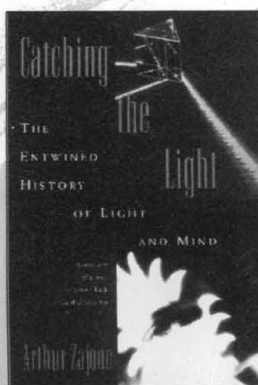


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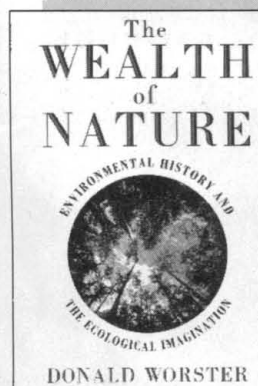
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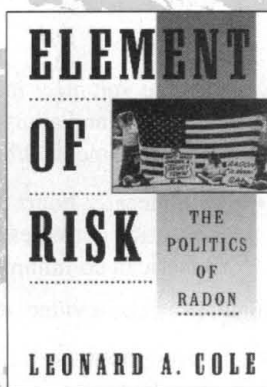
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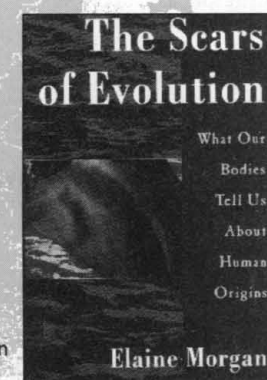
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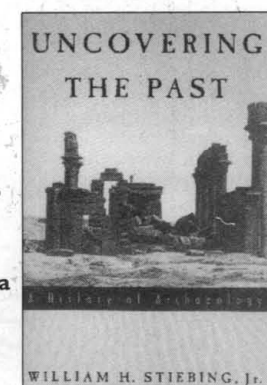
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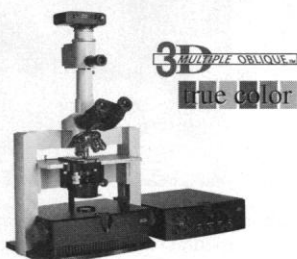
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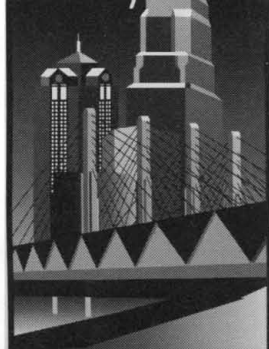
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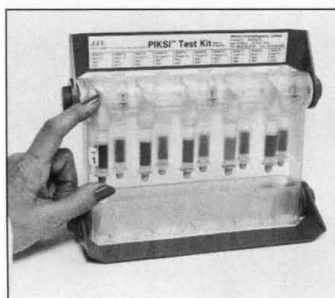
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## Sequence Analysis Software

MacDNASIS 3.5 is an accelerated sequencing software program that provides an easy user interface for analyzing large amounts of research data on the Apple Power Macintosh. The new release runs DNA and protein sequence analyses orders-of-magnitude faster than the previous version. Accelerated functions include RNA secondary structure prediction, homology search, and multiple sequence alignment. Users can access genetic information on Hitachi Software's CD-ROM, CD-DATA, which include the GenBank, EMBL, NBRF-PIR, SWISS-PROT, and Prosite databases. **Hitachi Software Engineering America. Circle 140.**

## Antibodies

Six new monoclonal antibodies to mouse adhesion markers VCAM-1, VLA-4, MAC-1 (CD11b), CD11a, ICAM-1, and CD44 are available as purified

antibody and most are available conjugated to FITC, R-PE, or biotin. They can be used in cell adhesion assays, immunohistochemistry, flow cytometry, and functional studies. **Antigenix America. Circle 141.**

Nine antibodies to tubulins include specificities to tubulin,  $\alpha$ -tubulin,  $\beta$ -tubulin,  $\beta$ -tubulin I+II,  $\beta$ -tubulin III, acetylated tubulin, and tyrosine-tubulin. Both monoclonal and polyclonal antibodies are available. The antibodies can be used in immunofluorescence, immunohistochemistry, immunoblotting, enzyme-linked immunosorbent assay, immunoprecipitation, and radioimmunoassay. **Sigma Immunochemicals. Circle 142.**

## Automated Immunostaining System

The TechMate Automated Immunostaining System, featuring menu-driven software and optimized chemistry, offers laboratories increased throughput and enhanced reproducibility. The system can perform a full range of routine tests and advanced techniques simultaneously such as immunostaining and in situ DNA hybridization. **Curtin Matheson Scientific. Circle 143.**

## Fluorescent Latex Microspheres

TransFluoSpheres Latex Beads are fluorescent latex microspheres that incorporate a series of two or more dyes carefully chosen to allow energy transfer between the dyes. This strategy produces microspheres with extremely large Stokes shifts. These beads should prove superior in applications in which standard latex microspheres are currently used, such as detecting cell surface an-

tigens, tracing neurons, and studying phagocytosis. The large Stokes shifts exhibited by these spheres eliminate many of the problems related to cellular autofluorescence and other background contributions. They are available with an excitation maximum at 488 nm and emission maxima at 560, 605, 640, 685, or 720 nm. **Molecular Probes. Circle 144.**

## Mini Hybridization Oven

The Mini AutoBlot Hybridization Oven has the smallest footprint in the industry, according to the manufacturer. Designed for fast and convenient DNA to DNA and DNA to RNA hybridization, it measures only 16 1/4 inches wide by 12 1/4 inches high



by 13 1/2 inches deep and weighs 44 pounds. It features a removable six-position rotisserie, variable speed control, and state-of-the-art microprocessor control. **Bellco Glass. Circle 145.**

## Personal Thermal Cycler

The Omn-E is a small thermal cycler that incorporates a high level of functionality, including the ability to accommodate 96-well plates. It is available in a choice of block format: the MicroBlock, for 96 0.2-ml tubes or a single 96-well plate, and the OmniBlock, for 48 0.5-ml tubes

or a single 96-well plate. The Mon-E can provide full active tube control (ATC) or simulated tube control (STC). ATC features a dedicated thermistor probe located in a normal sample tube to continually monitor reaction temperature and feedback information to the microprocessor. STC is a software algorithm that, once a calibration factor has been entered, enables precise control of reaction temperature. The unit's memory can store many programs for future reference. **Hybaid. Circle 146.**

## Literature

*Oncogene mRNA Profiling Using Fluorescent Quantitative PCR* is an application note that explains how, using synthetic internal polymerase chain reaction (PCR) standards and fluorescent labeling, oncogene mRNA labels can be measured as a percentage of total cellular mRNA. The method described takes fewer steps and less time than previous methods, and allows absolute quantitation of mRNA so results from different experiments can be compared. **Molecular Dynamics. Circle 147.**

*PC Systems Handbook For Scientists and Engineers, Volume One: Data Acquisition* is a 100-page tome of hard-to-find personal computer accessories. **CyberResearch. Circle 148.**

*Laboratory Glassware Washers* contains 18 pages of these appliances, including the redesigned FlaskScrubber and SteamScrubber. **Labconco. Circle 149.**

*VG Platform II: The Quadrupole MS for the Next Millennium* describes a mass spectrometer that accommodates both the established and most advanced sample inlet and ionization techniques and has flexibility and sensitivity to meet the most demanding research, method development, and service applications. **Fisons Instruments. Circle 150.**

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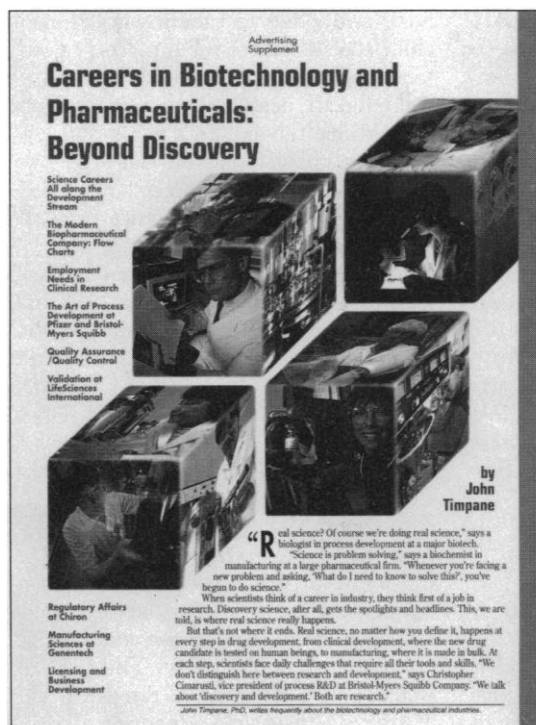
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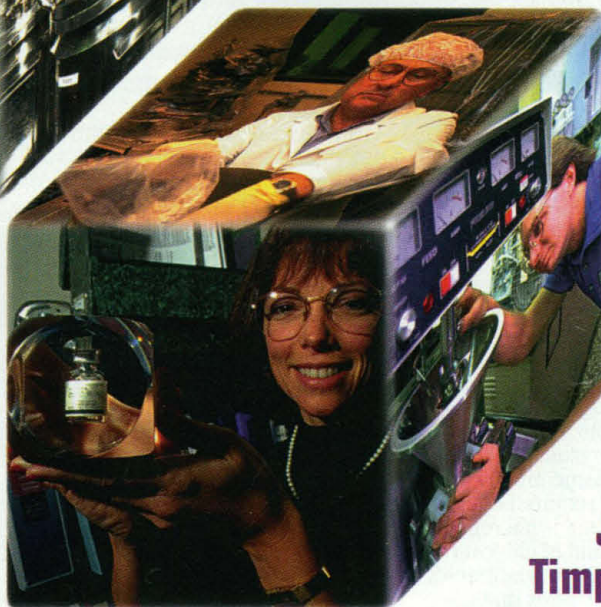
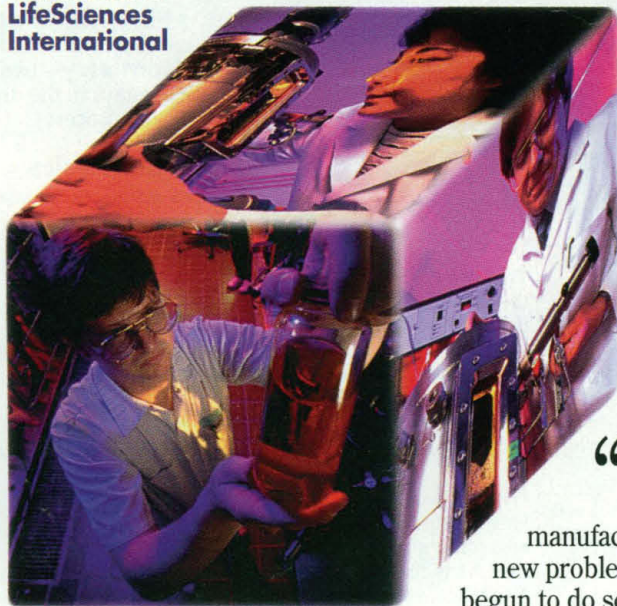
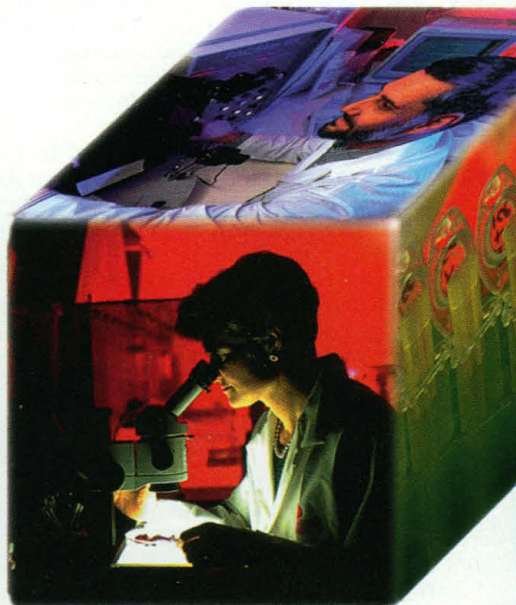
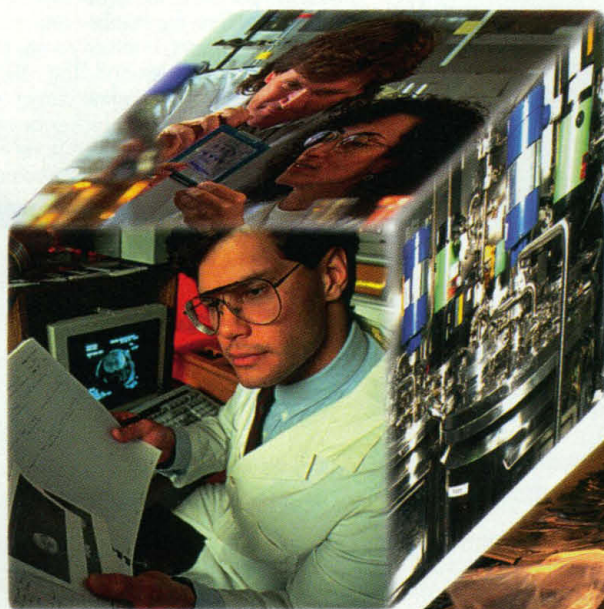
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**“R** real science? Of course we’re doing real science,” says a biologist in process development at a major biotech. “Science is problem solving,” says a biochemist in manufacturing at a large pharmaceutical firm. “Whenever you’re facing a new problem and asking, ‘What do I need to know to solve this?’, you’ve begun to do science.”

When scientists think of a career in industry, they think first of a job in research. Discovery science, after all, gets the spotlights and headlines. This, we are told, is where real science really happens.

But that’s not where it ends. Real science, no matter how you define it, happens at every step in drug development, from clinical development, where the new drug candidate is tested on human beings, to manufacturing, where it is made in bulk. At each step, scientists face daily challenges that require all their tools and skills. “We don’t distinguish here between research and development,” says Christopher Cimarusti, vice president of process R&D at Bristol-Myers Squibb Company. “We talk about ‘discovery and development.’ Both are research.”

*John Timpane, PhD, writes frequently about the biotechnology and pharmaceutical industries.*



"From regulatory affairs to plant operations, development increasingly is where the jobs are," says Roger Shamel, president of Consulting Resources Corporation. Good scientists will always be needed, and will always stream, to the research lab. But in the average drug company, more than half of all PhDs are working in the development stream: QA, QC, regulatory, process development, formulations. At a research leader like Genentech, Inc., more than 60 percent of all science PhDs (not counting postdocs) work in departments other than research.

Many research scientists will tell you of the great respect and credibility these departments have throughout the company. "Everyone in this company knows that they rely on the scientists in development," says one research chemist. "Without them, we can't get our product out there."

Below we examine the science careers beyond discovery research, hearing from scientists in everything from validation to licensing. They are doing science that is very real, focusing on real-world problems with real-world solutions. One and all appear to agree: Gratification abounds, and little of it is delayed.

## JENSEN ON CLINICAL RESEARCH

**D**ave Jensen of Search Masters International sees clinical research as an area in which a growing number of jobs will be available in the future. "Traditional pharmaceutical companies now are increasingly emphasizing the efficient and timely passage of drugs through the Phase I-IV process," he says, "which calls for experienced, talented people in the clinical area."

Biotechnology will also have jobs to contribute. "More than half of all open positions in biotech companies are now in non-discovery areas, including clinical, development, and manufacturing. This reflects the life cycles of many biotech companies."

"CRA's, the people actually out there collecting the data in the clinical studies, will be the number one need. They're backed, in turn, by the project managers, another career track of its own. Nurses and MDs are wonderfully in demand. The MD/PhD with a clinical background can expect to enjoy a fine career. And nurses can find openings in clinical research whether or not they have a clinical background—however, experience is very important, and experienced candidates are the first choice."

# The Science Stream

An overview of the development stream appears below. When reading it, please keep in mind that different companies have different names for their departments and may slice the cake differently (some companies group preclinical and clinical together, or formulations and process development, or manufacturing and plant operations).

Let us start with a brand-new chemical entity called A1. Discovery scientists have alerted the rest of the company that A1 appears to have promise. Meetings are held, and a decision emerges: Develop A1. Send it on down the stream. What happens to it next?

DVM  
PhD  
MD  
MS  
BS

## Preclinical Development

Here, DVMs and other scientists are needed to perform animal tests.

PhD  
MD  
MA  
RN  
PharmD

## Clinical Development

MDs, PharmDs, nurses, biostatisticians, and managers are needed to organize, track, and quantify the results as A1 passes through the large multicenter human trials required by the FDA. One of the more numerous job openings is that of clinical research assistant, or CRA, who travels to the centers, ensures that the protocols for the drug trials are being followed correctly, and squires data back and forth between center and company.

PhD  
MS  
BS  
ENG

## Process Development

Here, chemists, chemical engineers, biophysicists, and molecular biologists work together, testing A1 to learn all about its characteristics, for they must design processes that can take manufacture of A1 from bench- to plant-level. They are in touch with research, who know most about A1. Their first customer is clinical development, because clinical needs large amounts of A1 for their multicenter human trials.

And they are in touch with manufacturing, who will implement the process they develop.

PhD  
MD  
MS  
BS

## Formulations

Would A1 work best as a tablet? a syrup? an aerosol spray? an injectable? Is there a workable time-release form? What excipients do we mix it with? These are the questions facing the chemists and pharmacists in formulations. They perform the crucial hands-on science that molds a drug candidate into a formulation appropriate for commercialization.

PhD  
MS  
BS  
MBA

## Regulatory Affairs

Here, scientists work with government to ensure that management and development techniques meet governmental standards. Regulatory will be involved with A1 all along its ride. One of the most eclectic departments in the company, regulatory is staffed with scientists from many backgrounds.

PhD  
MS  
BS  
MBA

## Quality Assurance (QA) / Quality Control (QC)

QC is responsible for continuous testing of the products and processes in preclinical, clinical, and manufacturing to ensure that the manufacturing process is reliable, repeatable, and safe. QA

ensures that the manufacturing process—and QC as well—follow good manufacturing practices (GMPs); tasks can range from documentation to be sent to the FDA or circulated within the company, to overseeing setup and operation of new equipment or new processes. These departments, staffed by scientists with a range of diverse backgrounds, are in constant touch with all of the other departments in our list.

PhD  
MD  
MS  
BS

## Validation

This is a division of QA/QC that often is broken out by itself. Here, engineers and other scientists ensure that the company's engineering, design, and manufacturing operations comply with FDA regulations.

PhD  
MS  
BS  
ENG

## Manufacturing

Here, engineers, technicians, and other scientists ensure that A1 is made according to a reliable, steady standard.

PhD  
MS  
BS  
ENG

## Operations

In this department, engineers, technicians, and managers oversee the actual physical functioning and maintenance of the manufacturing plant. Their duties may include purchasing and supply of raw materials; facilities operation and safety; security; and repair.

Recruiters are looking for good scientists in the following fields:

• **Molecular biology**—to carry the hot science of the moment all the way down the production stream

• **Pharmacology and medicinal chemistry**—two mainstays in the drug design process

• **Biophysics**—essential in process development and manufacturing

• **Chemical engineering**—a well-paying and sought-after field

• **Fermentation technology**—for both pilot and commercial plants

• **Information science**—a growing need for biostatisticians and computer programmers

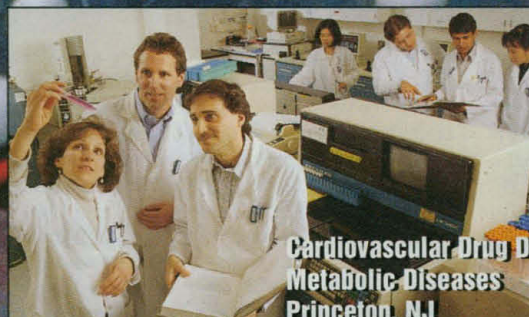
• **Crossover science**—chemists, biologists, and other scientists with credentials in law, business, industrial relations, or other fields



# BIOTECHNOLOGY

## A Network of Teams at Bristol-Myers Squibb

The depth and diversity of Bristol-Myers Squibb's biotechnology effort positions our Pharmaceutical Research Institute to take advantage of new developments and discoveries on a global basis. Combining our internal network with our external alliances and collaborations places us in a leadership role and at the cutting edge.

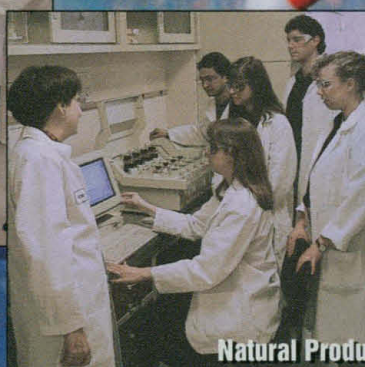


Cardiovascular Drug Discovery  
Metabolic Diseases  
Princeton, NJ



Central Nervous System  
Drug Discovery  
Wallingford, CT

We are proud of our scientists who are revolutionizing pharmaceuticals and ultimately world health care.



Natural Products Research  
Drug Discovery  
Wallingford, CT



Oncology Drug Discovery  
Molecular Genetics  
Princeton, NJ



Immunological Diseases  
Immunodeficiency/Immunosuppression  
Seattle, WA



Oncology Drug Discovery  
Molecular Biology  
Princeton, NJ



# Bristol-Myers Squibb

Please write or forward your curriculum vitae to:  
Human Resources MS300, Bristol-Myers Squibb Pharmaceutical Research Institute,  
P.O. Box 4000, Princeton, NJ 08543-4000. Equal Opportunity Employer, M/F/D/V

Princeton, NJ  
Canada

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Seattle, WA  
Syracuse, NY

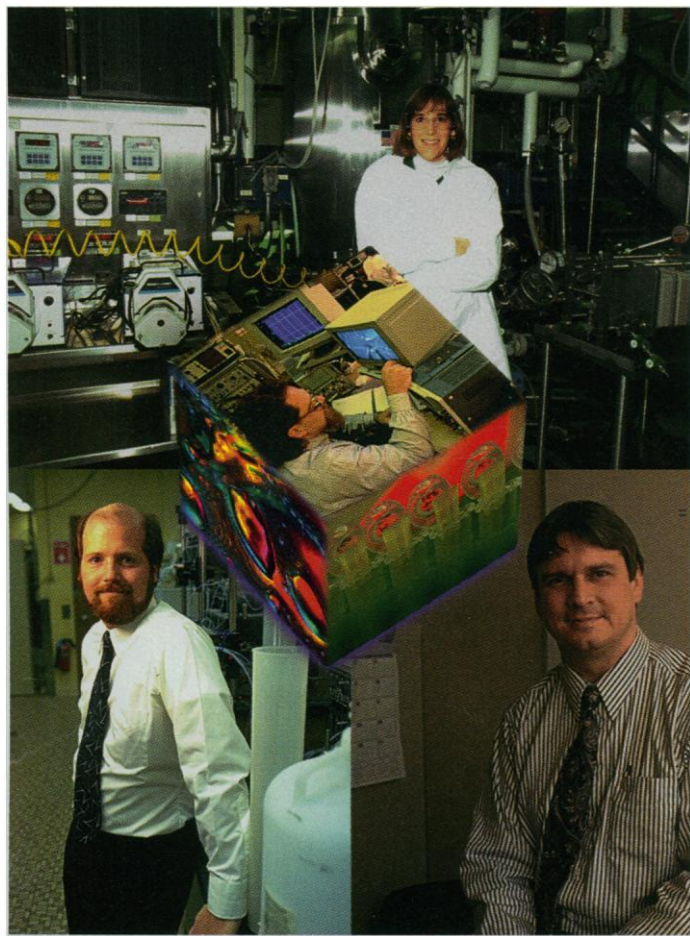


# "THE FIRST TO OBSERVE WHAT'S HAPPENING":

## New Processes and Developments at Pfizer, Bristol-Myers Squibb, and Genentech

Amy Murnane is a group leader of cell culture and fermentation R&D at Genentech, Inc. The role of her group is to develop cell culture processes that will allow large-scale manufacture of biologically produced products. At Genentech, biochemists, cell biologists, and chemical engineers all work in close concert. "We evaluate nutrient metabolism and recombinant protein secretion from mammalian cells," Murnane says, "and then we develop a way to make enough to support market demands."

Christopher Cimarusti, vice president of process research and development at Bristol-Myers Squibb, oversees three tightly knit yet diverse groups whose task is to determine the best process for making a new entity and to transfer that process to manufacturing. Cimarusti enjoys the powerful overview this activity has given him. "We really are intimately involved with every other department in R&D," he says. Tim Hagen, group director for pharmaceutical R&D at Pfizer Central Research, says, "The remarkable thing about this area is that we have a variety of clients and customers within our organization, including hourly and minute-by-minute contact with clinical and with regulatory. We also serve discovery, obviously;



Finding novel, timely solutions: Amy Murnane of Genentech (above); Chris Sinko (below, left) and Tim Hagen (below, right) of Pfizer

### THE "HAND-OFFS" AT BRISTOL-MYERS SQUIBB

The processes for making a new pharmaceutical entity change as the amount to be manufactured grows. Different techniques and technology, different chemistry and biology, may be required with each leap in order of magnitude. At Bristol-Myers Squibb, as at many other companies, each hand-off takes the entity into a new department.

**10 mg - 10 g** Discovery (performs initial bench-level discovery, creation, or isolation of the new entity)

**10 g - 100 g** Chemical process research (identifies possible ways to make the entity on a larger scale)

**1 kg - 100 kg** Chemical process development (a collaboration between R&D and manufacturing; scales up manufacture for toxicology and clinical research; makes the process useful for manufacturing)

**100 - 1000 kg** Manufacture (scales up once again to make the entity in commercial amounts)

production, because ultimately we have to transfer our product units there for manufacture; and marketing as well, because they have a great deal of input as to design and construction, dosage strengths and profiles, even the color and shape of a tablet."

At Pfizer, as at many companies, pharmaceutical R&D scientists are responsible for all the dosage form R&D for new chemical entities coming out of the discovery labs. But that's far from all. They also study ways to extend product lines. As the company applies for FDA approval for new dosage forms, pharm R&D is testing each new form for efficacy and safety. When drugs are licensed from other companies, pharm R&D is there to characterize and test them for their commercial possibilities. And pharm R&D is also involved in exploring new drug delivery systems.

Hagen's department at Pfizer is about 123 strong, with 25 doctorate-level scientists and about 20 lab technicians, with the balance being bachelor's and master's degree scientists. These include engineers, physical organic chemists, biologists, biochemists, polymer chemists, and pharmacists.

Time is of the essence in these departments. "Though everyone's under time pressure in the modern company," Cimarusti of Bristol-Myers Squibb says, "I think our departments are even more so. We have at least one process in transfer between process development and manufacturing at a time—often several—so we're always moving." Says Murnane of Genentech, "Basic research may have an undefined endpoint. In development, we have a time line that drives our challenges and our sciences. We have to find novel ways to meet those time lines."

Murnane calls process development "intellectually exciting, very fast-paced, very team-oriented." And is it ever science. Chris Sinko, senior research scientist in pharm R&D at Pfizer, says, "We're doing real science all the time. We're charged with bringing in new technologies to work more efficiently with less material. We have to stay current, go out and learn the new technologies." Hagen says that "some of the work in Chris's lab is very much on the cutting edge of research in material assessment."

Murnane, Cimarusti, Hagen, and Sinko all agree that the elements for which discovery science is famous also exist in their departments. That includes the thrill of being the first to see into a previously hidden corner of nature. "Often we are working with a novel molecule that has never been used in this way before," Murnane says. "We may be the first scientists ever to observe what's happening."

Above: Photograph by Lance Lougee taken at Genentech; Lower left and lower right: Photographs by Bruce Johnson; Inset cube: Photographs courtesy of Bristol-Myers Squibb



# Postdoctoral Opportunities In The Biomedical Sciences.

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

## **Breast Cancer and Aging** **Antonio Passaniti, PhD**

Tumor progression and suppressor gene function in an aged rodent model of spontaneous breast cancer is being studied. Projects involve differential gene expression and mammary epithelial cell culture. Applicants must have a strong background in molecular and cellular biology and have less than five years of postdoctoral experience. Laboratory of Biological Chemistry (OE-73), NIA, Gerontology Research Center, Room 1-223, 4940 Eastern Avenue, Baltimore, MD 21224.

## **Erasure of T Cell Memory by Immunotoxins** **David M. Neville, Jr., MD**

Erasure of T cell memory by anti-CD3 diphtheria toxin based immunotoxins is being studied in rhesus monkeys. Optimization of immunotoxin construction is being performed by inserting specific coupling sites on engineered single chain mAbs and engineered toxins. Applicants must have less than five years of postdoctoral experience. Laboratory of Molecular Biology (OE-73), NIMH, Building 36, Room 1B08, 36 CONVENT DR MSC 4034, BETHESDA MD 20892-4034.

## **HIV Molecular Biology** **Steven L. Zeichner, MD, PhD**

Cellular genes and gene products involved in HIV replication and the host response to infection are being studied. Projects involve the identification, cloning, and characterization of cellular genes demonstrating altered expression during HIV infection and the investigation of their effects on HIV pathogenesis. Applicants must have training in molecular biology and have less than five years of postdoctoral experience. Pediatric Branch (OE-73), NCI, Building 10, Room 13N240, 10 CENTER DR MSC 1928, BETHESDA MD 20892-1928.

## **Human Retrovirology and Molecular Biology** **David Derse, PhD**

Molecular mechanisms of retroviral pathobiology are being studied with the aims of defining interactions of viral regulatory proteins with cellular factors and their effects on signalling pathways which control mRNA synthesis and processing. Molecular biological methodologies combined with various recombinant expression systems will be used to analyze protein-protein and protein-nucleic acid interactions that modulate cellular and viral functions. Applicants must have less than five years postdoctoral experience. Laboratory of Leukocyte Biology (OE-73), NCI-FCRDC, Building 567, Room 219, Frederick MD 21702-1201.

## **Molecular Carcinogenesis and Papillomaviruses** **Joseph A. DiPaolo, PhD**

*In vitro* and *in vivo* models are in use to study multistage cervical carcinogenesis and human papillomaviruses. Areas of interest include molecular control of differentiation and cytokine gene expression, molecular cytogenetics, therapy using targeted ribozymes, and immunological intervention. Applicants must have less than five years postdoctoral

experience. Laboratory of Biology (OE-73), NCI, Building 37, Room 2A19, 37 CONVENT DR MSC 4255, BETHESDA MD 20892-4255.

## **Transcriptional Regulation in Lymphocytes** **Howard A. Young, PhD**

Molecular analysis of the transcriptional regulation of lymphokine genes in T helper-1 and T1 helper-2 CD4+ T cells with special emphasis on interferon- $\gamma$  is being studied. This work will focus on the effect of clinically relevant signalling molecules on the activation of gene transcription and DNA binding proteins which interact with specific regulatory elements in the IFN- $\gamma$  gene and other relevant genes. Laboratory of Experimental Immunology (OE-73), NCI-FCRDC, Building 560, Room 3123, Frederick MD 21702-1201.

## **Vaccines Targeting T Cell Subsets** **Basil Golding, MD**

Ongoing research projects include the development of a vaccine for HIV-1 using a carrier, *B. abortus*, which bypasses the requirement for CD4+ cells; and studies of human and mouse cytokine networks following stimulation by different immunogens. Applicants must be US citizens or permanent residents and have less than five years postdoctoral experience. Laboratory of Plasma Derivatives, (OE-73), FDA/CBER, Division of Hematology, (HFM 345), 1401 Rockville Pike, Rockville, MD 20842-1448.

## **Additional Postdoctoral Fellowship Opportunities**

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

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

## **To Apply**

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



# National Institutes Of Health

## Office Of Education

The NIH is an Equal Opportunity Employer



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DIVERSE PERSPECTIVES

**But to a living organism,**

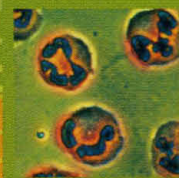
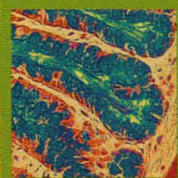
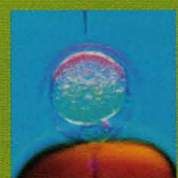
ARE A KEY FACTOR IN

*all are equally*

THE PROCESS OF

**important.**

DISCOVERY.



Amgen's philosophy of independent research within a collaborative, consensus-driven environment has been instrumental in making us the leading independent global biotechnology company. Each individual's background and experience allows for unique input — input that may point the way to a new breakthrough.

The positions listed on the adjacent page are currently available at

Amgen's Southern California headquarters.



## POST DOCTORAL FELLOW STEM CELL BIOLOGY

Candidates must have a Ph.D. in Hematology, Developmental Biology, or a related field. Experience in cell biology or hematopoiesis (colony assays, maintenance of primary cells and cell lines), FACS analysis, and cell sorting is required. (Job Code: OXP-SC-2200)

## CLINICAL MANAGERS

These positions will plan and manage clinical programs encompassing broad drug-specific or disease-specific disciplines. Responsibilities also include coordinating interdepartmental activities such as protocol design and approval, negotiating grants, tracking program budgets, and screening and selecting investigators. These positions require a MS in a Life Science and typically 3 years' management experience. Candidates must have knowledge of FDA regulatory requirements, a strong scientific background, and excellent communication skills.

We currently have openings in the following areas:

- **Infectious Disease:**  
(Job Code: OXP-SC-1866)
- **Interferon:**  
(Job Code: OXP-SC-1536)
- **Oncology:**  
(Job Code: OXP-SC-1867)

## CLINICAL RESEARCH ASSOCIATES

These positions require a BS in a Life Science or an RN license, and typically 2 years of clinical research monitoring experience within a pharmaceutical, biotech, or CRO environment. Excellent interpersonal skills and the ability to travel are also required. Knowledge of FDA regulations is preferred.

We currently have openings in the following areas:

- **AIDS:**  
(Job Code: OXP-SC-2173)
- **Interferon:**  
(Job Code: OXP-SC-0001)
- **Oncology:**  
(Job Code: OXP-SC-0002)
- **CNS:**  
(Job Code: OXP-SC-0003)
- **Infectious Disease:**  
(Job Code: OXP-SC-0004)

## MANAGER, BIOSTATISTICS

Candidates must have a MS (Ph.D. is preferred) in Biostatistics, Biometry, Applied Statistics, Epidemiology, Statistics, or Applied Mathematics with an emphasis on statistics. This position typically requires 8 years' experience in applied biostatistics in a medical research setting, including 5-6 years in a pharmaceutical or biotechnology environment with regulated products. Excellent background in pre-clinical design and analysis (pharmacokinetic, stability analysis, process development, manufacturing, and research) is also required. (Job Code: OXP-SC-1077)

## BIOSTATISTICIAN

This position requires a MS in Biostatistics, Biometry, Applied Statistics, Epidemiology, Statistics, or Applied Mathematics with an emphasis on statistics. Candidates must have 3 years' applied biostatistics experience in a medical research setting, including the design and analysis of clinical trials. Experience with SAS programming and BMDP is required. (Job Code: OXP-SC-1938)

## RESEARCH SCIENTISTS

The following positions require a Ph.D. in Biological Sciences or related field and 2 years of post-doctoral experience.

