■ Molecular Biology

- Apply your expertise in the development of a program for receptor mediated entry of DNA into epithelial cells. A Ph.D. and experience in cellular and molecular biology are required. **(Code SG3A)**

- Clone and characterize human membrane fusion proteins. A Ph.D. and experience in cellular and molecular biology are required. **(Code SG4A)**

■ Cellular Biology

- Scientist or veterinarian to work with whole animals including primates to assess CF protein and gene therapy in whole lung. Requires Ph.D. with extensive animal physiology experience specializing in lung function or delivery of drugs to the lungs. **(Code SG5A)**

■ These represent current opportunities. However, individuals with expertise in related areas are also encouraged to apply.

In addition to the opportunity to make a significant contribution in cystic fibrosis research, Genzyme offers an excellent compensation and benefits package, including 3 weeks' vacation, a 401(k) plan with a company match, extensive insurance benefits, and an Employee Stock Purchase Plan.

Please forward your resume, indicating job code, to: Human Resources, Dept. S918, Genzyme Corporation, One Mountain Road, Framingham, MA 01701.

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Advancing Health Care Products And Services Worldwide

RESPIRATORY PHARMACOLOGISTS

The Procter & Gamble Company has openings for three respiratory pharmacologists, two experienced and one entry level, who will become part of highly interactive multidisciplinary project teams at our Miami Valley Laboratories in Cincinnati, Ohio.

Cell & Molecular Biology/Inflammation/Immunology Focus *(Dept. MR2)*
An experienced Ph.D. pharmacologist is required to design and execute a major research program investigating the immune and/or inflammatory pathogenesis of respiratory allergy, asthma, and related diseases. The position requires a Ph.D. in pharmacology and at least five years of academic or industrial experience in preclinical/clinical models of respiratory inflammation and in receptor pharmacology at the tissue, cell, and/or molecular levels. Experience in leading/directing other doctoral level collaborators and/or subordinates is needed. Broad training in pharmacology and physiology including knowledge of molecular biology based tools and methodologies is required. Training in biochemistry, molecular biology, and cell biology and a working knowledge of the cell and molecular components involved in respiratory inflammation is desirable.

Disease Pathogenesis and Therapeutic Focus *(Dept. DL)*
This position requires a minimum of five years experience in respiratory research and a record of leadership and creativity. The candidate will work with a team of scientists to develop understanding of the pathogenesis of respiratory disease leading to the discovery of new and improved therapies. The candidate must have a Ph.D. in pharmacology, physiology, immunology, or biochemistry, and possess a knowledge of mechanisms of respiratory disease and therapeutic approaches for treatment of these diseases. The successful candidate must have a record of accomplishment with strong evidence of leadership skills directed towards setting research program direction. Individuals with experience in preclinical disease models, clinical research, and industry experience will be given priority.

Upper Respiratory Drug Discovery Focus *(Dept. SG)*
This is an entry level opening for a Ph.D. biomedical scientist to join a drug discovery team working on novel therapies for the treatment of upper respiratory symptoms. The applicant must have a Ph.D. in physiology or pharmacology and a minimum of two years of research experience (postdoctoral or industrial), preferably in respiratory or cardiovascular research. The individual will have demonstrated technical and problem-solving skills and will be expected to design and implement preclinical research strategies in support of our respiratory drug discovery efforts.

Procter & Gamble is a world leader in the research, development, and manufacture of consumer products, including those in health care, personal care, beauty care, and pharmaceutical areas. Sales last year exceeded $27 billion, and the R&D budget was $786 million. We offer competitive salaries, a benefits package in the top 5% of U.S. firms, and excellent opportunities for personal and professional growth.

Applicants must be presently authorized to work in the U.S. on a full-time basis. Send resume and list of publications, specifying position(s) of interest to:

Dr. N.G. Howell, The Procter & Gamble Company
(Place Dept. code here), P.O. Box 398707
Cincinnati, Ohio 45239-8707.

No Agency Referrals Please. *P&G is an Equal Opportunity Employer.*

Procter&Gamble

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At Promega Corporation, we use the expertise and creativity of our people, technology and financial resources to develop, manufacture and deliver innovative scientific products and services worldwide. We strive to provide a rewarding work experience for our employees and to achieve unparalleled excellence, quality and prosperity in our business.

Consider the following opportunities at Promega:

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R&D SENIOR SCIENTISTS (PhD)
- Cellular Immunology (Adhesion Molecules/Receptors)
- Signal Transduction
- Eukaryotic Genetics & Genome Mapping
- Technology Development in Molecular & Cellular
- Molecular Biologist (Mammalian Expression Systems)

R&D SCIENTISTS (MS)
- Nucleic Acid Detection & Purification
- Enzyme Purification & Enzymological Analysis
- Eukaryotic Genetics & Genome Mapping
- Signal Transduction
- Protein Analysis
- Bioorganic Chemist

PRODUCTION SCIENTISTS (BS/MS)
- DNA Typing
- Molecular & Cellular Biology
- Nucleic Acid Purification/Sequencing
- Molecular Biologist/Affinity Purification Chemist
- Enzyme Discovery/Protein Engineering
- Restriction Enzymes

QUALITY ASSURANCE SCIENTIST (BS)

METROLOGIST (BS)

TECHNICAL SERVICES REPRESENTATIVES (BS/MS)

MARKETING MANAGER (MS)
- Cell Biology

NATIONAL SALES MANAGER (MS/PhD)

FIELD APPLICATIONS SPECIALISTS (BS/MS)
- Boston Area
- New York City Area
- Research Triangle Park Area
- Texas

To apply for any of these positions or for further information, forward a resume indicating position of interest with references and salary history or write to: Promega Corporation, Kathy Potter, Employment Coordinator, 2800 Woods Hollow Road, Madison, WI 53711-5399. Equal Opportunity Employer. (No agency solicitation accepted.)

Promega

If you're ready to reach greater heights, we'll give you the chance to grow.

We're Los Alamos.

Wherever you are in your career growth, there's room to achieve even greater heights at Los Alamos National Laboratory.

We have over 7,000 professionals conducting both basic and applied research, learning more about the universe we live in, and solving specific technical and scientific problems.

We believe in having a culturally diverse workforce; people who can use their varying experiences to look at problems from all angles.

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For job vacancy information, call (505) 667-8622.

Affirmative Action/Equal Opportunity Employer. Ability to obtain a Department of Energy Security Clearance may be required. Los Alamos National Laboratory is operated by the University of California for the U.S. Department of Energy.

Los Alamos
NATIONAL LABORATORY

PhD Neurobiologists

Pfizer Central Research

Pfizer, a U.S. based multinational pharmaceutical company has earned its reputation as an industry leader by maintaining its pharmaceutical research at the forefront of biomedical sciences and therapeutic innovation. Consider these exciting research opportunities in the Neuroscience Department located at our expanding Central Research Laboratories in Groton, Connecticut.

We now have openings for PhD neuroscientists with a minimum of 2 years of postdoctoral experience in the areas of neurodegenerative diseases, psychotherapeutics, and molecular neurobiology. We seek motivated individuals with an interest in applied research and a proven record of creative scientific problem solving. The ability to work as a member of a multidisciplinary team with a common goal of discovering breakthrough approaches to treating diseases of the nervous system is essential.

Neurodegenerative Diseases

Areas of special interest are Alzheimer's disease and B-amyloid processing/toxicity, excitotoxicity, intracellular Ca2+ homeostasis, neuronal Ca2+ channels and cognitive psychopharmacology. Requires experience in *in vivo* and *in vitro* models of neurodegeneration.

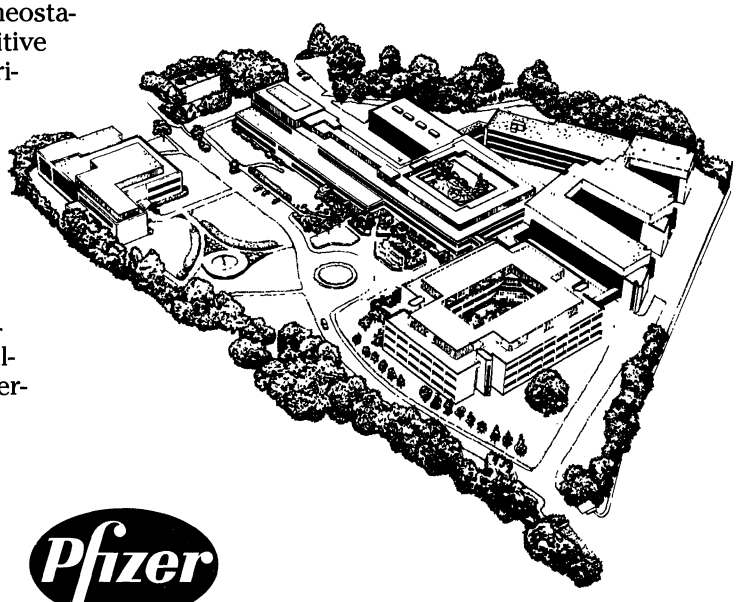
Psychotherapeutics

Our programs emphasize research in psychosis, anxiety, depression, and drug addiction. Experience in neuropharmacology and interest in advancing the treatment of psychiatric illness and evaluating the functional properties of novel drugs highly preferred.

Molecular Neurobiology

Experience in molecular neurobiology and a desire to be at the forefront of its application to drug discovery are essential. Experience in cDNA cloning, quantitative RNA analysis, library construction, DNA sequence analysis, PCR, or regulation of gene expression/translation is required.

In addition to a stimulating research environment, we offer a competitive compensation and benefits package, including generous relocation assistance to this southeastern Connecticut shoreline community. Qualified applicants may send a resume, description of research experience, and names of three references to: **Mr. Kym Goddu, Personnel Associate, Employee Resources Department, Pfizer Inc, Central Research Division, Eastern Point Road, Groton, CT 06340.** We are an equal opportunity employer.



Pfizer

Central Research

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SANDOZ RESEARCH INSTITUTE

PUT YOUR CAREER ON THE FRONTIER OF SCIENTIFIC RESEARCH

At Sandoz Pharmaceuticals, research is the tool by which we gain the knowledge needed to improve the lives of countless thousands across the country and around the world. That's why we've committed substantial resources to expanding our Research Institute, which now includes a wealth of state-of-the-art technologies and brand new laboratory facilities.