- **Inflammation:** Experience in drug discovery/rheumatoid arthritis is required. (Job Code: OXP-SC-1401)
- **Colon Tumor Biology/Intestinal Epithelial Cell Biology:** Experience in intestinal epithelial cell biology and colon tumor biology is required. (Job Code: OXP-SC-1914)
- **Mammalian Cell Biology:** Assay development experience in receptor/ligand and tumor biology is required. (Job Code: OXP-SC-2261)
- **Neuroscience:** Requires experience in molecular biology (expression cloning), pharmacology, or related field. (Job Code: OXP-SC-2096-S)
- **Medicinal Chemistry:** Experience in drug discovery is required. (Job Code: OXP-SC-2054)
- **Pathology:** Experience with drug development, preclinical biology, and in vivo models is required. (Job Code: OXP-SC-2175-S)

## RESEARCH ASSOCIATES

The following positions require a BS/ BA in Biological Sciences or related field.

- **Neuroscience:** Requires expression cloning or in vivo experience. (Job Code: OXP-SC-1476-S)
- **Experimental Hematology:** Experience with tissue culture and ES cells is required. (Job Code: OXP-SC-1778-S)
- **Immunology:** Receptor/ligand biology experience is required. (Job Code: OXP-SC-1974)
- **Mammalian Cell Biology:** Requires experience in bioassays and tissue culture. (Job Code: OXP-SC-2240)
- **Developmental Biology:** Experience in molecular and cell biology is required. (Job Code: OXP-SC-2014-S)
- **Stem Cell Biology:** Experience in molecular biology and tissue culture is required. Experience in hematopoiesis is preferred. (Job Code: OXP-SC-2205-S)
- **Pharmacology:** Pharmacology and laboratory instrumentation experience and computer literacy are required. (Job Code: OXP-SC-2288)
- **Pharmaceuticals:** Requires a background in formulating/preformulating small molecules or peptides or experience with protein and HPLC. (Job Code: OXP-SC-1877-S)
- **Protein Structure:** Protein purification and sequencing experience is required. (Job Code: OXP-SC-1876-S)
- **Analytical Resources:** Experience in protein purification and HPLC is required. (Job Code: OXP-SC-2039-S)
- **Process Development:** Requires experience in aseptic techniques and microbial physiology. (Job Code: OXP-SC-2306)
- **Protein Formulation:** Requires experience in protein purification/characterization. (Job Code: OXP-SC-4170-S)

## MANUFACTURING ASSOCIATES

These positions require a BS in a Life Science or equivalent. (Job Code: OXP-SC-2298-S)

Other positions require an additional 2 years of related manufacturing experience. (Job Code: OXP-SC-2243-S)

At Amgen, you'll find our approach to scientific research as rewarding as it is effective. We offer a highly competitive compensation and benefits package. Please mail your resume/c.v. to: **Amgen Inc., Staffing, Job Code (refer to the job code listed next to your area of interest), Amgen Center, Thousand Oaks, CA 91320-1789.** Principals only, please. EEO-Affirmative Action Employer M/F/D/V.

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# PRODUCTION AT PROMEGA: “A DISTINCT FREEDOM TO ACT”

*Promega Corporation of Madison, Wisconsin, is a biotechnology company that provides a broad range of molecular biological reagents for scientists in both industry and the academy world-wide. While it does not make drugs and therefore is not under the same regulatory constraints as a drug company, Promega has a complete development stream using the latest in bioprocessing technology. Eight Promega scientists gathered to talk about their departments and their company. Members of the round table were:*

**Ray Bandziulis**, director, corporate quality assurance and regulatory affairs

**Michael Betlach**, microbiology and fermentation development manager

**Mary Doers**, production scientist, applications group, molecular and cell biology

**Elizabeth Murray**, group leader in process biochemistry, applications group

**Cas Perkowski**, vice president, operations

**Tim Seifritz**, employment coordinator, human resources

**Alan Smallwood**, group leader, modifying enzymes, production

**Chuck York**, group leader, nucleic acid chemistry

**Perkowski:** My area, which is operations, includes all phases of manufacturing, including procurement; material handling, shipping, receiving, and warehousing; process development; regulatory affairs (including both QA and safety); and plant services (which embraces everything from maintenance and metrology to repair of lab equipment and custodial services). The greatest number of scientists here work in production, calling on a big spectrum of technical backgrounds and expertise—fermentation, product separation and purification, advanced molecular biologic techniques, oligonucleotide synthesis, immunology, and animal health.

**Betlach:** My department, fermentation, is a cross between a biology and a chemical engineering group—and there's a fair amount of bacteriology. When the R&D scientists need to grow things in bigger batches, they call on us. We're involved significantly in both discovery research and process development. We also provide starting materials for many research and development groups.



The Promega team (left to right): Murray, Seifritz, Bandziulis, Doers, York, Betlach, Perkowski, and Smallwood

**Doers:** Molecular and cell biology is one of three departments in the applications group (the other two being protein biochemistry and nucleic acid analysis). Our molecular biologists and cell biologists spend most of their time doing quality and applications testing of specific products. We are constantly working on quality, cost-effectiveness, issues concerning scale-up, and troubleshooting.

**Murray:** We become research partners with our customers, because they start using products in ways we never anticipated. That's probably inevitable in the real world. The results get back to us, and sometimes we take a product back to the lab and reinvestigate it.

**York:** In nucleic acid chemistry, we manufacture products for nonradioactive labeling of nucleic acids and purification/isolation. We're responsible for a wide range of products, including antibodies and enzymes. Some of the most important skills here include immunology, molecular biology, and chromatography.

**Murray:** In process biochemistry, we take seriously the idea that we are directly responsible for our products. One woman in my group, which makes lysate products, has made over 90 batches of the same product, and she has documented

each according to yield and quality. She has a real feeling for it and can pick up subtle changes. If a vendor provides us with slightly different starting materials, she can tell.

**Bandziulis:** Everyone praises the discovery scientists in R&D—as they should. But the science and techniques needed to get procedures to work reliably and consistently—they're surely undervalued. The type of problems we have to solve in process troubleshooting would have been valid thesis topics for graduate students a couple of years ago.

**Murray:** We're trying to debug problems in production, create ever tighter and tighter manufacturing protocols, and create effective validation processes. That demands a lot of experimental work.

**Smallwood:** And some of it can lead to publication. You find yourself faced with challenges that no one else has had to face before. Let's say a new entity comes in that has not yet been commercialized. We have to discover the best methods and equipment to purify and isolate it. Often these present very large hurdles that we have to address.

**York:** Addressing just the logistics of supplying raw materials and assembling those materials into final products can be astounding. And it washes over into areas such as plant operations and safety, and liaison with vendors and clients.

**Smallwood:** In production, we have a constant interplay between molecular biologists, protein biochemists, and fermentation scientists.

**Perkowski:** Right now, we're looking for an experienced bioprocess engineer with a strong background in chromatography scale-up in enzymology and protein purification. That shows how specific our needs can be. But in a more general way, we are always interested in chemists, biologists, and biochemists with excellent backgrounds—and we do prefer experience.

**Seifritz:** That's why, from an HR perspective, we look for excellent science, but also we ask, "Does this person have the ability to manage projects? Communicate effectively?" Technical skills are only half the package. Flexibility and open-mindedness are very important.

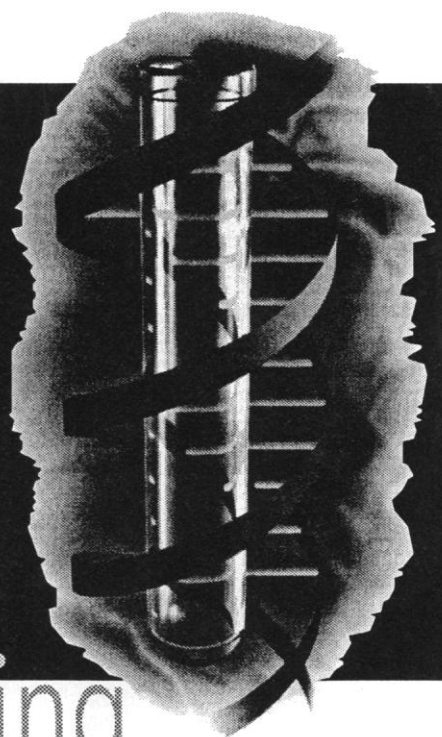
**Doers:** Within that, there is a definite assumption that you can make your own decisions. You're responsible for each aspect of your product, and you enjoy a distinct freedom to act.

Photograph courtesy of Promega Corporation



ALWAYS  
EVOLVING...

Always Solving.



Gen-Probe is changing the way medicine is practiced through the continual evolution of genetic probe-based technology. Today, we are the acknowledged leader in DNA probe diagnostics, with more FDA-cleared DNA probe products than any other company.

At Gen-Probe, improving technology is a non-stop pursuit. We continue to build upon our leadership position by using our patented and proprietary technologies to develop, manufacture and market new products while making existing tests faster, more sensitive and easier to use.

Our search for skilled professionals is also an ongoing process. We continuously seek talented individuals to join our San Diego facilities and be a part of exciting diagnostic and therapeutic breakthroughs. Opportunities are available in the following areas:

- **Diagnostic R&D**
- **Therapeutic R&D**
- **Regulatory Affairs**

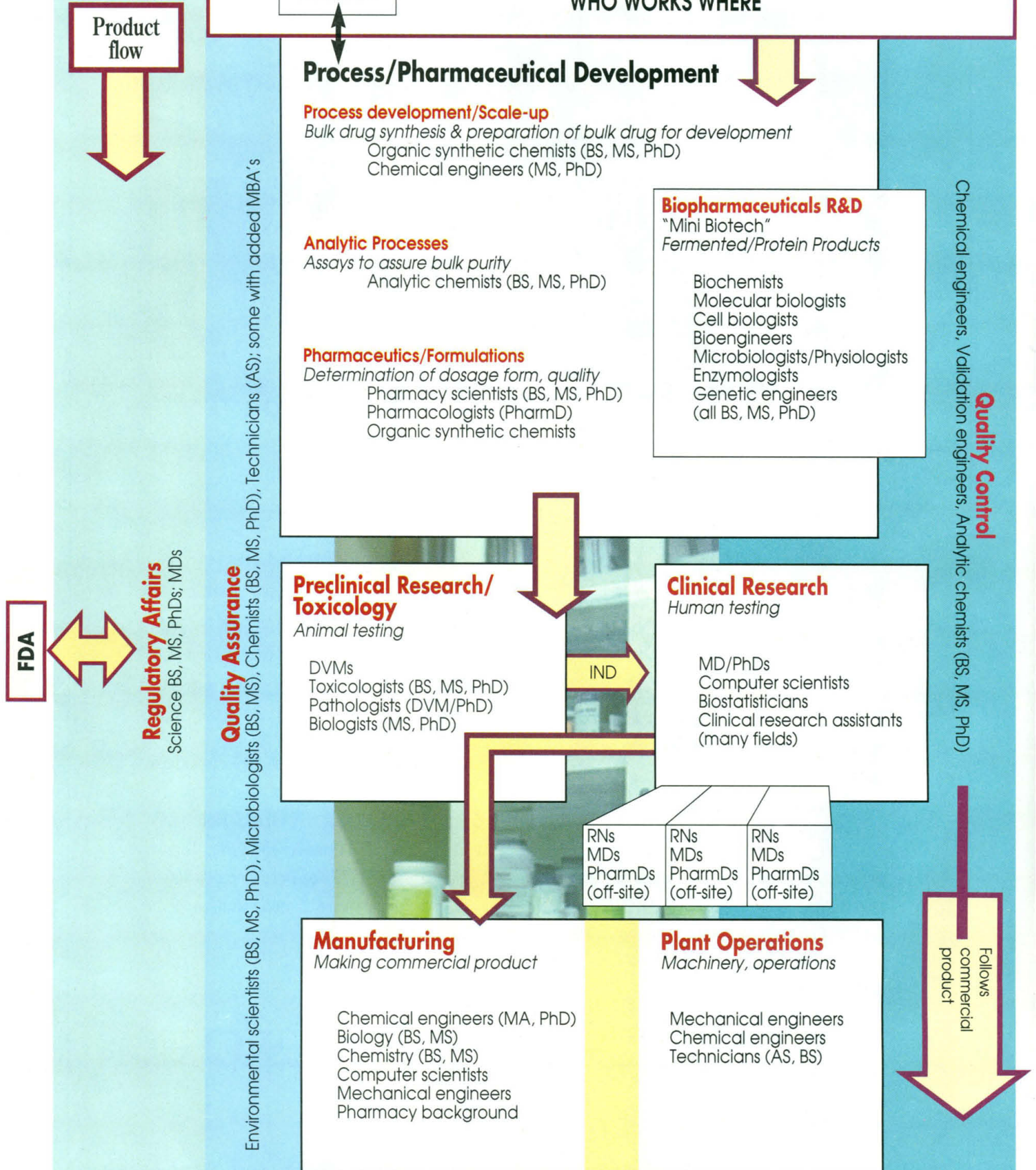
As one of the few emerging biotech companies that is profitable and has proven R&D, manufacturing, marketing and sales skills, Gen-Probe will continue to grow and prosper based on our sound technology, our philosophy of innovation and our ability to improve existing products while developing new ones.

If you're searching for the ideal solution to your professional pursuits, we invite you to learn more about our current opportunities. Call our Jobline at (619) 625-8666, then send your resume to 9880 Campus Point Drive, Dept. 395, San Diego, CA 92121. Gen-Probe supports a drug-free work environment. We are an equal opportunity employer.



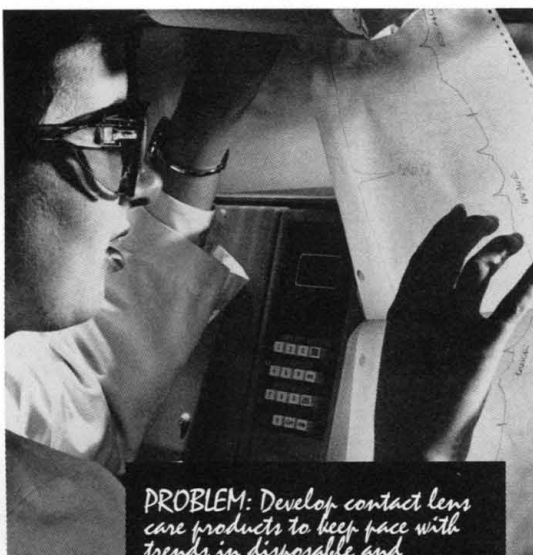
# Pharmaceuticals:

## WHO WORKS WHERE

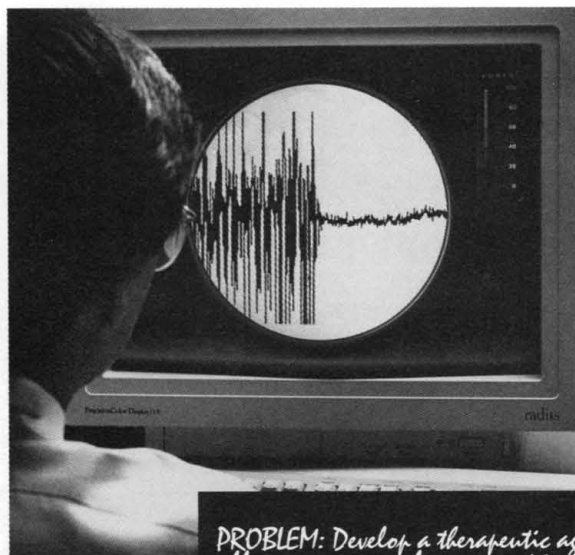


Source: Survey of pharmaceutical companies  
Chart: Jackie Syrop





**PROBLEM:** Develop contact lens care products to keep pace with trends in disposable and frequent replacement lenses.  
**SOLUTION:** Disinfection solutions for use directly in the eye.



**PROBLEM:** Develop a therapeutic agent that will allow more normal movement in patients with neuromuscular disorders.  
**SOLUTION:** Botox® purified neurotoxin complex.



**PROBLEM:** Develop methods to treat glaucoma patients without excessive intraocular pressure.  
**SOLUTION:** Basic research to learn how to normalize retinal blood flow.

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Join the team at Allergan and become a part of some of today's most innovative health care solutions. We are widely recognized as a global leader in the development, manufacture and marketing of specialty therapeutic products for eye and skin care as well as neuromuscular disorders.

We have allocated extensive resources to R&D efforts in five key areas: glaucoma, cataracts, neuromuscular disorders, contact lens care and receptor-selective retinoids. Our goal, as always, is to enhance the quality of life for people around the world while expanding our market presence. As we continue to create quality products in a changing health care environment, our need for talented professionals grows.

We commonly have opportunities in the following areas:

- Biostatistics
- Clinical Research
- Product Development
- Project Management
- Regulatory Affairs
- Toxicology

If you would like to join us in developing solutions for the health care needs of today and tomorrow, please send your resume to:  
**Allergan, Corporate Human Resources, Dept. JSS, 2525 Dupont Drive, T2-1B, Irvine, CA 92715.** Only qualified candidates will be contacted. Equal Opportunity Employer.

 **ALLERGAN**

# SCIENCE AND MEDICINE AT FOX CHASE:

## WHERE TODAY'S DISCOVERIES LEAD TO TOMORROW'S HOPE

Research conducted by scientists and physicians at Fox Chase has led to ground-breaking discoveries that have an impact on science and medicine today. Past achievements include formulation of the Patterson function in crystallography; demonstration of pluripotency in animal cells; discovery of hepatitis viruses and their identification as retrovirus; elaboration of the tumor-suppressor gene; and discovery of the SCID mouse.

Current research interests of our faculty are wide-ranging and include gene expression; molecular aspects of oncogenesis; viral molecular biology and pathogenesis; molecular structure and function analysis; pharmacology and therapeutics; regulation and development of the immune system; cell cycle control; and human genetics, including the Human Genome Project.

An energizing environment with research as its major focus, the Center has more than 60 independent laboratories where investigators enjoy a unique advantage—to pursue their passion for discovery full-time, with minimal distractions by administrative or teaching responsibilities.

### **Tenure Track Faculty Positions:**

At this time we are welcoming applications from outstanding independent investigators to fill Assistant and Associate Professor-level positions in **genetics, cellular and developmental biology, and immunobiology.**

We are interested in people using model experimental systems capable of exploiting the exploding genetic data bases. Fox Chase offers excellent shared core facilities, such as transgenic mouse, hybridoma, tissue culture, cell sorting and electron microscopy facilities, and a wide range of biotechnology and computational support services.

As a new faculty member, you will receive a generous start-up package including funds for equipment, technical assistance and operating expenses. You will have the opportunity to recruit postdoctoral trainees from our intramural program and to obtain adjunct faculty positions at nearby medical and scientific centers.

Interested candidates should send a C.V., summary of research interests and at least three references to: Search Committee, c/o Dr. A.M. Skalka, Director, Institute for Cancer Research, Fox Chase Cancer Center, 7701 Burholme Ave., Philadelphia, PA 19111.

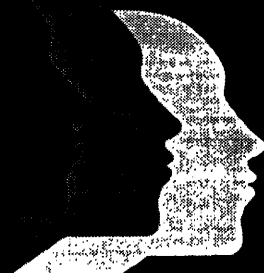
### **Postdoctoral Training:**

Fox Chase Cancer Center also offers competitive postdoctoral fellowships for advanced laboratory training in a variety of disciplines compatible with our faculty's broad research interests. Trainees have access to the Center's core facilities for specialized technical training and to faculty-directed specialized tutorials in topics reflecting a broad scope of biomedical research interests. For information and an application, contact Dr. C. Seeger, Postdoctoral Office, Fox Chase Cancer Center, 7701 Burholme Ave., Philadelphia, PA 19111.

Fox Chase Cancer Center is an Affirmative Action/Equal Opportunity Employer.

FOX CHASE  
CANCER CENTER  
DISCOVERY & HOPE





## *Diversity in Products. Diversity in People.*

Syva, nationally recognized for leadership in medical diagnostics, is also a pioneer in advanced testing systems for drugs and infectious diseases. We are currently seeking Development Scientists in San Jose (Evergreen) & Senior Research Scientists in Palo Alto for the following specialties:

### **DEVELOPMENT: MANAGER**

#### **Development/Product Support**

- Lead the Product Support Group in the advancement of drug monitoring products, transitioning products from Development to Manufacturing. You'll be responsible for competitive evaluations, product improvements, and preservative development, as well as the development of new drug monitoring products using EMIT technology. You'll need a Ph.D. in Biochemistry or Bio-organic Chemistry, and 7+ years of related experience. Requires expertise in EMIT technology and Drugs of Abuse assay methodologies. You must also be knowledgeable of drug testing, therapeutic drug monitoring, clinical chemistry, and diagnostic product manufacturing and current device manufacturer regulatory requirements. The ability to interface with related departments/customers, summarize technical information for distribution, and lead products through development and manufacturing is essential. (Job #SSM317SBA)

### **SENIOR SCIENTISTS**

#### **Infectious Disease Diagnostics**

- Both of these positions will design and conduct experiments related to the application of EIAs for infectious disease analytes to an automated analyzer. Additionally, you may test approaches to overcome reagent/system interactions. Requires an M.S. in Chemistry, Biochemistry, Biology, Virology or Physics, paired with 4+ years' experience, or a Ph.D. and 1+ years of experience. You'll need an understanding of basic statistical principles (imprecision, ANOVA, confidence intervals), and direct experience in the development and characterization of analytical methods. A background in EIA, multifactorial experimental designs, and automated instrument systems is ideal. For the more senior position, you must also demonstrate strong project leadership skills and supervisory experience. (Job #SSM317SBB)

- These positions provide technical leadership in immunoassay test development through reagent engineering and experimental & manufacturing protocol design. You'll conduct hands-on bench work and direct others as needed in order to collect, interpret and present sound data and conclusions. Requires an M.S. or Ph.D. in Biochemistry or Microbiology (Ph.D. preferred), along with relevant post-doctoral or industry experience. You must have a solid understanding of the fundamental concepts of biochemistry,

quantitative analytical skills, experience with IBM compatible computers, and a working knowledge of the application of statistics to experimental design. Previous experience developing analytical methods for antibody purification at the manufacturing scale is preferred. (Job #SSM317SBC)

### **RESEARCH:**

#### **SENIOR SCIENTISTS**

##### **Human Disease Markers**

- You'll assume team leadership responsibilities for production and product support for Research Kits for a marker of Type I diabetes. This involves developing protocols for components preparation, carrying production of the kits into a manufacturing environment, and advising customers as to usage. You'll need a Ph.D. in Biochemistry, or related field, paired with demonstrated laboratory and supervisory experience, including a background in R&D and manufacturing. Prior knowledge of diagnostic assay technologies and project management is essential. (Job #SSM317SBD)

##### **Nucleic Acid Detection**

- This team player will invent and optimize novel methods (applicable to automation and compatible with Syva's commercial goals) for nucleic acid-based amplification and detection of infectious micro-organisms. A Ph.D. in Molecular Biology, Microbiology, Genetics or Biochemistry, and related experience are required. Candidates must be skilled in nucleic acid manipulation, have the ability to work with biohazardous materials, and have experience using standard molecular biology techniques, along with strong analytical abilities. Some familiarity with medical microbiology is beneficial. (Job #SSM317SBE)

##### **Immunoassay Methods**

- You'll play a vital role in designing and developing improved bioanalytical procedures and methods, primarily in the area of nonisotopic immunoassays. This will encompass devising and preparing new and existing materials and reagents, as well as implementing/executing experimental strategies while critically analyzing experimental observations. A Ph.D., or equivalent, in Biophysical or Physical Organic Chemistry and a minimum of 2-3 years' relevant post-doctoral experience are required. Knowledge of bioanalytical, organic and biochemistry is preferred. (Job #SSM317SBF)

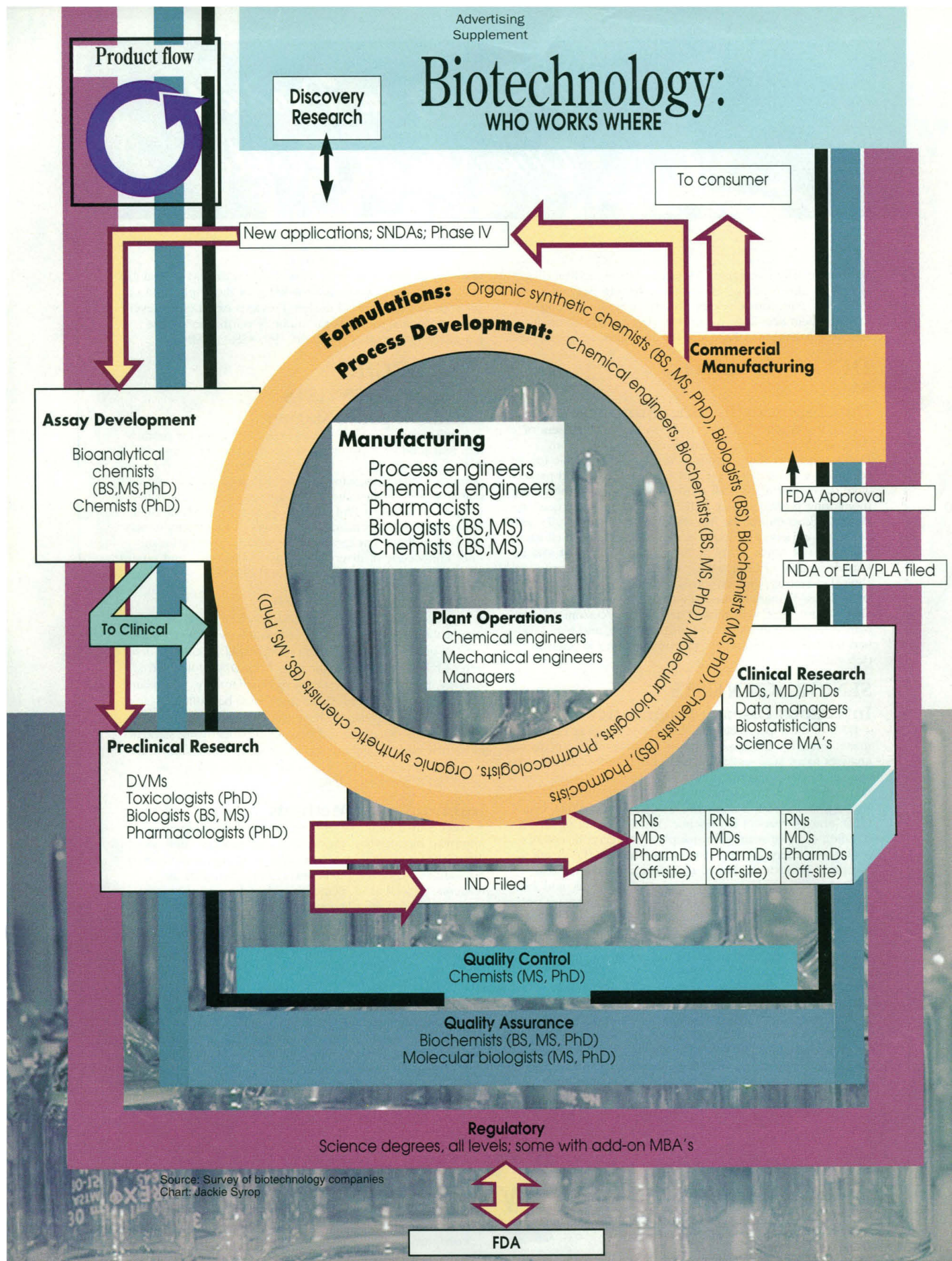
Syva offers competitive salaries and generous benefits. Please send your resume, indicating appropriate Job #, to: Syntex/Syva Corporation, Professional Staffing, 3401 Hillview Avenue, Ste. A2-130, Palo Alto, CA 94304. FAX: (415) 354-2122. Principals only please. Syva is an equal opportunity employer committed to the values of a diversified workforce.



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# Biotechnology: WHO WORKS WHERE



Source: Survey of biotechnology companies  
Chart: Jackie Syrop



# Research & Development Is The Foundation Of Our Business

Johnson & Johnson, with over \$15 billion in sales, is the world's largest and most comprehensive health care products company serving the consumer, pharmaceutical, diagnostic and professional markets. To us, investment in R&D is key to maintaining leadership throughout our entire family of companies. We believe that our worldwide commitment of over a billion dollars annually ranks us among the top American-based corporations in R&D expenditure. This fact, combined with our supportive environment where contributions are fully acknowledged and advancement is based on ability, offers you a unique foundation on which to build your career.

While openings vary by company, we are interested in hearing from candidates with health care industry or academic experience and a degree (BS, MS, PhD) in Biology, Biochemistry, Biochemical Engineering, Biostatistics, Chemistry, Immunology, Medicine, Microbiology, Molecular Biology, Pathology, Pharmacy, Toxicology or equivalent, for involvement in the following areas:

## Pre-Clinical R&D

- Chemical Development
- Drug Discovery
- Drug Safety Evaluation
- Pharmaceutical Development
- Drug Metabolism

## Clinical Drug Development

- Clinical R&D
- Clinical Trials
- Medical Biostatistics
- Medical Writing
- Regulatory Affairs

In addition to an excellent compensation and benefits package, Johnson & Johnson offers a LIVE FOR LIFE Wellness Program with on-site fitness centers, smoke-free work places in campus-like settings, and programs that can help you balance your work life with your family life. To apply for these openings or to be considered for future opportunities, send your resume suitable for scanning into our state-of-the-art database (i.e., clean/clear, no graphics, and preferably unfolded). Forward to Dept. 223, Johnson & Johnson Recruiting, Employment Management Center, P. O. Box 16597, New Brunswick, NJ 08906-6597.

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"Leadership Beyond Compliance"



## FIRE DRILLS AND HAPPINESS: REGULATORY AFFAIRS

"You ought to see my in-box," says Mary O'Hara, regulatory affairs associate at Chiron Corporation. It's always full. "There are always surprises in there that could change your whole day, your whole agenda." Regulatory is a little bit of law, a little bit of business, a great deal of science, a great deal of writing and speaking, and a talent for staying on your toes. "There's no degree in regulatory," says O'Hara. "It's a job to be learned on the job."

According to Rod Dougherty, director of the drug regulatory affairs compliance group, Pfizer Central Research, "We're always in the middle." Scientists in regulatory affairs find themselves running a two-way street between the FDA and the company. Bentley Moyer, regulatory affairs associate at Chiron, says, "We have to communicate the company's position to the FDA—meaning we have to know all the issues and be able to distill them and communicate them clearly and coherently. But then, when the FDA makes a statement, we have to turn around and tell the company what it means. You must be utterly in control of your material."

If that sounds like an endorsement of good communication skills, it is. "Absolutely essential," said every single scientist we spoke to. Gary Wilson, associate director of compliance at Pfizer, stresses that "because of the diversity of disciplines we must deal with day to day, you can't do without good verbal and written skills." Janice Russ, regulatory affairs associate at Pfizer, says, "I can't stress such skills enough. We keep in touch with one another on various projects, we interact with the clinical department, and we have to communicate with investigators when we are out in the field."

At a biotech like Chiron, regulatory tends to attract people with degrees in biology, biochemistry, genetics, physiology, or microbiology. At larger traditional drug companies, biology, chemistry, and pharmacology backgrounds are relatively more in evidence. One will find all degree levels from BS to PhD. Add-on MBA's are common. (Russ: "My MBA helped me become more organized, a better communicator, a better user of my time.")

Experience in regulatory is much prized. People come to that experience in a variety of ways. Wilson of Pfizer worked as an inspector of drug manufacturers and devices for the FDA. "My FDA background is a

great one to have," he says. "It exposed me to a broad range of companies and products, which developed my ability to assess potential problem areas." Dougherty headed discovery groups in everything from immunologics to antiparasitics. Managing projects through the Phases drew him to what he calls "the unique, indispensable role regulatory plays in the overall drug development process." Moyer went from manufacturing/QC to QA to regulatory, "a pathway that makes a lot of sense," he says, "since many of the concerns of QA/QC and regulatory affairs are alike."

No matter how you look at it, regulatory is a rich and busy life. "You work with every department in the company," says one scientist. "You need to know the science, the systems. You need to be able to talk the talk."

Which brings us back to Mary O'Hara's in-box. She is responsible for Chiron's generic products, a few therapeutics, and corporate labeling. She also reviews product complaints and files formal reports on each to the FDA. And her special baby is Proleukin® (aldesleukin), a recombinant interleukin II currently licensed in the United States and Canada for metastatic renal cell carcinoma.

Such a range of duties is not unusual in regulatory. Moyer says that "the ability to switch gears is one of the most important characteristics of the successful regulatory person." Wilson says that "there'll be times when walking into our department, you might say, 'What a well-oiled piece of machinery here'—but two days later, you'd think there was a fire drill going on." Information from clinical trials may trigger a

series of decisions, reports, communications to the FDA, and liaison with clinical investigators. "One little change can send a ripple through the whole process," Wilson says, "and we have to be on top of it." The only way to do that, as Russ sees it, is by capitalizing on everyone's talents: "We all build on one another's skills. My weakness might be your strength."

Our theme has been real science, and in regulatory it goes on every day. Dougherty says, "It's a daily learning experience. We're constantly testing our procedures, trying to do things more quickly, more efficiently, trying to master the scientific disciplines that are central to our jobs." Moyer likes working with the science firsthand every day: "We get to see the raw and the processed data for all our products. We're intimately involved with product development at every stage." Such intimate involvement may be why so many regulatory scientists would agree with Mary O'Hara: "It's challenging, with a true sense of reward and accomplishment. That exhilaration you feel when a new product is approved."

## "IN TUNE WITH WHAT'S GOING ON": QUALITY ASSURANCE, QUALITY CONTROL

QC/QA. Two sets of two letters. Not the same, but very close.

In most companies, QC is the physical testing of a product—day by day, batch by batch—to ensure that it consistently meets specifications for purity and potency. Not only are they testing; they're also creating new and better methods for testing.

QA is dedicated to overseeing the efforts of manufacturing and QC. QA documents and reviews manufacturing records. QA inspects manufacturing and testing systems for efficiency and accuracy. QA also documents the activities of QC. QA assures that everything takes place according to good manufacturing practices.