If your career belongs on the leading edge of scientific research, you belong at Sandoz. We currently have immediate openings available for the following research professionals:

EXPERIMENTAL TOXICOLOGISTS

Experienced toxicologists to develop new methods and new projects related to the mechanism of target organ toxicity. The successful candidates should have a Ph.D. in Pharmacology, Toxicology, Biochemistry, Cell Biology or a related field and at least 2 years of experience in the pharmaceutical or chemical industries, or relevant experience in *in vitro* and *in vivo* toxicology testing of drugs or chemicals. Specific experience in hepatic or renal cell culture for toxicity testing and performing mechanistic studies on drug-induced cell injury is required. The ability to recommend and develop procedures for mechanistic studies to understand the nature of drug toxicity at the biochemical or cellular level is essential. Position #2065.

ASSOCIATE DIRECTOR, REGULATORY TOXICOLOGY

Experienced toxicologist to manage toxicology technician team leaders, study coordinator and toxicology drug formulation activities. The successful candidate will have a Ph.D. in Toxicology, Pharmacology or a related field and at least 8 years of broad experience in the methodologies, instrumentation and conduct of toxicology studies in the pharmaceutical industry or equivalent. Excellent oral and written communication skills, managerial leadership and supervisory skills are required. This individual will assist in the management of daily operations and long-term goals of Regulatory Toxicology. They will be responsible for risk assessment and safety evaluations of drug candidates for clinical trials, the preparation of toxicology reports and summaries for IND, NDA and related submissions and represent Regulatory Toxicology on project teams. Position # 2366.

SENIOR ASSOCIATE FELLOW, REGULATORY TOXICOLOGY

Experienced toxicologist to design, supervise, conduct and report acute, subchronic, chronic, carcinogenic and mechanistic toxicology studies. The successful candidate will have a Ph.D. in Pharmacology, Toxicology or a related field with at least 5 years of experience in the pharmaceutical industry or equivalent. Excellent oral and written communication skills are required. This individual will conduct risk assessment and safety evaluations of drug candidates for clinical trials and will be responsible for data analysis and the preparation of toxicology summaries for IND, NDA and related submissions. They will be expected to independently perform highly complex scientific work and will also represent Regulatory Toxicology on various project teams. Position # 2227.

Being part of the research team at Sandoz has many advantages. Our salaries and benefits programs are designed to attract top candidates and provide them with the resources to produce their best. Comprehensive health, dental, and savings plans as well as fitness and athletic facilities are all provided at our attractive location in northwest New Jersey, which also allows for outstanding academic, cultural and outdoor pursuits. For consideration, please forward your curriculum vitae, position number, a statement of research interests and the names and addresses of three references to:

SANDOZ

SANDOZ PHARMACEUTICALS CORP
SRI Human Resources Department
Building 403/100
East Hanover, New Jersey 07936-1080

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What do you have to do to get a position in science that provides challenge, variety, depth, freedom of research, supportive colleagues and mentors, interesting fields of investigation and respect?

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You already know our products. Perhaps it's time you knew our company better too. As one of the world's largest consumer products companies, Unilever is comprised of more than 500 individual concerns that produce food, household and personal care products in hundreds of countries around the globe. And, although these products are very different in nature, behind each and every one of them stands the solid research, technology and innovative thinking of Unilever Research.

Since 1902, our scientists have been working hard to make life easier — and better — for the people who use our products. Today, our worldwide research network is backed by an R&D budget of $650 million, and staffed by over 8,000 dedicated scientific professionals at state-of-the-art laboratories in the United States, England and the Netherlands.

Working in small, multi-disciplinary teams, and linked by sophisticated telecommunications systems that promote close collaboration between research teams, our scientists build strong relationships with peers and mentors, and maintain strong ties to academic, medical and research facilities around the world.

Here at our U.S laboratories in Edgewater, NJ, scientists with degrees in Analytical, Organic, Inorganic and Physical Chemistry; Biochemistry and Biological Sciences, and Chemical Engineering will find an environment where the challenge is to think across the conventional boundaries of science. Also in Edgewater is our newly established Skin Science Center where we are bringing together talented and creative individuals from a variety of areas — cell biology, colloid and surface science, pharmacology, behavioral science, material science, immunology, histology, enzymology, cellular differentiation and others — to explore and investigate the science of skin in a whole new way.

Challenge, freedom, variety. For the very reasons you chose science as a career in the past, it's time to choose Unilever as your future. For consideration, send your resume to: James R. Conti, Manager, Employee Relations, Dept. CIS92, Unilever Research U.S., 45 River Road, Edgewater, NJ 07020. An equal opportunity employer.

Unilever

Unilever Research U.S.

BS/MS Scientists

The Bristol-Myers Squibb Company in Syracuse, New York, has the following opportunities available due to expansion of our Worldwide Pharmaceutical Bio/Chem Division:

CELL BIOLOGISTS

Scientists with BS/MS degrees in Cell Biology or related fields are needed to support the development of improved cell lines, cell banks, and inocula for large-scale bioprocessing. Projects include monoclonal antibodies and recombinant protein derived from mammalian cells and metabolites from plant tissue culture. Previous industrial experience is preferred. **(ID#009-026)**

PROTEIN CHEMIST

Scientists with BS/MS degrees in Protein Chemistry, Chemistry or Biochemistry and experience in purification and analysis of proteins are needed to develop purification processes suitable for pilot plant scale production of clinical-quality therapeutic proteins. Projects include therapeutic monoclonal antibodies and recombinant proteins. Industrial experience in gram-scale processing and purification of proteins derived by cell technology under GMP conditions is preferred. **(ID#104)**

MOLECULAR BIOLOGIST

This position requires a scientist with a BS/MS in Molecular Biology or related field and experience in DNA hybridization, Southern analysis and PCR amplification techniques. Responsibilities include the analysis of genetically-engineered cell lines and in-process biologicals. Opportunities for gene cloning and expression also exist. **(ID#024)**

PROCESS ENGINEER

BS/MS level Biochemical Engineer or equivalent related discipline with a minimum of five years industrial experience in production and/or scale-up of microbial and/or cell culture processes required for this position. Must also have a thorough knowledge of regulatory requirements as they apply to large-scale biologics. Responsibilities include the scale-up and definition of manufacturing processes for biologics as well as cGMP validation for all new processes and elements. **(ID#012)**

FACILITY ENGINEER

BS/MS degree in Chemical Engineering or related discipline with industrial experience in process automation and maintenance and operation of pilot plant facilities is needed to coordinate the design/automation, construction, validation and maintenance of biotechnology facilities. Must also have a thorough understanding of regulatory guidelines as they pertain to cGMP facility operations and experience in the development of processes for the scale-up and production of biologics. **(ID#JT-1)**

ANALYTICAL CHEMIST

Individual with a BS/MS in Analytical Chemistry or closely related discipline and relevant experience in HPLC, electrophoresis and immunoassays of proteins. The individual will be responsible for the development, implementation and application of analytical tests for biological products, including primary metabolites, antibiotics, monoclonal antibodies and taxol. **(ID#JT-2)**

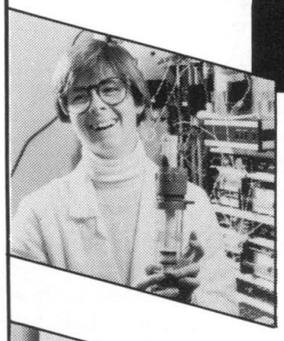
PROTEIN PURIFICATION ENGINEER

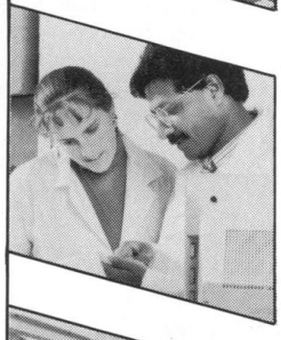
This position requires a Scientist/Engineer with BS/MS degree in Biochemical Engineering or related discipline with at least two years experience in purification of cell culture and/or recombinant microbial proteins for clinical applications in an industrial environment. cGMP and clean room experience preferred. Responsibilities include assisting in the development of GMP purification processes for pilot scale production of clinical-grade therapeutic proteins from microbial and animal cell culture. **(ID#021)**

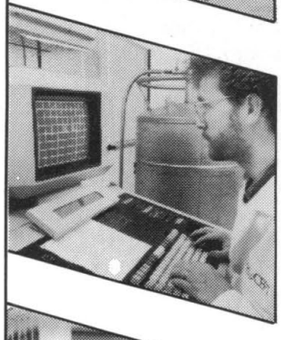
We offer an excellent starting salary, comprehensive benefits and a working environment conducive to professional growth. For prompt, confidential consideration, forward your resume with salary requirements, Job Title and ID Job # for which you are applying, to: **Manager of Employment, Bristol-Myers Squibb Company, P.O. Box 4755, Syracuse, NY 13221-4755.** Equal Opportunity Employer, M/F/D/V.

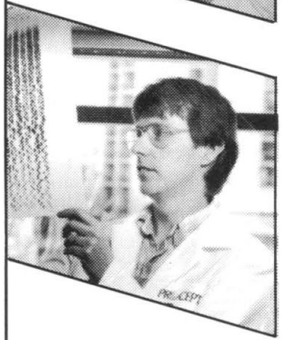
Bristol-Myers Squibb Company

The business of commercializing science.









At Procept, a rapidly growing biopharmaceutical company, we are forging new ground in the development of novel immunotherapeutic drugs to address major disease markets by combining our proprietary receptor technology with structure-based drug design methodologies.

One of our principal research programs is based on the identification of T-cell antigen receptors that play a role in the pathogenesis of specific autoimmune diseases. The result will lead to the development of a unique class of drugs which will block autoimmune response. Expansion of this program has created new opportunities for talented scientists to bring us their best ideas and creative spirit as valuable contributors to this effort.