And behind both QA and QC is regulatory, which runs between company and FDA, ensuring compliance, hastening submissions, keeping in touch.

Since companies may manufacture different kinds of product, there may be a QC department for each kind—one for small-molecule entities, one for proteins, one for diagnostic kits. Validation, dedicated to the testing of equipment, is so important it is often in a department by itself (see "A Job and a Mission: Validation," below).

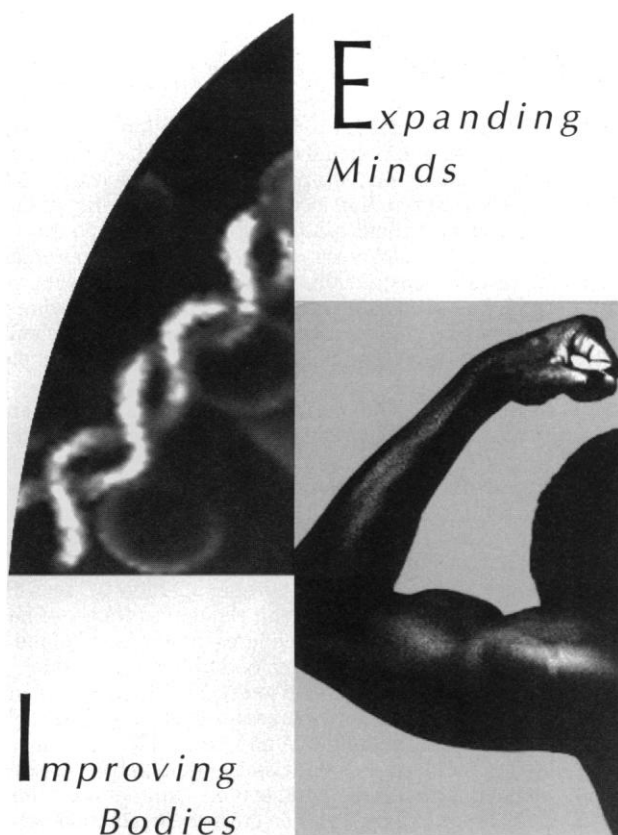
Peter Rauenbuehler is QC manager responsible for monitoring the stability of marketed and clinical products at Genentech. He sees QC as "ensuring product quality for both the company and the patient." His responsibilities are twofold: To



Above (left to right): Wilson, Dougherty, and Russ of Pfizer; Inset: Moyer of Chiron; Below: O'Hara of Chiron

Above: Photograph by Bruce Johnson; Below, and inset cube, top face: Photographs by Lance Lougee taken at Chiron





**CHIRON**

WHERE GREAT CAREERS COME TOGETHER

## **Here, people make all the difference.**

At Chiron, our enthusiasm for biotechnology goes beyond looking for solutions to serious diseases. Our sights are set on helping people be their best. Whether they're the patients who benefit from our breakthrough diagnostics, therapeutics, vaccines or ophthalmic devices ... or the Chiron professionals who make it happen.

## **Do you have the Chiron mind set?**

If your education, talent and self-determination have inspired you to seek out creative solutions in detection, treatment and prevention of the unsolved diseases and conditions plaguing mankind, Chiron has a place for you. Come join our team of diverse, energetic visionaries, today. And develop the cancer, herpes, HIV and hepatitis answers of tomorrow.

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Our global organization has openings to challenge a wide range of biotech capabilities. Currently the following divisions:

***\*Diagnostics***

***\*Vaccines***

***\*Technologies***

***\*Ophthalmics***

***\*Therapeutics***

Are reviewing resumes that specialize in:

***\*Manufacturing***

***\*Information Systems***

***\*Research & Development***

***\*Engineering***

***\*QA/QC***

If unable to meet with us personally, write us at Chiron Corporation, Human Resources, 4560 Horton Street, Emeryville, CA 94608. Expand your opportunities to advance your career *and* to transform the practice of medicine. We welcome applications from all individuals. Women, veterans, minorities and disabled individuals are encouraged to apply.



ensure the quality of new materials used in manufacturing final drug product and to develop the stability profiles of final drug products. In Rauenbuehler's division, analytical chemists, biochemists, and chromatographers perform a variety of analytical tests to monitor the quality of raw materials and finished products.

Tony Eistetter is associate director of methods development and QC at Chiron. "Methods development takes a new product, does the assay validation, handles all the intermediary paperwork, and transfers the product to QC, which takes over the testing and keeps the paperwork up to date," he says. Precision and dexterity are needed for these jobs. "You have to be a good technician and pay attention to your results. We'd prefer not to repeat steps."

By the same token, no one can afford to become so focused on a stepwise routine that they fail to think scientifically. "Because each process is so complex, with various modes of fermentation and purification involved, each lot is slightly different," Eistetter says. "To communicate those differences and what they mean, you need to have a good background in protein chemistry. If we get an unexpected band in a gel, we have to ask ourselves, 'Is this an artifact? A breakdown product? A bad buffer?' And we have to be able to test for an answer and communicate our results to scientists throughout the company."

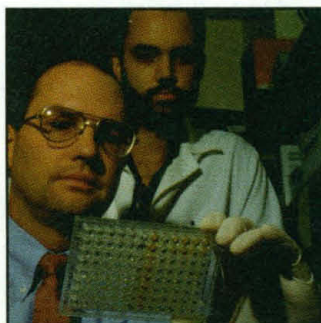
Most of Eistetter's QC employees have bachelor's degrees in biochemistry, microbiology, physiology, or related fields. Everyone has responsibility for several products, for which the basic skills of protein chemistry, including ELISA and gel electrophoresis, are absolutely necessary.

At Bristol-Myers Squibb, Jean Battaglia is director of product compliance services, a division of QA/QC that, as she puts it, "assures that once a product is on the market, it maintains its quality and efficacy." Battaglia and her group monitor the stability of products and investigate reports from consumers—everyone from wholesalers to private consumers to MDs and nurses. In Battaglia's group, the predominant background tends to be analytical chemistry; in QA as a whole, analytical chemists, pharmacists, and engineers join environmental scientists and microbiologists.

Suppose that marketing is requesting a package change for a certain product. "We'd start evaluating how that change might affect stability, and we'd design protocols to test for that effect," Battaglia says. "Our statisticians would analyze the data, and we'd work with the vendors who manufacture our packaging. We must present a rationale for each change we're considering, meaning we have to understand what we're doing and why." Such a change will trigger new contacts with the FDA, meaning close teamwork with regulatory affairs and other departments. A single modification in equipment or packaging can affect an entire product line.

Rauenbuehler enjoys being a part of a developing science. "You get exposure not only to your own company but also to regulatory agencies all over the world," he says. "You're in tune with what's going on in the industry—often, you're shaping it." Eistetter enjoys the credibility that good work brings. "People know that we add value," he says. "They know we're good scientists."

"Real science? Absolutely," Battaglia says. "We're dealing with new compounds all the time and looking for new ways to use them. We have to find ways to deal with challenges that are always changing. That's what science is about."



Above, left to right: Tony Eistetter and Carl Hoffman of Chiron; Below: Peter Rauenbuehler of Genentech

## A JOB AND A MISSION: VALIDATION

PHILADELPHIA—What is validation? Validation is what companies like LifeSciences International (LSI) do. There isn't an engineering degree in validation—at least not yet. But let us hazard a definition: The service of assuring that a company's engineering, design, and manufacturing operations comply with FDA regulations.

With about 700 employees worldwide, LSI performs engineering, architecture, construction, and validation services for the pharmaceutical, biotech, and medical device industries. A wide range of scientists thrive in such an eclectic environment. Mechanical, electrical, and chemical engineers do well—but so do people with microbiology, pharmacy, even psychology backgrounds.

The essence of validation is testing: Using standard scientific testing protocols to ensure that equipment has been installed, operates, and performs according to manufacturing and design specifications. And that's not all. Now that the equipment operates, it must comply with FDA regulations—embodied in the bible of regulatory codes, Twenty-One CFR 211, which lays out GMPs for finished pharmaceuticals.

"Compliance is more than just proper operations," says Michael Breggar of LSI. "There's the human element as well—we have to develop standard operating procedures (SOPs) for all of the equipment, demonstrate they're correct, and train the personnel."

The hottest topic in validation today, Breggar says, is validation of cleaning procedures. Few companies make only one product. Most will manufacture product A and product B, and in a variety of formulations and dosages, on the same equipment. "At FDA right now, the hot questions are, 'What sort of clean-out procedures do you have?' There had better be no cross-contamination between products A and B." Several niche companies exist that do nothing but cleaning validation.

On-the-job travel is a constant. "I tell people to expect 70 percent travel," Breggar says. "It'll come in spurts. If the client company is simply developing documents, you can do it at the office. But you can't stay at the office and test equipment in Des Moines." Some validation companies divide their work force into teams dedicated to protocol development (no travel) and teams made up wholly of "gypsies" (100 percent travel).

Tact and flexibility are two requirements to put into your suitcase. It's sometimes a challenge juggling different clients and different cultures. While the GMPs may be the same, each company may handle them differently. Going between company A and company B can be truly jarring. You'll be working closely with plant engineering, regulatory, quality assurance, and operations management people at the client company. "There's going to be a certain degree of failure in testing," Breggar says. "Fingers point, and you end up in the middle of things. We try to train our people in this delicate art."

LSI is looking for good engineers, people with experience in validation and/or regulatory consulting, and good scientists who can adapt to the life of the service company. A movement is under way at institutions such as the University of Maryland, Penn State, and Temple University to include validation in their biophysics courses. In the meantime, companies like LSI are the schools in which scientists and engineers learn about this vital field.

People often grow to love it. "We try to have the ideal situation—a team that works with the job from beginning to end," Breggar says. "That way, they live with the project all the way through. Finishing a job is like coming to the last chapter in a thousand-page novel—you get to know the cast of characters, the situation, you're comfortable with it. When at last you read in the trade press that the FDA approved the drug, you get a real sense of accomplishment."

"People who do validation should see it as though they are the ones who assure the consumer public of safety and efficacy. That puts a different spin on things. This is no longer my job; it's my mission."

Photographs by Lance Lougee; Above: taken at Chiron; Below: taken at Genentech



# Career Opportunities at St. Jude Children's Research Hospital

St. Jude Children's Research Hospital, a premier research center for biomedical research, offers postdoctoral fellowship opportunities available in the basic and clinical sciences. Recent M.D., Ph.D., D.V.M., or Pharm.D. fellows are eligible to train with leading scientists in several basic biomedical research laboratories, including biochemistry, experimental oncology, genetics, experimental hematology, immunology, molecular pharmacology, tumor cell biology and virology/molecular biology. Additional opportunities are also available in the clinical sciences, including infectious diseases, hematology/oncology, pharmaceutical sciences, pathology and laboratory medicine, radiation oncology and diagnostic imaging. An interdisciplinary effort in cell and gene therapy has been initiated. SJCRH currently has 155 postdoctoral fellows funded from peer-reviewed grants, outside fellowships and institutional sources. Ten named fellowships are currently available.

Fellowship awards are given for up to three years and are based on merit, recommendation and the promise of a productive career in biomedical research. Stipends are highly competitive.

Applicants should provide a curriculum vitae, including a brief description of their research interests, and have three references. These should be forwarded to:



*Danny Thomas, Founder*

## **Academic Programs**

### **St. Jude Children's Research Hospital**

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## "TWEAKING THE PROCESS": MANUFACTURING SCIENCES AT GENENTECH

*Manufacturing is the focus of all the efforts of all the people we heard from in this article. Their discoveries and decisions all come to effect what happens in the fully scaled-up manufacturing process. Manufacturing is an area of great diversity of backgrounds: PhDs in engineering, analytical chemistry, and biochemistry work alongside technicians with associate degrees. More than science with a pocket wrench, manufacturing is so important that no other department pulls together as many people from as many different areas. Below, Bob Bridenbaugh, group leader and senior scientist in manufacturing sciences for Genentech, discusses the complexity of manufacturing science and the versatile scientists who work there.*

Part of being a scientist is that you're always learning, always synthesizing new solutions from different areas of knowledge. That's what you have to do in manufacturing sciences. With bioreactors, you're constantly asking yourself, "How can I explain this biology I am observing? Is it the equipment, the cells, a media component, or an operating condition?"

While most people have a clear idea of what research does, they usually have no concept of development at all. Often, they are surprised when I tell them that we're doing many of the same things the discovery scientists are doing. The difference here is that we have very optimistically aggressive time lines, and our research is very much process- and task-oriented. But this is applied science, with the goal of coming up with a process for a reliable, safe, effective compound to treat various diseases. To do that, you must understand the biology of that entity and determine its key characteristics, along with the implications these have for treating your target disease state.

To meet a process- or task-oriented goal, we work in project teams composed of people from our department and other development groups in cell culture and fermentation, downstream processing or recovery, stability, characterization, assay development and pharmacology (which can include safety evaluation and pharmacokinetics), as well as support groups in QC and assay services. The composition of the team will change as the project proceeds and requires different areas of expertise. It's a very complex operation, and it's by neces-

sity nonlinear. It is massively parallel just to meet the time lines. Almost never does an individual or a single lab group do all the steps from microbiology to cloning to expression and so forth to the end, as is usually done in academia—it would take too long.

My area is downstream processing, which includes recovery process design and large-scale protein purification. We design the protein purification process, transfer it to manufacturing proper, train the people there to run it, create the documentation, and often oversee the operation. As the process goes on, you'll see variations, and there's always something to improve. Devices can surprise you! And so can the



Above: Sanders of Chiron;  
Below: Bridenbaugh of  
Genentech

scale-up issues once you're actually up and running. Very often, a fairly rapid decision is required. You're back to a very basic scientific requirement: To question your assumptions. You ask yourself, "Which way of solving this problem would work better this time? An engineering approach? Or a biochemistry approach? Or some combination of the two?" And once you've drawn some conclusions, you have to turn around and test

them and test them again. Perspective, thinking skills, communication skills,

persistence, and the ability to gain a rapid understanding of a problem or task—you really need these things. A good sense of the possible is important too—knowing which problems can be solved and which are too big for a practical solution. I'm using the same skills I've always used as a scientist—observation, organization, formulation and solution of problems, decision-making. You're always looking for improvements, robustness, streamlining, always tweaking the process to meet the goal.

## SCIENCE IN SUITS AND TIES: LICENSING AND BUSINESS DEVELOPMENT

By definition, a company is a living organism that interacts with its environment and incorporates what it needs to grow and develop while assuming new shapes and taking new directions. Nor is this a metaphor but a fact of life in any business, most of all pharmaceuticals.

Licensing and business development are in charge of scouting the territory for opportunities, taking in new ideas from outside,

and sending out ideas from within. Call it science in suits and ties. Via in-licensing, the company takes in a good idea and develops it for commercial potential; via out-licensing, that company allows other companies to buy and develop its ideas.

To work here, you need to know the science. You need to know the business too, preferably by experience rather than by the book. One person who knows both is the kinetic Tom Sanders, director of business development at Chiron. Sanders left academics and came to Chiron in 1983, early days for the biotech industry. "I had no real business experience other than common sense," he says.

What does he do now in business development? "I do deals. I create opportunities. I buy and sell technology—a whole range of activities such as in-licensing a technology from a university lab or putting together our \$20 million relationship with Viagene."

"We have many different backgrounds among our employees," Sanders says. "People come here by many routes. One has a BS and MS in biochemistry, with an MBA on the side; we've also had a PhD in yeast expression biology; another has a PhD in protein biophysics; our vice president has an MBA, and he acquired the science by osmosis, as did our previous vice president, who was a lawyer."

Those interested in his area need "a solid science background—maybe not a PhD in all cases, but very good science." Scientists in his field must simultaneously know the science in detail and be able to take the broad view: "You had better understand all the ramifications of the technology. You must be able to appreciate how different sciences synergize. An excellent example is gene therapy. Many different components are involved in delivering genes to specific targets, and when you are buying and selling technologies to do that, you have to know what you're buying and selling."

Sanders begs us to say a word on communications skills. He and his people do a great deal of writing: Term sheets, draft amendments to agreements, correspondence, proposals, capability statements, backgrounders, and more. "Clear, incisive writing is absolutely essential. So are good verbal communication skills. I give many presentations, especially company overviews when working in my groups. If there is no leading scientist present, I have to be able to present the scientific angles accurately and accessibly."

Sanders recommends experience on the business side as well as good science. And one thing more: A taste for creative chaos. "You have to be able to thrive in the entrepreneurial, informal, somewhat chaotic environment here. Okay, you've come to us from a big university or a large company—but can you function in an environment where decisions are made while walking down the hall? Without a doubt, we're doing science here—and a whole lot else."


Photographs by Lance Lougee; Above: taken at Chiron; Below: taken at Genentech



# SCIENCE DRIVES OUR SUCCESS

Our primary focus at Genentech is to provide an environment where science thrives. This commitment to scientific excellence applies to all departments and is the driving force within our company.

Our future is solid due to the number of products in the pipeline. Products in development include antibodies to combat breast cancer; vaccines to fight HIV-1; anti-inflammatory agents; asthma and allergy antibodies; treatments to mitigate chemotherapy; as well as refinements and extensions of some of our five currently marketed products.



This rich product pipeline creates outstanding scientific opportunities. Consider the challenge of applied science and the impact you can have on our manufacturing processes today in the following areas:

## SCIENTIST - PROCESS SCIENCES

Focus on development and characterization of processes to manufacture pharmaceutical proteins within Cell Culture & Fermentation R&D, and work on independent projects in this field. Ph.D. and 3+ years in cell/ molecular biology using mammalian cells for expression of heterologous proteins is necessary. Dept. CSRA

## SCIENTIST - VIROLOGY

Your clinical virology background and familiarity with multiple virus families with infectivity and molecular assays will allow you to be directly involved in assay development, virus testing and virology support. Ph.D. with a minimum of 2 years' related experience, including regulatory filings, is ideal. Dept. CSMD2

## SCIENTIST - CELL BIOLOGY/ PHYSIOLOGY

Your broad-based cell culture, molecular biology and cell genetics background will enable you to contribute to a group responsible for cell banking/cryopreservation and cell characterization. A Ph.D. with a minimum of 2 years' postdoc experience required; GMP and regulatory experience is a plus. Dept. CSMD1

## MANAGER - CELL CULTURE OPERATIONS

Take a leadership role in Biochemical Manufacturing as you manage the activities of supervisors and technicians providing cell cultures for development, clinical and licensed product efforts and ensure GMP compliance. Your BS combined with an advanced degree in biological sciences, engineering or management will allow you to also provide technical/project management. A minimum of 8 years' related biotechnology experience, with a manufacturing or clinical development focus is required. Dept. CSCR

If you want to join in our success, look into these opportunities at Genentech. Find out about our extensive benefits package that includes fully-paid dental/medical/vision coverage for you and your family, child care facilities, free health club membership, and an employee stock purchase plan.

For immediate consideration, please send your resume to Genentech, Inc., Human Resources Dept. (*reference appropriate code*), 460 Point San Bruno Blvd., South San Francisco, CA 94080. We promote and actively support affirmative action and equal employment opportunity. Women and minorities are encouraged to apply.

# Genentech, Inc.

**DepoTech** is a leader in lipid-based sustained release systems for the controlled delivery of pharmaceutical agents. Established to address the significant, currently unsatisfied market need for drug delivery systems, our encapsulating technology, Depofoam™, is a unique, proprietary, lipid-based injectable material that can encapsulate a wide variety of water stable drugs to provide sustained and controlled delivery. Currently, we have exciting opportunities in a variety of fields.

**SCIENTIST - PHARMACOKINETICS:** Heads up a small group in the design and execution of preclinical studies involving a novel controlled release technology. A Ph.D. in pharmaceutical sciences, pharmacokinetics or a related discipline and 4-8 years of appropriate industry experience in the development of human pharmaceuticals is required. **JOB CODE 010**

**PROCESS ENGINEER** Play an important role in design and development of process for producing sustained release pharmaceutical agents. BS/MS in Chemical Engineering or related field with at least two years of hands on process design and scale-up experience required. Strong background in colloid science, emulsions and biochemistry is desirable. Knowledge of cGMP, aseptic processing and CIP/SIP design is a plus. **JOB CODE 009**

**STATISTICIAN** Responsible for the analysis of preclinical and clinical studies carried out during the development of new drugs. Advanced degree in statistics or biostatistics. Experience in analysis of clinical data in reporting to the Food and Drug Administration required. Good knowledge of at least one of the major statistical packages is required. PC environment experience, as well as support of design and analysis of industrial experiments are a plus. Good written and oral communication skills are essential. **JOB CODE 007**

**FACILITIES ENGINEER,** Provide corrective and preventative maintenance. Requires 2-4 years experience HVAC maintenance, high purity water systems, steam boilers, compressed gas systems, as well as broad trade knowledge in plumbing, electrical and electrical maintenance. Prior work experience in a biotech manufacturing environment is highly desirable. **JOB CODE 002**

**CALIBRATION SPECIALIST** Responsibilities include calibration laboratory set up, calibration database maintenance, in-house calibration testing and coordination with outside calibration services, validation testing, and writing Calibration and other SOPs. Must be organized, detail oriented, and proficient in word processing, spreadsheet applications and database software, and have experience calibrating: Data acquisition systems, WFI and RO/DI systems, magnehelic, pressure and temperature gauges, and other laboratory and pharmaceutical equipment; PLC programming; BS or equivalent and 2-4 years pharmaceutical, biotech or medical device experience is required. BS or equivalent required. **JOB CODE 026**

**VALIDATION ENGINEER** Responsibilities include writing Validation SOPs, Protocols and Final Reports; performing biotech validation testing and results tabulation. BS/BE and 2-4 years biotech or pharmaceutical experience with Process and System Validation; CQ, IQ, QQ, & PQ studies; data acquisition set up, programming and calibration; PLC programming and software proficiency are required. **JOB CODE 032**

**DepoTech** is a dynamic, rapidly growing privately-held biopharmaceutical company. We offer outstanding opportunities for career growth and excellent salary and benefits. Please send resume (no calls please) with three references to: **Human Resources (Job Code \_\_\_\_), DepoTech Corporation, 11025 N. Torrey Pines Road, Suite 100, La Jolla, CA 92037.**



**DepoTech**



American Museum of Natural History

## DEAN OF PUBLIC PROGRAMS

The American Museum of Natural History seeks an outstanding professional with broad interests, background, and knowledge in science education and exhibition to serve as Dean of Public Programs. The Dean will report to the President of the Museum and will be a senior officer of the Museum. Reporting to the Dean will be the Exhibition and Education departments.

The Dean will provide leadership for active and far-reaching education and exhibition programs dedicated to enhancing the scientific literacy of a broad audience of children and adults. The Dean will be expected to provide the intellectual strength needed to stimulate and coordinate the energies of the Museum's scientific staff, exhibit developers, educators, and consultants in developing an integrated, creative, and effective strategy for Museum-wide public programs. This will be an opportunity to build upon a rich educational tradition, to strengthen it, and to utilize new interpretative techniques to develop national and international initiatives to improve the public's understanding of science.

An advanced degree would be preferred for this position, as well as substantial experience in science education and/or exhibition, but candidates may come from an unconventional background. Familiarity with new and emerging technologies is valuable. Significant managerial experience is also sought. The Museum is an Equal Opportunity Employer and encourages applications from women and members of minority groups.

Nominations and letters of application with curriculum vitae should be sent to:

Lauren Rabin, President's Office  
American Museum of Natural History  
Central Park West at 79th Street, New York, New York 10024.



**Monterey Bay Aquarium  
Research Institute  
(MBARI)**

## SENIOR SCIENTIST / DEPARTMENT CHAIR

Applications and nominations are invited for a newly created Senior Scientist position at MBARI, with particular emphasis towards the sub-disciplines of marine biology, ocean physics, geochemistry, geology and geophysics. The successful candidate will be selected based on the ability to most appropriately complement MBARI's unique position as a premier independent laboratory, with a major commitment to scientific discovery through advanced technologies for ocean observation. Additionally, the incumbent will be recruited to serve a term as Chairperson of the Science Department, participating in the governance and daily management of the Institute.

A Ph.D. in a scientific discipline and 10+ years demonstrated success in conducting marine research is required, with substantial, significant and original research contributions. In addition, proven leadership and administrative success is essential, as the Science Chairperson serves as a member of the MBARI management team.

Applications should include an updated CV, a statement of research interests, and four professional references. Applications will be considered immediately, with a target review date of June 1, 1995 and a preferred hire date before December 31, 1995. MBARI offers a competitive compensation and benefits package, including retirement. Please respond to Director, SS-MBARI, 160 Central Avenue, Pacific Grove, CA 93950.

**EOE MBARI welcomes diversity.**



National Institutes of Health / National Institute on Drug Abuse

## DIRECTOR, DIVISION OF INTRAMURAL RESEARCH

Location: Baltimore, Maryland

The National Institute on Drug Abuse (NIDA) invites nominations and applications for this senior scientific position located in Baltimore, Maryland.

The Director of NIDA's Division of Intramural Research is responsible for the direction of the largest single research center in the world dedicated to basic biomedical and clinical research on drug abuse and addiction. Located on the Hopkins Bayview Campus, the program includes substantial resources and is comprised of several large multi-disciplinary preclinical laboratories and clinical research programs that include both inpatient and outpatient facilities.

Desirable qualifications include an M.D. or Ph.D. degree with extensive postgraduate research experience; and experience in the scientific and administrative management of research programs which has established the candidate as an authority in preclinical or clinical research approaches in the neurosciences or other biomedical or behavioral sciences.

Salary will be negotiated within the allowable limits established by law. Copies of the vacancy announcement may be obtained by calling the NIDA Personnel Management Branch on (301) 443-9593. Applicants must submit one of the following documents: (1) a resume/curriculum vitae and bibliography; or (2) a Federal employment application (SF-171, or OF-612). In addition, applicants are encouraged to submit a narrative related to the qualification requirements listed in the vacancy announcement.

Submit complete application materials by May 15, 1995, to:

**NIDA Personnel Management Branch  
Attention: Ms. Maryann Pafitis  
5600 Fishers Lane, Room 10-21  
Rockville, Maryland 20857**

All qualified candidates will receive consideration without regard to race, color, age, religion, gender, national origin, political affiliation, sexual orientation, marital status, union membership or disability.

NIH is an Equal Opportunity Employer

## Research Scientist

Bio-Rad Laboratories is a world leader in the fields of clinical diagnostics, life science research products and analytical instruments.

Our continued growth has created the need for creative scientists with experience in the commercial development of non-isotopic immunoassays. Successful candidates will have a BS, MS, PhD in Life Sciences or equivalent and demonstrated success in the development of immunochemical assays.

For consideration, please send your resume, complete with salary history to: Bio-Rad Laboratories, 4000 Alfred Nobel Dr., Dept. 199, Hercules, CA 94547. An Equal Employment Opportunity / Affirmative Action Employer.

**BIO-RAD**

**Bio-Rad Laboratories**

## POSTDOCTORAL FELLOWSHIPS

### IN NEW DRUG DEVELOPMENT

The Department of Clinical and Scientific Affairs (CSA), Pfizer Central Research, New York City, announces its annual competition for Postdoctoral Fellowships in New Drug Development.

The Department of Clinical and Scientific Affairs has a broad range of activities. It is responsible of designing and conducting clinical development programs for Pfizer discovered compounds, as well as investigating and developing new claims and indications for marketed compounds. CSA also designs and conducts clinical development programs for new formulations and dosage forms of existing products.

The Postdoctoral Fellows will become members of project teams, and gain experience in the design and implementation of clinical research programs. While no laboratory or clinical studies are actually conducted at Pfizer in New York, Fellows will interact with specialists in their chosen field to have studies performed at contract laboratories, universities, and with individual investigators.

Two fellowships will be given for clinical research related to new drug development in the following areas: allergy, central nervous systems, microbiology/infectious disease, oncology, pharmacology, pharmacokinetics and urology. Candidates should possess a doctoral degree (MD, Ph.D. or PharmD), have no more than one year of non-industry postdoctoral experience, and be authorized to engage in employment within the US. Prior experience with clinical trials or the drug development process is desirable, but not a prerequisite. Salary will be based on qualifications and experience.

### DEADLINE TO SUBMIT APPLICATION IS MAY 1, 1995

For further information forward resume and salary history to: **Postdoctoral Fellowship in New Drug Development, Department of Clinical and Scientific Affairs, Pfizer Central Research, 235 East 42nd Street, 15th Floor, Stop 19, New York, NY 10017-5755, Att: Michael Delicio, Senior Personnel Associate.** We are an equal opportunity employer.



## Postdoctoral Research Associates

The Agricultural Research Service, as the principal scientific research agency of USDA, conducts research to solve technical food and agricultural problems of broad scope and high national priority. The agency's work is carried out under six specific research objectives--conservation of soil, water and air, plant productivity, animal productivity, commodity conversion and delivery, human nutrition and well-being, and integration of systems. Overall aim of ARS research is to ensure the continuation of an adequate supply of food and fiber of high quality to meet the needs of American people and for export.

**ARS is currently recruiting for postdoctoral positions throughout the United States. Opportunities exist in many research areas, including:**

- Human Nutrition
- Genetics
- Immunology
- Virology
- Biochemistry
- Chemistry
- Microbiology
- Animal Science
- Entomology
- Plant Physiology
- Plant Pathology
- Agronomy
- Soil Science
- Engineering



Agricultural  
Research  
Service

Successful candidates will be hired initially for up to 2 years in duration. Salary for these positions \$34,295 to \$41,104 (plus locality pay) will be based on qualifications and experience. There are some employment restrictions for non-U.S. citizens.

*For written descriptions of positions and application procedures, write to:*

**Rita J. Atta**  
Human Resources Division  
USDA/ARS  
6305 Ivy Lane, Room 130  
Greenbelt, MD 20770-1435  
or call:  
**Julie Cypriano**  
301-344-0101

(NW9070)A

ARS is an Equal Opportunity  
Employer



The Beckman Institute for Advanced Science and Technology

University of Illinois at Urbana-Champaign

### ASSOCIATE DIRECTOR FOR EXTERNAL AFFAIRS AND RESEARCH

The Beckman Institute for Advanced Science and Technology at the University of Illinois at Urbana-Champaign (UIUC) is the nation's largest, most broadly based multidisciplinary academic research organization, housing more than 700 researchers in areas ranging from biological intelligence and human-computer intelligent interaction, to molecular and electronic nanostructures. The 84 research faculty are drawn from 16 departments at UIUC.

The Beckman Institute seeks an experienced manager or executive, from government, academia, or industry, with the necessary scientific stature to work with corporate executives, government officials, and academic and industrial research scientists, to develop broad-scale research relationships between the Institute and entities such as corporations, research institutes, and government agencies. These relations include major multidisciplinary research projects involving researchers from academia, industry, national laboratories, and industrial laboratories. The Associate Director will also assist the Director in the daily operation of specialized research facilities and coordinate public relations efforts.

The position is a regular full-time academic professional appointment. An earned doctorate in an engineering or science discipline is strongly preferred, but the combination of an advanced degree in science or engineering and appropriate industrial experience will be considered.

The position begins August 21, 1995, and all applications received by May 1, 1995 will receive full consideration, though applications may be accepted until the position is filled. Please send a letter of interest, resumé, and names and contact information for at least three references to:

**Jiri Jonas, Director**  
Beckman Institute for Advanced Science and Technology  
University of Illinois at Urbana-Champaign  
405 North Mathews Avenue, Urbana, IL 61801  
j-jonas@uiuc.edu, 217-244-1176.

The University of Illinois is an AA/EEO Employer.

### Scientific Positions Available

Oread Laboratories has redesigned its technical divisions and has expanded its service offerings. Oread is seeking sharp, technically qualified, entrepreneurial minded scientists to fill the positions of this growing analytical company. We are seeking individuals possessing B.S., M.S., and/or Ph.D.s in the following technical fields.

- Organic Chemistry
- Pharmaceutical Chemistry
- Microbiology
- Analytical Chemistry
- Biochemistry
- Toxicology
- Physical Chemistry

Applicants must possess strong scientific backgrounds, preferably with industrial experience, and a desire to be on the ground floor of a growth company. Excellent benefits and salary. Resumes and letter of intent to: Human Resources, Oread Laboratories, Inc., 1501 Wakarusa Dr., Lawrence, Kansas 66047.

No phone calls please.

EOE





CoCensys, Inc., a progressive and innovative pharmaceutical company located in Irvine, California, has immediate openings in the following positions.

### Director of Synthetic Chemistry

Requires a Ph.D. in Organic Chemistry. Minimum 10 years of pharmaceutical industry experience, with specific experience in medicinal chemistry. Proven expertise in the discovery of new chemical entities which could be advanced into development as potential drugs. Substantial publication record, both in scientific journals and patents. Experience in preparing and executing comprehensive synthesis plans aimed at discovering and optimizing innovative chemical entities preferred. Must have management experience.

### Director of Pharmaceutical Science

Requires a Ph.D. in Pharmaceutical Sciences. Minimum 10 years of pharmaceutical industry experience, with extensive experience in preformulation research and formulation development of solid and parenteral dosage forms of small molecule pharmaceuticals. Proven expertise in regulatory filings. Ability to provide scientific guidance and technical direction to contract development organizations. Must have management experience.

### Group Leader, In Vivo Pharmacology

Requires a Ph.D., M.D., or D.V.M. degree. Applicant must have experience with the rat middle cerebral artery occlusion model and other rodent or non-rodent models of focal and global brain ischemia. Experience with animal models of pain is desired.

CoCensys is a people-oriented environment with a winning spirit and an excellent benefits package. If you are future-oriented and challenge-seeking with the above qualifications and a willingness to relocate, please send resume and salary requirements to: **COSENSYS, INC., Human Resources Dept., 213 Technology Drive, Irvine, CA 92718.**



**CoCensys**

Affirmative Action/Equal Opportunity Employer  
NO PHONE CALLS, PLEASE.

## BESSELAAR

*A Corning Pharmaceutical Services Company*

There's never been a better reason to team up with Besselaar, a global leader in clinical drug development.

### REGIONAL CLINICAL RESEARCH ASSOCIATES

Based from your home, you will monitor Phase II and III clinical trials of drugs and biologics. Qualified candidates will possess a minimum of two years of extensive field monitoring experience and a BA/BS in the life sciences or nursing.

### SENIOR CLINICAL RESEARCH ASSOCIATES

You will serve as a Project Manager for Phase II and III clinical trials and assist with monitoring on an as-needed basis. Requirements include a BA/BS, preferably in the life sciences or nursing, and a minimum of four years of field monitoring and project management experience. Supervisory experience preferred.