Protein Biochemistry

PRINCIPAL INVESTIGATOR/ GROUP LEADER

We seek an experienced, senior Ph.D. level protein biochemist to direct a laboratory group responsible for the purification, refolding/renaturation and structural characterization of recombinant, soluble cell-surface receptors. These novel immunoregulatory protein receptors will be utilized as targets for therapeutic drug development using structure-based computer drug design strategies. You should have 5+ years' postdoctoral experience and a proven record of management success leading a multidisciplinary team of research scientists, preferably in an industrial biotechnology setting. Candidates who are experienced in scale-up purification development or biophysical protein characterization are particularly well-suited for this outstanding leadership opportunity.

RESEARCH ASSOCIATES-BS/MS

We also have a new opening for an accomplished scientist seeking enhanced responsibility in a team environment. You should have 3+ years' experience in modern methods of protein purification and characterization including HPLC/FPLC, SDS-PAGE, IEF, westerns, ELISA and spectroscopy. A background investigating protein-ligand interactions would be a definite asset.

BIOPHYSICAL PROTEIN CHEMIST

A new opportunity exists for a Ph.D. level scientist with 2+ years' experience and a demonstrated record of achievement in studying the fundamental mechanisms governing protein folding. You will play a key leadership role in our protein receptor development programs by applying your knowledge and experience to the renaturation and functional characterization of a variety of recombinant receptor proteins expressed in microbial cells. You should have direct experience with appropriate biophysical techniques for studying protein folding and protein conformational structure such as UV, CD and fluorescence spectroscopy, microcalorimetry and molecular modelling.

Immunology

SENIOR SCIENTIST/PROJECT LEADER

We are seeking a creative immunologist/cell biologist with 6+ years' of postdoctoral experience to manage research aimed at the discovery of novel immunosuppressive agents which target T cell/APC interactions. Expertise in the biology of lymphocyte adhesion molecules or MHC proteins is essential. In addition, you should have experience in one or more of the following areas: transfection/transient expression of cell surface proteins, cell or protein-based binding assays, or identification of functionally important sites on adhesion molecules. Supervisory and leadership skills are required for the management of a research project.

We invite you to apply for these positions and enjoy the following advantages: our extensive business and academic affiliations, including scientific collaborations with Harvard and MIT; our state-of-the-art facilities; and an outstanding compensation package including incentive stock options. Please forward your resume in confidence to: **Mr. Jack Knox, Director of Human Resources, Procept, Inc., 840 Memorial Drive, Cambridge, MA 02139**.

PROCEPT

WYETH-AYERST RESEARCH

Wyeth-Ayerst
Laboratories is a division of Fortune 100 American Home Products Corporation, a leading manufacturer and marketer of health care products with multi-billion dollar annual sales and an impressive record of growth and profitability.

As a research-based pharmaceutical company, we are committed to helping people lead healthier lives through innovative pharmaceutical and nutritional products. It is from this commitment and position of strength that we move forward with a major expansion of our research and development activities.

At Wyeth-Ayerst, our commitment to tomorrow is evidenced in the products we develop, the research we pursue, the excellence we achieve.

Our continued success depends upon the talent of multi-disciplinary research teams made up of scientists like you...bringing to market pharmaceutical products that improve health and enhance the quality of life.

Join Wyeth-Ayerst Laboratories for an unparalleled opportunity for professional growth. We seek both entry-level and experienced candidates to staff key positions in drug discovery and development research at our three primary U.S. Research and Development facilities.

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We're building on our success

We offer competitive salaries and professional opportunities as well as a full range of benefits.

Equal Opportunity Employer, M/F/D/V

Leading the way to a healthier world

RADNOR, PENNSYLVANIA

Candidates with M.D., R.N., B.S./M.S. or Ph.D. degrees in appropriate disciplines are sought to staff key positions at our suburban Philadelphia location in Clinical Research, Clinical Operations, Research Quality Assurance, Biostatistics and Clinical Data Management, Regulatory Affairs, Biotechnology/Microbiology and Nutrition areas. Respond to Wyeth-Ayerst Research Personnel, P.O. Box 8299, Philadelphia, PA 19101.

ROUSES POINT, NEW YORK

This location on beautiful Lake Champlain invites candidates with B.S./M.S., or Ph.D. degrees in the appropriate scientific disciplines to inquire about our openings in Analytical Chemistry, Chemical Development, Pharmaceutical Sciences, Toxicology and Drug Safety. Respond to Wyeth-Ayerst Research Personnel, 64 Maple St., Rouses Point, NY 12979.

PRINCETON, NEW JERSEY

Candidates with B.S./M.S. or Ph.D.'s in the appropriate scientific discipline (Molecular Biology, Biology, Immunology, Pharmacology, Biochemistry, Organic Chemistry and Chemistry) are sought to staff positions in Analytical Chemistry, Cardiovascular-Metabolic Disorders, Central Nervous System Pharmacology, Drug Metabolism, Female Health/Bone Metabolism, Organic Chemistry and Inflammation/Allergy/Immunology. Respond to Employment Supervisor, Wyeth-Ayerst Research, CN 8000, Princeton, NJ 08543-8000.

At each of these sites, you will find the most advanced resources and the convenience of outstanding cultural, educational and leisure activities just minutes away.

We are proud to offer an excellent quality of work life.

Wyeth-Ayerst offers the ideal environment to spark your enthusiasm and challenge your ingenuity. In support of your research efforts, you will find responsible management and innovative colleagues, as well as state-of-the-art resources and equipment. The free-flow of scientific and technical knowledge is encouraged by frequent in-house seminars and Company-sponsored participation in conferences and worldwide symposia. Our research scientists are encouraged to establish their reputations by developing a strong record of publications.

Outstanding professional opportunities.

Company policies that support your professional growth include a job posting program, training activities and a benefits package that offers tuition reimbursement. Our Research & Development Career Ladders provide the structure to recognize education, skills and experience from the level of a recent college graduate to that of an experienced Ph.D. or M.D. research scientist who is a recognized authority in a particular field.

TIGR
THE INSTITUTE FOR GENOMIC RESEARCH

DEPARTMENT DIRECTOR/RESEARCH SCIENTIST/POST-DOCTORAL POSITIONS

The Institute for Genomic Research is a new, not-for-profit research center devoted to accelerating the sequencing, mapping and functional characterization of human, animal, and plant genomes. The goal of the Institute is to bring scientists together in a collaborative environment to identify and characterize novel genes and gene families through the application of DNA sequence analysis, gene mapping, computational biology, gene expression, and model organism studies. Departmental research in the Institute is supported by a large-scale DNA sequencing facility with state-of-the-art robotics and informatics. The Institute is affiliated with two biotechnology companies developing pharmaceutical and agricultural products, and Institute scientists will have the opportunity to work with colleagues in these companies to see their discoveries through to useful products. The proximity of The Institute for Genomic Research to the National Institutes of Health and major universities in the Washington, DC/Baltimore metropolitan area offers the opportunity for additional research collaborations. We are currently recruiting scientists at all levels for the following departments.

GENE DISCOVERY AND FUNCTION
Research Scientists/Post-Doctoral Fellows

Work in collaboration with other programs to develop integrated approaches to library construction, large scale DNA sequencing, and functional characterization of genes using yeast molecular genetics, PCR technology, protein family analysis, and developmental biology. Applicants should have a strong background in molecular biology, biochemistry or genetics.

GENOME INFORMATICS
Research Scientists/Post-Doctoral Fellows

Develop methods, algorithms, and software for data analysis and management, laboratory robotics, and interactive simulation and design. Experience in comparative sequence analysis, structure and function prediction, scientific databases, process control, robotics, and interactive simulation especially valuable.

CANCER BIOLOGY
Director/Research Scientists/Post-Doctoral Fellows

Develop strategies for utilizing large scale DNA sequence analysis to identify new therapeutic targets and markers of cellular transformation. Applicants should have experience relevant to the field of tumor cell biology (oncogenes, tumor suppressor genes, etc.).

MOLECULAR AND CELLULAR BIOLOGY
Research Scientists/Post-Doctoral Fellows

Focus on gene expression in prokaryotic and eukaryotic systems, the discovery of novel proteins involved in signal transduction and intracellular signaling, and transcriptional and translational control of gene expression. Applicants should have a strong background in molecular biology, neurobiology, pharmacology, or biochemistry.

PLANT BIOLOGY
Director/Research Scientists/Post-Doctoral Fellows

Use large-scale sequencing, mapping, and reverse genetics to identify genes, analyze gene function, and characterize genomes of higher plants and fungi. Select and develop new model systems. Investigate cell-cell, host-pathogen, and environmental interactions.

GENETIC DISEASES
Director/Research Scientists/Post-Doctoral Fellows

Identify the molecular basis of human genetic diseases through the application of DNA sequencing, FISH mapping, specific cDNA selection, PCR technology, genetic and physical mapping. Applicants should have experience in molecular biology, human genetics, or DNA mapping.

Directors: Requires PhD/MD and a minimum of 10 years relevant experience, a record of independent scientific leadership and accomplishments, supervisory background, and excellent communication skills.

Research Scientists: Requires PhD/MD and 2+ years post-doctoral training in an appropriate field. Appointments will be made at levels equivalent to full, associate or assistant professor, commensurate with experience.

The Institute offers a stimulating research environment, a competitive compensation and benefits package, and the amenities of both the metropolitan DC area and rural Maryland. Qualified applicants are encouraged to send a curriculum vitae and letter indicating position of interest to:

Human Resources Department
The Institute for Genomic Research
932 Clopper Rd.
Gaithersburg, MD 20878

TIGR is an Equal Opportunity Employer

RESEARCH SCIENTISTS/ NUCLEAR MEDICAL TECHNOLOGISTS

Hybritech Incorporated, a subsidiary of Fortune 100 Eli Lilly and Company, is a leader in the development of *in vitro* and *in vivo* products utilizing monoclonal antibody technology. We have immediate and challenging opportunities for key scientific talent in our Research & Development divisions.