### CLINICAL RESEARCH ASSISTANTS/ASSOCIATES

Travelling throughout North America to monitor Phase II and III clinical trials, assisting in study administration and providing data QA are the major responsibilities for CRAs. Requirements include a BA/BS, preferably in the life sciences or nursing, and previous experience in a medical/clinical research environment. Monitoring experience preferred.

### REGULATORY AFFAIRS ASSOCIATES

You will utilize your knowledge of GCPs and GLPs in a QA/QC environment to conduct both internal and field audits. You will also assist the packaging group in the design, labeling, and distribution of clinical supplies. Qualified candidates will have a BA/BS in the life sciences or pharmacy and previous experience in Regulatory Affairs, QA or Clinical Research.

Besselaar offers competitive salaries and excellent benefits, including a comprehensive medical/dental plan, 401(k), and company-funded pension plan. Please send your resume with salary requirements to: **Human Resources, Dept CS- Sci, G.H. BESSELAAR ASSOCIATES, 210 Carnegie Center, Princeton, NJ 08540-6233.** Only those selected for further consideration will be contacted. Principals only. Drug screening is a condition of employment.

*An Equal Opportunity Employer (M/F/D/V)*

*The reasons for teaming up with Besselaar have never been stronger.*

## INJURY → INFLAMMATION → FIBROSIS

**FIBROGEN, INC.** is an emerging biotechnology company committed to the development of therapeutics for the treatment of fibrotic diseases and excessive scarring. This has been a common, serious, and difficult area -- until now. FibroGen's extensive worldwide cooperation with university scientists has prompted the development of lead compounds which block fibrosis and collagen deposition. In addition, new treatments for inflammatory diseases, the aging of skin and other connective tissue disorders are under development. Cell and animal models relevant to human disorders are also to be undertaken. Other key areas will involve evaluating drug delivery systems and toxicity as well as pro-drug development.

FibroGen is currently building an active, in-house team at all levels. We are looking for individuals in the following areas:

**ORGANIC DRUG SYNTHESIS**

**MEDICINAL CHEMISTRY**

**PHARMACOLOGY**

**BIOCHEMISTRY**

**CELL BIOLOGY**

**ANIMAL PHYSIOLOGY**

**ASSAY DEVELOPMENT**

The successful candidates for our new team will assess the potency of enzyme inhibitors as modifiers of collagen synthesis in vitro, in tissue and cell culture, as well as in animal models. They will synthesize modified forms of enzyme inhibitors, develop drug delivery systems, and evaluate toxicity.

FibroGen has recently opened a new laboratory facility in the San Francisco Bay Area. To learn more about our company and our current activities, we invite you to send your C.V./resume to: **FibroGen, Inc., 772 Lucerne Drive, Sunnyvale, CA 94086** or fax to: **(408) 720-7212.** We are an equal opportunity employer.

## FIBROGEN

## **FDA** Challenging Biomedical Employment Opportunities

The Centers for Biologics and Drug Evaluation and Research are searching for **outstanding Physicians and Scientists** interested in a challenge by participating in the development and approval process for new biological and drug products. Physicians and scientists serve on multidisciplinary scientific teams of highly skilled professionals. Duties may include reviewing and evaluating Investigational New Drug applications and biological product license or new drug applications; reviewing proposed labeling; evaluating adequacy of the methods, facilities and controls used for approval or non-approval of applications. Some positions offer the unique opportunity to conduct biomedical research in combination with review responsibilities. These positions have a high degree of independence and involve complex medical, scientific, and regulatory issues. Opportunities for professional development may include further training, attendance at scientific meetings and conferences, and clinical activities.

**Qualifications:** **Physicians** must have completed all requirements for a Doctor of Medicine or Osteopathy Degree from an accredited institution. Graduates of foreign medical schools must submit a copy of their permanent Educational Commission for Foreign Medical Graduates (ECFMG) certification. Physicians should be board eligible or certified in a primary specialty or have completed at least four years residency training or possess equivalent experience. A background combining research experience with clinical medicine is preferred along with specialty training and expertise in one or more of the following areas: oncology, infectious diseases, hematology, rheumatology, epidemiology, pediatrics, pulmonary diseases, allergy, immunology, parasitic diseases, pathology, pediatric pulmonology, gastroenterology, or related disciplines. For **scientists**, doctoral level degrees in biological or physical sciences, pharmacology, toxicology, or related disciplines, along with advanced training and/or experience in the development, manufacture or testing of biologics, drugs and/or antibiotics is desirable.

For all candidates, experience in the pharmaceutical industry along with computer applications would be desirable. In addition, candidates should have highly developed analytical, written and oral skills, as well as the ability to research problems and issues and to use mature judgment in problem solving.

Candidates for Civil Service or Commissioned Corps appointments must be U.S. citizens. Candidates for Fellowships may be either U.S. citizens or resident aliens eligible for citizenship within four years.

**Location:** Offices and laboratories are strategically located on the campus of the National Institutes of Health in Bethesda, Maryland, or in several locations throughout the Rockville, Maryland, area.

**Salary:** For **physicians**, Civil Service salary range for GS-13 through GS-15 is \$60,281 to \$92,856. In addition, some positions may include a Physician's Comparability Allowance. For **scientists** (other than M.D.), Civil Service salary range for GS-11 through GS-15 is \$36,174 to \$93,166. Salary, benefits, research support, and level of responsibility are commensurate with education and experience. Also, positions may be filled by appointment in the U.S. Public Health Service, Commissioned Corps, or in the Fellowship Program, with commensurate salary and benefits.

**How to Apply:** Interested candidates should send an Application for Federal Employment (SF-171) and/or current detailed Curriculum Vitae along with bibliography, statement of regulatory/research interest, transcript, and names of three references to:

**FDA/Center for Biologics  
Evaluation & Research**  
1401 Rockville Pike  
Suite 200N - HFM-50  
Rockville, MD 20852-1448  
ATTN: Ms. Blumenthal (161)

**FDA/Center for Drug  
Evaluation & Research**  
5600 Fishers Lane  
HFD-505, Rm. 6B-17  
Rockville, MD 20857  
ATTN: Recruitment Staff (237)

FDA IS AN EQUAL OPPORTUNITY EMPLOYER AND HAS A SMOKE FREE ENVIRONMENT

## **Bioscience Career Opportunities Start Here...**

*As the nation's original producer of professional job fairs designed for the biotech, pharmaceutical and medical device industries, Life Science Associates has provided a forum for the best scientific talent to meet directly with the country's leading firms for over six years.*

*See what opportunities await you at  
**Life Science Associates BioExpo Career Fairs***

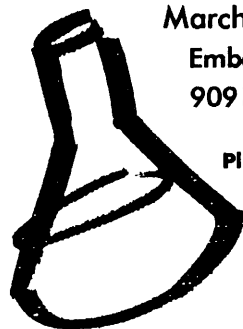
**Parsippany, NJ**

**March 30 - 3PM to 7PM**

**March 31 - 9AM to 1PM**

**Embassy Suites Hotel**

**909 Parsippany Blvd.**



**Plus other 1995 events...**

**May 5 - San Francisco**

**July 10-11 - Boston**

**September 19 - San Francisco**

**October 23 - Boston**

**"East Coast Diversity Day"**

*Opportunities exist throughout the U.S. for BS/MS/PhD through management level professionals. Register FREE at the door for the New Jersey event, or for registration information on future LSA job fairs, send request to: LSA, 2100 Embarcadero, Suite 101, Oakland, CA 94606. Companies interested in recruiting call 510-436-3976.*



## **1995 WORKSHOPS**

**June 4-9, 1995**

**Nucleic Acid and Protein Sequence Analysis<sup>1</sup>**

- Database Searches and Pairwise Alignments
- Multiple Sequence Alignments and Pattern Identification
- Visualization of Macromolecules and Sequence Alignments

*Application Deadline: April 17, 1995*

**June 25-28, 1995**

**Structure Determination From NMR<sup>2</sup>**

- Solving NMR solution Structures of Biological Macromolecules

*Application Deadline: April 28, 1995*

**August 16-19, 1995**

**Molecular Mechanics and Dynamics of Biopolymers<sup>2</sup>**

- Development of Force Fields
- Structure: Thermodynamics, Refinement & Analysis

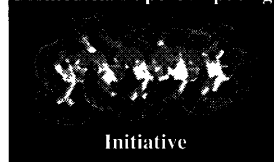
*Application Deadline: June 22, 1995*

<sup>1</sup> Funded by a grant from the NCHGR, NIH. Financial assistance for travel & lodging for researchers affiliated with U.S. academic institutions is available.  
<sup>2</sup> Funded by a grant from NCRR, NIH. Travel, meals and hotel accommodations for researchers affiliated with U.S. academic institutions are supported by this grant.

**Direct Inquiries to:**  
Nancy Blankenstein,  
Pittsburgh Supercomputing Center  
4400 Fifth Avenue, Suite 230C  
Pittsburgh, PA 15213  
biomed@psc.edu or 412-268-4960

**WWW information** <http://pscinfo.psc.edu/biomed/workshops95.html>

**Biomedical Supercomputing**



**Initiative**



## FIELD APPLICATIONS SPECIALIST

Picture yourself in San Diego, Denver, or another region of your liking in the U.S., in an organization that encourages excellence through team efforts, innovation and continuously improving goods and services. At Gelman Sciences, a microporous membrane manufacturer committed to developing and marketing filtration products which exceed the requirements of our customers, we are clear that enthusiastic, involved employees are the key to our continued success.

To support our aggressive plans for expansion, we are seeking individuals with unique scientific/sales backgrounds. To earn a position on our elite sales team we require a life sciences degree, 5+ years' experience using life sciences knowledge in a high technology medical, biotech or diagnostic environment, and the ability to positively influence buying decisions for end users in research, quality control and technical production. If you can demonstrate a successful track record in attaining stretch growth goals, and using proven sales techniques to achieve strategic objectives, we invite you to consider the challenge of managing our new and existing account business development efforts. We will rely on you to use your talents to identify customer needs and problems, offer scientifically sound solutions, and obtain commitments to gain sales. Travel is required and we will support the set up and maintenance of your home office.

In return for your expertise, excellent people skills and innovative problem-solving abilities, we offer a highly competitive sales incentive compensation plan, many valuable benefits and significant opportunities for higher level of professional development. For confidential consideration, send resume to **Gelman Sciences, 600 S. Wagner Rd., Attn: Human Resources, # (SCI), Ann Arbor, MI 48103-9019.** EOE.



**GelmanSciences**

## Assistant/Associate Director, Regulatory Affairs

**Univax Biologics, Inc.** is a dynamic biopharmaceutical firm that develops immunotherapeutic products which harness the natural human immune system to prevent and treat serious infections and autoimmune diseases. Our development-stage products use proprietary vaccines to produce polyclonal antibodies in healthy plasma donors.

Univax is seeking a highly-skilled individual with three to five years of practical product or assay development experience with vaccines (polysaccharide and protein chemistry) at the Laboratory Manager level who is interested in transitioning into the regulatory arena. At minimum, a B.S. in pharmaceutical, biological or chemical science is required. An advanced degree is preferred.

Univax offers an excellent compensation package which includes generous life and health insurance benefits, a contributory 401(k) plan, and equity participation programs. For immediate consideration to become part of our team, submit resumes in confidence to:

**UNIVAX BIOLOGICS, INC.**  
Human Resource Department  
12280 Wilkins Avenue  
Rockville, MD 20852  
Fax (301) 770-3097

EEO M/F/D/V

Principals Only

Smoke-Free Work Place

# A CAREER OF DISCOVERY

## -Postdoctoral Positions- California and Japan

Tanabe Research Laboratories, USA, Inc., is an established drug discovery laboratory dedicated to the design of small molecules for subsequent development as anti-inflammatory therapeutics. We are focused on cell adhesion antagonists as well as antagonists of signal transduction pathways.

We will be holding interviews at the FASEB/experimental biology Conference in Atlanta, GA from April 10th-13th. **Interviews to be held during the conference will be arranged prior to the event.** We invite immediate response from qualified PhD scientists interested in meeting with us at the conference to discuss post-doc positions in San Diego, CA and the laboratories of our parent company Tanabe Seiyaku in Japan. Tanabe Seiyaku is one of the top ten pharmaceutical companies in Japan.

### SAN DIEGO POSITIONS

The following positions are located in San Diego, CA, an outstanding scientific environment for research in the pharmaceutical sciences:

**MOLECULAR BIOLOGIST:** Experience in gene expression in yeast and mammalian cells required; experience with two-hybrid system desired.

**CELL BIOLOGIST/BIOCHEMIST:** Prefer interest in inflammatory processes and/or osteoarthritis.

### OSAKA/TOKYO POSITIONS

The following positions are located in either Osaka or Tokyo (some positions may be located in the U.S. initially, prior to relocation to Japan):

- **PHYSIOLOGISTS**
- **PHARMACOLOGISTS**
- **CELL BIOLOGISTS**
- **BIOCHEMISTS**
- **MOLECULAR BIOLOGISTS**

Along with highly competitive salaries, candidates selected for positions in San Diego, CA will enjoy an outstanding benefits package including medical/dental/ life insurance and a company-matched 401(k) plan. Candidates selected for positions in Japan will qualify for the Tanabe Seiyaku Benefit Program. If you're interested in joining an intellectually stimulating, highly motivated group of scientific professionals, submit your resume along with cover letter and the names of three references immediately to: **V. Smith, 4540 Towne Centre Court, San Diego, CA 92121; fax (619) 558-0650.** We are an Equal Opportunity Employer.



**TANABE RESEARCH**  
Laboratories, USA, Inc.

## WE'RE CHANGING MILLIONS OF LIVES. NOW IT'S YOUR TURN.

*At Lederle-Praxis Biologicals we're pioneering the design, manufacture and marketing of vaccines so sophisticated, they're changing lives—right now.*

*Here, you'll help improve the quality of a lot of lives. Including your own. Our research facility, located in a suburb of Rochester, NY, is within easy reach of some of New York State's most attractive cultural, educational and recreational resources.*

### SR. RESEARCH SCIENTIST Molecular Biology

You will perform prokaryotic protein expression, expressing antigens for vaccine production purposes. In this role, you'll evaluate promoters, analyze message stability and optimize yields. Our ideal candidate will possess a Ph.D. in Microbiology, Molecular Biology or a related discipline and have a minimum of 6 years' related experience. Experience with prokaryotic cloning and expression systems is required.

At Lederle-Praxis, you'll enjoy a professional atmosphere and the kind of salary and benefits package you'd expect from an industry leader. Please send your resume to: Human Resources Department, Lederle-Praxis Biologicals, 211 Bailey Rd., West Henrietta, NY 14586-9728. An Equal Opportunity Employer.



**Lederle-Praxis Biologicals**

Protecting Families Through Immunization®

## BAYLOR COLLEGE OF MEDICINE

### Chair, Department of Pharmacology

Baylor College of Medicine seeks outstanding candidates for the position of Professor and Chair of the Department of Pharmacology. The Department is regarded as a key basic science department, highly interactive with the College's many clinical programs.

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

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



**Stuart C. Yudofsky, M.D.**  
Chair, Search Committee for the  
Department of Pharmacology  
Chair, Department of Psychiatry  
and Behavioral Sciences  
Baylor College of Medicine  
One Baylor Plaza, Room 115D  
Houston, Texas 77030-3498

### CHIEF FINANCIAL OFFICER SCIENTIFIC RESEARCH LABORATORY

A major biotechnology scientific research laboratory being formed in La Jolla, California, is seeking an energetic Vice President - Chief Financial Officer. His or her initial activities will focus on the design and construction of the facility and the development of the operating structure of the laboratory, with transition to ongoing operating functions within two to four years.

The qualified candidate will have an MBA or be a CPA or have equivalent skills, with strong budgeting, cash management, and accounting skills. Experience working in a scientific or related technical organization would be an advantage.

The successful candidate will be responsible for working with the development team during the building process, procurement of scientific equipment, designing employee benefit programs, and administering the ongoing operations of the laboratory.

Top academic and intellectual qualifications are a must. A highly competitive salary and benefits package reflects the importance of this appointment. Interested persons should forward a letter of interest, curriculum vitae and salary requirements to P.O. Box 2209, La Jolla, CA 92038-2209.

### POSTDOCTORAL POSITIONS UNIVERSITY OF CALIFORNIA, SAN FRANCISCO SCHOOL OF DENTISTRY

Applications from **DENTIST-SCIENTISTS** are invited for several **POSTDOCTORAL POSITIONS** in fields related to diseases of oral biology. The primary goal of this new postdoctoral program is to augment/strengthen the research skills of dentist-scientists to enhance their ability to pursue independent research careers in either academic dentistry or industry. Senior, well-established research investigators will serve as mentors in the program. Opportunities are available to gain advanced research experience in cell and molecular biology of extracellular matrices (collagen, integrins, second messengers), bacterial and fungal adherence, microbial pathogenesis (regulation of virulence factors, heat-shock proteins), virology (herpesviruses, papillomaviruses, HIV), and craniofacial development (growth factors). Applicants must have a DDS or equivalent degree, advanced training in a recognized clinical specialty, and a recent PhD in Oral Biology or a relevant basic science. Positions are available beginning July 1, 1995.

Send curriculum vitae, a summary of research interests, and the names and addresses of three references to Amy Beinart, UCSF Department of Stomatology, 513 Parnassus Ave., Room S612, San Francisco, CA 94143-0422, USA.

Enquiries about the position should directed to

Gary C. Armitage (tel: 415 476-8955/  
fax: 415 476-4204) or John S. Greenspan  
(tel: 415 476-5415/fax: 415 476-4204/  
email: stom%johnhg@cemail.ucsf.edu).

UCSF is an affirmative action/  
equal opportunity employer.

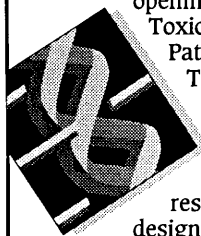
Women and minorities are encouraged to apply.



## TOXICOLOGIST

### Department of Pathobiology and Toxicology

Genentech, Inc. is a pace-setting international biotechnology company that discovers, develops, manufactures and markets pharmaceuticals for significant unmet medical needs. We have an opening for a Ph.D.



Toxicologist in the  
Pathobiology and  
Toxicology  
Department.

The individual  
will be primarily  
responsible for the  
design, conduct, and the  
scientific evaluation of Safety

Assessment studies conducted in vivo or appropriate alternative test systems in support of US and international marketing applications. Candidates will be expected to independently prepare comprehensive pre-clinical safety assessments in the support of these applications and to present and defend this data to regulatory authorities. Interacting with other scientists and working with project teams to provide expertise on all relevant safety issues regarding experimental and marketed Genentech products will also be key.

Qualified candidates will have a PhD or equivalent in Toxicology and a minimum of 4 years' experience in the Pharmaceutical industry working with a wide variety of pharmaceutical agents and classes of compounds. Experience with protein therapeutics would be a plus. Board certification in Toxicology is desirable.

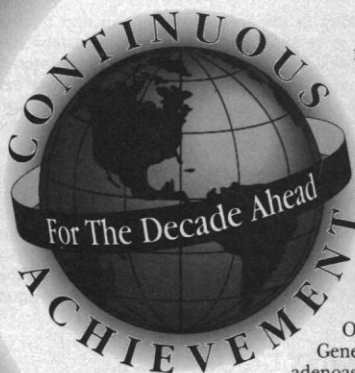
Genentech offers an excellent salary and benefits package which includes child care resources, free health club membership and fully paid medical, dental and vision coverage. For immediate consideration, please send your resume to: Genentech, Inc., Human Resources, Attn: NSDT, 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal employment opportunity. Women and minorities are encouraged to apply.

**Genentech, Inc.**

# genzyme

**Moving forward.** With a commitment to the development of new technologies and the resources required for success, Genzyme has become a major, diversified health care products company. **Looking ahead.**

Many words can describe a goal, an achievement, or even an opportunity. But only one word can describe opportunities like these. **Genzyme.**



### RESEARCH SCIENTIST

*Adenoassociated viruses  
Framingham, MA*

Opportunities exist within our Molecular Biology Gene Therapy group to design and develop adenoassociated virus vectors. Long term vector development based on these and other viruses is a priority. Issues requiring aggressive and imaginative approaches include control of vector gene transcription and protein expression, vector backbone modifications that increase safety, reduction of host response to vector administration, persistence of the vector genome in patients, and novel cell lines for vector production. Close collaboration with Molecular Biology, Animal/Cell Physiology, and Immunology staffs is critical. We seek candidates with a Ph.D. or MD degree in Biological Sciences, 2-3 years' postdoctoral training and experience in molecular virology, molecular biology or cell biology, and expertise in AAV.

For the above position only, please forward resume to: Genzyme Corporation, Attn: Pam Kurtzer, Human Resources Dept., One Mountain Road, PO Box 9322, Framingham, MA 01701-9322. Fax: (508) 872-5234.

### RESEARCH SCIENTIST/DRUG DISCOVERY

*Cellular Immunologist*

Ph.D. in Immunology or Cell Biology plus 2-5 years' experience in the field of Cellular Immunology is required. The candidate shall possess a broad knowledge relevant to autoimmune disease and expertise in cellular studies including 1) leukocyte activation processes such as antigen/cytokine responses and 2) characterization of cell surface antigens and their interactions. The candidate we seek will join our rapidly growing Drug Discovery Program.

Responsibilities include a key role in the drug discovery program's cellular immunology research effort and designing and performing a variety of cellular assays. Major objectives will be the selection of molecular and cellular processes as targets for therapeutic intervention, design of high-throughput screening assays and development of a series of cellular assays to characterize immunomodulatory drug candidates. The successful candidate will be a team player and possess strong communication and supervisory skills. **Code PJ-1**

### SENIOR MANUFACTURING ASSOCIATE/ GENE THERAPY

MS or BS in Biology/Engineering, with at least 4-6 years of GMP pilot scale fermentation and down stream purification experience. Individual needs to be highly motivated, mature, well-organized, and flexible. Demonstrated ability to supervise and to work with others as a team is essential. Excellent background in microbial physiology and biochemistry is required.

Responsibilities include routine GMP production of DNAs, process development, and supervision of one junior associate. **Code PJ-2**

Qualified candidates should forward their resume indicating code to Genzyme Corporation, Human Resources, One Kendall Square, Cambridge, MA 02139. Or fax: (617) 374-7200. An equal opportunity employer.

Genzyme rewards success with an excellent compensation and benefits package, including 3 weeks' paid vacation, a 401(k) plan with a company match, extensive insurance benefits and an Employee Stock Purchase Plan.

**ADVANCING HEALTHCARE PRODUCTS  
AND SERVICES WORLDWIDE**

The Life Sciences Division at Lawrence Berkeley Laboratory is currently seeking the following:

## SENIOR or STAFF SCIENTIST DNA Repair

Seeking a Senior or Junior investigator to work on the molecular and cell biology of DNA repair mechanisms in higher eukaryotic cells. A senior scientist must have a nationally and internationally established track record in the field and an active and well funded research program. A staff scientist may have a less established track record with a funded research program. We seek candidates who can effectively interact with the LBL Human Genome Center, as well as molecular and cell biologists whose interests include radiation biology, structural, genetic and enzymatic aspects of DNA damage and repair, genomic stability, molecular cytogenetics, and control of cell proliferation, differentiation, carcinogenesis and tumor suppression. The Laboratory will provide well equipped Laboratory space, the possibility of up to two years of start up funds, after which the program is expected to be self-supporting. Job #JSCI3248

## STAFF SCIENTIST Chromatin/Nuclear Structure

Seeking a Junior or mid career investigator working in the area of chromatin and nuclear structure, particularly as it relates to the control of gene expression. Must have an established track record and a funded research program. We seek candidates who can effectively interact with molecular and cell biologists in the Division whose interests include the control of cell proliferation, differentiation and replicative senescence, carcinogenesis and tumor suppression, genomic stability and DNA repair, and molecular cytogenetics. LBL will provide well-equipped laboratory space and a comprehensive fringe benefits package. Job #JSCI3247

LBL is adjacent to the University of California, (UC) Berkeley campus. Investigators will have the opportunity to interact closely with faculty at both UC Berkeley and UC San Francisco. Please send a curriculum vitae; a list of publications (complete for last three years); a list of current and pending funding; a brief (one page or less) summary of the research program and future directions; and the names, addresses, and telephone numbers of three references by April 14, 1995 to: Chair, LSD Search Committee, c/o Lawrence Berkeley Laboratory, Staffing Office, One Cyclotron Road, Bldg. 938A, Berkeley, CA 94720. Please indicate Job #. We are an equal opportunity employer.



**LAWRENCE BERKELEY LABORATORY**  
UNIVERSITY OF CALIFORNIA  
Department of Energy

## GRANTS



### HUMAN GENETICS/CELL BIOLOGY

The Ara Parseghian Medical Research Foundation announces a major program initiative directed toward understanding the molecular basis of Niemann-Pick Type C (NP-C) disease, an autosomal recessive cholesterol storage disorder that has recently been mapped to human chromosome 18. The Foundation will initially fund meritorious research proposals for up to a two year period, at a maximum of \$125,000/year. Researchers with a strong background in human genetics, human or murine gene mapping, expression cloning or cell biology are strongly encouraged to apply. Research should be targeted toward either:

i) Identification of the gene (or genes) responsible for NP-C disease as well as potentially disease-suppressing genes.

ii) Designing a cell-based (using either existing CHO cell mutants or NP-C immortalized fibroblasts) phenotypic complementation assay suitable for industrial scale screening of pharmaceutical compounds.

The upcoming application deadline is May 15, 1995 with funding to begin July 1, 1995. A review of relevant scientific literature is available through the Foundation for researchers new to the field who are interested in submitting a proposal. For information and application forms, please contact: Grants Administrator, The Ara Parseghian Medical Research Foundation, P.O. Box 65662, Tucson, Arizona 85718. Telephone 602-324-3816.

**Mayo  
Clinic**

**Rochester  
Minnesota**



### PROGRAM IN MOLECULAR MEDICINE

The Mayo Foundation announces a major initiative in the area of molecular medicine, including expansion of programs in molecular genetics and gene therapy. This program will involve laboratory research, education and clinical practice. It is intended to bring together basic scientists and clinicians working toward medically important goals of genetic diagnosis and therapy of disease.

Seven new tenure-track faculty positions are available with associated laboratory space, equipment, start-up funds, and ongoing institutional support. Additionally, the program will incorporate the laboratories of individual Mayo scientists and clinicians currently working in this area and resources within the recently renovated General Clinical Research Center. The ten Mayo Research Core Facilities will be accessible to the program, and Mayo's extensive patient population base and clinical investigative expertise will play an integral role in this endeavor.

Mayo Foundation is fully committed to the establishment and ongoing success of this program. Positions are available for individuals with an M.D. and/or Ph.D. degree who have a strong interest in/commitment to the clinical application of human gene therapy, or basic disciplines such as molecular virology, vector development, and gene mapping/linkage analysis which are relevant to gene therapy. Appointments at all academic levels will be considered.

Interested applicants are asked to submit curriculum vitae, bibliography, statement of research interests, and names of three references to:

Laurence J. Miller, M.D.  
Molecular Medicine Search Committee  
Mayo Clinic and Foundation  
1701A Guggenheim Building  
200 First Street SW  
Rochester, MN 55905

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

### POST-DOCTORAL TRAINING

#### DEPARTMENT OF MOLECULAR PHARMACOLOGY AND BIOLOGICAL CHEMISTRY NORTHWESTERN UNIVERSITY MEDICAL SCHOOL



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

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

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

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

*Affirmative Action/Equal Opportunity Employer*



NeXstar Pharmaceuticals, Inc., is a Boulder, CO based biotechnology company involved in discovery, development, and production of oligonucleotide-based diagnostic and therapeutic agents and the manufacture of liposomal drug formulations for the treatment of major diseases. NeXstar was formed as a result of the recent merger of NeXagen, Inc. of Boulder and Vestar, Inc. of San Dimas, CA. NeXstar is a fully integrated pharmaceutical firm with product sales of over \$45 million, a proven clinical and product development capability, and a fundamental and patent protected drug discovery technology. We currently have career opportunities in both Boulder and San Dimas.

### Senior Director, Manufacturing

This position will be located in our San Dimas, CA facility and oversee local manufacturing operations as well as contract manufacturing activities in Boulder, in California and overseas. The successful candidate will have an advanced degree in chemical/biochemical engineering or chemistry/biochemistry. Significant experience in both the pharmaceutical and biotechnology industry is a prerequisite, with a focus on the problems of non-traditional product manufacturing, also required. **Position 100.**

### Senior Director, Analytical Sciences

Located in Boulder, CO, this position will direct analytical and bioanalytical research and service groups in both locations. Requires a Ph.D. in chemistry, biochemistry or biophysics and significant experience in both the pharmaceutical and biotechnology industry. Experience should include traditional HPLC/chromatographic techniques as well as macromolecule characterization. Experience in managing methods validation and documentation for regulation submissions to domestic and foreign agencies is also required. This position will require frequent travel between the two sites. **Position 101.**

### Group Leader, Pharmacology/Toxicology

We are seeking a senior level pharmacologist with industrial experience in the pharmaceutical industry to oversee the animal facility and pharmacology/toxicology studies in San Dimas. The successful candidate will have a Ph.D. in pharmacology or toxicology, successful managerial experience and the ability to support multiple research efforts simultaneously. **Position 172.**

### Senior Pharmacologist

Located in Boulder, this individual will develop and conduct in vivo studies in animal models for preclinical efficacy. A Ph.D. in Pharmacology or equivalent with experience in developing and conducting in vivo efficacy models. **Position 171.**

NeXstar offers a competitive salary and benefits package. Interested candidates may submit their resume and cover letter to Human Resources as follows:

Positions 171 and 172 reply to:  
NeXstar Pharmaceuticals, Inc.  
2860 Wilderness Place  
Suite 200  
Boulder, CO 80301



Positions 100 and 101 reply to:  
NeXstar Pharmaceuticals, Inc.  
650 Cliffside Drive  
San Dimas, CA 91773

NeXstar is an Equal Opportunity Employer

### NEW.....NEUROSCIENCE

#### THE EJLB FOUNDATION SCHOLAR RESEARCH PROGRAMME

The EJLB Foundation announces that it will award each year up to six (6) grants for research projects in all areas of neuroscience that pertain directly or indirectly to schizophrenia and mental disease.

Eligibility for such grants is restricted to young scientists who are pursuing an independent research career and have given evidence of having significant potential. It is also a requirement that these scientists have earned an MD and/or a Ph.D. degree, have completed their post-graduate training and been admitted, after June 15, 1990, as faculty members of a leading university or an affiliated non-profit research centre, in Canada or elsewhere in the world.

Each grant totals CAN\$300,000, is disbursed over three (3) years and is non-renewable.

The next closing date for receipt of letters of intent is June 15, 1995.

Full details and letter of intent forms may be obtained from The EJLB Foundation, 1350 Sherbrooke Street West, Suite 1050, Montréal, Québec, H3B 1J1. Fax (for inquiries only) 514-843-4080.

## BioProcess Development Center

### Fermentation Microbiologist & Metabolic Pathway Engineer

DuPont Central Research has recently established the BioProcess Development Center, a multidisciplinary R&D group aimed at the development of state-of-the-art industrial bioprocesses for the production of chemicals and polymers. We have immediate openings for two Principal Investigators to join our teams of Life Scientists and Engineers in this exciting new venture.

#### Fermentation Microbiologist

Requires Ph.D. in Microbiology, or a related field, and at least 5 years of industrial experience in fermentation optimization and scale-up. The successful candidate will research all parameters effecting the performance of microbes in fermentation processes. Preference will be given to candidates with experience moving research projects to large scale fermentations.

#### Metabolic Pathway Engineer

This candidate will primarily use the tools of molecular biology to develop novel metabolic pathways for the production of chemicals in microorganisms. The ideal candidate will have a Ph.D. in Biochemistry or Molecular Biology and strong post-doctoral work in pathway engineering.

At DuPont, you'll find a stimulating scientific environment in a modern research facility located near Wilmington, DE. Our Mid-Atlantic location offers a wide range of academic, cultural and recreational activities. Qualified candidates should send a resume with three references to: DuPont Human Resources, PSS-0099, Wilmington, DE 19898. An Equal Opportunity Employer.



Central Research  
and Development

# RESEARCH SCIENTIST RESEARCH DEPARTMENT

Connaught Laboratories, a major provider of quality biologicals for a healthier world, is pursuing its vision of expanding our global success as a leader within the world's premier biological company. To meet our objectives we seek out valued people dedicated to excellence and innovation, and introduce them to an environment worthy of their skills.

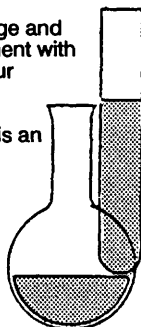
We have an immediate opening for a creative, enthusiastic individual capable of providing broad technical expertise to our Research Department. The successful candidate will be responsible for the design, execution and analysis of experiments together with the supervision of one Research Associate.

To be considered you must possess a Ph.D. with a minimum of 2 years post doctoral training in the area of Virology or Viral Immunology and have a proven research record. Expert knowledge of one (or several) of the following areas is required: Peptide/Protein Chemistry; Genetic Expression Systems; or Infectious Disease Animal Models.

We offer an attractive salary and benefits package and the potential for ongoing professional development with a growth-oriented organization. Please send your resume to: **Human Resources, Dept. R.S., Connaught Laboratories, Inc., P.O. Box 187, Route 611, Swiftwater, PA 18370.** Connaught is an equal opportunity employer M/F/D/V.



*Excellence in Biologicals for a Healthier World*



## NEUROBIOLOGY TENURE TRACK FACULTY POSITIONS

University of Maryland Dental School  
Department of Oral and Craniofacial Biological Sciences

The Department of Oral and Craniofacial Biological Sciences was recently established from the merger of the basic science departments in the Dental School. New full-time faculty are being recruited with broad expertise on the response of the nervous system to tissue and nerve injury, including receptors and signal transduction, regulation of gene expression, function and chemistry of spinal and brain stem neural networks, supraspinal modulatory systems, and animal models of pain and hyperalgesia. Core facilities in molecular biology, tissue culture, immunohistochemistry, and image processing are being established. Joint appointments in the medical school will be offered to those candidates who exhibit a strong potential for collaborative research.

Positions are primarily at the Assistant Professor level but outstanding candidates at any level will be considered. Salary is dependent upon qualifications and experience. Successful candidates will have a Ph.D. or equivalent, a record of outstanding research achievement, and a demonstrated ability to attract external funding. For best consideration, applications should be received by June 1, 1995. Applicants should send a C.V., copies of their two most significant publications, brief descriptions of present research and future research plans, and the names of 3-5 individuals from whom recommendations can be obtained, to:

Dr. Ronald Dubner, Chair  
Department of Oral and Craniofacial Biological Sciences  
Dental School  
Room 4-A-11  
University of Maryland at Baltimore  
666 W. Baltimore Street  
Baltimore, Maryland 21201

We especially encourage women and minorities to apply. The University of Maryland is an AA/EEO/ADA employer.

Roche

Join A Health Care Leader

## SENIOR SCIENTIST Molecular Biology, Biopharmaceutical R&D

At Hoffmann-La Roche, the strength of our research efforts have made us a leader in the pharmaceutical and health care industries. Currently, we're looking for a dedicated research scientist to conduct innovative explorations in biotechnology.

Our Biopharmaceutical R&D Department seeks a Senior Level Molecular Biologist to supervise a group in stable mammalian cell construction. Responsibilities include research into improved vectors and cell lines, as well as development and characterization of high-producing stable cell lines. This group will work seamlessly with the cell culture group devoted to optimized biopharmaceutical production.

To qualify, candidates must have a Ph.D. in Molecular/Cellular Biochemistry, or a related field, with postdoctoral study and 3-5 years industrial experience. Specific knowledge of mammalian cell transfection, vector development, and stable cell line production required. Experience with biopharmaceutical production preferred, with bacterial expression also desirable. Demonstrated results-oriented accomplishments in a team-based research environment is essential, as are supervisory skills.

We offer a competitive salary and comprehensive package in a progressive atmosphere. To apply, please send your resume with present salary to: **Ms. Lynn Harac, Staffing Department LH015MG, Hoffmann-La Roche Inc., Nutley, New Jersey 07110-1199.** We are an equal opportunity employer.

Roche

**Hoffmann-La Roche**

A Member of the Roche Group

## POSTDOCTORAL FELLOWSHIPS AVAILABLE

The Center for Insect Science, through a training grant from the National Institutes of Health, is offering three to four postdoctoral fellowships on the interface between molecular biology and the biochemistry, physiology, neurobiology, genetics, and ecology of insects. Appointments are for two years, depending on availability of funds and satisfactory performance. In addition to a stipend, fellows receive funds to support their research. Fellows will also be encouraged to develop their own ideas in an atmosphere that is supportive, but that demands independent thinking and collaboration with colleagues. Applicants must have a Ph.D. degree, and according to the terms and conditions of the grant, must be U.S. citizens or permanent residents. Candidates with previous NRSA support should note the statutory limitation of three years total aggregate support. Application deadline: April 15, 1995 or until positions are filled.

To apply, please send an introductory cover letter with a statement of research interests, curriculum vitae, and names of three references to:

Dr. Edmund A. Arbas, Chair  
Search Committee  
Center for Insect Science  
Life Sciences South, Room 225  
University of Arizona  
Tucson, AZ 85721

*Applications from women and members of minority groups are particularly encouraged. The University of Arizona is an Affirmative Action/Equal Employment Opportunity/ADA Employer.*



## CAREER OPPORTUNITIES

Pfizer Inc., a Fortune 100 pharmaceutical company, can offer you a world of challenge and opportunity where you can make a significant contribution to the research and development of exciting new products to be introduced in the coming decades...and the new century.

Challenging and rewarding opportunities exist for:

- **PhD Research Scientists**
  - Analytical Chemistry
  - Computational Biology
  - Diabetes & Obesity
  - Drug Metabolism
  - Food/Nutrition
  - Immunology
  - Molecular Biology
  - Osteoporosis
  - Pharmacogenetics
- **Research Assistants (BS/MS)**
  - Analytical Chemistry
  - Antibody Discovery
  - Atherosclerosis
  - Cardiovascular
  - Clinical Measurements/Molecular Immunology
  - Computational Biology
  - Diabetes & Obesity
  - Immunology
  - Molecular Biology
  - Synthetic Organic Chemistry
- **Clinical Research**
  - CRA's (Groton based)
  - Regional CRA's (Boston, Los Angeles, New York City)
  - Biostatisticians
  - Clinical Programmers
- **Pharm R&D**
  - Contract Packaging Coordinator
  - Research Pharmacy Planner

In addition to a stimulating environment, we offer a competitive compensation and flexible benefits package, including relocation assistance to our southeastern shore community. Please submit CV or resume (indicating **AD#1010**) suitable for electronic scanning (i.e., eliminate italics, bullets, bolds, underlines, and staples) to: **Manager of Employment (AD#1010), Pfizer Inc., Central Research Division, Eastern Point Road, Groton, CT 06340.**

*We are an equal opportunity employer M/F/D/V.*



**Central Research**  
Bringing science to life.

## NEW PRODUCTS DISCOVERY

### Director, Pediatrics Director, Geriatrics San Francisco Bay Area

Nicoderm®, Procardia XL®, Estraderm®, Testoderm®... some of the most recognizable products in the pharmaceutical industry. We're ALZA, the company that developed these popular products. If you would like to participate in the most exciting breakthroughs in pharmaceutical therapy, join ALZA today.

We have two positions available for individuals to investigate high priority therapeutic/patient categories of drugs. The objective will be to find optimal drug delivery candidates in the pediatric and geriatric fields for ALZA technological expertise. You will present viable product candidates to ALZA's New Products Review Committee. An MD, PharmD or equivalent advanced degree is required, along with 3-5 years' pharmaceutical industry experience in drug development, clinical pharmacology, or similar field. Sub-specialty training in pediatrics/geriatrics, internal medicine or clinical pharmacology is preferred but not necessary.

For these San Francisco Bay Area positions, please send your resume to ALZA, Human Resources, 950 Page Mill Rd., P.O. Box 10950, Palo Alto, CA 94303-0802. Fax (415) 494-5151 or call (415) 494-5214 or our TDD line at (415) 494-5003. We are pleased to be an equal opportunity employer and encourage applications from qualified persons with disabilities. All trademarks are registered to their respective companies.

**alza**

## The Integrated Approach To Brain Disease



*Trophix Pharmaceuticals, Inc., is a biopharmaceutical company devoted to developing novel therapeutics for neurological and neuropsychiatric disorders by integrating the latest advances in cell and molecular neurobiology, neuropharmacology and medicinal chemistry. We currently seek a number of highly motivated individuals to join our drug discovery team.*

### MOLECULAR PHARMACOLOGY

#### Research Scientist

The successful candidate will develop and implement high-throughput screening assays employing cell culture models, working closely with Medicinal Chemistry. Requirements include a Ph.D. in Pharmacology, Biochemistry or Neuroscience, Post-Doctoral training, and 3-5 years industrial experience in drug screening (essential). Preference will be given to candidates with extensive experience in mammalian cell culture, radioligand binding and second-messenger assays.

#### Research Associate

Candidates should possess a BS/MS in Biology; other requirements include a working knowledge of receptor binding and second-messenger assays (e.g., PI turnover, cAMP, ELISA), experience with mammalian cell culture, and familiarity with computer spreadsheets and data analysis programs. Industrial experience, especially in drug screening, is preferred.

### ELECTROPHYSIOLOGY

#### Research Scientist

We seek an individual with extensive experience recording from mammalian cells in cell culture, and experience in channel and receptor physiology. The successful candidate will have a Ph.D. and 2-4 years Post-Doctoral training. The project involves investigating the mechanism of action of novel channel blockers and will require close interactions with Pharmacologists and Medicinal Chemists.

### BIOINFORMATICS

#### Scientist

We seek an individual with experience in implementing, managing and supporting a complete informatics system. Tasks will include sample management/tracking, sequence similarity search and analysis and sequence database management. The successful candidate will interact daily with Cellular and Molecular Biologists, thus preference will be given to individuals with a working knowledge of molecular biology and/or neuroscience. Industry experience is preferred.

### SYNTHETIC ORGANIC CHEMISTRY

#### Research Scientist

The successful candidate will have a Ph.D. in Chemistry and Post-Doctoral experience, with a solid background in the multi-step synthesis, isolation and structural determination of complex organic compounds. Preference will be given to individuals with expertise in structure-based rational drug design and synthesis of small molecule libraries.

#### Research Associate

Candidates should possess a BS/MS in Chemistry with at least 2 years full-time bench experience, preferably in the pharmaceutical industry.

*Trophix is located in South Plainfield, New Jersey, approximately 40 minutes from New York City. Send your resume along with salary history and references to: Trophix Pharmaceuticals, Inc., 40 Cragwood Road, South Plainfield, NJ 07080, Attn: Human Resources.*



**TROPHIX**  
PHARMACEUTICALS, INC.

## NEW PROGRAM ANNOUNCEMENT



Thomas  
Jefferson  
University

### Biotechnology

Bachelor of Science Degree

Thomas Jefferson University, an academic health center in Philadelphia, is pleased to announce the inauguration of its bachelor of science degree in biotechnology. The first class will matriculate in September, 1995.

Under the auspices of the College of Allied Health Sciences, the University's undergraduate division, the biotechnology program is offered by the Department of Laboratory Sciences. Students enter this two-year program as college juniors having already completed two years at another accredited college or university. Graduates are prepared not only for entry-level positions in biomedical research but also for graduate programs in molecular biology, immunology, genetics and related fields.

The curriculum includes didactic, laboratory and practical research experience in immunochemistry and immunoassays; recombinant DNA and related molecular amplification techniques; cell sorting, flow cytometry, and other digital imaging methods; protein chemistry, molecular modeling, and chromatographic techniques; and cell and tissue culture.

For information about admission, call 1-800-522-2644 in Pennsylvania; 1-800-247-6933 outside Pennsylvania but in the U.S.; 215-955-8890 outside the U.S.

For other information about the program, call program director, Lydia McMorrow, Ph.D. at 215-955-0822. Or write: Thomas Jefferson University, 130 S. 9th Street, Philadelphia, PA 19107-5233.

## COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

University of California, Davis  
Davis, CA 95616

**Positions are 9-month tenure track appointments. Eleven month term employment will be offered and continued based upon academic personnel review.**

Assistant/Associate/Full Professor and Agronomist in the Agricultural Experiment Station, specializing in cropping systems, agroecology, soil, and international agricultural development. Develop a comprehensive research program on the analysis of production systems evaluating various management strategies of single and multiple cropping patterns. Provide a leadership role in addressing crop production issues relevant to California, national and international systems. Teach at the graduate level and contribute at the undergraduate level. Academic advising and graduate student training is expected. Apply to: Dr. D. William Rains, Committee Chair, Dept. of Agronomy and Range Science. Position open until filled. To ensure consideration, submit by May 1, 1995.

Assistant Professor and Agronomist in the Agricultural Experiment Station, specializing in quantitative ecology. Research the study and application of ecological principles and processes to enhance natural resource use and environmental compatibility in agricultural systems. Graduate and undergraduate teaching in quantitative methodology of agricultural and ecological systems. Apply to: Dr. Shu Geng, Committee Chair, Dept. of Agronomy and Range Science. Position open until filled. To ensure consideration, submit by May 1, 1995.

Assistant Professor and Agronomist in the Agricultural Experiment Station, specializing in wheat genetics and plant breeding. Develop a comprehensive modern genetics research program that emphasizes either molecular or quantitative approaches. Teach a graduate course in cropping systems and train graduate students. Apply to: Dr. Larry R. Teuber, Committee Chair, Dept. of Agronomy and Range Science. Position open until filled. To ensure consideration, submit by April 21, 1995.

## BIOTECHNICAL / PHARMACEUTICAL JOB FAIRS

*La Jolla, California*  
*Embassy Suite Hotel*

Friday, March 24, 1995

Saturday, March 25, 1995

*Cambridge, Massachusetts*  
*M.I.T. Stratton Center*

Friday, April 28, 1995

Saturday, April 29, 1995

Interviewing Companies to date—

- ◆ Depotech ◆ Ares ◆ Gen-Probe ◆ Serono Laboratories
- ◆ Systemix ◆ Allergan ◆ Centaur Pharmaceuticals
- Alpha Therapeutics ◆ Clintrials ◆ Baxter
- ◆ FDA—Center For Drug Evaluation & Research
- ◆ FDA—Center For Biologics Evaluation & Research

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

### CAREER CONNECTION

Dept. SM-395, P.O. BOX 7451, Thousand Oaks, CA. 91359  
(805) 374-8777 or (800) 967-0020 FAX (805) 494-1870



## POSTDOCTORAL FELLOWSHIPS IN MOLECULAR AND CELL BIOLOGY AT THE NIH

Postdoctoral Fellowships are available in the Genetics and Biochemistry Branch, NIDDK, NIH. The Branch is similar to a small academic department and has excellent laboratory facilities. The intramural program of the NIH offers an outstanding research environment. The Branch is located on the main intramural campus of the NIH in Bethesda, Maryland, a 20 minute ride from Washington, D.C. Applications are invited from individuals of the highest caliber with Ph.D., M.D., or M.D., Ph.D. degrees. Physicians may participate in either the NIH Interinstitute Endocrine or the NIH Interinstitute Medical Genetics Training Programs. Current research interests of the staff with positions available include:

- The targeting of proteins to the secretory pathway in both eukaryotes and prokaryotes is being studied using a combination of *in vivo* and *in vitro* approaches. Current projects focus on the mechanisms of signal sequence recognition, the regulation of protein targeting by a new family of GTPases, and the function of recently discovered prokaryotic homologs of components of the eukaryotic sorting machinery (Harris Bernstein)
- Biochemistry and molecular biology of homologous recombination in eukaryotes and prokaryotes, the structure and function of novel triplex DNAs, new methods for gene mapping and cloning (e.g. RARE) and gene targeting in mammalian cells, gene rearrangements in eukaryotes and novel approaches to gene therapy (Dan Camerini-Otero)
- The role of DNA structure in homologous recombination is being investigated. We are studying the kinetics of DNA branch migration and the role of recombination proteins in promoting branch migration. We are also interested in characterizing other enzymes involved in recombination and repair in eukaryotes (Peggy Hsieh)
- Molecular basis of mechanisms involved in hormonal and development control of gene expression. The immediate focus is on the transacting factors of the steroid/thyroid hormone receptor gene superfamily. Future work will use homologous recombination to target genes of regulatory nuclear proteins (Vera Nikodem)
- Current projects involve gene targeting by homologous recombination to generate mouse models of lysosomal storage diseases, development of gene therapy for treatment of neurodegenerative disorders, and investigation of lysosomal enzyme structure and function (Rick Proia)
- The functional role of a family of neural-specific transcription factors, class III POU domain genes, is being investigated using a combination of molecular and embryological approaches in vertebrate embryos. The regulation of anterior-posterior patterning in the early vertebrate embryo is also under investigation (Sheryl Sato)

Interested candidates should send a letter stating their interests, their curriculum vitae and list of publications, and the names and addresses of three references to:

**Dr. R. Daniel Camerini-Otero, Chief, Genetics and Biochemistry Branch, Building 10, Room 9D-15, National Institutes of Health, Bethesda, Maryland 20892; Telephone: 301-496-2710**



Beirne B.  
Carter  
Center for  
Immunology  
Research



UNIVERSITY OF VIRGINIA  
HEALTH  
SCIENCES  
CENTER

### FACULTY POSITION BEIRNE B. CARTER CENTER FOR IMMUNOLOGY RESEARCH UNIVERSITY OF VIRGINIA

The Beirne B. Carter Center for Immunology Research seeks applicants for a tenure track junior faculty position in immunobiology. We seek candidates with expertise and interest in the cell and molecular biology of cytokine expression and cytokine receptor signaling, cell adhesion molecules, or in lymphocyte development. Applicants should have postdoctoral experience and are expected to develop a strong independent research program. Some teaching in graduate and medical courses will also be expected.

Current areas of research interest among Beirne B. Carter Center for Immunology Research faculty include Antigen Processing and Presentation, MHC and Antigen Receptor Structure, Lymphocyte Activation, Autoimmunity and Allergy, and the Immunology of Infectious Diseases. The University of Virginia provides excellent research facilities in an exceptional locale. Centers for research in Cancer Biology, Molecular Biology and Cell Signaling, Retrovirus and AIDS, and Cardiovascular Physiology are present on campus. Beirne B. Carter Center for Immunology Research faculty are actively encouraged to collaborate with faculty in these related disciplines.

Applicants should send a curriculum vitae, a summary of present and future research interests, and the names of 3 referees. Completed applications should be sent to:

**Dr. Thomas J. Braciale**  
c/o Administrator

Beirne B. Carter Center for Immunology Research  
University of Virginia  
MR4/Box 4012 Health Sciences Center  
Charlottesville, VA 22908

*The University of Virginia is an Equal Opportunity/  
Affirmative Action Employer. Women and minority  
candidates are encouraged to apply.*

### • Challenging Research • Exceptional Funding • Extensive Databases

A pioneer in pharmacy program management and a member of the SmithKline Beecham family of companies, Diversified Pharmaceutical Services, Inc. is managing today's toughest health care challenges. By meeting the needs of over 150 health care organizations, we're making a tangible impact on nearly 15 million lives and we've doubled in size in one year.

Our leading-edge Pharmacoeconomic and Outcomes Research team focuses on projects funded by SmithKline Beecham Pharmaceuticals, Diversified Pharmaceutical Services, and other pharmaceutical manufacturers.

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**Manager Pharmacoeconomic and Outcomes Research**—Manage, design, and execute research projects, including management of staff. You must have strong presentation and client relation skills.

**Researcher**—Develop and execute research projects.

These positions require a PhD in pharmacy (or another quantitative-oriented field) OR a PharmD with a research fellowship or RPh with master's degree, both with 2 years research experience. Epidemiology orientation and experience with administrative health care databases is helpful.

We offer competitive salaries and outstanding benefits. Please send or fax your resume or CV, indicating position preference, to: K. Williams, Diversified Pharmaceutical Services, Inc., Rt. ED-0801, PO Box 9422, Minneapolis, MN 55440-9422. Fax: 612/820-7010. An equal opportunity employer.



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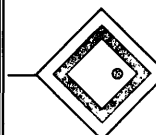
### CHEMICAL ENGINEER DRUG DELIVERY

AquaPharm is a fast growing innovator in health and nutrition products for the aquaculture industry. Candidate will direct the Chemical Engineering group and apply delivery technologies to vaccines, nutritional additives, and growth promotants. Must have 2+ years post-doctoral experience and background of applications to the agriculture, food, or biomedical industries, production scale-up, and regulatory compliance.

### AQUATIC IMMUNOLOGY-MICROBIOLOGY

Position available for Ph.D. Scientist with strong background in immunology & microbiology of aquatic animal disease. Candidate will participate in our program in fish health including advanced vaccines, diagnostics and will interact closely with scientists in Chemical Engineering and Nutrition. Must have 2+ years post-doctoral experience and background in animal health in aquaculture.

*AquaPharm is an equal opportunity employer and offers competitive compensation and challenging opportunities in a stimulating environment. Send resumes to: Personnel AquaPharm Technologies Corp., 9110M Red Branch Rd., Columbia, MD 21045*



AQUAPHARM  
Technologies Corp.



## **NEW POSITION VACANCY** *Founding Dean, Faculty of Pharmacy* *The Health Sciences Center, Kuwait University*

Health Sciences Center, Kuwait University, invites applications for the position of Dean, Faculty of Pharmacy. This is new position established to provide leadership in the development of a new Faculty of Pharmacy. The Health Science Center includes the new Faculty of Pharmacy, a new Faculty of Dentistry, the Faculty of Medicine and the Faculty of Allied Health Sciences and Nursing. With the completion of the present expansion program in 1998, all faculties will be accommodated in a medical center complex adjacent to a major reaching hospital.

Candidates for Dean should be prepared to take lead responsibility for organization of a new faculty and a new, 5 year professional degree program, including a new curriculum. The selected candidate will have administrative responsibilities for academic, research, and service functions of the faculty, including:

- Faculty and University administration according to the policies of governance of the University and Ministry of Education/Higher Education
- Coordination of programs with concerned Ministries, agencies and professional societies
- Recruitment of Chairpersons and faculty members in accord with the University-HSC Five Year Development Project
- Curriculum development for a 5-year professional degree program in Pharmacy, in coordination with the Faculty of Science and Ministry of Public Health
- Promotion of research to support HSC's graduate programs and to advance professional development of academic staff. Leadership for post-graduate training and in-service education.

The position of Dean carries the academic rank of Professor and candidates must satisfy the criteria for professorships at Kuwait University. Candidates should possess a Ph.D, or its equivalent, and should present a history of sustained research publications. Experience in academic administration as Chairman and Dean is preferred with 10-15 years combined academic experience, including 3-6 years as Professor.

### Conditions of employment:

Competitive salary and benefits, including sixty (60) days paid annual leave, a paid conference annually, gratuity, furnished accommodation, electricity and water free of charge, and free medical care. Free first class annual round trip air tickets to country of citizenship or permanent residence. Education for three (3) dependent children in Kuwait is provided from elementary through high school. There is no taxation and currency is transferable without restriction.

Applicants should submit a letter of intent, curriculum vitae (2 copies), and names and addresses of three (3) referees. Review applications will begin February 1, 1995, and continue until the position is filled. Employment could begin earlier, but not later than January 1, 1996.

Please mail applications to:

**Vice President, Health Sciences Center  
Chairman, Search Committee, Dean of Pharmacy  
Kuwait University  
P. O. Box 24923  
Safat 13110  
KUWAIT**





## RESEARCH SCIENTISTS



*Astra is a pharmaceutical company in a phase of rapid growth. The company's operations, which are highly international, consist in research, production and marketing of pharmaceuticals through subsidiaries, agents and licensees all over the world. The number of employees is about 14,400, of whom 5,300 in Sweden. Sales in 1994 amounted to SEK 28 bn (USD 3.65 bn).*

### ASTRA ARCUS AB

*Astra Arcus, a research company in the Astra Group, is engaged in R & D in primarily two areas—CNS and Infection. Astra Arcus employs some 430 people and the company is located in Södertälje, 35 kilometres south of Stockholm.*

Immunology, Preclinical R & D, Astra Arcus AB is seeking an immunologist to join the Department of Immunobiology, and a molecular biologist to join the Department of Molecular Biology & Chemistry.

If you would like to take part in the development of innovative immunological research, this is a unique opportunity. You will join a team of scientists engaged in explorative research aiming at the development of new drugs, mainly in the field of autoimmune diseases. Experience of the pharmaceutical industry is advantageous. The position requires good ability to co-operate within a group.

### IMMUNOLOGIST

You will have a Ph.D. preferably with post doctoral experience in the field of immunology, with the emphasis on animal models of autoimmune diseases and on experimental animal systems (e.g. transgene, SCID, knockout). You will be a specialist within your particular area and have good technical skills as well as theoretical knowledge. Cellular as well as molecular immunology are equally familiar to you.

### MOLECULAR BIOLOGIST

We are looking for an experienced scientist to actively pursue research within the area of eucaryotic molecular biology. Suitable background is a Ph.D. exam with post doctoral experience and a broad practical knowledge of techniques in molecular biology as well as skills in cloning and expression of proteins in eucaryotic cells.

Further information about the position as immunologist can be obtained from Dr Carl Harald Janson, tel +46-8-553 273 47 or Dr Mats Ferm, tel +46-8-553 286 87, and information on the position as molecular biologist can be obtained from Dr Kjell Stenberg, tel +46-8-553 260 93 or Dr Lars Janson, tel +46-8-553 267 45.

We want your application before March 31, 1995 to Astra Arcus AB, Human Resources, Marianne Jonehed, S-151 85 Södertälje, Sweden.



# DIRECTOR OF THE MRC LABORATORY OF MOLECULAR BIOLOGY, CAMBRIDGE

The MRC wishes to appoint a distinguished international reputation in basic research to the position of Director of the MRC Laboratory of Molecular Biology in Cambridge on the retirement of the current Director Professor Sir Aaron Klug FRS in September 1996.

The Laboratory is known world-wide for its outstanding research record. The Director provides overall leadership and strategic direction to the Laboratory, as well as carrying out his/her own research. The Laboratory comprises around 50 tenured scientific staff, 50 short term post doctoral scientists, plus technical, administrative and secretarial support staff; the total core complement is around 200 posts. In addition, the Laboratory acts as host to a large number of visiting scientists and research students who make important contributions to the overall research programme. The scientific portfolio is covered within four Divisions: Structural Studies, Protein and Nucleic Acid Chemistry, Cell Biology and Neurobiology.

The Laboratory is well served in terms of workshops, computing facilities and networks, and other routine research requirements. The accommodation is purpose built and located

## MRC Medical Research Council

An equal opportunities employer.

within the MRC Centre, Hills Road, Cambridge, which provides centralised administrative services to the Institute and to other local MRC establishments. Close links are maintained with Cambridge University, the Clinical School, local MRC Units and the MRC Interdisciplinary Research Centre in Protein Engineering. In addition, there is a strong track record of interactions with industry.

The salary is negotiable in the range for MRC Special Appointments (up to £57,000 pa) but more may be available for an exceptional candidate. Assistance towards the costs of relocating to Cambridge will be available.

A job description and other information may be obtained from Dr Diane McLaren, MRC Headquarters, 20 Park Crescent, London W1N 4AL (telephone 0171 636 5422).

Applicants should send a brief outline of their vision for the future strategic direction of the Institute, brief proposals for his/her own research team, an up-to-date curriculum vitae and publications list, plus the names of three referees to Sir Dai Rees, Chief Executive of the Medical Research Council at the above address, no later than 20 April 1995.

## THE UNIVERSITY OF BIRMINGHAM



### SCHOOL OF BIOCHEMISTRY LECTURESHIP IN MOLECULAR CELL BIOLOGY

Applications are invited from promising or established scientists with research interests in molecular aspects of cell or developmental biology. Individuals with proven expertise in molecular aspects of intercellular interactions e.g. growth factors, cell adhesion or extracellular matrix are especially encouraged to apply. The successful applicant will become part of a new research initiative in molecular cell biology located in newly refurbished laboratory space with access to state of the art technical resources and equipment. The new staff member will be expected to participate in the teaching of undergraduate and postgraduate science and medical students.

Starting salary on scale from £14,756 - £19,326 or £20,133 - £25,735 a year.

Informal enquiries to Professor John K. Heath (email jkh@bch.ox.ac.uk) or Professor Ian Trayer (tel. 0121 414 5401).

Application forms (returnable by 28th April 1995) and further particulars from the Director of Staffing Services, The University of Birmingham, Edgbaston, Birmingham B15 2TT, telephone 0121 414 6483 (24 hours), quoting reference S13649/95.

We encourage applications from women and people from ethnic minorities or with a disability; and draw attention to the flexible patterns of work we are able to offer in conjunction with generous maternity leave provisions and day nursery facilities.

The University is an exempt Charity which exists to advance learning to the highest level for the benefit of its students and society at large.

## DEPARTMENT OF MEDICINE (RIB)

### SENIOR SCIENTIST IN THE GENE THERAPY OF LUNG INFLAMMATION

Professor Chris Haslett (Respiratory Medicine, Royal Infirmary, Trust Hospital) and Professor David Porteous (MRC Human Genetics Unit, Western General Hospital) have obtained a Programme Grant from the Norman Salvesen Emphysema Research Trust in support of a Senior Scientist to develop gene-therapeutic strategies for augmenting the activity of antiapoptotic and antioxidants in the lung. This award recognises the synergism between the Inflammatory Cell Biology Group at the Rayne Laboratory and the Cystic Fibrosis Gene Therapy Group at the MRC Human Genetics Unit. For a suitably qualified individual this position will be on the Senior Research Fellow grade (Senior Lecturer equivalent) and will be for an initial term of five years and thereafter on a rolling three year contractual basis. Funding for a senior post-doctoral scientist (3 years) and technical support (3 years) is available for initial support of this post.

Salary will be in the range: £24,377 - £30,533 pa.

Please quote REF: SCT 590099.

Informal enquiries to Professor C. Haslett, Tel: 0131-536 2263.

Further particulars may be obtained from:

THE PERSONNEL OFFICE,  
THE UNIVERSITY OF EDINBURGH,  
1 ROXBURGH STREET, EDINBURGH EH8 9TB

where applications (5 copies) including CV and the names and addresses of two referees should be lodged.

Closing date: 31st March, 1995.

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# POSTDOCTORAL POSITION

## APOPTOSIS IN AUTOIMMUNE DISEASES

 *Astra is a pharmaceutical company in a phase of rapid growth. The company's operations, which are highly international, consist in research, production and marketing of pharmaceuticals through subsidiaries, agents and licensees all over the world. The number of employees is about 14,400, of whom 5,300 in Sweden. Sales in 1994 amounted to SEK 28 bn (USD 3.65 bn).*

### ASTRA ARCUS AB

*Astra Arcus, a research company in the Astra Group, is engaged in R & D in primarily two areas—CNS and Infection. Astra Arcus employs some 430 people and the company is located in Södertälje, 35 kilometres south of Stockholm.*

A postdoctoral research position is immediately available for studies related to apoptosis in autoimmune diseases at the department of Immunobiology, Immunology, Preclinical R&D, Astra Arcus AB. Suggested topics of research include, but are not limited to:

- the regulation of apoptosis in autoreactive immune cells
- the importance of organ specific survival factors in the induction of autoimmune processes
- the pathology of apoptotic mechanisms

You will join a team of researchers engaged in explorative research aiming at the development of new drugs, mainly in the field of autoimmune diseases. Your work will not be dependent on ongoing projects and will provide opportunities for a creative individual. Collaboration with external academic groups as well as the publication of results is encouraged. The position is for 2 years, which might be extended.

Further information of the position can be obtained from Dr. Carl Harald Janson, telephone +46-8-553 273 47, Dr. Mats Ferm, telephone +46-8-553 286 87 or Dr. Alf Larsson, telephone +46-8-553 271 30; FAX: +46-8-553 270 60. Send application with curriculum vitae to ASTRA ARCUS AB, personnel, S-151 85 Södertälje, Sweden.

We want your application before March 31, 1995, to Astra Arcus AB, Human Resource, Marianne Jonehed, S-151 85 Södertälje, Sweden.





## IMPERIAL COLLEGE University of London

### NERC Centre for Population Biology

### Postdoctoral Researcher

We seek a theoretical or experimental ecologist to complement our broad but focused research programme. The position is open to well-qualified applicants in any field of ecology relevant to the Centre. Key areas are:

- Aquatic ecology (eg algae-zooplankton-microparasite foodwebs, dynamics and co-evolution).
- Microbial ecology (eg ecosystem processes in model terrestrial communities in the Ecotron).
- Conservation ecology and global environmental change (eg habitat fragmentation and responses to climate change).
- Experimental population dynamics (any group of organisms).

Applicants should have a PhD and relevant research experience. A 2-year contract is offered, with the possibility of renewal. Salary range £13,941 - £20,953.

Further details from Miss C Challis, tel 01344 294475; Centre for Population Biology, Imperial College at Silwood Park, Ascot, Berks SL5 7PY, UK.

**Applications to be received by 21 April 1995.**

*The College is striving towards Equal Opportunities.*

## Marketing Specialists

Bio-Rad Laboratories is a world leader in the fields of life science research products, clinical diagnostics and analytical instruments. We are seeking dynamic professionals to fill key positions in our Life Science Group.

These positions require a BS/MS or equivalent in Biochemistry or related field. (MBA a plus.) One position requires 2+ years experience with protein/peptide biochemistry, gel electrophoresis, blotting and/or chromatography instrumentation in either a laboratory or sales/marketing environment. One position requires a working knowledge of, and/or experience in the science education market, either from teaching, sales/marketing or other function. Previous product management experience within the Life Science market highly desirable. One position requires experience with pilot or production scale chromatography of therapeutic biomolecules. Experience of cGMP, validation, regulatory work and or selling a plus.

For consideration, please send your resume to: Bio-Rad Laboratories, 2000 Alfred Nobel Dr., Dept. 230, Hercules, CA 94547. EEO/AA.

**BIO-RAD** Bio-Rad Laboratories



## RESEARCH SCIENTIST BACTERIAL PATHOGENESIS AND IMMUNITY



Biopharmaceuticals

Applicants with experience in the study of the biology of host-pathogen interactions are invited to apply for a research position in a team working on the development of new and improved bacterial vaccines. The successful candidate must hold a Ph.D. degree and should have a minimum of 3 years post-doctoral experience. An interest in the molecular basis of bacterial pathogenicity and practical knowledge of bacterium-host interactions is essential. Experience in the study of the interaction of bacteria with the immune system would be preferred but applicants with other relevant experience will be considered.

The applicant would be responsible for supervising and planning the work of technical staff while at the same time being expected to make an active contribution at the bench. Duties involve the interpretation of the results of protection studies in animal models of infection and the development of in vitro assays for assessing prospective, protective antigens.

Our biomedical research centre located close to Vienna offers excellent research facilities and technical support and provides the opportunity to work within a small international team of motivated scientists. Immuno offers a competitive salary, benefits programme and compensation for re-location expenses.

Please submit a detailed Curriculum Vitae together with salary requirements and date of availability to:

Immuno AG, Personnel Dept.  
Dr. Elisabeth Pullez  
Industriestrasse 67, A-1221 Vienna

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### Saint Louis University School of Medicine

#### Professor and Chairperson Department of Pathology

Saint Louis University School of Medicine is accepting nominations and applications for the position of Chairperson, Department of Pathology. The Department serves a 360 bed, University-owned tertiary care hospital (Saint Louis University Hospital), an adjacent 190 bed children's hospital (Cardinal Glennon Children's Hospital), and the St. Louis VA Medical Center (John Cochran VA Hospital). Educational and research activities of the Department are well established. Candidates must have a record of excellence in academic pathology with experience in research and administrative affairs.

Nominations and applications should be addressed to:

**Bruce R. Bacon, M.D.**  
Chairperson  
Pathology Search Committee  
Saint Louis University  
School of Medicine  
1402 South Grand Boulevard  
St. Louis, MO 63104

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## Enzymologist

Arris Pharmaceutical Corporation is a growing biopharmaceutical company dedicated to the rapid development of novel human therapeutics. We are committed to an innovative multi-disciplinary & team oriented approach that encourages both creativity and collaboration. We currently have an exceptional opportunity for an experienced Enzymologist.

Candidates must have 3-5 years' post-doctoral experience in enzyme kinetics, inhibitor characterization, protein purification, spectrophotometric and fluorometric assay methods. Good communication skills and the ability to interact in a highly interdisciplinary environment are expected. Supervisory experience and familiarity with high-throughput assay methods are pluses.