RESEARCH SCIENTIST/99m Tc CHEMIST

This individual will be a key team member in the development of antibody and peptide-based imaging agents for cancer and other disease states. The ideal candidate will have a PhD in Organic Chemistry or Biochemistry, minimum 2 years' post-graduate experience, with expertise in Tc chemistry and synthetic organic chemistry. Experience working with proteins, peptides or chelating agents is also desirable. JOB CODE=MD/SM/9-18-92/CH

RESEARCH SCIENTIST - METHODS RESEARCH

We seek an individual who will be responsible for developing novel immunoconjugates for clinical diagnostic applications. Such conjugates may be used in a variety of immunoassay formats to improve sensitivity, or other aspects of assay performance. The successful candidate must have a PhD in Synthetic Organic Chemistry with 2-5 years of relevant experience. Experience in working with fluorescent dyes and coupling dyes to proteins, as well as knowledge of analytical techniques for characterization of conjugation reactions, is required. JOB CODE=DB/SM/9-18-92/MR

RESEARCH SCIENTIST - SKELETAL DISEASE

Responsibilities for this position include assisting in the selection and development of diagnostic markers for skeletal disease, coordination of R&D activities with external companies and collaborators, and identifying new opportunities for use of skeletal diagnostic markers. The ideal candidate will have a PhD in Bone Biology or Bone Biochemistry and 5-10 years' related experience. Immunoassay development experience is helpful. JOB CODE=DB/SM/9-18-92/SK

APPLICATIONS SPECIALISTS NUCLEAR MEDICINE TECHNOLOGY

We are seeking several Applications Specialists to be responsible for technical support of our *in vivo* product line, including customer and sales training programs, in-field education, technical support troubleshooting, and clinical marketing program support. Candidates must be registered Nuclear Medicine Technologists with 2+ years of practical, hospital-based experience. The ideal candidate will possess a Bachelor's degree and recent work experience in a Nuclear Medicine or Radiology field support position. Overnight travel is required. JOB CODE=MD/SM/9-18-92/AS

We offer exceptional career opportunities, a stimulating environment, competitive salaries, and an excellent benefits package. For confidential consideration, please send your resume to: HYBRITECH INCORPORATED, Human Resources, P.O. Box 269006, San Diego, CA 92196-9006. When sending your resume, please specify the appropriate job code and your salary history. Equal Opportunity Employer.

TEAM Excellence

Hybritech INCORPORATED

Harnessing The Body's Power To Heal™

Genetics Institute is a leader in the research and discovery of regulatory proteins and their development into human biopharmaceuticals.

Our Postdoctoral Fellowship Program provides opportunities for outstanding postgraduate scientists to gain in-depth training and experience in the dynamic environment of a leading biopharmaceutical company. These talented, well-trained, highly motivated individuals will work with our outstanding scientists, gain exposure to a broad range of forefront technologies, and participate in all aspects of scientific interchange available at Genetics Institute.

For more information about employment opportunities, please send curriculum vitae along with a letter specifying research interest, to: Human Resources Department, Genetics Institute, Inc., 87 CambridgePark Drive, Cambridge, MA 02140.

Genetics Institute offers competitive salaries and benefits, including comprehensive health care, dental and life insurance, three weeks' paid vacation, 401(k), stock purchase plans, tuition assistance, and an on-site exercise facility. Genetics Institute is dedicated to building strength through diversity. We are an Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIP OPPORTUNITIES

Our research and development is in the following areas:

HEMATOPOIESIS AND CELLULAR IMMUNOLOGY

Basic research activities are directed towards understanding the cellular and molecular biology of cytokines, their receptors and their role in regulating both hematapoiesis and lymphopoiesis *in vitro* and *in vivo*.

BONE BIOLOGY & PHARMACOLOGY

Our basic research focuses on the understanding of the cellular and molecular biology of the Bone Morphogenetic Proteins (BMPs) which have been shown to effect bone formation *in vivo*.

DEVELOPMENTAL BIOLOGY

Basic research efforts are directed towards understanding the biology of cardiac, skeletal muscle, bone and cartilage during embryonic fetal development and during tissue repair and regeneration in the adult animal.

SIGNAL TRANSDUCTION

This area of basic research involves signal transduction, utilizing 3-D protein structural determinations by high field NMR, molecular mutagenesis, enzymology and cellular biological studies.

EXPRESSION & PURIFICATION OF RECOMBINANT PROTEINS

The Process Biochemistry group is engaged in the development of scalable and efficient processes for purifying recombinant protein therapeutics.

Examples of current postdoctoral opportunities include:

Molecular & Cellular Genetics

This laboratory focuses on the expression, processing and secretion of recombinant human proteins in Chinese Hamster Ovary (CHO) cells. The molecular biologist postdoctoral fellow will set up homologous recombination in CHO cells for targeted gene disruption of secretion and growth control genes. Cell culture experience is essential.

Microbiology

We have developed new technologies for screening complex peptide libraries for protein subunits that functionally mimic receptors and ligands. The postdoctoral fellow will utilize this technology to probe protein-protein interactions and to discover new therapeutics. Experience with microbial genetics, molecular biology, and/or protein-protein interaction is desired.

Signal Transduction

Several postdoctoral positions are available to study the biology and biochemistry of cytosolic PLA_2 and related enzymes; eg. characterization of the CaLB domain which is also present in PKC, PLC and GAP.

Separations Sciences

The postdoctoral fellow will investigate new technologies and their mechanism of action in protein extraction and isolation. New purification technology will be assessed for their effect on protein structure and biological function.

GENETICS INSTITUTE

OPPORTUNITIES IN CELLULAR BIOCHEMISTRY

Glaxo Inc. takes great pride in being one of the largest pharmaceutical companies in the world. The opening of our new Glaxo Research Institute, located in Research Triangle Park, NC, represents our continued commitment in the pharmaceutical industry to the discovery of drugs for unmet patient needs.

Few facilities can match the ten-building research complex that is attracting scientists from a provocative diversity of cultures and countries. To them, and to you, we offer a superb setting for energetic collaboration in pursuit of evasive solutions. The following openings are available within our ***CELLULAR BIOCHEMISTRY DEPARTMENT.***

• GROUP LEADER • SENIOR SCIENTIST

Selected individuals will be involved in identifying or characterizing steroid/orphan receptors and their cognate ligands. Specific expertise in these areas is preferred. Both positions require a Ph.D. in a Biological Science.

The ***Group Leader*** *position requires a minimum of 5 years postgraduate experience in molecular biology and/or cell biology.* ***Please refer to Job #9126-GL-SC on all resumes.***

The ***Senior Scientist*** *position requires a minimum of 0-2 years postgraduate experience in molecular biology and/or cell biology.* ***Please refer to Job #9126-SS-SC on all resumes.***

• ASSOCIATE SCIENTISTS

The successful candidates will be responsible for all aspects of in vitro drug discovery, to include the development and implementation of receptor binding and second messenger assays (eg. kinase, cyclase, and phospholipase) for the identification of lead compounds, as well as follow-up assays to determine selectivity and mechanism of action.

These positions require a BS or MS in Chemistry, Biochemistry, or Biology, along with an interest in pursuing all facets of receptor biology, and a commitment to scientific excellence. Experience with radioligand binding assays and/or second messenger assays is desired. Candidates should have the ability to contribute to a team effort, and a strong desire to discover important new chemical entities that will be the "breakthrough" drugs of tomorrow. ***Please refer to Job #9126-AS-SC on all resumes.***

Join Glaxo and enjoy excellent salaries, flexible benefits, an on-site fitness center, a spirit of enthusiasm and teamwork and outstanding opportunities for career satisfaction. Equally appealing is our world famous scientific, industrial and academic community in Research Triangle Park, NC. Send your resume, ***INDICATING THE CORRESPONDING JOB # NOTED ABOVE,*** *and salary history to:* ***Human Resources Department, Glaxo Inc., P.O. Box 13398, Research Triangle Park, NC 27709.*** *(No Phone Calls or Agency Referrals, Please.) An Equal Opportunity Employer M/F/D/V.*

Glaxo Inc.

SANDOZ RESEARCH INSTITUTE

EXPANDING OUR COMMITMENT TO INNOVATIVE RESEARCH

BIOLOGISTS - ONCOLOGY RESEARCH

Innovative research at Sandoz has been enhancing medicine around the world for over a century. Pioneering drugs have extended and improved the quality of life for countless individuals and revolutionized basic scientific concepts within the transplantation and mental health fields. As a result of a major expansion into oncology research, the Sandoz Research Institute seeks highly motivated and creative scientists. Successful applicants will be part of multidisciplinary teams of biologists and chemists using state-of-the-art technologies in modern, newly-opened research facilities. Position #2380.

Major responsibilities at all levels include contributions to the cancer drug discovery and development process in addition to independent research efforts in oncology. Strong communication skills and participation in team-oriented collaborations are also requisite.

TUMOR BIOLOGIST

Ph.D./M.S./B.S. in the biological sciences with extensive experience (2-10 years) in an industrial/academic setting using tumor models to study the effects of chemical compounds as potential chemotherapeutic agents. The candidate will be responsible for the supervision of individuals in applying tumor models in rodents as part of our preclinical drug discovery program. Position #2381.

BIOCHEMIST/ ENZYMOLOGIST

Ph.D. in Biochemistry with postdoctoral experience (2-4 years) in an academic/industrial setting. The candidate will be responsible for the purification of novel macromolecules, including proteins, as they relate to oncology drug discovery and contribute to efforts related to enzyme assay development as part of our drug screening. The establishment of productive interactions with our medicinal chemistry, molecular biology, drug screening, and protein/peptide structure research groups is required. Position #2382.

MOLECULAR PHARMACOLOGIST

Ph.D./M.D. in Pharmacology with substantial postdoctoral experience (2-10 years) in an academic/industrial research setting. The candidate will be responsible for contributions to drug discovery and development efforts in oncology as it relates to intracellular drug distribution and metabolism. The candidate will also be responsible for the supervision of individuals as part of an interdisciplinary research unit dedicated to drug interaction studies at a molecular and cellular level. Position #2383.

MOLECULAR ONCOLOGIST

Ph.D. in Molecular Biology/ Biochemistry/Cell Biology/Genetics with postdoctoral experience (2-5 years) in an academic/industrial research setting. The candidate will be responsible for identification of novel targets at a molecular level and elucidation of mechanisms central to drug intervention strategies in oncology. Will also be expected to contribute to the development of molecular biology-based drug screens in collaboration with academic partners. Broad knowledge of proteins involved in signal transduction and growth regulation as it relates to the malignant process is required. Position #2384.