Arris offers generous salaries & benefits, the potential for career advancement and the opportunity to make significant scientific contributions. For consideration, please send resume & cover letter to: **Arris Pharmaceutical Corp., Human Resources, Attn: Job# S0317-E, 385 Oyster Point Boulevard, Suite 3, South San Francisco, CA 94080.** EOE



## MOLECULAR BIOLOGISTS

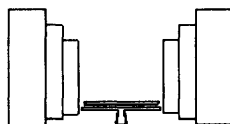
There's no better place to pursue a research career than with CIBA, a company recognized worldwide for innovative drug therapies that fulfill unmet medical needs. As part of an ongoing commitment to research excellence, we have several opportunities for molecular biologists with proven research experience.

### Join a world-class research effort on the forefront of discovery

Working with a multidisciplinary team of scientists involved in drug discovery research, you will use your knowledge of molecular biology to identify, clone, express and purify recombinant proteins. Qualified candidates must have experience in cloning, DNA sequencing, recombinant protein expression and similar processes. A background in gene isolation, protein purification and cell culture techniques will be considered an asset. A Bachelor's degree and laboratory experience are required; a Master's is preferred.

We offer a competitive salary, excellent benefits and an environment designed for professional development. For confidential consideration, please send your resume with salary requirements to: **Staffing Center, Ciba Pharmaceuticals Division, Department JN-395-8, 556 Morris Avenue, Summit, NJ 07901.** We are an equal opportunity employer M/F/D/V.

### Preparing for the future



## Postdoctoral Position in Neural Development and Function

### THE SALK INSTITUTE

Position is available to study the roles of several signaling pathways in neural development and function by various approaches including gene-targeting technology. Areas of current interest include neurotrophins and their receptors (*Cell* 69, 737-749; *Science* 263, 1447-1449; *Nature* 368, 147-150; *Cell* 77, 503-512), and corticotropin-releasing factor and their receptors, and glia growth factor receptors. A doctoral-level degree is required, and a strong background in neurobiology, neuroendocrinology, and/or molecular biology is preferred.

Applicants should send *curriculum vitae*, statement of research interests and experience, and names of three references to: **The Salk Institute, Attn: Dr. Kuo-Fen Lee, 10010 N. Torrey Pines Road, La Jolla, CA 92037.** The Salk Institute is an Equal Opportunity/Affirmative Action Employer.

As a world technology leader with a patent portfolio that ranks second to none (we were awarded 1,008 new U.S. patents in 1993 alone), Eastman Kodak Company offers innovative thinkers a professional environment to grow. Our new initiatives in the Scientific Imaging Systems Unit offer opportunities in the following areas:

### SCIENTIST (New Haven, CT)

This position will participate as a member of the Research and Development team creating digital documentation, storage and retrieval systems for the scientific market. We require a minimum of a BS with 3 years of broad experience using IBM/Apple computers, NIH Image/PhotoShop software, optical media hardware with proficiency in digital imaging, optics and photo science as applied to laboratory techniques for scientific imaging; Life Science background a plus.

### TECHNICAL SUPPORT (Rochester, NY)

The successful candidate will function within the Customer Assistance Group, providing technical and applications support to customers as well as feedback to internal development, planning and marketing groups. The selected individual will be required to communicate with customers on a daily basis. We require a BS or MS with a working knowledge of Molecular Biology/Life Science techniques as well as hardware and software proficiency to support digital document storage retrieval systems for the scientific laboratory market.

Both positions offer Eastman Kodak's salary/benefits package and a stimulating professional environment. Relocation assistance is available. For confidential consideration, please send your resume to: **Professional Staffing Dept. SNC, EASTMAN KODAK COMPANY, 343 State Street, Rochester, NY 14650-1139.** Eastman Kodak is an equal opportunity employer. We invite people with disabilities to notify us of their need for accommodations.



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## POSITIONS OPEN

### TENURE-TRACK FACULTY POSITION ASSISTANT/ASSOCIATE PROFESSOR

Department of Biochemistry and Molecular Biology  
University of Kansas Medical Center

Candidates should have a Ph.D. or M.D./Ph.D. in Biochemistry, Molecular Biology, or a closely related field. Qualified applicants with an M.D. degree will also be considered. Applicants should have research expertise in the area of gene regulation/gene structure. Applicants with experience in gene targeting, transgenic technologies, gene transcription, gene mapping, and/or protein-DNA interactions are preferred. The successful candidate will have made significant scientific contributions and will be expected to develop a well-funded research program. Teaching will involve graduate and medical students. The department currently has seventeen tenure-track faculty and nine research track faculty with research interests in two major areas: structural biochemistry and gene expression. There are strengths in this department and at this Medical Center in reproductive biology, cell and developmental biology, extracellular matrix biology, neuroscience, virology and immunology. The Medical Center is currently recruiting an endowed professor in Molecular Medicine and the successful candidate will have an opportunity to interact with this person. Send curriculum vitae and names of three references to: **Chair, Faculty Search Committee, Department of Biochemistry and Molecular Biology, 3901 Rainbow Boulevard, University of Kansas Medical Center, Kansas City, KS 66160-7421.** Review of applications will begin as soon as they are received and will continue until this position is filled. *The University of Kansas is an Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSOR OF BIOLOGY TENURE TRACK-FALL 1995

The Marist College Division of Science invites applications for a tenure-track position at the level of **ASSISTANT PROFESSOR** of Biology beginning in the fall of 1995. Qualified candidates must have completed a Ph.D. degree and have a strong interest in undergraduate education. Candidates are expected to have a commitment to excellence in teaching and to establish a program of research involving undergraduate students. Preference will be given to candidates with previous college-level teaching experience.

Teaching responsibilities include: upper-level courses in genetics, microbiology, cell biology and molecular biology; freshmen-level general biology courses for majors; and biology courses for non-majors.

Marist College is a four (4) year, independent, liberal arts institution centrally located in the scenic and historic Hudson River Valley, less than two hours north of New York City.

Please submit a résumé, a description of teaching goals and research plans, and three letters of recommendation. Review of credentials will begin March 21, 1995. Credentials will continue to be accepted until the position is filled. Please address to: **Dr. Andrew Molloy, Division of Science, Marist College, MPO Box 905, SCI-BIO, Poughkeepsie, NY 12601.**

*Marist College is an Equal Opportunity/Affirmative Action Employer.*

**Environmental Scientist:** Tenure-track position at the **ASSISTANT PROFESSOR** level (Ph.D. required) to start in September 1995. Eckerd College seeks qualified individuals to contribute to a newly formed, interdisciplinary Environmental Studies major. Candidates should be: a) interdisciplinary (e.g., environmental geology; marine or estuarine biogeochemistry; hydrology; environmental toxicology); b) familiar with aspects of resource management and/or policy; c) excellent teachers; d) active scientists who intend to maintain productive research programs, ideally involving undergraduate students; and e) strongly committed to environmental issues. Experience with the environmental consulting field and familiarity with political and regulatory entities would be helpful. Candidates must also be willing periodically to participate in the College's General Education program. Please send curriculum vitae, teaching evaluations (if available), graduate transcripts and three letters of recommendation to: **Drs. Gregg R. Brooks or John E. Reynolds III, Marine Science Department, Eckerd College, 4200 54th Avenue South, St. Petersburg, FL 33711.** The Committee will begin to review applications after 15 April 1995. *An Equal Opportunity Employer. Minority candidates are encouraged to apply.*

## POSITIONS OPEN

### RESEARCH POSITION ASSISTANT PROFESSOR DEPARTMENT OF DERMATOLOGY

The Department of Dermatology is seeking applications for a **TENURE-TRACK FACULTY** position at the assistant to associate professor level to establish a basic science laboratory in molecular biology, pharmacology, cell biology or biochemistry. The successful candidate will be expected to develop a strong research program and to supervise a doctoral graduate program. Applicants must have a Ph.D. or M.D./Ph.D. degrees.

Please send curriculum vitae with a complete bibliography, representative reprints, description of research interests and the names and addresses of three references to:

**Evan R. Farmer, M.D.**

Department of Dermatology  
550 North University Boulevard, Suite 3240  
Indianapolis, IN 46202

*Indiana University is an Equal Opportunity/Affirmative Action Employer.*



INDIANA UNIVERSITY  
MEDICAL CENTER

### PORTLAND STATE UNIVERSITY Center for Science Education College of Liberal Arts and Sciences Research and Education Position

Undergraduate and K-12 Science Education and Curriculum Reform—**ASSISTANT PROFESSOR**, tenure-track, academic year position, beginning September 16, 1995. Full-time appointment split two-thirds in the Center for Science Education/College of Liberal Arts and Sciences; one-third in the School of Education. Expertise in science education reform, community-based education/research programs, and undergraduate and graduate teaching. Experience with teaching mature students and in-service teachers. Requirements include earned doctorate in science or science education discipline and demonstrated commitment to scholarly productivity in theory and practice of interdisciplinary science education. Application materials must be postmarked by April 24, 1995, and include a detailed letter of application, complete curriculum vitae, three letters of reference and a list of names, addresses, and telephone numbers of at least two to three additional references. Send materials to: **PSU CSE, Search Committee, P.O. Box 751, Portland, OR 97207.** *Portland State University is an Affirmative Action/Equal Opportunity Employer.* The filling of this position is subject to funds being available. Please call or write to Portland State University Center for Science Education (503-725-3871) for a complete position description.

### ASSISTANT PROFESSOR DEPARTMENT OF ZOOLOGY UNIVERSITY OF BRITISH COLUMBIA

Applications are invited for a tenure-track position at the **ASSISTANT PROFESSOR** level in the Department of Zoology, University of British Columbia. Salary will be commensurate with education and experience.

The Department of Zoology currently comprises 36 faculty members, approximately 35 postdoctoral fellows and research associates, and 140 graduate students. Preference will be given to candidates with at least two years of postdoctoral experience and demonstrated excellence in research that complements the present strengths in the department. We require a comparative endocrinologist (vertebrate or invertebrate). Experience with molecular biology approaches to this discipline will be considered a major asset. The appointee will be expected to develop a strong research program, and teach in appropriate undergraduate courses. Starting date will be January 1 or July 1, 1997. Appointment is subject to final budgetary approval.

Curriculum vitae, three letters of reference, and a brief outline of research interests should be submitted to: **Dr. J. E. Phillips, Head, Department of Zoology, University of British Columbia, 2354-6270 University Boulevard, Vancouver, BC V6T 1Z4 Canada. FAX: 604-822-2416.** Closing date for application is August 1, 1995.

*In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of British Columbia welcomes all qualified applicants, especially women, aboriginal people, visible minorities and persons with disabilities. Appointment may be considered at a higher rank for a senior woman with exceptional qualifications.*

## POSITIONS OPEN

### FACULTY POSITION Physiology/Pharmacology

The Department of Veterinary Biomedical Sciences, University of Missouri is accepting applications for a tenure-track faculty position. Although preference will be given to candidates at the **ASSISTANT PROFESSOR** level, outstanding candidates at the Associate or full professor level will also be considered. Qualifications include a Ph.D., D.V.M. or M.D. and exceptional potential to develop and maintain a strong biomedical research program competitive for extramural support. Preference will be given to candidates whose research interests enhance existing areas of excellence in cardiovascular biology, transmembrane signaling, and membrane transport at the molecular, cellular, organ, or systems level. Teaching responsibilities will be in veterinary and graduate physiology or pharmacology courses. A joint appointment at the Dalton Cardiovascular Research Center is possible. Applications should include a curriculum vitae, names of three references, and a letter stating professional goals. The closing date for applications is May 31, 1995, or until the position is filled. Address correspondence to:

**Dr. James Schadt**  
UMC-Veterinary Biomedical Sciences  
E102 Veterinary Medicine Building  
1600 East Rollins  
Columbia, MO 65211

*The University of Missouri is an Affirmative Action/Equal Opportunity Employer and complies with the guidelines of the Americans with Disabilities Act of 1990. Minorities and women are encouraged to apply.*

### ASSISTANT/ASSOCIATE PROFESSOR POSITIONS

Department of Microbiology  
University of New Mexico, School of Medicine

Applications are invited for two **TENURE-TRACK FACULTY** positions in the Department of Microbiology. Candidates must have a Ph.D. or equivalent and publications, postdoctoral experience, and/or external funding indicating research productivity. Research experience in the study of immunology or molecular aspects of infectious disease, the potential to participate in collaborative research within the School of Medicine, and teaching experience are desired. The applicant will be expected to develop an externally funded research program, and to participate in teaching of medical and graduate students. Applicants should submit a letter including a description of research interests, plans and support, a curriculum vitae, and the names, addresses and telephone numbers of three (3) references. Materials should be mailed to: **Dr. Jeffrey K. Griffith, Chair, Microbiology Search Committee, c/o Dolores Tarin, Department of Microbiology, University of New Mexico, Albuquerque, NM 87131** for receipt by May 8, 1995. Telephone: 505-277-3344; FAX: 505-277-6029. *The University of New Mexico is an Equal Employment Opportunity/Affirmative Action Employer.*

### ENVIRONMENTAL MANAGEMENT

The Air Force Institute of Technology seeks applicants for a tenure-track position and a visiting professor position in Environmental Management at the **ASSISTANT** or **ASSOCIATE PROFESSOR** levels. The positions involve teaching graduate level environmental management plus participation in: (1) developing new courses supporting the graduate program; (2) advising Master's thesis students; (3) consulting; and (4) conducting and publishing research. Salary Range: \$34,000 to \$76,851.

Applicants must be U.S. citizens or owe allegiance to the United States, and have an earned doctorate in environmental management, engineering or science, public health, or related field. Knowledge of U.S. environmental laws and policy from a DoD perspective is desirable.

Applicants should submit a letter of application, professional curriculum vitae, and the names of three professional references to:

**Dr. Charles Bleckmann**  
AFIT/ENV  
2950 P Street, Building 640  
Wright-Patterson AFB, OH 45433-7765  
Telephone Inquiries: 513-255-2998

Closing Date: 15 May 1995.

*The Air Force Institute of Technology is an Equal Opportunity/Affirmative Action Employer and women and minorities are encouraged to apply.*

# Research Scientist – Cell Biology

**Rhône-Poulenc Rorer Research & Development, a world leader in pharmaceutical research, has an opportunity available in the Biology Department of our Collegeville, Pennsylvania research site.**

To qualify, you should have a Ph.D with 1-3 years of post-doctoral research experience in the cellular biology of hematopoietic systems/bone marrow stromal cell lineages. The ability to isolate and characterize clonal populations of cells as well as prior experience with primary cultures is required. A working knowledge of intracellular techniques such as measurement of intracellular calcium and microinjection is preferred.

Rhône-Poulenc Rorer offers a highly competitive salary, excellent benefits, a challenging work environment, and opportunities for advancement. Qualified candidates should send their resume including salary requirements to: **Rhône-Poulenc Rorer Research & Development, P.O. Box 1200, Mail Code H37, Dept. 94R-132, Collegeville, PA 19426-0107.** Equal Opportunity Employer, M/F/D/V.



## Excellence in Biopharmaceutics

**Cortech, Inc.** is a publicly-held biopharmaceutical company in Denver, Colorado committed to developing new therapies for inflammatory and immunological disorders. Cortech has two opportunities available in our chemistry department. The successful candidates will join a multi-disciplinary team devoted to structure-based drug design, thereby adding their expertise to that of our medicinal chemists, biochemists and X-ray crystallographers.

### Computational Chemist

The ideal candidate will possess a PhD and have expertise in modeling enzyme-inhibitor interactions. Extensive experience in applied molecular modeling with knowledge and experience in other areas of computational chemistry preferred.

### Analytical Chemist/NMR Spectroscopist

The ideal candidate will possess a PhD in Analytical Chemistry with postdoctoral and practical experience in modern 2D and 3D techniques related to high field Nuclear Magnetic Resonance spectroscopy. Preference will be given to candidates with experience in the art of structural and conformational determination as it relates to drug discovery. Familiarity with NMR techniques associated with metabolic studies necessary.

**Cortech, Inc.** offers a competitive salary, full benefits, stock options and relocation assistance. Please send resume with salary requirements to: Cortech, Inc., Attn: Human Resources, 7000 N. Broadway, Denver, CO 80221. Fax: (303) 650-2701. No phone calls please. EOE.



## RESEARCH SCIENTISTS (CROP PROTECTION)

DuPont Agricultural Products in Newark, Delaware is seeking highly motivated and creative individuals to join our multidisciplinary Insect Biochemistry and Physiology Group working on the discovery and development of new crop protection products. Successful candidates should be able to work and communicate effectively in a diverse group of biologists, entomologists chemists, biochemists, molecular biologists, and toxicologists.

### METABOLISM CHEMIST/TOXICOLOGIST

We are seeking a metabolism chemist/toxicologist whose responsibilities will include the isolation and identification of metabolites of experimental crop protection chemicals from insect, animal, plant, and soil matrices. A Ph.D. in analytical chemistry, toxicology, biochemistry or equivalent science is required. Post-doctoral or industrial experience is desirable. Of particular interest is experience with 13C/14C LC/MS. A working knowledge of insect and mammalian biochemistry/toxicology is also desirable.

### INSECT ELECTROPHYSIOLOGIST/BIOCHEMIST

A significant component of our insecticide discovery program involves research focused on the elucidation of mechanisms of action of crop protection chemicals. An opening is now available for a Ph.D. insect electrophysiologist/ biochemist in support of this effort. The responsibilities for this position include basic research on the mode of action of new compounds and the identification and pharmacological characterization of novel biochemical processes effecting insect control. A Ph.D. in insect biochemistry/physiology with demonstrated expertise in insect electrophysiology and biochemistry is required.

### PLANT PHYSIOLOGIST/BIOCHEMIST

We also are seeking a plant physiologist/biochemist. The person filling this position will be expected to contribute to an understanding of the biochemical and physical dynamics of movement and metabolism of experimental insect control agents in selected crops. A Ph.D. in plant physiology/biochemistry or equivalent science and a strong background in analytical chemistry, LC/MS, and related technologies is required. An understanding of plant/insect interactions is desirable. This individual will also be an integral part of a larger team conducting similar research for plant disease and weed control.

### VIROLOGIST

We are seeking a molecular virologist to join a group of scientists working on the development of genetically modified baculoviruses for the control of insect pests in agriculture. This position requires the development of a program focused on gene regulation and expression relative to enhanced insect control, e.g., viral stability, host range, and replication. A Ph.D. or equivalent experience in virology with a strong background in molecular or cell biology is required. At least 5 years of industrial and/or academic experience and a working knowledge of insect pathology is highly desirable. Strong leadership and effective communications skills are required.

### BIOCHEMIST

The control of insect pests by natural endemic baculoviruses is generally too slow to provide effective crop protection. Genetic modification of these selective viruses has therefore focused on the cloning and expression of insect specific peptides to enhance their activity. The individual filling this position will be expected to contribute to the isolation, purification, and characterization of insect specific toxins or regulatory peptides to be expressed in baculoviruses for control of insect pests in agriculture. In addition, isolation of these expressed toxins for further characterization, e.g., pharmacokinetics, mode of action, toxicology, etc., is expected. A Ph.D. in biochemistry or closely related science with demonstrated expertise in protein isolation and characterization is required. Experience in toxicology and immunology is highly desirable.

We are also accepting resumes from scientists with a bachelor's degree in chemistry, biochemistry, or molecular biology who wish to be considered for openings in our Discovery Research programs.

Interested candidates are invited to forward their resumes and a list of references to:

**Human Resources  
P.O. Box 5633  
Newark, DE 19714-5633**

*DU PONT IS AN EQUAL OPPORTUNITY EMPLOYER*



AGRICULTURAL PRODUCTS



## POSITIONS OPEN

### ASSISTANT/ASSOCIATE PROFESSOR PHARMACEUTICAL SCIENCES Immunology

The Washington State University College of Pharmacy, Department of Pharmaceutical Sciences has available an annual tenure-track appointment at the **ASSISTANT/ASSOCIATE PROFESSOR** level, effective January 1, 1996. A Ph.D. and experience in immunotoxicology/pharmacology is required. Postdoctoral experience is desirable. The candidate should have a strong research background. A professional degree in Pharmacy is preferred. The position will involve teaching clinical toxicology to professional pharmacy students and teaching and directing graduate students in the Pharmacology/Toxicology graduate program. Development of an independent extramurally funded research program is expected. The department emphasizes research in cancer. Applicants should indicate rank of application, provide a curriculum vitae, the names and addresses of three references and a statement of research interests and professional goals. Application deadline is July 1, 1995, or until the position is filled. Contact: **Dr. Gary G. Meadows, Ph.D., College of Pharmacy, Washington State University, Pullman, WA 99164-6510. Telephone: 509-335-4750.** *Washington State University is an Equal Opportunity/Affirmative Action Educator and Employer. Members of ethnic minorities, women, Vietnam-era or disabled veterans, persons of disability, and/or persons age 40 and over are encouraged to apply.*

### TENURE-TRACK FACULTY POSITION NO. 151

The Department of Pharmaceutical Sciences at North Dakota State University invites applications for a tenure-track position at the rank of **ASSISTANT/ASSOCIATE PROFESSOR**, with appointment beginning July 1, 1995. The successful candidate will be expected to establish an extramurally funded independent research program, teach and direct graduate students, and participate in a sequence of team-taught pharmacodynamics courses offered to professional pharmacy students. Applicants should have a Ph.D. in one of the pharmaceutical sciences (pharmacology, pharmaceutics, medicinal chemistry or a related discipline), and at least two years of postdoctoral experience with a strong record of scholarship and experience using state-of-the-art approaches to address problems at the cellular or molecular level. The applicant must also have a strong commitment to teaching, as well as good interpersonal and oral and written communication skills. All qualified individuals are encouraged to apply, particularly those with research interest in drug metabolism, electrophysiology, targeted drug delivery, or molecular biology. A professional pharmacy degree is desirable, but not required.

Applicants should submit a curriculum vitae, three letters of recommendation, and a brief description of future research plans to: **Dr. Stephen T. O'Rourke, College of Pharmacy, North Dakota State University, Fargo, ND 58105.** Review of applications begins April 15, 1995, and will continue until a suitable candidate is selected. *North Dakota State University is an Equal Opportunity/Affirmative Action Employer.*

### CARDIAC PHARMACOLOGY IDAHO STATE UNIVERSITY

The Department of Pharmaceutical Science in the College of Pharmacy, Idaho State University seeks outstanding and enthusiastic applicants for a tenure-track faculty position in Pharmacology at the level of **ASSISTANT or ASSOCIATE PROFESSOR**, effective July 1, 1995. The candidate should have a Ph.D. in Pharmacology or a closely related discipline and should preferably have a background in Cardiac and/or Renal Pharmacology. Ability to teach Cardiac Pharmacology to professional pharmacy and graduate students is essential and to teach Renal Pharmacology an advantage. The successful candidate will be expected to conduct scholarly research in or related to Cardiac Pharmacology and/or in areas which complement the research interest of the Department. The candidate is also expected to participate in team-taught courses and in service and professional activities. Review of applications will begin April 3, 1995, and will continue until the position is filled. Applicants should forward a letter of application, a curriculum vitae, an outline of research plans and career goals, and arrange for three letters of reference to: **Dr. James C. K. Lai, Pharmacology Faculty Search, College of Pharmacy, Idaho State University, Campus Box 8334, Pocatello, ID 83209.**

*Idaho State University is an Affirmative Action/Equal Opportunity Employer and encourages applications from women, minorities and members of underrepresented groups.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR Department of Forest Resources Management (Position in Conservation Policy Management)

Applications are invited for a tenure-track position in Forest Resources Management at the **ASSISTANT PROFESSOR** level to support the new Faculty of Forestry degree program in Natural Resources Conservation. This position is subject to final budgetary approval. The successful candidate will be expected to develop and teach undergraduate and graduate courses which focus on conservation policy, and planning as applied in parks, protected areas and industrial forests, and to develop an active research program in one or more of these areas. Applicants should have a doctoral degree in a related field. Familiarity with GIS applications in planning and management at both landscape and site levels would be an asset. Experience in the field is preferred.

Salary is commensurate with experience. The closing date for applications is June 30, 1995. Letters of application, curriculum vitae, and the names, addresses and telephone numbers of three referees should be sent to: **Dr. Gordon Baskerville, Head, Department of Forest Resources Management, University of British Columbia, 270, 2357 Main Mall, Vancouver, BC V6T 1Z4 Canada.**

*The University of British Columbia welcomes all qualified applicants, especially women, aboriginal people, visible minorities and persons with disabilities. Appointment may be considered at a higher rank for a woman with exceptional qualifications. In accordance with Canadian immigration requirements priority is given to Canadian citizens and permanent residents of Canada.*

### TENURE-TRACK FACULTY POSITION NO. 118

The Department of Pharmaceutical Sciences at North Dakota State University invites applications for a tenure-track position at the rank of **ASSISTANT/ASSOCIATE PROFESSOR**, with appointment beginning July 1, 1995. The successful candidate will be expected to establish an extramurally funded independent research program, teach and direct graduate students, and participate in a sequence of team-taught pharmacodynamics courses offered to professional pharmacy students. Applicants should have a Ph.D. in pharmacology, or a related discipline and at least two years of postdoctoral experience with a strong record of scholarship and experience using state-of-the-art approaches to study pharmacologic mechanisms at the cellular or molecular level. The applicant must also have a strong commitment to teaching, as well as good interpersonal and oral and written communication skills. All qualified individuals are encouraged to apply, particularly those with research interests in signal transduction, ion channels, or vascular smooth muscle/endothelium. A professional degree in pharmacy is desirable, but not required.

Applicants should submit a curriculum vitae, three letters of recommendation, and a brief description of future research plans to: **Dr. Stephen T. O'Rourke, College of Pharmacy, North Dakota State University, Fargo, ND 58105.** Review of applications begins April 15, 1995, and will continue until a suitable candidate is selected. *North Dakota State University is an Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT/ASSOCIATE/FULL PROFESSOR (Deadline extension due to late announcement)

The Center of Marine Biotechnology of the University of Maryland Biotechnology Institute seeks to fill a tenure-track faculty position with a highly qualified researcher in aquaculture and fisheries biotechnology and molecular biology. Preference will be given to exceptional candidates who have established research programs in the areas of marine transgenics, vertebrate molecular neuroendocrinology, immunology, or developmental biology. Applications will be accepted at the **ASSISTANT, ASSOCIATE, or FULL PROFESSOR** levels, and the starting rank of the position will be commensurate with the qualifications of the successful candidate. Individuals who have demonstrated outstanding research ability should forward a curriculum vitae, a short description of research plans, and names of three referees by April 17, 1995, to: **Chairman, Search Committee for Aquaculture Biotechnology, Center of Marine Biotechnology, University of Maryland Biotechnology Institute, 600 East Lombard Street, Baltimore, MD 21202.** *The University of Maryland is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

## POSITIONS OPEN

### MOLECULAR BIOLOGIST

A **RESEARCH ASSISTANT PROFESSORSHIP** is available to develop novel strategies for studying the mechanisms governing pituitary hormone secretion as they relate to the differentiation and transdifferentiation of growth hormone and prolactin producing cells and the role of the hypophyseal neurointermediate lobe in regulating anterior pituitary hormone release. Both rodent and bovine model systems are utilized. We currently study these processes at the single, living cell level by employing a broad spectrum of molecular and cellular strategies which include (but are not limited to) combinations of the following techniques: reverse hemolytic plaque assays for quantifying hormone secretion, video imaging of cells transfected with luciferase-promoter constructs for assessing gene expression in real time, and microinjection (cytoplasmic and nuclear) for selectively introducing modulators of gene expression and hormone secretion. Postdoctoral experience and an extensive background in molecular biology are required. This is an outstanding opportunity for a creative scientist to interact in an excellent research environment and to establish an independent research program. Salary and benefits are highly competitive and commensurate with experience. Send curriculum vitae and names and telephone numbers of three references to: **Dr. L. Stephen Frawley, Department of Cell Biology and Anatomy, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-2204. Telephone: 803-792-3526; FAX: 803-792-0664.** *Women and minorities are encouraged to apply. An Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSOR BIOLOGY/MICROBIOLOGY Tenure-Track, Fall 1995

Ph.D. in Molecular Biology with emphasis in Biochemistry and Immunology, good communication skills, and a demonstrated ability to teach science at the undergraduate level. Teach first-year biology and upper-level courses in biochemistry, immunology, and molecular biology; advise students majoring in microbiology, biochemistry and allied health; and conduct appropriate research projects with students. The University of Houston-Downtown is located in the dynamic central business district of Houston. The 8,000 undergraduate student body has an ethnic mix which matches that of the city. Application deadline: May 6, 1995. Send a curriculum vitae and names of at least three references to: **Chair, Biology Search Committee, Department of Natural Sciences, UH-Downtown, Suite N-813, Houston, TX 77002.** *The University of Houston-Downtown is an Affirmative Action/Equal Opportunity Employer.*

### ASSISTANT PROFESSOR IN MICROBIOLOGY CHANG GUNG COLLEGE OF MEDICINE AND TECHNOLOGY TAIWAN, ROC

The School of Medical Technology at the Chang Gung College of Medicine and Technology is seeking applicants for a tenure-track **ASSISTANT PROFESSOR** position, which will be available starting August 1995. Candidates should have a Ph.D. degree in Microbiology and at least two years of postdoctoral or equivalent experience in a related area. The ability to teach undergraduates in Clinical Microbiology and to participate in the teaching of graduate courses is expected. The successful applicant must have an undergraduate degree in Medical Technology or a Medical Technologist license, and have demonstrated excellence in publications. Applicants should submit a curriculum vitae, a brief description of future research plans, and three letters of recommendation by April 15, 1995, to: **Dr. Tsan Z. Liu, Dean of the School of Medical Technology, Chang Gung College of Medicine and Technology, 259 Wen-Hwa 1st Road, Kwei-Shan, Taoyuan, Taiwan, ROC.**

**ASSISTANT PROFESSOR** of medicine in residence for a program on molecular mechanisms of liver fibrosis and vasoregulation in liver disease. Incumbent must possess an M.D. or M.D./Ph.D. and be Board-certified in Internal Medicine and Gastroenterology. Applications to: **Dr. D. M. Bissell, Liver Center Laboratory, Building 40, Room 4102, San Francisco General Hospital, San Francisco, CA 94110.** *The University of California is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

### Three Scientist Positions

A private, established biotechnology company located in the Boston, Massachusetts area is recruiting scientists to staff its newly constructed research facility. The company is a pioneer in the development of therapies based on the circadian regulation of mammalian metabolism and immunology. Associates will interact with a multidisciplinary group of scientists including organic chemists, biochemists, cell biologists, endocrinologists, immunologists, physiologists, and chronobiologists to study two research areas: 1) circadian neuroendocrine regulation of metabolism in Type II diabetes and 2) neuroendocrine regulation of immune function at the cellular and organismal levels as it relates to tumor immunology and autoimmune disease. The company seeks to fill the following positions:

#### Metabolic Physiologist

Applicants should have a PhD with a strong background in biochemistry and physiology with an established record of expertise in lipid and carbohydrate abnormalities associated with insulin resistance, particularly as it relates to interactions between hepatic glucose output and free fatty acid oxidation, as well as to lipoprotein metabolism.

#### Hypothalamic Neuroscientist

Applicants must have a PhD and proven track record in a neurophysiology related area, and must have extensive experience in hypothalamic anatomy and physiology as it relates to the regulation of metabolism and/or immune function. Candidates must have expertise in neurotransmitter (dopaminergic, serotonergic, peptide) receptor assay techniques (scatchard analysis, PCR identification, *in situ* hybridization).

#### Tumor Immunologist and Autoimmune Disease Immunologist

Candidates should have a PhD with a strong background in cellular immunology or equivalent to study neuroendocrine regulation of macrophage activation, lymphokine production, and B cell, T cell, NK, and LAK activation as they relate to cancer or autoimmune disease. Previous experience in macrophage, natural killer cell, and T cell function as well as inflammatory response processes and experience with animal models of autoimmune disease, inflammation, or neoplasia is required. Applicant should send a complete curriculum vitae, a brief description of research experience, and names of three references to:

**Ms. Gina Tyrrel, Personnel Manager**  
Ergo Science Incorporated  
100 First Ave, 4th Floor  
Charlestown, MA 02129  
(617) 241-8999



## OPPORTUNITIES IN CLINICAL RESEARCH

Ross Products Division, a division of Abbott Laboratories and the leading manufacturer of pediatric and adult nutritional products, has several opportunities in Clinical Research.

**Clinical Research Associates (2)** – Candidates will have a Ph.D. in Nutritional Science or related field, RD is desired. Clinical areas of interest and experience should include: respiratory physiology, inflammatory conditions, and other critical/intensive care settings. Will be responsible for the design of research protocols, monitoring study progress and preparation and presentation of final study results.

**Clinical Research Scientist** – Candidate will have a Ph.D. in Nutritional Biochemistry or related field plus post doctoral training or experience in application of basic scientific training. This individual will be responsible for: conducting pediatric clinical research and evaluation of related technologies for Ross products, development of research plans and protocols, providing conceptual analysis of new product and/or research concepts.

Ross Products Division, located in Columbus, Ohio, offers excellent compensation and benefit programs with opportunities for growth and advancement. For confidential consideration please direct your CV to: **ROSS PRODUCTS DIVISION, Attn: Staff Recruiter, 625 Cleveland Avenue, Columbus, OH 43215.** Ross is an EEO and offers a smoke-free environment.



**ABBOTT LABORATORIES**  
**ROSS PRODUCTS DIVISION**

ROSS PRODUCTS DIVISION

### The Division of Biomedical Sciences School of Graduate Studies and Research

Meharry Medical College

Present

Twelfth Symposium

Immunology, Biochemistry, and  
Molecular Biology

of

Tropical Diseases

Monday, April 3, 1995

8:00 a.m.-5:00 p.m.

Room M 001

West Basic Science Building  
Meharry Medical College

About the Symposium... This one day symposium on "Recent Advances in the Immunology, biochemistry, and Molecular Biology or Tropical Diseases brings together molecular biologists, immunologists and biochemists in the southeastern region of the United States who share an interest in parasitic disease research. The presenters and topics for six sessions are: **Jean G. Ford, M.D.**, (Harlem Hospital Center), "Molecular Epidemiology of Tuberculosis," **Elizabeth Wirtz, Ph.D.**, (The Rockefeller University, Laboratory of Molecular Parasitology, "Inducible gene expression in trypanosomes mediated by prokaryotic repressors," **Kojo Mensa-Wilmot, Ph.D.**, (The University of Georgia, Department of Zoology), "Control of Glycosylphosphatidylinositol Cleavage in *Trypanosoma brucei* and *Leishmania amazonensis*," **Donna Russo, Ph.D.**, (Meharry Medical College, Department of Microbiology), "Human T Cell immunizations with *Leishmania*," **Rick Tarleton, Ph.D.**, (The University of Georgia, Department of Zoology), "Chagas' Disease: The role of T Cells in Immune Control and Disease Development," **William P. Weidanz, Ph.D.**, (University of Wisconsin Medical School, Department of Microbiology and Immunology, "The role of  $\gamma\delta$  T Cells in Malaria." **Registration**... The registration fee for the symposium is \$50 with graduate students paying \$30. For more information call: Dr. George C. Hill, Ph.D., Professor, Division of Biomedical Sciences, Meharry Medical College, Nashville, TN 37208. T: (615) 327-6193 F: (615) 321-2999. Internet: Hillgeg75@ccvax.mmc.edu

## IN IT FOR LIFE

Improving life, by advancing science.

Since opening our doors back in 1980, Genetics Institute has discovered a prodigious number of novel regulatory proteins. To date, nine of these have advanced to human clinical evaluation or commercialization, and the outlook for continued innovation is unprecedented.

Our success as the largest biotechnology employer in Massachusetts has been fueled by our collaborative work environment driven by values and focused on the future. This culture attracts and inspires some of the brightest minds whose ideas sustain us as a leader in the industry. Our New England location places us in a hub for the biotechnology industry. The Boston area offers nearby mountains, seacoast, and a four-season climate providing endless recreational, cultural and educational opportunities. So when you consider why you chose the sciences, consider Genetics Institute. Make an impact.

### STAFF SCIENTIST Pharmacodynamics and Safety

Apply pharmacokinetic-pharmacodynamic principles to understand the time course of a compound through the body, to select a dose and frequency of administration of that dose, and to use these methods to accelerate the drug development process. Responsibilities also include the design, execution and analysis of pharmacokinetic-pharmacodynamic studies, particularly clinical studies. Requirements include a PhD with at least 2 years' industry experience, or a PharmD with 3-5 years' industry experience. Degrees must be in Pharmacokinetics or Pharmaceutics. Protein experience a plus. Previous training in pharmacokinetics and pharmacodynamics is key to this position as well as experience in a preclinical, clinical and regulatory environment. Background must include good communication skills plus the ability to use specialized software for analysis (including, but not limited to, NONLIN, PCNONLIN, RSTRIP or SAS). **Job Code 95-A015**

### STAFF SCIENTIST rIL-11 & Epithelial Protection

Conduct studies of rIL-11 in animal models of cytotoxic therapy and inflammatory Bowel Disease. A unique opportunity to combine in vivo pharmacology with molecular biology techniques, you will use appropriate animal models to investigate the role of IL-11 in potential new indications. Experience with In situ Hybridization, Immunohistochemistry, Light and Electron Microscopy is essential. Requirements include a Ph.D. or M.D., with at least one year of laboratory experience, excellent communication skills, the ability to interact with clinical departments, within a multidisciplinary environment. **Job Code 95-SCI**

For consideration, please send or fax resume, indicating appropriate Job Code, to: Human Resources Department, Genetics Institute, Inc., One Burt Road, Andover, MA 01810. Fax: (508) 623-2607.

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

**GENETICS INSTITUTE®**

*Harnessing the Body's Power to Heal™*

## POSITIONS OPEN

### SENIOR RESEARCH FACULTY POSITIONS Immunology and Allergy La Jolla Institute for Allergy and Immunology

The La Jolla Institute for Allergy and Immunology invites applications for two senior positions: one in Allergy and one in T Cell Biology. Possible areas for the T Cell Biologist include research in autoimmunity, tumor or infectious disease immunology, and cytokine research. Applications from other areas of T cell immunology are also welcome. These positions include set-up funds and liberal ongoing institutional support.

We encourage applications at the level of **ASSOCIATE** or **FULL PROFESSOR** from individuals with recognized, well-established research programs. Interested candidates should supply a letter of research interests and a curriculum vitae to: **Faculty Search Committee, La Jolla Institute for Allergy and Immunology, 11149 North Torrey Pines Road, La Jolla, CA 92037. An Equal Opportunity/Affirmative Action Employer.**

### ASSISTANT/ASSOCIATE PROFESSOR CELL/DEVELOPMENTAL BIOLOGY

The Department of Anatomy at the Louisiana State University Medical Center—New Orleans seeks to identify a **FACULTY** candidate with a Ph.D. and at least three years of postdoctoral experience. Scientists with research programs in the general area of cell/developmental biology that use molecular biology techniques are especially encouraged to apply. Salary levels are competitive with ample space and start-up funds. Co-appointments in the Cancer and Neuroscience Centers of Excellence are encouraged. Teaching responsibilities will be in the area of microanatomy. For consideration, send a curriculum vitae, research interests, and names of three references to: **Dr. R. Ranney Mize, Head, Department of Anatomy P6-2, LSU Medical Center, 1901 Perdido Street, New Orleans, LA 70112. An Equal Opportunity/Affirmative Action Employer.**

**ASSISTANT or ASSOCIATE PROFESSOR**—The Section of Molecular Cardiology at the Albert Einstein College of Medicine invites applications from individuals with an M.D. and/or Ph.D. degree, an outstanding record of publications, and the ability to bring or develop a strong, externally funded research program. Although expertise in mouse molecular genetic approaches is preferred, any aspects of cardiovascular development, physiology or disease will be considered. The Albert Einstein College of Medicine provides a highly interactive scientific community, well-supported by core facilities and training programs. Competitive salary and start-up package are available. Please submit a curriculum vitae and statement of research interests, with the names of three references, to: **Dr. Glenn I. Fishman, AECOM, Jack and Pearl Resnick Campus, Ullmann 1225, 1300 Morris Park Avenue, Bronx, NY 10461. An Equal Opportunity Employer.**

The Center for Drug and Alcohol Programs (CDAP) at the Medical University of South Carolina is recruiting for biochemical/molecular neuropharmacologists at the **ASSISTANT/ASSOCIATE PROFESSOR** level. CDAP is an expanding research, treatment and training faculty with basic science and clinical laboratories, and a productive interdisciplinary research group. Candidates must possess a Ph.D. and postdoctoral experience in pharmacology, neurosciences, and molecular biology, and are expected to maintain a funded research program in the general area of drug and alcohol abuse. Interest in receptor and second messenger systems as well as experience in utilizing electrophysiology and/or tissue culture is desirable, but not essential. Applicants should send curriculum vitae, statement of research interests, and three letters of reference to: **CDAP Search Committee, c/o Dr. H. C. Becker, Department of Psychiatry, Medical University of South Carolina, Charleston, SC 29425. Affirmative Action/Equal Opportunity Employer.**

Electrophysiologist. Tenure-track position at the **ASSISTANT/ASSOCIATE PROFESSOR** level for Ph.D. experienced in single/double-barreled microelectrodes to study Esophageal epithelia. Patch clamp a plus. Salary and time for independent research negotiable. Send curriculum vitae and names of three references to: **R. C. Orlando, M.D., Tulane University Medical Center, SL-35, 1430 Tulane Avenue, New Orleans, LA 70112. Tulane University is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### THE CLEVELAND CLINIC FOUNDATION Center for Anesthesiology Research

**ASSISTANT PROFESSOR** level position with expertise in Microcirculation and/or Vascular Reactivity. Doctoral degree and postdoctoral training required. Joint appointment in Division of Anesthesiology and the Research Institute. Join a growing cardiovascular program utilizing *in vivo* and *in vitro* methodologies to address fundamental basic research issues. Numerous collaborative opportunities in all aspects of vascular biology. Competitive salary and start-up funds. Candidates should send curriculum vitae, name and FAX number of three references, and a brief statement of research interests to: **Dr. Paul A. Murray, Carl E. Wasmuth Endowed Chair and Director, Center for Anesthesiology Research—FF-40, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195. The Cleveland Clinic Foundation is an Affirmative Action/Equal Opportunity Employer.**

### ASSISTANT PROFESSOR—DUKE UNIVERSITY

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

Thomas More College of Liberal Arts seeks a Biology teacher beginning September 1, 1995, at **ASSISTANT PROFESSOR** rank to teach introductory courses and to initiate and develop a major biology program. Needs to have competency to teach college-level mathematics as well. Must be entrepreneurial-minded so as to seek outside funding for this program. Tenure-track position. Salary competitive. Send inquiry to:

**Dr. Peter V. Sampo, President  
Thomas More College of Liberal Arts  
Six Manchester Street  
Merrimack, NH 03054**

Teaching Position—Ecologist/Environmental Scientist. The Department of Biology, Emory University, invites applications for a teaching position at the **ASSISTANT PROFESSOR** rank for a non-tenure-track, one-year term beginning in September 1995, with a possibility of renewal for up to three years. The successful applicant should have training in community/ecosystem ecology and environmental science, innovative interdisciplinary approaches in teaching environmental studies, expertise in computer use for teaching and communication, and strong evidence of excellent teaching. The position is assigned to the Human and Natural Ecology Program where responsibilities are teaching introductory and advanced courses in environmental studies and ecology, advising students and some administration. Send curriculum vitae, a statement addressing how you meet our criteria for a candidate, and three letters of recommendation to: **Dr. Harvey L. Ragsdale, Human and Natural Ecology Program, Emory University, Atlanta, GA 30322. Review of applications will begin immediately and the position will remain open until filled. Emory is an Equal Opportunity/Affirmative Action Employer.**

Swarthmore College—Biochemistry. Swarthmore College invites applications for a temporary (one year) full-time position in biochemistry at the level of **ASSISTANT PROFESSOR**. This appointment will begin on September 1, 1995. Ph.D. required; postdoctoral experience is preferred. Teaching assignments will be in general chemistry and introductory (sophomore-level) biochemistry. Candidates should submit a curriculum vitae, copies of graduate and undergraduate transcripts, a statement of teaching interests and arrange for three letters of recommendation to be sent to: **Prof. Thomas A. Stephenson, Chair, Department of Chemistry, Swarthmore College, 500 College Avenue, Swarthmore, PA 19081-1397. Application materials must be complete by April 3, 1995, to assure full consideration. Women and members of underrepresented minorities are especially encouraged to apply.**

## POSITIONS OPEN

### FRAMINGHAM STATE COLLEGE DEPARTMENT OF BIOLOGY

Nine-month, tenure-track position at the **ASSISTANT PROFESSOR** level, to begin fall 1995. Broadly trained biologist, specializing in developmental/cell biology. Duties: teaching courses in area of expertise, leading undergraduate research, and participating in the instruction of lower-level biology courses. Ph.D. in an area of Biology at the time of appointment and a strong commitment to undergraduate teaching required; college teaching experience preferred. Send a letter of interest, curriculum vitae, graduate transcripts, and the names of three references by April 17, 1995, to: **Dr. C. T. Roskey, Department of Biology, Framingham State College, Framingham, MA 01701. An Equal Opportunity/Affirmative Action Employer seeking to increase the diversity of its workforce. People of color, women and persons with disabilities are especially encouraged to apply.**

### TENURE-TRACK POSITION IN RADIOECOLOGY

An academic tenure-track position is available in radioecology at Colorado State University beginning September 1, 1995. Expectations of this position will include teaching graduate-level courses in radioecology and environmental contaminant modeling, supervising graduate student research, maintaining an active research program, and providing broad service to the University, the public, and state, national or international organizations. Qualifications include a Ph.D. in radioecology or closely related discipline, experience in the transport of radionuclides and/or other contaminants in aquatic or terrestrial ecosystems, strong interests in the application of radioecology to emerging problems in environmental restoration and waste management, human health and ecological risk assessment, and research to improve risk assessment models. A person is sought with excellent speaking, writing, and mathematical modeling skills, quality teaching experience, and the ability to attract research support. Salary and academic rank are negotiable. Send letter of application, curriculum vitae, and the names and addresses of three references by June 15, 1995, to: **Dr. F. Ward Whicker, Department of Radiological Health Sciences, Colorado State University, Fort Collins, CO 80523. Colorado State University is an Equal Employment Opportunity/Affirmative Action Employer.**

### UNIVERSITY OF CALIFORNIA SANTA BARBARA

#### School of Environmental Science and Management

We invite applications for two **SENIOR POSITIONS** in the new graduate school: (a) Earth System Science, including the physical climate system, hydrologic cycle, biogeochemical cycles, and their interactions; (b) Environmental Policy and Resource Management, including environmental regulation and policy analysis, economic valuation, and resource management. We seek distinguished applicants with strong publication records, vigorous, original research programs, evidence of excellence in teaching, and a commitment to helping start a new, interdisciplinary program that will admit its first students in fall 1996. Appointment level is open. Rank and salary will depend on teaching and research experience.

Review of applications has begun and will proceed until the positions are filled. Start date is July 1, 1995. Send curriculum vitae, names of four references, statement of proposed research and teaching interests, and reprints of no more than five publications to: **Jeff Dozier, Dean, School of Environmental Science and Management, University of California, Santa Barbara, CA 93106. Email: dozier@esm.ucsb.edu.**

*The University of California is an Equal Opportunity/Affirmative Action Employer.*

### BIOLOGY POSITION MOLECULAR GENETICIST

Wesleyan College has a one-year, **POTENTIAL TENURE-TRACK** position in molecular genetics. Teach: comparative physiology, biochemistry, cell biology, microbiology. Ph.D., commitment to undergraduate teaching and research required. A selective liberal arts college for women, Wesleyan emphasizes critical thinking, connected learning, and writing across the disciplines. Application, curriculum vitae, transcripts, and three letters of recommendation to: **Ronald Toll, Chair, Biology, Wesleyan College, Macon, GA 31297, by April 3, 1995. An Affirmative Action/Equal Opportunity Employer.**



## INDUSTRIAL BIOTECHNOLOGY

Energy BioSystems is a young, well funded, industrial biotechnology corporation specializing in the application of biotechnical systems to the chemical and energy industries. The company is expanding its R&D laboratories in the northern Houston suburb of The Woodlands, and is seeking personnel for its molecular genetics and biochemistry programs. This is an opportunity to join a rapidly growing biotechnology company at an early stage in its development.

### Senior Research Scientist-Molecular Genetics

**Duties** include planning and executing research to identify, clone, determine function, etc., of genetic elements of multi-step biodesulfurization pathway & creatively use gene regulation/expression systems to deregulate pathway. **Requirements** of this position include a Ph.D. in Molecular Genetics, Biochemistry or related field and 5+ years experience. Strong knowledge of microbial biosynthetic/biodegradative pathways. Demonstrated ability to obtain results with strong publication record. Demonstrated ability to manage group of 2-3 Ph.D. scientists involved in multiple research projects. Team player able to interact meaningfully with multidisciplinary group.

### Biochemist/Enzymologist

**Duties** of this hands-on bench scientist position involve the characterization of a multi-enzyme pathway resulting in the removal of sulfur from heterocyclic compounds. The successful candidate will be involved in the purification and characterization of the proteins involved in this process, the discovery of enzyme mechanisms, the affects of inhibitors and the development of the enzymology of the process with the goal of enhancing the rate of catalysis. **Requirements** include a Ph.D. in Biochemistry or Enzymology and at least 2 years postdoctoral experience in academics or industry, a strong record of publication, preferably in the area of catalysis and enzyme mechanisms, knowledge of redox reactions a plus, working knowledge of microbial biosynthetic and catabolic pathways, and strong protein purification chemistry skills.



Please send resume in confidence along with a cover letter stating the name of the position. Also send the names, addresses and telephone numbers of relevant references to:

**Human Resource Manager**  
**Energy BioSystems Corporation**  
4200 Research Forest Drive  
The Woodlands, Texas 77381

No Phone Calls - EOE

## Senior Scientist

Identify in vitro models of ocular toxicity that correlate with clinical observations and establish in vitro procedures for evaluating the bio compatibility of materials for refractive surgery and for studying wound healing processes in ocular tissues. Design and establish an in-house laboratory for microbiological testing and studies in support of new product development and a laboratory for cell culture. Design and conduct studies in the identification of new preservative systems that have a good balance of antimicrobial activity and ocular safety. Direct and coordinate internal and external resources to test physiological concepts of ocular irritation and evaluate irritation potential of prototype products, and external resources for microbiological studies pertinent to new product development, competitive product evaluations, and support of product claims. Conduct tests of ophthalmic formulations to ensure ocular safety of new products, tests to determine nutrient diffusion through hydrogels and to evaluate epithelial cell growth over synthetic materials to be used in refractive surgical procedures, ex vivo studies related to the attachment of corneal grafts and tests to evaluate wound healing preparations. Validate and standardize cell culture and microbiological protocols to ensure consistency among testing laboratories. Coordinate and support studies in surgical procedures for refractive error correction and in histological evaluation of tissues. Collaborate in the design and preparation of ophthalmic compositions (materials and solutions) to establish critical product attributes with respect to ocular biocompatibility. Serve as internal consultant in microbiology to the Regulatory Affairs Department. Knowledge of mammalian cell culture, microbiology, ocular physiology, in vivo experimentation and international regulatory agency requirements with regard to microbiological and toxicological testing of ophthalmic products. An MS in Biology and 3 years' experience in job offered or 3 years' experience as Scientific Researcher (Biology) required. Position is Monday - Friday, 9-5. \$57,500/year. Send 2 resumes to: **Case No. 50351, Box 8968, Boston, MA 02114.**

## STAFF SCIENTIST Genetic Systems

Stratagene, with over 200 employees, is located in a very attractive part of La Jolla, California. Known for our innovative, high quality products for cutting edge research, we are expanding our program in the area of genetic systems.

The successful candidate will have a postdoctoral and/or industrial experience with expertise in one or more of the following areas:

- Eukaryotic gene expression
- Protein expression
- Yeast two-hybrid screening
- Viral Vectors

We offer an excellent salary and benefits package. Candidates interested in joining a highly successful, progressive company with room to grow are encouraged to submit resume to: **Stratagene, Attn: Professional Staffing 21014-95R, 11011 N. Torrey Pines Rd., La Jolla, CA 92037. AA/EOE.**



**STRATAGENE®**

## POSITIONS OPEN

### DIRECTOR OF RESEARCH CALIFORNIA ACADEMY OF SCIENCES

The California Academy of Sciences invites applications for the position of **DIRECTOR** of Research. The Academy, a natural history museum founded in 1853 and located in San Francisco, has strong emphases in systematics, evolutionary biology, and natural history in both its research and educational programs. The Director of Research serves as administrator and external liaison for the 100 members of the scientific and research staff. We seek a colleague with a Ph.D. and demonstrated scientific accomplishments in one or more areas of the Academy's research emphases. Strong interpersonal skills and demonstrated managerial abilities are needed to coordinate and foster current and future research programs. Strong interdepartmental cooperation with the Academy's public education programs is a major goal. Collaborative skills that will maximize interaction between the Academy and scientific programs in San Francisco Bay Area museums, colleges, and universities are expected. Starting salary will be commensurate with experience. Applicants should forward a curriculum vitae, statement of interest in development of research programs in systematics, and the names of three references to: **Chair, Director of Research Search Committee, c/o Human Resources, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118**. Applications must be received on or before April 15, 1995. *The California Academy of Sciences is an Equal Opportunity Employer committed to diversity.*

### UNIVERSITY OF VICTORIA BRITISH COLUMBIA Research Chair in Ocean Acoustics School of Earth and Ocean Sciences

Applications are invited for a **JUNIOR CHAIR** in Ocean Acoustics, part of an Acoustic Research Program that is sponsored by the Department of National Defence and the Natural Sciences and Engineering Research Council of Canada. The Senior Chair is **Dr. Ross Chapman**. The Acoustic Research Program is primarily directed to defence-related applications in matched field inversion, geoaoustics, environmental acoustics and acoustic propagation modeling. The Junior Chair will be appointed to a tenure-track position at the Assistant Professor level and, although collaborating with the Senior Chair in ocean acoustics, will develop a related but independent program of research. The Junior Chair will also teach undergraduate and graduate courses in ocean acoustics and related topics. Applicants should have a Ph.D., and postdoctoral experience in underwater acoustics research, including experience with ocean or arctic field trials. Applications, including a curriculum vitae and the names of three referees, should be sent by May 15, 1995, to: **Dr. Chris Barnes, Director, School of Earth and Ocean Sciences, University of Victoria, P.O. Box 1700, Victoria, BC V8W 2Y2 Canada. FAX: 604-721-6200**. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The University of Victoria is an employment equity employer and encourages applications from women, aboriginal people, visible minorities and persons with disabilities.*

**LECTURER** in Biology: Penn State Erie, The Behrend College, invites applications for the position of Lecturer in Biology, beginning fall 1995. Applicants must have a strong background in organismal/cell biology and genetics. Primary responsibilities will be to teach lower division biology and to supervise and develop teaching laboratories. An M.S. in biology is required; Ph.D. and teaching experience is preferred. Send résumé, transcripts, and arrange that three letters of reference be sent to: **Dr. Roger Knacke, Division of Science, Department BIOL-8, The Pennsylvania State University at Erie, Erie, PA 16563-0203** by April 15, 1995. *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

The University of California, Los Angeles (UCLA) Department of Neurology seeks M.D. or Ph.D. neuroscientists. Basic aspects of basal ganglia function, degenerative diseases, and mechanisms of cell death are research areas of greatest interest. **TENURE-TRACK POSITION**, newly remodeled molecular biology laboratories, and start-up funds are available. Applicants should have a demonstrated record of research productivity and extramural support. Curricula vitae and letters of interest should be directed to: **Jeffrey Cummings, M.D., Reed Neurological Research Center, UCLA School of Medicine, 710 Westwood Plaza, Los Angeles, CA 90095-1769**. *An Equal Opportunity Employer.*

## POSITIONS OPEN

### PROFESSOR AND CHAIR Department of Pharmacology and Toxicology Dartmouth Medical School

Applications are invited for the position of **PROFESSOR AND CHAIR** of the Department of Pharmacology and Toxicology at Dartmouth Medical School. The department participates in the education of M.D., Ph.D., and M.D./Ph.D. students. Members of its faculty conduct research on a wide range of interdisciplinary topics, with a strong emphasis on cellular and molecular pharmacology, and maintain research and academic ties to other departments within Dartmouth Medical School and Dartmouth College, to the Veterans Administration Medical Center and the Norris Cotton Cancer Center. Applicants should have an active research program and a strong record of scientific and scholarly achievement. They should be committed to excellence in education, and have the leadership qualities necessary for developing the faculty and promoting the research and academic programs of the department.

Letters of application, accompanied by a curriculum vitae, names and addresses of three references, and a summary of current research activities, should be sent to: **Allan Munck, Ph.D., Pharmacology-Toxicology Search Committee, Department of Physiology, Dartmouth-Hitchcock Medical Center, Lebanon, NH 03756-0001**.

*Dartmouth College is an Affirmative Action/Equal Opportunity Employer.*

### HEAD OF NUCLEAR MEDICINE AT HADASSAH MEDICAL ORGANIZATION JERUSALEM

This important post is opened to candidates with Board certificate in Nuclear Medicine. The Department, located at the Hebrew University Hadassah Medical Center of Ein Karem, provides service to all the departments of the two Hadassah Hospitals, as well as to outpatients from within and without the Hadassah Organization in Jerusalem and countrywide. Hadassah Hospitals are the clinical teaching arms of the Hebrew University-Hadassah Medical School; therefore, the appointment is linked with senior academic status at the Medical School, with responsibility for teaching nuclear medicine at the undergraduate, graduate, and residency levels. The Department has large, recently modernized facilities with up-to-date equipment, including research laboratories.

The candidate must have extensive experience in clinical nuclear medicine. Previous administrative experience, while not imperative, is an asset. The Hadassah Hospital being a highly research-oriented, academic institution, the candidate must show evidence of research capacity at a high international level.

Salary and other emoluments are at the appropriate high level on Hadassah medical/academic scales.

Enquiries, and applications including a full bibliography, should be addressed to the **Director General, Hadassah Medical Organization, P.O. Box 12000, Jerusalem 91120 Israel**, within 60 days of publication.

### FACULTY POSITION ISCHEMIA-REPERFUSION RESEARCH

The Department of Anesthesia at Brigham and Women's Hospital, Harvard Medical School has one position for a **FULL-TIME RESEARCHER** to study mechanisms of ischemia-reperfusion injury, preferably with a focus on the role of neutrophils. The position is within a newly established Ischemia-Reperfusion Center, to join two other investigators in established research space. The Anesthesia Research Laboratories are comprised of 15 independent investigators working in molecular neuropharmacology, pain research, muscle mechanics and cardiac electrophysiology. Academic rank will be commensurate with experience and status. Applicants should send a letter describing their interests, a curriculum vitae and have three letters of recommendation forwarded to:

**Professor Gary R. Strichartz  
Vice Chairman for Research  
Department of Anesthesia Research Laboratories  
Brigham and Women's Hospital  
Harvard Medical School  
75 Francis Street  
Boston, MA 02115**

*Harvard Medical School/Brigham and Women's Hospital are Equal Opportunity/Affirmative Action Employers. Women and minority candidates are especially encouraged to apply.*

## POSITIONS OPEN

### PRESIDENT

The Board of Trustees invites applications for the **PRESIDENCY** of The University of Health Sciences, College of Osteopathic Medicine. Senior level administrative experience and knowledge of medical education preferable. Requires outstanding communication and interpersonal skills to provide and inspire broad support for institutional advancement, and to effectively meet the needs of a diverse student, faculty, staff and physician population. Requires ability to inspire support through legislative action, grant acquisition and foundations.

Is responsible and accountable to the Board for successful management of the affairs and mission of the institution, which currently has an enrollment of 675 and annual operating budget of ten million dollars. Position will remain open until filled. Send curriculum vitae to:

**Elaine Wallace, D.O.  
Presidential Search Committee Chair  
The University of Health Sciences  
2105 Independence Boulevard  
Kansas City, MO 64124**

*All qualified persons encouraged to apply.*

The University of Michigan, Department of Ophthalmology, is seeking a **FACULTY** member to fill a position that combines patient care in the sub-specialty area of retina, along with basic research into biomedical application of femtosecond laser for medically based experiments. Responsibilities of this position will be split equally between these areas. Applicants must be certified by the American Board of Ophthalmology and have sub-specialty fellowship training in medical and surgical retina, along with expertise in retinopathy of prematurity. The candidate shall also have credentials which demonstrate accomplishment in biomedical application of ultrafast optical laser science. Position will be research or tenure-track at the assistant, associate or professor level, based on the individual's academic qualifications and experience. Send résumé and background information, along with a statement of research plan, to: **Dr. Paul A. Sieving, Search Committee Chair, W. K. Kellogg Eye Center, Department of Ophthalmology, University of Michigan, 1000 Wall Street, Ann Arbor, MI 48105**. *The University of Michigan is an Equal Opportunity Employer.*

### SYSTEMATIC BOTANIST

The California Academy of Sciences is reopening its search for an **ASSISTANT CURATOR** of Botany. Applications are solicited from individuals with primary interest in and commitment to active, field- and collection-oriented research in vascular plant systematics and the curation, operation, and development of a major herbarium. Candidates must have a Ph.D., an active research program with demonstrated interest and competence in a particular group of vascular plants, and be prepared to participate in a variety of curatorial, administrative, and public educational activities at the Academy. Information about the Academy and its research departments is available on the Academy's gopher server ([gopher.calacademy.org](http://gopher.calacademy.org)) or WWW server (<http://www.calacademy.org>). Applicants should forward a curriculum vitae, description of research goals, copies of significant publications, and the names, addresses, and telephone numbers of three references to: **Human Resources, No. ACB, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118-4599**. Deadline for applications is 15 September 1995. *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available immediately to study the differential expression of gap junction proteins in vascular wall cells. Ph.D. with experience in molecular biology and chemistry of membrane proteins preferred. Send letter, curriculum vitae and names of three references to: **Dr. David M. Larson, Mallory Institute of Pathology, Boston University School of Medicine, 784 Massachusetts Avenue, Boston, MA 02118**. FAX: 617-534-5315; Email: [davlar@acs.bu.edu](mailto:davlar@acs.bu.edu). *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available to study the regulation of extracellular matrix production by human renal glomerular mesangial cells. Training or experience in cell and/or molecular biological methods is desirable. Interested applicants can send curriculum vitae and names of references to: **William F. Glass II, M.D., Ph.D., Department of Pathology, Box 214, University of Virginia, Charlottesville, VA 22908**. Email: [wfg8u@virginia.edu](mailto:wfg8u@virginia.edu).

**The National Institute on Drug Abuse**, a component of the NIH, supports over 300 predoctoral and postdoctoral researchers through individual fellowships and at the 40 training sites highlighted below. For information on these training sites, please contact the project directors. For information on individual awards or general information on NIDA research training programs, contact NIDA at 301/443-6071. Women, the disabled, and members of ethnic groups underrepresented in the health sciences, are especially encouraged to apply. All candidates must be U.S. citizens or have been lawfully admitted for permanent residence.

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## **PREDOCTORAL ONLY**

### *Neuropeptides*

Martin W. Adler, Ph.D.  
Temple U. Medicine  
(215) 221-3242  
(215) 221-1904 (fax)

### *Behavioral Pharmacology, Neuroimmunology, Neurobiology*

Linda Dykstra, Ph.D.  
U. North Carolina  
(919) 962-6595  
(919) 962-2537 (fax)

### *Pharmacology*

Barry B. Wolfe, Ph.D.  
Georgetown U. Medicine  
(202) 687-1420  
(202) 687-6437 (fax)

## **POSTDOCTORAL ONLY**

### *Human Behavioral*

*Pharmacology*  
George Bigelow, Ph.D.  
Johns Hopkins U.  
(410) 550-0035  
(410) 550-0030 (fax)

### *Substance Abuse, AIDS & Sexually Transmitted Diseases (SAS) Prevention*

Brian R. Flay, D.Phil.  
U. of Illinois-Chicago  
(312) 996-7222  
(312) 996-2703 (fax)

### *Pharmacology: Molecular, Cellular, Behavioral*

Joseph Goldfarb, Ph.D.  
Mount Sinai School of Medicine  
(212) 241-7014  
(212) 831-0114 (fax)

### *Behavioral Pharmacology, Treatment, Animal Behavioral Neuroscience*

John Grabowski, Ph.D.  
U. of Texas HSC  
(713) 792-7925  
(713) 794-1425 (fax)

### *Treatment Research*

Sharon M. Hall, Ph.D.  
U. of California, S.F.  
(415) 750-2183  
(415) 476-7734 (fax)

### *Biomedical*

Andrew Heath, Ph.D.  
Washington U.  
(314) 362-9400  
(314) 362-9420 (fax)

### *Etiology and Treatment*

Herbert D. Kleber, M.D.  
Columbia U.  
(212) 960-5570  
(212) 795-8860 (fax)

### *Adolescent Drug Abuse Intervention*

Howard Liddle, Ed.D.  
Temple University  
(215) 204-5930  
(215) 204-7300 (fax)

### *Molecular/Behavioral Pharmacology*

Jack Mendelson, M.D.  
McLean Hospital  
(617) 855-2716  
(617) 855-2519 (fax)

### *Maternal Substance Abuse, Neuropsychopharmacology, Pharma-cotherapeutics, Dual*

*Diagnosis*  
Carrie Randall, Ph.D.  
Med. U. of S. Carolina  
(803) 577-5011  
(803) 577-9092 (fax)

### *Pharmacological/Psychosocial Treatment*

Richard Schottenfeld, M.D.  
Yale U.  
(203) 789-7282  
(203) 789-7349 (fax)

### *Biochemistry/Pharmacology of Abused Drugs*

Eric J. Simon, Ph.D.  
New York U. Medicine  
(212) 263-5637  
(212) 263-5591 (fax)

### *Opioid Neurobiology & Molecular Genetics*

S. J. Watson, Ph.D., M.D.  
U. of Michigan  
(313) 763-3725  
(313) 747-4130 (fax)

## **PREDOCTORAL & POSTDOCTORAL**

### *Epidemiology, Etiology, Treatment*

Douglas M. Anglin, Ph.D.  
UCLA  
(310) 825-9057  
(310) 825-4779 (fax)

### *Epidemiology*

James C. Anthony, Ph.D.  
The Johns Hopkins U.  
(410) 955-3910  
(410) 955-9088 (fax)

### *Behavioral Pharmacology*

Warren Bickel, Ph.D.  
U. of Vermont  
(802) 660-3060  
(802) 660-3064 (fax)

### *Pharmacology & Neuroscience*

Jean M. Bidlack, Ph.D.  
U. of Rochester  
(716) 275-5600  
(716) 244-9283 (fax)

### *Molecular Pharmacology*

Charles Chavkin, Ph.D.  
U. of Washington  
(206) 543-4266  
(206) 685-3822 (fax)

### *Neuroscience*

Steven R. Childers, Ph.D.  
Bowman Gray Medicine  
(919) 716-3791  
(919) 716-7738 (fax)

### *Biological Bases of Drug-seeking Behavior*

John C. Crabbe, Ph.D.  
Oregon Health Sciences U.  
(503) 273-5298  
(503) 273-5351 (fax)

### *Epidemiology & HIV/AIDS*

Roger Detels, M.D.  
UCLA  
(310) 206-2837  
(310) 206-6039 (fax)

### *Pharmacology*

William L. Dewey, Ph.D.  
Medical College of Virginia  
(804) 786-0732  
(804) 786-1664 (fax)

### *Neuroscience*

Robert P. Elde, Ph.D. and  
Virginia S. Seybold, Ph.D.  
U. of Minnesota  
(612) 624-9406  
(612) 624-8118 (fax)

### *Immune Response, AIDS, Brain & Immunity,*

*Infectious Diseases*  
Herman Friedman, Ph.D.  
U. of South Florida  
(813) 974-3281  
(813) 974-4151 (fax)

### *Molecular/Cellular Approaches*

Steven E. Hyman, M.D.  
Harvard Medical School  
(617) 726-5715  
(617) 724-9610 (fax)

### *Pharmacology & Neuroscience*

Charles E. Inturrisi, Ph.D.  
Cornell U. Medical  
(212) 746-6235  
(212) 746-8835 (fax)

### *Behavioral Sciences*

Bruce Johnson, Ph.D.  
Medical & Health Research  
Assn. of NYC, Inc. / NDRI  
(212) 966-8700  
(212) 334-8058 (fax)

### *Neural & Pharmacological Mechanisms*

Kenneth M. Johnson, Ph.D.  
U. of Texas Medical  
(409) 772-9623  
(409) 772-9642 (fax)

### *Genetics*

Gerald E. McClearn, Ph.D.  
Pennsylvania State U.  
(814) 865-1428  
(814) 865-3282 (fax)

### *Pharmacology, Neuroscience, Behavior*

Donald E. McMillan, Ph.D.  
U. of Arkansas  
(501)-686-5511  
(501)-686-5521 (fax)

### *Nursing, Populations at Risk, Prevention, Early Detection*

Shirley A. Murphy, Ph.D.  
U. of Washington  
(206) 543-8569  
(206) 685-9551 (fax)

### *Molecular Biology, Neuropharmacology*

Eric J. Nestler, M.D., Ph.D.  
Yale U. Medicine  
(203) 789-7151  
(203) 562-7079 (fax)

### *Treatment, HIV*

Charles P. O'Brien, M.D., Ph.D.  
U. of Pennsylvania  
(215) 222-3200 Ext 132  
(215) 386-6770 (fax)

### *Neuropsychopharmacology*

Lewis S. Seiden, Ph.D.  
U. of Chicago  
(312) 702-9640  
(312) 702-3003 (fax)

### *Psychoneuroimmunology*

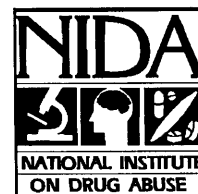
Burt Sharp, M.D.  
Minneapolis Medical Research  
Foundation  
(612) 337-7381  
(612) 347-3915 (fax)

### *Neurobehavioral Pharmacology*

Sheldon Sparber, Ph.D.  
U. of Minnesota  
(612) 625-5657  
(612) 625-8408 (fax)

### *Interdisciplinary*

James H. Woods, Ph.D.  
U. of Michigan  
(313) 998-6500  
(313) 998-6508 (fax)





## POSITIONS OPEN

### POSTDOCTORAL POSITIONS Molecular and Cellular Endocrinology

**POSTDOCTORAL FELLOWSHIPS** are available to study the mechanisms governing pituitary hormone secretion as they relate to the differentiation and transdifferentiation of growth hormone and prolactin producing cells and the role of the hypophyseal neurointermediate lobe in regulating anterior pituitary hormone release. Both rodent and bovine model systems are utilized. We study these processes at the single, living cell level by employing a broad spectrum of molecular and cellular strategies which include (but are not limited to) combinations of the following techniques: reverse hemolytic plaque assays for quantifying hormone secretion, video imaging of cells transfected with luciferase-promoter constructs for assessing gene expression in real time, and microinjection (cytoplasmic and nuclear) for selectively introducing modulators of gene expression and hormone secretion. Salary and benefits are highly competitive and commensurate with experience. Send curriculum vitae and names and telephone numbers of three references to: **Dr. L. Stephen Frawley, Department of Cell Biology and Anatomy, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425-2204. Telephone: 803-792-3526; FAX: 803-792-0664.** Women and minorities are encouraged to apply. An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL ASSOCIATES (two):** one will conduct electrophysiological experiments on single spinal cord neurons. Iontophoresis will be used *in vivo* together with data analyses requiring a familiarity with Macintosh data acquisition. Ph.D. or foreign equivalent, research experience/training in neurosciences and two years of experience in electrophysiological recording is required. Training/research experience in pain pathways or transmitter activity is desired. Second position will monitor neurotransmitter release from tissue slices. Ph.D. or foreign equivalent, research experience/training in HPLC, ELISAs, or RIAs and three years of experience in neuroscience is required. Training/research experience in pain transmission using immunohistochemical and molecular biological approaches to measure preproachykinins and substance P desired. Salary: \$20,000 to \$30,000 per year (100%/annual renewal). Start date (both positions): on/after April 1, 1995. Send letter (indicate which position), curriculum vitae, names/addresses of three references and statement of goals ASAP but not after December 31, 1995. **Dr. A. Larson, Veterinary Pathobiology, University of Minnesota, 1988 Fitch Avenue, St. Paul, MN 55108.** The University of Minnesota is an Equal Opportunity Educator and Employer.