RESEARCH SCIENTISTS

M.S./B.S. in the biological sciences with research experience (2-10 years) in an academic/industrial setting. Candidates would contribute to new and ongoing programs in oncology. Several positions are available in research units committed to drug discovery and development programs utilizing animals, tissue culture, biochemical, and molecular approaches. Specific technical skills requirements will be determined by the goals of the research units. Position #2385.

■

Being part of the research team at Sandoz has many advantages. Our salaries and benefits programs are designed to attract top candidates and provide them with the resources to produce their best. Comprehensive health, dental, and savings plans as well as fitness and athletic facilities are all provided at our attractive location in northwest New Jersey, which also allows for outstanding academic, cultural and outdoor pursuits. For consideration, please forward your curriculum vitae, position number, a statement of research interests and the names and addresses of three references to:

SANDOZ PHARMACEUTICALS CORP
SRI Human Resources Department
Building 403/100
East Hanover, New Jersey 07936-1080

An Equal Opportunity Employer M/F/D/V

A Thriving Environment For Research

Amgen is an innovative leader in the discovery, development and marketing of human therapeutics. Our advanced research in biotechnology has resulted in such breakthrough products as EPOGEN® (recombinant human Erythropoietin) and NEUPOGEN® (recombinant human G-CSF).

In addition to exciting, unique challenges, Amgen offers our research staff strong support and opportunities for external collaboration and interaction with peers in the academic community. Moreover, our business success has enabled us to provide our people with the environment and resources to do this critical work.

Due to our success, the following opportunities are available:

RESEARCH SCIENTISTS

Candidates for these positions must have a Ph.D. and at least one year of post-doctoral experience.

PHARMACEUTICS & DRUG DELIVERY

- Position to study drug delivery systems based on tissue targeting. Experience with peptides and proteins would be helpful.
- Position requires an individual with 5 years experience in the synthesis and characterization of polymers for use as either biomaterials or drug delivery systems.
- Position requires experience in the area of protein stabilization and/or formulation of proteins for pharmaceutical use.

AMGEN®

PHARMACOLOGY

- Position available for an Immunopharmacologist with experience with *in vivo* inflammation models.

NEUROBIOLOGY

- Position requires experience in the analysis of the actions of growth factors on cultured neurons.
- Position requires experience developing animal models of human neurodegenerative diseases, particularly models for Parkinson's diseases, Alzheimer's diseases or peripheral neuropathies.

STEM CELL BIOLOGY

- Cell/Molecular biologist or biochemist with experience in receptor biology, hematopoiesis growth and differentiation.

INFLAMMATION

- Cell Biologist to develop and expand projects in the discovery and characterization of molecules involved in leukocyte trafficking and activation. Experience with cellular adhesion molecules, *in vitro* assays and monoclonal antibodies required.

PROTEIN CHEMISTRY

- Position requires experience in stability of biologically active proteins. Understanding of parenteral formulation of protein pharmaceuticals would be helpful.
- Position requires experience in the micro-purification, characterization and sequencing of proteins and peptides required. Familiarity with HPLC, SDS/IEF PAGE, chemical modification and computers is essential. Experience in mass spectrometry of proteins and oligosaccharide characterization of glycoproteins is desirable.

RESEARCH ASSOCIATES

Candidates for these positions must possess a Bachelor's degree in a related discipline.

MOLECULAR/CELL BIOLOGY

(Post-doctoral positions also available)

- Positions to maintain tissue culture, transfect cell lines, perform various assays and carry out ELISA studies. Must be familiar with DNA/RNA techniques, DNA cloning, DNA library construction and screening, Southern, Northern and Western blot, PCR, DNA sequencing and gene expression, Gel electrophoresis (SDS and Agarose).
- Position for individuals with experience in transgenic mice and embryonic stem cell studies.

PROTEIN CHEMISTRY

- Individual will carry out protein studies, purify and characterize proteins and perform protein sequencing, spectrophotometry, chromatography and separation techniques.

PHARMACEUTICS & DRUG DELIVERY

- An opportunity to carry out surgical techniques in animal models, perform blood assaying (for WBC and hematocrit), ELISA, SDS-PAGE and run statistical studies of results.

STEM CELL BIOLOGY

- Positions for a cell/molecular biologists or biochemists with experience in receptor biology, hematopoiesis growth and differentiation.

If you have the necessary qualifications and would like to be part of an organization that places its highest value on the contributions of its people, send your CV with position applied for to: **Amgen, Inc.**, Staffing Department (Mail Code 10-1-A-411), Job Code #S-200, Amgen Center, Thousand Oaks, CA 91320-1789. Amgen is an Equal Opportunity Employer.

WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

STAFF SCIENTIST POSITIONS

The opening of the Axelrod Institute for the study of infectious disease reflects the continuing commitment of the Wadsworth Center to molecular medicine. This expansion provides exciting employment opportunities within the Center, a multidisciplinary basic research and public health laboratory. Centralized core technical facilities in biochemistry and ultrastructure, immunology, molecular genetics, and information resources ensure state-of-the-art equipment and laboratory services. The staff positions are in both research and service-related functions. Research staff are expected to develop strong independently funded programs. Participation in the graduate program of the School of Public Health of the State University of New York, which is housed at the Wadsworth Laboratories, provides opportunity for academic interaction and involvement in graduate education.

MOLECULAR, CELL AND DEVELOPMENTAL BIOLOGISTS

Candidates with expertise in molecular biology are sought to fill several positions. One opening is for an individual interested in studying regulation of gene expression in phage/bacterial or yeast systems. Candidates should have experience in microbial genetics, nucleic acid-protein interactions, genetic recombination, splicing and/or molecular evolution. A second position is available for someone interested in cell cycle regulation, membrane signaling and transport, or protein translation in mammalian cells. Expertise in protein expression and *in vitro* cellular reconstitution systems (especially oocyte) is desirable. A third position is available for a developmental biologist working in a non-mammalian system with well-defined genetics and a sophisticated developmental program. The Center is also interested in candidates experienced in studying the regulation of human cytochrome P450.

Search Committee Chairpersons: Dr. Carmen Mannella and Dr. Marlene Belfort

CELLULAR IMMUNOLOGISTS

The Center is particularly interested in attracting candidates in basic research to apply cellular and molecular approaches to the study of lymphocyte activation, interaction and/or regulation, and to interact with established groups in virology, cell biology, biochemistry and molecular genetics. Experience in flow cytometry and/or cytokine assays is desirable. Special opportunities are available for collaborative study pertaining to the immunobiology of HIV-1 infection and AIDS.

Search Committee Chairperson: Dr. Donal Murphy

NMR SPECTROSCOPIST

Candidates should be skilled in 1D and 2D homonuclear proton NMR techniques and prepared to apply the emerging 2D, 3D and 4D ^{15}N-^{13}C-heteronuclear-edited NOESY methodology to biological problems in the health sciences. The incumbent may interact with Center investigators studying oligosaccharide conformation and protein folding. Interaction with the X-ray crystallography and mass spectroscopy facilities is highly encouraged.

Search Committee Chairperson: Dr. Robert Trimble

INFORMATION RESOURCES COORDINATOR AND COMPUTER SUPPORT PERSONNEL

The Center seeks an individual with an extensive background in electronic data processing/system analysis and with management skills. The selected individual will supervise system analysts, and data-base management and networking specialists to: (i) develop and manage a computer core facility supporting both basic research and service functions, and network core technical facilities in biochemistry, immunology and molecular genetics; (ii) support and advise individual laboratories that provide State-mandated clinical and proficiency testing services; (iii) coordinate acquisition of hardware and software by directors of different units, to establish and maintain an integrated computational infrastructure with shared access.

Entry-level positions for network, PC and software support are also available.

Search Committee Chairperson: Dr. Joachim Frank

CLINICAL GENETICIST

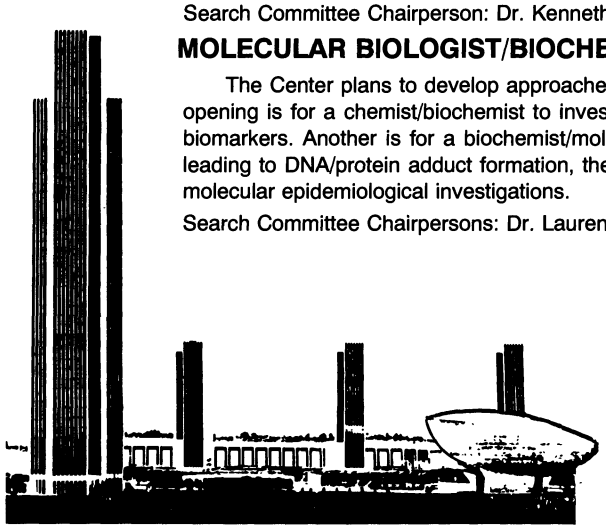
A clinical geneticist is sought with experience in molecular analysis of human diseases. The position requires expertise in all aspects of DNA analytical procedures. The individual will interact with the medical community to provide diagnostic reports and regulatory oversight of clinical genetics laboratories.

Search Committee Chairperson: Dr. Kenneth Pass

MOLECULAR BIOLOGIST/BIOCHEMIST/CHEMIST FOR MOLECULAR EPIDEMIOLOGY

The Center plans to develop approaches to environmental disease using biomarkers of xenobiotic exposure. One opening is for a chemist/biochemist to investigate the chemistry, analysis, and application of DNA/protein adducts as biomarkers. Another is for a biochemist/molecular biologist to use molecular techniques to investigate the processes leading to DNA/protein adduct formation, the consequences of adduction, and/or the incorporation of adduct data into molecular epidemiological investigations.

Search Committee Chairpersons: Dr. Laurence Kaminsky



- **Positions available immediately**
- **Salaries competitive and commensurate with level of appointment.**
- **Candidates with a doctoral degree and at least three years' post-doctoral experience should send applications by October 15th with the names of three references to the appropriate search committee chairperson at:**

Wadsworth Center for Laboratories and Research
New York State Department of Health
Empire State Plaza, P.O. Box 509
Albany, NY 12201-0509

POSTDOCTORAL POSITIONS

THE WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

Postdoctoral positions are available immediately in grant funded research programs in molecular biology with the following investigators at the Wadsworth Center:

- **Dr. Paul Masters. Molecular biology of coronaviruses**. Ongoing projects involving viral RNA-protein interactions, nucleocapsid assembly, mutant characterization and engineered genetics of the largest known RNA virus. Prior experience in virology or molecular biology is desirable.

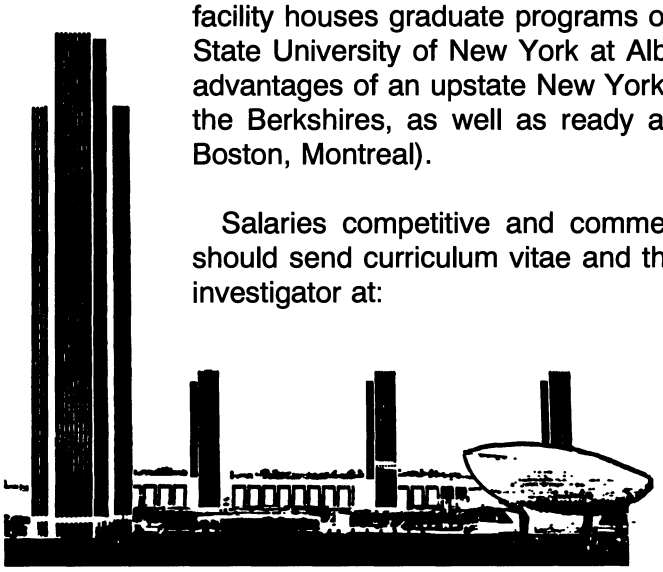
- **Dr. Lorraine Flaherty. Molecular genetics of the mouse genome**. Characterization, mapping and cloning of mouse genes which, when mutated, result in abnormalities such as polycystic kidney disease, deafness, cerebellar dysfunction, and facial malformation.

- **Dr. David Anders. Molecular genetics and biochemistry of human cytomegalovirus DNA replication**. Candidates should have training in either molecular biology, virology, protein biochemistry, or eukaryotic expression systems.

- **Dr. Marlene Belfort. Mobile self-splicing introns**. Analysis of self-splicing RNAs and DNA-based intron mobility in prokaryotes using genetic and biochemical approaches. Experience in protein and/or nucleic acid chemistry, genetics desirable.

- **Dr. Janet Keithly. Molecular biology of parasitic protozoa**. Two positions available: (1) Molecular mechanisms of drug resistance. Characterization of mutants and gene expression related to drug resistance of haemoflagellates. (2) Molecular analysis of waterborne protozoa. Development of molecular probes for *Giardia* subspecies, and identification of metabolic targets for chemotherapy of *Cryptosporidium*. Prior experience in molecular biology required.

The Wadsworth Center is a well-staffed research institute with centralized, state-of-the-art core resources in molecular genetics, immunology, biochemistry, electron microscopy, structural analysis, and information/computer sciences. This unique facility houses graduate programs of the Department of Biomedical Sciences of the State University of New York at Albany. Albany offers the cultural and recreational advantages of an upstate New York community in proximity to the Adirondacks and the Berkshires, as well as ready access to major metropolitan areas (New York, Boston, Montreal).



Salaries competitive and commensurate with experience. Interested applicants should send curriculum vitae and the names of three references to the appropriate investigator at:

Molecular Genetics Program
Wadsworth Center for Laboratories and Research
New York State Department of Health
Empire State Plaza, P.O. Box 509
Albany, NY 12201–0509

September 18, 1992

THE REPLIGEN REPORT

VOLUME 6

Cambridge, Massachusetts, home to Harvard and MIT and just across the Charles River from Boston, is the site of one of the country's largest concentration of biotechnology firms. Repligen, located in East Cambridge, is a major player in this industry and area and has always been noted as a company on the leading edge in research committed to healthcare. Over the past year, results from our research have allowed us to identify product candidates for the prevention and treatment of AIDS and for the treatment of cancer and acute inflammation. In addition to several new research projects in the inflammation area, we have also recently begun clinical trials on our anticancer compound. The years ahead promise many new and exciting challenges for people seeking a research environment that rewards initiative and recognizes achievement. If you're looking for a biotech company that's going places, join us today.

In addition to the positions listed below, we have opportunities for experienced individuals with a BS, MS or PhD in a Biological Science, Chemistry, or Chemical Engineering.

GROUP LEADER/PRINCIPAL INVESTIGATOR

This person will direct the development and scale-up of the purification process of one of our lead E.coli expressed recombinant proteins for clinical applications. Requirements are a PhD and 5 years' experience in scale-up purification of recombinant proteins expressed in E.coli, industrial process development and knowledge of cGMPs. **Att: Joan Curtice**

ASSOCIATE SCIENTIST

We are seeking a person to be responsible for the fermentation development and scale-up of production of recombinant proteins in E. coli; operation of bench-top fermenters, media optimization, design of control strategies, and evaluation of protein expression levels. Past experience with batch fed fermentation of recombinant E. coli is highly desirable. A PhD in Biochemical Engineering or Microbiology; or a BS/MS with at least 4 years' experience in fermentation development is required. **Att: Joan Curtice**

ASSOCIATE SCIENTIST

We are seeking a candidate to develop stable formulations for Repligen's monoclonal antibody products to: conduct pre-formulation characterization studies; set up stability studies and provide technical support to manufacturing for formulation and filling of final products. A PhD in Pharmaceutical Science or related discipline with 1-2 years' experience is desirable. **Att: Joan Curtice**

ASSOCIATE SCIENTIST

This person will conduct the complete structural characterization of clinical monoclonal antibody products. Emphasis will be on carbohydrate composition analysis, identification of glycosylation sites and other site-specific modifications by peptide mapping. Broad experience with chemical enzymatic digestions and/or mass spectrometry experience a plus. A PhD plus 0-3 years' experience required. **Att: Ed Bocko**

ENZYMOLOGIST/BIOCHEMIST

Amira, Inc., a subsidiary of Repligen Corporation, is a dynamic and rapidly growing biotechnology company founded by scientists from MIT and Harvard Universities. Amira's initial discoveries include small molecule therapeutics that inhibit the growth of neuroendocrine-derived tumor cells and block the replication of DNA viruses.

Currently, we are searching for a talented Enzymologist/Biochemist who can contribute to the evaluation of mechanisms of action of identified lead compounds. Knowledge in the area of signal transduction and intermediary metabolism is desirable. Applicants must have a PhD and appropriate postdoctoral experience. **Att: Barbara Fleming**

Repligen offers competitive salaries, benefits and equity participation. Please submit or FAX a cover letter, CV and references to the appropriate recruiter (as noted above) at: Repligen Corporation, One Kendall Square, Building 700, Cambridge, MA 02139. FAX: (617) 494-1786. An Equal Opportunity Employer, M/F/D/V.

Visit us at one of the following job fairs /conference:
9/25 - 9/26 Career Connection - Cambridge, MA
10/2 - 10/3 Career Connection - La Jolla, CA
11/16 and 11/17 American Society for Cell Biology - Denver, CO

RepliGen

At Johnson & Johnson Medical Inc., we've made it our business to provide the highest quality products to the health care industry. Our continued growth presents a challenging opportunity for a creative individual to play a leading role in the identification of new product opportunities in hemostasis.

SR. RESEARCH ASSOCIATE

Hemostasis Product Development

As a Product Development Scientist, the selected candidate will participate in technology assessment, design and conduct appropriate in vitro and in vivo studies, and develop formulations geared towards novel hemostasis products for use in medical and surgical procedures.

Qualified applicants should possess a Ph.D. in Biochemistry or related discipline and have a minimum of three years experience. Extensive knowledge of the molecular basis of blood coagulation is essential, as are excellent communication skills and the desire to work and succeed in a multi-disciplinary team environment. Experience in product development or drug discovery with supervisory responsibility is highly desirable.

We offer an excellent benefits package, competitive salary, as well as a professionally challenging environment. Candidates interested in this opening in the Dallas / Fort Worth area should forward resume with salary history, in complete confidence to: Johnson & Johnson Medical Inc., Attn: Human Resources, 2500 Arbrook Blvd., Arlington, TX 76014.

An Affirmative Action Employer, M / F / D / V

Johnson & Johnson

MEDICAL INC.

"Minorities in Science... A Search For Solutions"

13 November Issue
Cover Story in Science

In a first-time cover story, the 13 November issue of Science explores the complex problems and obstacles facing minorities as they work and compete in the scientific community.

Highlights include:

Affirmative Action Programs
Career Profiles
Barriers Facing Minorities
The Search For Solutions

Benefits of Advertising in This Special Issue:

•**More Visibility.** Strategically located in the main body of the magazine, next to career- related editorial. •**Harvey Research Study** measures reader awareness and retention of your ad.

Bonus Distribution:

Reprints distributed to: Minority Access to Research Centers •Minority Biomedical Research Support Program •National Hispanic Leadership Conference•National Network of Minority Women in Science•National Organization for the Advancement of Black Chemists and Chemical Engineers •National Puerto Rican Coalition •National Technical Association. *In addition to these organizations, many more will receive this section for use through mailings and at meetings.*

Don't miss this first time advertising opportunity!
Contact Janis Crowley at (212) 496-7704.

Space Reservation Deadline: Tuesday, October 27

xplore new areas of research in neurobiology...

Regeneron Pharmaceuticals, Inc. is committed to the development of new strategies, especially the use of novel nerve factors, for the treatment of devastating neurological disorders such as Alzheimer's, Parkinson's, Huntington's and Lou Gehrig's disease. Several positions are available for experienced, career-oriented Research Assistants:

RESEARCH ASSISTANT-

with experience in stereotaxic surgery and the evaluation of surgical and chemical models of neurodegenerative diseases/brain injury to assist as a team member in studies using behavioural, biochemical and histological approaches to evaluate novel therapeutic agents in vivo. Experience in HPLC, neurochemical assays, behavioural studies, and ligand binding assays is desirable.Famliiarity with image analysis systems and routine microscopy is preferred. BIN TA.

RESEARCH ASSISTANT-

with experience in primary neuronal tissue culture and biochemical/neurochemical assays to assist in vitro studies evaluating the biological properties of novel neuronal growth factors.Specific experience in radioenzymatic assays, mRNA and protein analysis and immunocytochemistry of cultured cells is desirable. BIN VW.

RESEARCH ASSISTANT-

A B.S. Degree in Biology is required along with 1-2 years' experience, preferably in Histology (Neurohistology a plus). Exposure to molecular biology techniques, in situ hybridization, and work with radio and non radio-labeled techniques are prerequisites. BIN SW.

Regeneron's modern facility is located on an expansive wooded campus in Westchester County, 25 miles north of Manhattan. The highly collaborative and supportive Regeneron community offers considerable scientific and professional growth potential and a competitive compensation package. Please send your resume and a cover letter indicating your research experience and interests, immediate career goals, desired starting date, salary expectations, and indicating appropriate Bin #, with the names of 2 or more references to: Human Resources Dept.,Regeneron Pharmaceuticals, 777 Old Saw Mill River Road, Tarrytown, N.Y. 10591-6707.

REGENERON

Pharmaceuticals, Inc.

Equal Opportunity Employer M/F

Synergen is a research-based biopharmaceutical company engaged in the discovery, development and production of protein-based human pharmaceuticals. Synergen's recombinant technology focuses on naturally occurring human proteins that regulate body processes associated with disease.

Synergen is working to further scientific understanding of how the human body responds to inflammation, injury and disease, in order to produce pharmaceuticals that reduce mortality and help people who have illnesses that currently have no satisfactory treatment.

We are currently conducting Clinical Trials, Phases I through III, for several promising compounds and are now ready to manufacture in our new commercial scale manufacturing plant.

This is difficult, challenging and exciting work. Highly qualified people are drawn to Synergen, attracted by the science, energy, values, and informal collegial work environment.

Synergen is located in Boulder, Colorado, a university community just 30 minutes north of Denver and an hour from Rocky Mountain National Park. The area's mild sunny climate fosters an active, casual lifestyle in a community that respects education and technology.

Currently, and in the near future, staffing needs include:

- **Scientists and Research Associates**
  - Discovery
  - Formulation
  - Pharmacology
  - Pharmacokinetics
  - Toxicology
  - Analytical Biochemistry
  - Process Development
- **Manufacturing**
  - Director
  - Engineer
- **Clinical Research**
  - Biostatistician
  - Medical Writers
  - Data Management

To be considered for a position at Synergen, please send your resume/C.V. to: **Employment Manager, Box SCS, Synergen, Inc., 1885 33rd Street, Boulder, CO 80301**. We are an Equal Opportunity Employer.

Synergen, Inc.

Public Announcement Regarding a New Research Project on DNA Analyses for Photosynthetic Microorganisms and Information Processing for DNA

Announced by the New Energy and Industrial Technology Development Organization on September 17, 1992

In order to promote the research of global environmental technology and industrial technologies, the New Energy and Industrial Technology Development Organization (NEDO) would like to inform all interested companies and research organizations regarding the research project described below. This new project is being undertaken as part of the Research and Development Program on Industrial Technology for Protection of the Global Environment and The National Research and Development Program of the Ministry of International Trade and Industry of Japan.

Theme of the Research Project

"DNA Analyses for Photosynthetic Microorganisms and Information Processing for DNA"

Outline of the Research Work to be Entrusted

In order to contribute to the solution of global environmental problems by studying the carbon dioxide fixation function of microorganisms, NEDO plans to conduct the research project on "DNA Analyses for Photosynthetic Microorganisms and Information Processing for DNA"

The entrusted research work relates to "technologies for effectual DNA base sequence analyses of photosynthetic microorganisms and for systematic information processing of DNA and its related compounds."

Procedures for Application

(1) Qualification Criteria

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

1. The applicant must have previous research and development experience in the field covered by or related to the project and possess the organizational structure, human resources and research facilities required to carry out the project work.
2. The applicant must be in sound financial condition and have the ability to manage its finances and facilities as necessary to smoothly carry out the project work.
3. The applicant must be able to comply with NEDO's instructions, 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 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 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: Friday, October 2, 1992

Time: 14:00 to 15:00

Place: NEDO's Head Office
Sunshine 80 Building, 28th Floor, Room 28-11
1-1, Higashi-Ikebukuro 3-chome
Toshima-ku, Tokyo 170

(3) Further Information

For further information regarding the research 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
Sunshine 60 Building, 28th Floor
1-1, Higashi-Ikebukuro 3-chome
Toshima-ku, Tokyo 170 Japan
Telefax: 03-5992-1184

Feedback

OK, we've shown you that we listened to your requests on last year's survey form. So please take a few minutes to fill out this year's questionnaire so we can improve next year's product. Then mail the completed form to: Constance Holden, c/o *Science*, 1333 H St., NW, Washington D.C. 20005. Or fax it to her at 202-408-8015.

Please rate the following sections:

	Excellent	Good	Fair	Poor	Didn't Read
Industry Trends	5	4	3	2	1
Real Life: Biotech	5	4	3	2	1
Real Life: Physics	5	4	3	2	1
Real Life: Environmental Science	5	4	3	2	1
Real Life: Postdocs	5	4	3	2	1
Real Life: European Postdocs	5	4	3	2	1
Real Life: Alternate Pathways	5	4	3	2	1
AAAS Careers Survey	5	4	3	2	1
Primer: Foundations	5	4	3	2	1

In what sector are you employed?

1	College/university	**5**	Nonprofit	**9**	Retired
2	Industry	**6**	Self-employed	**10**	Other
3	Government	**7**	Student		
4	Hospital	**8**	Postdoc		

Salary (optional & strictly confidential)

1	$29,999 or less	**4**	$50,000-59,999	**7**	$80,000-89,999
2	$30,000-39,999	**5**	$60,000-69,999	**8**	$90,000-99,999
3	$40,000-49,999	**6**	$70,000-79,999	**9**	$Over 100,000

Personal Information (confidentiality guaranteed)

Name and Title _____

AAAS Member _____ (check if yes)

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Address _____

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Your primary scientific discipline _____

Highest earned degree _____

Age _____

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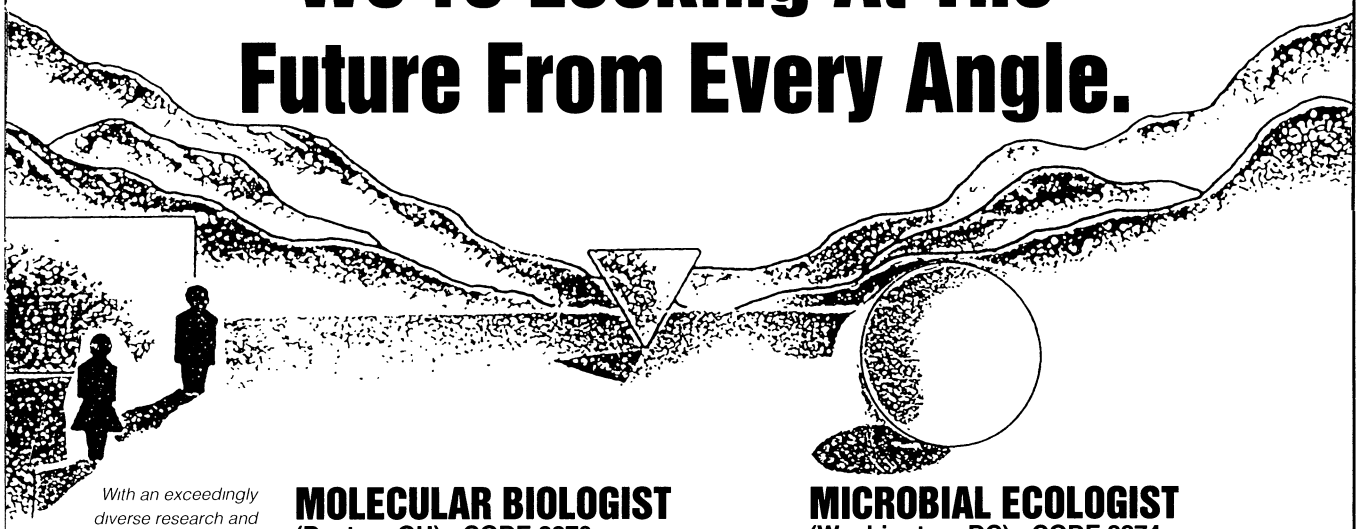

With an exceedingly diverse research and technology base, GEO-CENTERS, INC , is meeting the future head on We're making exceptional advances in fields such as immunology, molecular biology, and physiology As a leader in medical technology, flexibility is the key to our success Market demand, financial stability and technological strength — we've got every angle covered for continued growth and outstanding technical achievement

MOLECULAR BIOLOGIST
(Dayton, OH) - CODE 2270

A POSTDOCTORAL LEVEL scientist is sought to support a research effort designed to apply molecular biological and genetic methods to toxicological studies. The successful candidate will design a research effort to investigate target tissue/cell effects resulting from xenobiotic chemicals. The ideal candidate will possess a recent Ph.D. in Molecular Biology or a related field, with extensive documented experience in DNA and RNA extraction, electrophoresis, sequencing, construction of oligo probes/primers, Northern and Southern blotting, PCR, construction of genomic libraries, and design of plasmid vectors for cell transfection. Familiarity with the application of these methods to the study of the mechanisms of chemically-induced carcinogenesis is highly desired.

COMPUTATIONAL CHEMIST
(Dayton, OH) - CODE 2271

A POSTDOCTORAL LEVEL scientist is sought to assist in establishing an aggressive program in computational chemistry specifically directed towards predictive toxicology. The goal of this program is to develop the abilities to perform predictive toxicology computations on Air Force and DoD relevant chemicals to assess human and environmental risks. To qualify, the candidate should have a Ph.D. in a relevant field, with 1-3 years of demonstrated practical experience in computational chemistry with emphasis in quantitative structure-activity relationships (QSAR) relating to biological activity and physiochemical descriptors. The successful candidate will also be required to provide technical assistance and support in computational chemistry to other technical staff. Additional training and knowledge in mammalian biology/physiology, environmental technology and pharmacokinetic parameters would be desirable but not mandatory.

MICROBIOLOGIST
(Frederick, MD) - CODE 2272

A M.S./Ph.D. level candidate is sought to assist in the identification, isolation, and characterization of enzymes for bioremediation applications. The successful candidate will have an appropriate educational background, with demonstrated practical experience in culture methods, enzyme characterization, and possess extensive hands-on experience with HPLC and FPLC methods and instrumentation.

BIOCHEMIST
(Frederick, MD) - CODE 2273

A M.S./Ph.D. level candidate is sought to assist in the synthesis and characterization of proteins, peptides, biopolymers, catalysts, biological probes, and other model compounds for hazard studies. The successful candidate will possess extensive protein synthesis experience, as well as demonstrated skills in sequencing methods and instrumentation.

MICROBIAL ECOLOGIST
(Washington, DC) - CODE 2274

A Senior Staff level candidate is sought to assist in the development of a research effort to investigate enzymatic degradation of hazardous materials. The successful candidate will possess a Ph.D. in Microbial Ecology or Microbiology. with five years of specific experience in the purification and characterization of proteins for bioremediation applications. The candidate will be expected to have an extensive relevant publication record.

PHYSIOLOGIST
(Washington, DC) - CODE 2268

A M.S./Ph.D. level candidate is being sought to conduct research whose emphasis will be on the evaluation of novel therapies to protect or improve cardiovascular and organ functions in septic shock, and the development of suitable treatment modalities. The ideal candidate will possess a minimum of three years of relevant R&D experience, with specific expertise in the development of new methods for monitoring tissue perfusion and oxygenation.

MOLECULAR BIOLOGIST
(Washington, DC) - CODE 2269

A M.S./Ph.D. level candidate is being sought to conduct research in the evaluation of the abnormalities occurring in endothelial and smooth muscle cells in septic shock, with a concentrated effort in determining alteration in gene expression in this system. The successful candidate will possess a minimum of three years of relevant R&D experience, with specific knowledge of the techniques for production of probes for antisense and *in situ* hybridization, gene cloning, and sequencing.

RESEARCH SUPPORT STAFF
(Various Locations) - CODE 2240A

B.S./M.S. level staff members are being sought to support our research and development efforts throughout the country. Fields of specific interest include molecular biology, microbiology, physiology, and biochemistry. Candidates should possess a minimum of two years of post-graduate practical experience. Applicants should specify their geographic preferences, if any, and their specific fields of interest and expertise.

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1993 McKNIGHT NEUROSCIENCE SCHOLARS AWARDS

The McKnight Endowment Fund for Neuroscience is soliciting applications in preparation for awarding McKnight Scholars Awards which commence July 1, 1993.

The McKnight Scholars Awards were initiated in 1976 to stimulate research in neuroscience especially as it pertains to memory and, ultimately, to a clearer understanding of diseases affecting memory. Over the years this mandate has been interpreted broadly to permit support of work in many relevant areas of neuroscience. The McKnight Endowment Fund for Neuroscience administers its awards programs through a Board of Directors comprised of eminent scientists and representatives from the Board of Directors of The McKnight Foundation which is the source of the Endowment Fund.

Up to six 1993 McKnight Scholars will be selected from applicants who hold the M.D. and/or Ph.D. degree and have completed formal postdoctoral training. Candidates should have demonstrated meritorious research in areas pertinent to the interests of The McKnight Endowment Fund for Neuroscience and should be in the early stages of establishing their own independent laboratory and research career. Candidates must be citizens or lawful permanent residents of the United States. Award payments will be made directly to a sponsoring institution which must be located within the U.S.

Each McKnight Scholars Award provides $40,000 annually in 1993, 1994 and 1995. Funds may be used in any way that will facilitate development of the Scholar's research program. Funds may not be used for indirect costs.

Applications will be evaluated by a review committee which will recommend to the Board of Directors of the Endowment Fund candidates for appointment. Award announcements will be made on or before May 15, 1993.

Potential applicants should write or call the office of The McKnight Endowment Fund for Neuroscience to request application forms and guidelines. Completed applications must be postmarked no later than January 2, 1993.

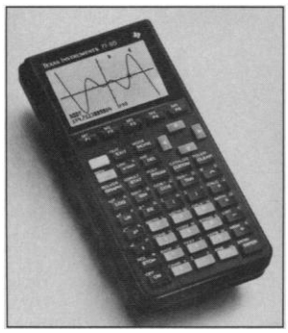
THE McKNIGHT ENDOWMENT FUND
FOR NEUROSCIENCE
600 TCF Tower • 121 South Eighth Street
Minneapolis, Minnesota 55402
Telephone: 612-333-4220

Gel for Point Mutation Screening

Hydrolink MDE (mutation detection enhancement) Gel is designed to screen DNA for point mutations without requiring complex chemical gradients or expensive apparatus. Used with simple, nondenaturing electrophoretic techniques, resolution in the gel is based on conformational differences in either double-stranded molecules or single-stranded DNA. The gel is designed for use by genetic researchers looking for simpler techniques for screening large amounts of DNA. AT Biochem. Circle 86.

Problem-Solving Calculator

The TI-85 Graphics Calculator combines the engineering functionality of an advanced scientific calculator with the visual problem-solving approach of a graphics calculator in a hand-held unit. The calculator has a substantial amount of software built in, so it can be



used to perform quick investigations and test a variety of problem-solving strategies. For more sophisticated problems, users can evaluate the calculator's results to determine which in-depth analyses to perform on larger computing platforms ranging from personal computers to mainframes. Texas Instruments. Circle 87.

DNA Purification Kit

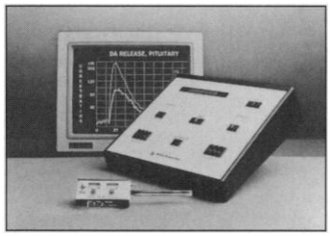
BaseBinder, a silica-based capture reagent for recovery of small quantities of genomic DNA, is now available in kit form. The BaseBinder kit eliminates variability in manual DNA purification, allowing consistent recovery of high-purity DNA. Because the kit is designed for small samples, DNA can be extracted from microliter quantities of whole blood, blood stains, submilligram quantities of tissues, cell samples containing less than a million cells, tumor aspirates, and many other sample types. DNA binds noncovalently to BaseBinder in high ionic strength solutions. This enables easy washing and isolation of the purified DNA, which rapidly elutes from BaseBinder in low ionic strength solutions. Applied Biosystems. Circle 88.

Cell Culture Additive

Glutamine-Penicillin-Streptomycin Solution provides a convenient way to add these substances to cell culture media. Each vial contains 200 mM L-glutamine with 10,000 units of penicillin and 10 mg of streptomycin per milliliter in 0.9% sodium chloride. It is sterile, endotoxin-tested, and cell culture–tested. One vial of solution suffices for one 500-ml bottle of media. Sigma Cell Culture. Circle 89.

Automated Neurotransmitter Analyzer

The IVEC-10 analyzer provides an automated, rapid, in situ means of measuring the neurotransmitters dopamine, serotonin, and norepinephrine with microelectrode technology. It offers the advantages of both chronoamperometry and fast cyclic voltammetry. The IVEC-10 combines the speed, selectivity, sensitivity, and flexibility needed to measure monoamines. Sampling is local and frequent. Unlike slower microdialysis techniques, IVEC-10 voltage protocols measure monoamines in real time. Unique oxidation and reduction current waveforms identify each molecular composition. Detection limits are in the 10^{-8} M range. Medical Systems Corp. Circle 90.



Polyclonal Antibodies

Two rabbit polyclonal antibodies to p561*lck* recognize different epitopes. p561*lck* is a tyrosine protein kinase that forms complexes with CD4 and CD8 in T lymphocytes and natural killer cells. Cambridge Research Biochemicals. Circle 91.

A rabbit polyclonal antibody is available to *trk*, which belongs to the family of tyrosine protein kinase receptor molecules. Cambridge Research Biochemicals. Circle 92.

A rabbit polyclonal antibody is available to the retinoblastoma gene product, a nuclear phosphoprotein thought to regulate cell proliferation. Cambridge Research Biochemicals. Circle 93.

Slot Blotter

The BIOSPOT Slot Blotter can simultaneously process up to 48 DNA, RNA, or protein samples in a slot format on membranes. The unit is made from temperature- and chemical-resistant Delrin, which will not warp or crack under normal operating conditions, unlike acrylic units. A novel three-part design makes assembly quick and easy. The unit measures 5.3 by 6.8 by 2.6 inches. Slot size is 0.8 by 7 mm, and well capacity is 500 μl. BIOS Laboratories. Circle 94.

Literature

The Age of Truly Affordable Electronic Gas and Liquid Flow Sensors, Flowmeters and Flow Controllers Has Arrived!!! is a 20-page catalog featuring a full line of these instruments. McMillan Co. Circle 95.

The Endotoxin Pollution Solution is a brochure on the END-X B15 endotoxin removal device, which combines the specificity and performance of affinity separation with the ease of microcentrifugation. Associates of Cape Cod. Circle 96.

Pharmacia LKB Biotechnology Consumables Catalogue 1992 features a range of consumables, including prepacked columns and media for standard and high-performance liquid chromatography, an extensive selection of electrophoresis precast gels and chemicals, and a full range of cell biology products. Pharmacia Biotech Europe. Circle 97.

Shodex PAK: Packed Columns for HPLC is a 16-page brochure highlighting analytical and preparative columns for high-performance liquid chromatography, with guides for column selection and applications. JM Science. Circle 98.

Issue 3 of *Second Messenger* includes 19 different monoclonal and polyclonal antibodies to neurofilament proteins and a detailed selection guide to help researchers select the most appropriate antibody for their purpose. Affiniti Research Products Ltd. Circle 99.

Tools for Glycobiology is a catalog that includes glycobiology research kits, oligosaccharides and their conjugates, glycosidases and glycosidase inhibitors, and an extended range of analytical and custom synthesis services. Oxford GlycoSystems. Circle 100.

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