### POSTDOCTORAL POSITION

Available immediately to study placental transfer and fetal effects of synthetic opioid peptides. Applicants should possess a Ph.D. and/or M.D. and demonstrated experience in one or more of the following areas: (1) *in vivo* or *in vitro* placental transfer studies, (2) opioid peptide chemistry and pharmacology, (3) placental and fetal endocrinology. Send curriculum vitae and arrange for three letters of recommendation to be sent to: **Dr. Hazel H. Szeto, Department of Pharmacology, Cornell University Medical College, 1300 York Avenue, New York, NY 10021. Email: hhszeto@mail.med.cornell.edu.** An Affirmative Action/Equal Opportunity Employer/Minority/Female/Veteran.

### POSTDOCTORAL POSITION SIGNAL TRANSDUCTION

A **POSTDOCTORAL POSITION** is available to study the regulation of soybean phospholipase C at the post-translational level. Experience in protein chemistry and a strong publication record are essential. Interested candidates should contact: **Dr. Madan K. Bhattacharyya, Plant Biology Division, Noble Foundation, P.O. Box 2180, Ardmore, OK 73402. Telephone: 405-223-5810; FAX: 405-221-7380.** The Noble Foundation is an Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately to study signal transduction in multidrug resistance. Experience in tissue culture, protein analysis and molecular biology techniques required. Interest in cancer biology desirable. Submit curriculum vitae and names of three references to: **Dr. Timothy Chambers, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Mail Slot 516, 4301 West Markham Street, Little Rock, AR 72205-7199.**

## POSITIONS OPEN

### MOLECULAR MECHANISMS OF DRUG RESISTANCE POSTDOCTORAL POSITIONS

The Cancer Institute of New Jersey  
UMDNJ-Robert Wood Johnson Medical School

**POSTDOCTORAL POSITIONS** are available immediately to study molecular mechanisms of drug resistance, involving molecular and cellular analysis of signal transduction and regulation of DNA repair in cisplatin resistant genetic mutants, as well as function and regulation of expression of the multidrug resistance gene.

Applicants should be highly motivated and able to employ both molecular and genetic techniques and conduct independent research. Send curriculum vitae and names of three references to: **Dr. Khew-Voon Chin, The Cancer Institute of New Jersey, CABM/Room 242, 679 Hoes Lane, Piscataway, NJ 08854. Telephone: 908-235-5481; FAX: 908-235-5475.** The University of Medicine and Dentistry of New Jersey is an Affirmative Action/Equal Opportunity Employer.

### MOLECULAR DERMATOLOGY POSTDOCTORAL POSITIONS

Several positions immediately available for M.D., Ph.D. or M.D.-Ph.D. applicants to study molecular basis of heritable skin diseases and develop gene therapy approaches. Strong background in molecular biology techniques a must. The studies will be performed within the Section of Molecular Dermatology of the Jefferson Institute of Molecular Medicine and the Jefferson Cancer Institute which offer an excellent research environment.

Send applications with curricula vitae to: **Jouni Uitto, M.D., Ph.D., Professor, Dermatology, and Biochemistry and Molecular Biology, Chairman, Department of Dermatology, Jefferson Medical College, 233 South 10th Street, Suite 450 BLSB, Philadelphia, PA 19107. FAX: 215-955-5788.** Thomas Jefferson University is an Equal Opportunity/Affirmative Action Employer.

### HARVARD MEDICAL SCHOOL Postdoctoral Position in Molecular Neurobiology

A **POSTDOCTORAL POSITION** is available to study biological clocks in mammals and *Drosophila*. Investigations in progress are aimed at characterizing molecular components of circadian pacemakers and elucidating the pathway by which light re-sets the pacemaker. Applicants should be experienced in molecular biology or genetics. Send curriculum vitae and the names of three references to: **Charles J. Weitz, M.D., Ph.D., Department of Neurobiology, Harvard Medical School, 220 Longwood Avenue, Boston, MA 02115. FAX: 617-734-7557.**

Canji, Inc., a leading developer of new therapeutics and diagnostics to suppress cancer has the following Molecular Biology positions available immediately: **POSTDOCTORAL FELLOW** with a background in cancer or human genetics for positional cloning project in prostate cancer and **SENIOR RESEARCH ASSOCIATE** or **STAFF ASSOCIATE** experienced with Southern and Northern blot, *in situ* PCR and hybridization, RT-PCR and quantitative PCR analysis. Send curriculum vitae and the names of three references to: **Human Resources, Canji, Inc., 3030 Science Park Road, No. 302, San Diego, CA 92121.** Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL SCIENTIST.** W. R. Grace & Co. has a postdoctoral position in the Grace Biomedical Unit, which is conducting clinical trials of its BioArtificial Liver System. Training in cellular biology, biochemistry, or molecular biology is required. The position will investigate hepatocyte function from three perspectives: functions compromised during hepatic failure, the capacity for isolated porcine hepatocytes to replace those functions, and induction of higher levels of specific cell functions. Please send your résumé in confidence to: **Grace Biomedical, W. R. Grace & Co., Department 1166, 128 Spring Street, Lexington, MA 02173.** Equal Opportunity Employer/Minority/Female/Disabled/Veteran.

**POSTDOCTORAL POSITIONS** available from July 1995, to study the role of cell-matrix interaction and the cytoskeleton in IL-1 mediated signal transduction and gene regulation. Ph.D. with emphasis in molecular biology and experience in biochemistry is required. Send curriculum vitae and names of three references to: **Dr. Eva Qvarnstrom, Department of Pathology, SM-30, University of Washington, Seattle, WA 98195.**

## POSITIONS OPEN

### VIROLOGY/MICROBIOLOGY

Several **POSTDOCTORAL POSITIONS** will be available beginning July 1, 1995, in the Department of Microbiology at the University of Colorado Health Sciences Center at Denver to work on molecular mechanisms of viral or bacterial pathogenesis. In the laboratory of **Randall K. Holmes, M.D., Ph.D.,** Professor and Chair-Designate, research projects include 1) structure-function relationships of cholera toxin, heat labile enterotoxins, diphtheria toxin, and diphtheria toxin repressor, 2) development of new chimeric toxins as vaccines by genetic engineering, and 3) analysis of virulence regulation in *V. cholerae*, *E. coli* and *C. diphtheriae*. In the laboratory of **Kathryn V. Holmes, Ph.D.,** Professor, projects include 1) characterization of coronavirus-receptor interactions, and 2) analysis of the replication and pathogenesis of coronaviruses.

A Ph.D. in microbiology, cell biology, biochemistry, genetics or related field is required. Research facilities and environment for professional development are excellent. Salary is commensurate with training and experience. Submit curriculum vitae and bibliography, and names of three professional references to: **Dr. Randall Holmes or Dr. Kathryn Holmes, Department of Microbiology, Campus Box B-175, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, CO 80262.**

### ASSOCIATE SCIENTIST AND POSTDOCTORAL POSITIONS

To work in the established laboratory of **Dr. Kenneth Baker** on one of three areas: a) molecular biology and regulation of angiotensin II (AII) receptors; b) regulation of renin-angiotensin system genes in cardiac cells; or c) molecular signal transduction pathways for AII in primary cardiac and propagated cell lines. A Ph.D. and/or M.D. is required with background and experience in biochemistry, molecular and cellular biology. Salary will be commensurate with education and experience. Applicants should send curriculum vitae, official transcripts and three letters of reference to: **Geisinger Human Resources (KB), 100 North Academy Avenue, Danville, PA 17822-1529.** Equal Opportunity Employer/Minority/Female/Disabled/Veteran.

### POSTDOCTORAL POSITION MEMBRANE PROTEINS JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

A **POSTDOCTORAL POSITION** is currently open for candidates who have a strong structural and molecular biology background, have worked with membrane proteins, and are interested in overexpressing and crystallizing them. The proteins to be studied are CFTR (cystic fibrosis transmembrane conductance regulator) and the mitochondrial ATP synthase. Send curriculum vitae and names of three references to: **Dr. Peter L. Pedersen, Department of Biological Chemistry, School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205.** An Equal Opportunity Employer.

**POSTDOCTORAL POSITION:** Available May 1, 1995, to study control of exocytosis of mammalian sperm (acrosome reaction), using biochemical and subcellular fractionation, and measurement of intracellular ions with fluorescent probes. Send curriculum vitae, description of research training, and names of three references by April 15, 1995, to: **Dr. Nicholas L. Cross, Department of Physiological Sciences, 264 VM, Oklahoma State University, Stillwater, OK 74078-0353. FAX: 405-744-8263; Email: ncross@vml1.ucc.okstate.edu.** Oklahoma State University is an Affirmative Action/Equal Opportunity Employer committed to multicultural diversity.

**POSTDOCTORAL POSITION**—Available for a highly motivated scientist to study the molecular biology of RNA plant viruses. Projects involve investigations of virus replication, pathogenesis, and cell-to-cell movement. Demonstrated abilities in PCR, complex cloning protocols, site-directed mutagenesis, and *in vitro* transcription and translation with previous experience with plant viruses. Researcher will work in the Bowman Gray Technical Center, Winston-Salem, North Carolina. Application deadline is April 15, 1995. Send curriculum vitae, transcript, and three letters of reference to: **Dr. O. W. Barnett, N.C. State University, Box 7616, Raleigh, NC 27695.** An Affirmative Action/Equal Opportunity Employer.

# Research Associate

At Amgen, you'll discover a research environment that emphasizes collaboration, intellectual honesty, scientific integrity, and a supportive culture. This unique approach has helped us grow into a global biotechnology leader in just thirteen years.

## NEUROSCIENCE

The Neuroscience Department seeks a BS/MS level Research Associate to work on neurodegenerative disease models of the CNS. Experience with neurochemistry, behavioral pharmacology, and histochemistry is required. Experience with molecular biology and computers is preferred.

At Amgen, you'll find our approach to scientific research as rewarding as it is effective. We offer a highly competitive compensation and benefits package that includes a retirement and savings plan, an on-site fitness center, and three weeks' vacation. Please mail your resume/c.v. to: Amgen Inc., Staffing, Job Code: OXP-SC-2260, Amgen Center, Thousand Oaks, CA 91320-1789. Principals only, please. For information on other research opportunities available at Amgen, please call 1-800-446-4007. EEO-Affirmative Action Employer M/F/D/V. We recognize that diverse perspectives are a key factor in the process of discovery.



# NATIONAL INSTITUTE ON AGING

## Postdoctoral Fellowship Positions

Laboratory of Molecular Genetics

Vilhelm A. Bohr, M.D., Ph.D.

Michele K. Evans, M.D.

The Laboratory of Molecular Genetics located at the Gerontology Research Center in Baltimore, Maryland is seeking postdoctoral fellows (Ph.D. or M.D.) interested in the field of DNA damage and repair. The roles of DNA damage and DNA repair mechanisms are currently being investigated in several human models associated with cancer susceptibility and features of premature senescence. Applicants should have a strong background in molecular biology and biochemistry, as well as less than three years of postdoctoral experience. Starting salary will be commensurate with qualifications and experience. Interested candidates should submit curriculum vitae, bibliography, reprints, summary of research interests and names of three references to:

**National Institute on Aging  
Attn: LMG (05), Room 2D09  
Gerontology Research Center  
4940 Eastern Avenue  
Baltimore, MD 21224**

NIH is an Equal Opportunity Employer

## Cell & Molecular Biology of Eukaryotic Systems

The Department of Biological Sciences in the Faculty of Science at the University of Alberta invites applications for a Research Scholar faculty position with research interests in cell and molecular biology of eukaryotic systems. The effective date of employment will be July 1, 1996. The candidate should have expertise in the use of molecular genetics techniques and have experience in any aspect of modern cell biology, typically in research areas such as developmental biology, cell cycle regulation, parasitology, immunology, neurobiology, etc. The candidate must have a PhD and two or more years of postdoctoral research experience.

Appointments may be made at levels of Assistant Professor (\$39,230 - \$55,526), or Associate Professor (\$48,527 - \$69,664). The position will be long-term and will be funded through an external agency, but the incumbent will enjoy the privileges of the University academic rank at which the appointment is made. The granting of these awards is by competition and is made on the basis of excellence. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Candidates should forward a curriculum vitae, list of publications, a statement of research interests and the names of three referees to:

**Dr. William Paranchych**  
Department of Biological Sciences  
CW405 Biological Sciences Bldg.  
University of Alberta  
Edmonton, Alberta  
Canada T6G 2E9

**Closing Date:**  
**April 30, 1995**

*The University of Alberta is committed to the principle of equity in employment. As an employer we welcome diversity in the workplace and encourage applications from all qualified women and men, including Aboriginal peoples, persons with disabilities, and members of visible minorities.*

# Research Scientists

## 4 Postdoctoral Opportunities

The Biological Sciences group in Central Research and Development has four openings for Visiting Research Scientists to work with members of our research staff. These are one year postdoctoral positions with a possibility for extension, and are available immediately. They offer the opportunity to carry out exciting fundamental research in areas of commercial importance.

1) You will study the xenobiotic degradation of various chemicals, including nitroaromatics. In addition, we are pursuing state-of-the-art industrial bioprocesses for the production of chemicals and polymers. The suitable candidate will be familiar with microbial biochemistry, metabolite and degradation pathway identification, enzyme purification and characterization, and biocatalysis. Knowledge of molecular biology techniques will be an advantage.

2) In this role, you will develop bioluminescent detection of environmental (pro) mutagens. The project involves expression of luminescence genes in "Streptomyces griseus." The suitable candidate will have experience in microbial physiology/biochemistry and molecular biology.

Experience with "Streptomyces" genetics is desirable.

3) You will join our group involved in an ongoing effort to characterize the enzyme biotin synthase. We are looking for candidates with a strong background in enzyme mechanisms and/or bioinorganic chemistry.

4) This position involves identification and characterization of glutathione-S-transferase enzymes involved in plant herbicide metabolism. The successful candidate should have research experience in molecular biology, an excellent understanding of biochemistry, and an interest in studying basic research problems with practical agricultural applications.

We are located in Wilmington, DE, an area that offers an attractive lifestyle with easy access to all the cultural, academic and recreational activities of the Eastern Seaboard. To be considered, please forward your resume to: DuPont Human Resources, PSS-0101, Wilmington, DE 19898. An Equal Opportunity Employer.



*Central Research  
and Development*

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** are available at the Mountain States Medical Research Institute and Boise VAMC to participate in research concerning the molecular characterization of inflammation, signal transduction, receptor gene expression, and anthracycline cardiotoxicity. Experience with molecular biology techniques including PCR, footprinting, cloning, protein purification, and cell culture is desirable. Must have permanent resident visa. U.S. citizenship is preferred. Send curriculum vitae and three letters of reference to: **Dr. Robert Vestal, Director/MSMRI and ACOS/Research, VA Medical Center (151), 500 West Fort Street, Boise, ID 83702.** An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITIONS REPRODUCTIVE BIOLOGY

Two centers at Universidad de Chile and Universidad Católica de Chile in Santiago invite applications to an exciting international research network program in cellular and molecular basis of reproduction funded by The Rockefeller Foundation. Fellowships are for one to two years. Request information from: **Manuel Villalón, Ph.D. and/or Luigi Devoto, M.D. FAX: 56-2-6336204; Email: mvilla@genes.bio.puc.cl.**

A **POSTDOCTORAL POSITION** is available to study the newly discovered  $Ca^{+2}$  signaling pathway mediated by cyclic ADP-ribose. Ongoing research includes characterizations of the metabolic enzymes, synthesis of cADPR analogs and regulation mechanisms of the pathway. Experience with molecular biology, enzyme purification and/or microinjection desirable. Please send curriculum vitae and reference letters to: **Dr. Hon-Cheung Lee, Department of Physiology, University of Minnesota, 6-255 Millard Hall, 435 Delaware Street SE, Minneapolis, MN 55455.** The University of Minnesota is an Equal Opportunity Educator and Employer.

Two NIH-funded **POSTDOCTORAL POSITIONS** are available immediately to study the structure, function, and regulation of olfactory-specific P450. Experiences in gene cloning, heterologous expression, or transcription factor identification and characterization are desirable. Compensation from Health Research, Inc. Send curriculum vitae and names of three references to: **Dr. Xinxin Ding, Wadsworth Center for Laboratories and Research, New York State Department of Health, Box 509, Albany, NY 12201-0509.** Health Research is an Affirmative Action/Equal Opportunity Employer.

A **POSTDOCTORAL POSITION** is available, starting July 1, 1995, in the Division of Nephrology/Hypertension at the University of California, San Diego. Candidates must hold an M.D. or Ph.D. degree and have interest in renal physiology, pathophysiology and cell biology. Applicants must be U.S. citizens or permanent residents. Send curriculum vitae and three letters of reference to: **Roland C. Blantz, M.D., Division of Nephrology/Hypertension (9111H), 3350 La Jolla Village Drive, San Diego, CA 92161.** The University of California is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** to study membrane biogenesis and protein traffic in yeast. Experiments focus on targeting of the plasma membrane  $[H^+]$ ATPase (*J. Cell Biol.*, 128:39-49, 1995). Background in molecular biology, genetics or cell biology required. Salary based on experience. Submit curriculum vitae and three references to: **Dr. Amy Chang, Anatomy/Structural Biology, Albert Einstein College of Medicine, Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461.** An Equal Opportunity Employer.

**POSTDOCTORAL FELLOWSHIPS** in Molecular Biology of Infectious Diseases and Developmental Immunology. Positions available through the Division of Infectious Diseases, Department of Pediatrics, University of Minnesota. One opening in July of 1995 and two openings yearly through 1999 for two years of laboratory research with faculty in the Departments of Pediatrics, Internal Medicine, Laboratory Medicine and Pathology, or Microbiology. Contact: **Dr. Margaret K. Hostetter, UMHC Box 296, University of Minnesota, 420 Delaware Street S.E., Minneapolis, MN 55455.** Telephone: 612-624-6904. The University of Minnesota is an Affirmative Action/Equal Opportunity Employer. Because of funding limitations, candidates must be U.S. citizens or permanent residents.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately, to study the mechanism and nature of interprotein interactions between cytochrome P-450 and its redox partners. A molecular biologist/enzymologist is required to efficiently generate, screen and characterize mutant proteins with respect to structure and function, and protein-protein interactions. Send résumé and three letters of reference to: **L. Waskell, M.D., Ph.D., University of California, San Francisco, VA Medical Center, Department of Anesthesia, 4150 Clement Street, San Francisco, CA 94121.** An Equal Opportunity Employer.

**POSTDOCTORAL POSITIONS** are available to study genes involved in the proliferation and/or differentiation of hematopoietic stem cells (see *PNAS*, 91:439-463, 1994). A strong background in molecular and cellular biology is desired. Starting salary of \$28,000. Please send or FAX curriculum vitae and three references to: **Donald Small, M.D., Ph.D., Oncology Center 3-109, Johns Hopkins University School of Medicine, 600 North Wolfe Street, Baltimore, MD 21287.** FAX: 410-955-8897. Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available immediately to explore the signal transduction pathway for chemotactic cytokines using site directed mutagenesis, molecular cloning techniques, gene knock-out animal models, and a variety of *in vitro* model systems to explore perturbation/enhancement of biological functions. Contact: **Ann Richmond, Ph.D., Department of Cell Biology, Vanderbilt University School of Medicine, Nashville, TN 37232.** FAX: 615-343-4539; Email: **Richmoa@ctrvx.Vanderbilt.edu.**

**POSTDOCTORAL POSITION** available to study the organization of human and monkey visual cortex, and the effects of visual deprivation. Ph.D. and background in neurobiology preferred. Send curriculum vitae and names of three references to: **Dr. J. C. Horton, UCSF, San Francisco, CA 94143-0730.** Email: **horton@itsa.ucsf.edu.** The University of California, San Francisco is an Affirmative Action/Equal Opportunity Employer.

### PREDOCTORAL AND POSTDOCTORAL TRAINING PROGRAM IN REPRODUCTIVE SCIENCES

The University of Kentucky is recruiting **PREDOCTORAL and POSTDOCTORAL TRAINEES** for an NIH-supported training program in the Reproductive Sciences. Applicants must be U.S. citizens or permanent residents. Faculty are from the Departments of Animal Science, Anatomy & Neurobiology, Biochemistry, Pharmacology, Physiology, OB-GYN, and Vet Science with diverse research interests in the reproductive sciences at the molecular, cellular, and whole animal level. For further information, please contact: **Dr. Tom Curry, Department of OB-GYN, University of Kentucky, Lexington, KY 40536.** Telephone: 606-323-6166; FAX: 606-323-1931. The University of Kentucky is an Equal Opportunity/Affirmative Action Employer and encourages applications from qualified women and minorities.

**POSTDOCTORAL FELLOW—Molecular Endocrinology** on an NIH-funded training grant to join a group studying signal transduction pathways and transcription factors that mediate developmental and hormonal regulation of the growth hormone and prolactin genes. Strong background in biochemistry required, and experience in molecular biology preferred. Send curriculum vitae, and names and telephone numbers of three references, to: **Dr. Carter Bancroft, Department of Physiology and Biophysics, Box 1218, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574.** An Equal Opportunity Employer. Must be a U.S. citizen or permanent U.S. resident to be eligible.

**POSTDOCTORAL FELLOWSHIP** at Johns Hopkins University School of Medicine in cardiac metabolism and physiology. Applicants should have experience in heart perfusion and a background in biochemistry. Send curriculum vitae and two or more letters of recommendation before April 15, 1995, to: **John C. Chatham, NMR Research, Department of Radiology, Johns Hopkins University School of Medicine, 217 Traylor Building, 720 Rutland Avenue, Baltimore, MD 21205.** Email: **jchatham@mri.jhu.edu.** The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available May 1995 to evaluate and compare territory quality for several species of endangered vertebrate insectivores. This work involves comparing insect communities within the territories of insectivorous vertebrates that are located within recently burned and unburned California coastal sage scrub habitat. Send a curriculum vitae including a statement of research interests and the names, addresses, and telephone numbers of three references to: **Dr. Rick Redak, Department of Entomology, University of California, Riverside, CA 92521.** Telephone: 909-787-7250; FAX: 909-787-3086; Email: **redak@ucr.ac1.ucr.edu.** The University of California is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH POSITIONS** in Evolutionary Genetics and Extinction Modeling. To study the role of spontaneous mutation as a factor in evolution and extinction. Two positions are available for the performance and analysis of mutation-accumulation experiments in lines of the bacterium *E. coli* (and various repair/recombination deficient strains) and of the microcrustacean *Daphnia*. A position is also available for the development of computer programs for the estimation of the risk of extinction for endangered species; candidates for this position must have advanced skills in computer programming, ideally including experience with parallel processing. Starting dates no later than 1 September 1995; up to four years of support may be available. Applicants should forward, by 1 May 1995, a description of research interests/experience, curriculum vitae, and names, addresses, and telephone numbers of three references to: **Michael Lynch, Department of Biology, University of Oregon, Eugene, OR 97403.**

The University of Oregon is an Equal Opportunity/Affirmative Action Institution committed to cultural diversity and compliance with the ADA.

### POSTDOCTORAL FELLOW POSITION IN REPRODUCTIVE BIOLOGY

Beth Israel Hospital is offering a **POSTDOCTORAL FELLOW** position in the field of Reproductive Biology. Applicants must have a Ph.D. degree. Expertise in areas of protein chemistry, DNA sequencing, Northern blot analysis, flow cytometry, and *in vitro* cell culture is preferred. Research will primarily focus on antioxidant enzymes, gametes and early embryo development, and their significance in assisted reproductive technologies.

Submit curriculum vitae and names, addresses, and telephone numbers of three references to:

**Joseph F. Mortola, M.D.  
Department of Ob/Gyn  
Beth Israel Hospital  
Brookline Avenue  
Boston, MA 02215**

Beth Israel Hospital is an Affirmative Action/Equal Opportunity Employer

### POSTDOCTORAL FELLOWSHIPS MOLECULAR HEMATOPOIESIS STEM CELL GENE THERAPY HIV ANTIVIRAL DEVELOPMENT

Positions available immediately in Harvard Medical School affiliated laboratories focused on hematopoiesis and HIV. Recent advances in cell biologic systems provide the basis for gene therapy approaches to HIV and dissection of regulatory mechanisms in hematopoiesis. Experience in one or more of the following areas is required: cell biology methods in hematologic, immunologic or virologic systems, or, molecular biology with emphasis on PCR based cloning, mutagenesis and gene expression. Ph.D. and/or M.D. required.

Contact: **Dr. David T. Scadden, Dr. Randal A. Byrn or Dr. Jerome E. Groopman, Deaconess Hospital, Harvard Medical School, 110 Francis Street, Boston, MA 02215.** FAX: 617-424-6237.

**RESEARCH FELLOWSHIP.** The focus is on mammalian stress genes involved in growth control and their regulation by factors particularly the tumor suppressor p53. Studies involve elucidation of their regulatory pathways and the functions of these genes. Salary is \$25,000 to \$42,000 per year based on zero to five years of post-doctoral experience. Experience in molecular biology or protein biochemistry. Send curriculum vitae and names of three references to: **Dr. A. J. Fornace Jr., Building 37/Room 5C09, NCI, NIH, Bethesda, MD 20892-4255.** NIH is an Equal Opportunity Employer.



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Exciting opportunity to work on a project concerned with the regulation of expression of genes relevant to the development and/or treatment of insulin resistance and non insulin-dependent diabetes mellitus. The ideal candidate will have a recent Ph.D. or equivalent in Biochemistry, Molecular Biology or a closely related subject, with a background and interest in hormone action, signal transduction or the regulation of gene expression. **(Position #PD-023)**

### NMR SPECTROSCOPY

Ph.D. or equivalent in Organic Chemistry, Biochemistry or a related field with specialties in NMR spectroscopic techniques required. The successful candidate should be completely familiar with modern multiple dimension NMR as it applies to structure determination, and must have experience with or at least have practical knowledge of Diffusion NMR techniques. **(Position #PD-029)**

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## POSITIONS OPEN

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An internationally renowned applied genetics laboratory is interested in acquiring a **POSTDOCTORAL TRAINEE** to learn an integrated application of genetic markers to the solution of bio-legal problems including: immunoglobulin allotyping, plasma protein and RBC enzyme genotyping by IEF, RFLP and PCR based DNA polymorphisms. Experience in population genetics, population biology, biological anthropology, electrophoresis, or molecular biology desirable but not necessary. Good interactive skills with people, telephone and written skills, and situational flexibility absolutely necessary. Ph.D. required. Position would require one year of postdoctoral training, with the possibility of appointment to full-time Assistant Directorship upon completion of training. Applicants should forward curriculum vitae, three references, and sample publications if available by May 15, 1995, to: **Dr. Moses S. Schanfield, Analytical Genetic Testing Cancer, Inc., 7808 Cherry Creek South Drive, No. 201, Denver, CO 80231. FAX: 303-750-2171.**

### CHROMATIN STRUCTURE/GENE THERAPY

**POSTDOCTORAL POSITION** available immediately to study the chromatin structure of the human beta-globin gene locus. The fellow will help characterize cis-acting elements which regulate the formation of tissue-specific chromatin structural domains and then use these elements to develop novel gene therapy vectors. Experience in molecular biology is necessary and in the use of retroviruses desirable. Send curriculum vitae and three references to: **Dr. Christopher H. Lowrey, Box 7506, Dartmouth Medical School, Hanover, NH 03756. FAX: 603-650-6841; Email: c.lowrey@dartmouth.edu.**

**POSTDOCTORAL FELLOWSHIP.** The Legacy Research Department has an open postdoctoral position beginning July 1995. A successful candidate will conduct basic thermophysiological research on the mechanisms of fever and/or endotoxin shock in the laboratory of **Dr. A. A. Romanovsky**. Requirements include M.D. and/or Ph.D. degree in physiology and related sciences, peer-reviewed publications in the field, good surgical skills, and experience of conducting chronic experiments in laboratory animals. Computer, biochemical and histological skills are welcome. This is a one-year position with an option of extension for a second year. Stipend and benefits are very competitive. Application deadline is May 30, 1995. Please send curriculum vitae, reprints of published papers, a description of research interests, experiences, and career goals, as well as names and telephone numbers of at least two references to: **L. A. Kiesow, M.D., Ph.D., Chief, Legacy Research, 2801 North Gantenbein Avenue, Portland, OR 97227. Legacy Health System is an Equal Opportunity Employer.**

**POSTDOCTORAL/RESEARCH ASSOCIATE POSITION(S).** Research involves enzyme mechanism and enzyme structure-function studies and requires experience in protein purification and characterization and recombinant DNA techniques. Send curriculum vitae, statement of research interests and experience, and the names and telephone numbers of three references to: **Dr. C. A. Caperelli, Division of Pharmacology and Medicinal Chemistry, College of Pharmacy, University of Cincinnati Medical Center, 3223 Eden Avenue, Cincinnati, OH 45267-0004.**

### POSTDOCTORAL FELLOWSHIPS DRUG ABUSE TREATMENT RESEARCH

The NIH/National Institute on Drug Abuse, and the DHHS/PHS/FDA/Center for Drug Evaluation and Research announce a three-year program to train physicians for careers in drug abuse treatment research and the design, conduct, and interpretation of clinical trials to develop new medications for treatment of drug abuse. The **FELLOWSHIP** includes clinical, research management, and drug regulatory training. Must be United States citizens, or plan citizenship within one year, and should be Board-eligible upon entering the program. Stipends are reviewed annually for fairness and competitiveness. Openings July 1995 and July 1996. Contact: **June Cory, FDA, Parklawn 9B-04, 5600 Fishers Lane, Rockville, MD 20857. Telephone: 301-443-2200. FDA is an Equal Opportunity Employer and has a smoke-free environment.**

## POSITIONS OPEN

### POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS

**FELLOWSHIPS** available to residents of North America with Ph.D., M.D., or comparable degree and less than one year of postdoctoral laboratory experience by application date for beginning training in basic biomedical research. The three-year award consists of a stipend of \$25,000 for the first year, \$27,000 for the second year, \$29,000 for the third year; \$2,000 per annum research allowance, travel to fellowship location; annual meeting. Application deadline August 15, 1995; fellowships activate following July. For application forms, write: **The Helen Hay Whitney Foundation, 450 East 63 Street, New York, NY 10021; or FAX: 212-688-6794.**

**POSTDOCTORAL FELLOWSHIP** available in Neuroscience/Membrane Biophysics focusing on the pathogenesis of Alzheimer's disease. Biophysical techniques such as X-ray scattering will be used to study protein/membrane structure. Requires recent Ph.D. in Biophysics, Biochemistry, or related field with experience in protein or lipid chemistry preferred. Send curriculum vitae; reprints of recent publications; statement describing research experience and goals; names, addresses, and telephone numbers of three references to: **R. Preston Mason, Ph.D., Associate Professor, Medical College of Pennsylvania and Hahnemann University, Allegheny Campus, Neurosciences Research Center, 320 East North Avenue, Pittsburgh, PA 15212-4772. An Equal Opportunity Employer.**

### POSTDOCTORAL FELLOWSHIP

Position available for protein biochemist/molecular biologist in well-funded laboratory investigating molecular basis of endothelial cell cytoskeletal organization and cell-cell interactions in the regulation of barrier function. Experience in molecular biology, signal transduction, and protein phosphorylation preferred. Send curriculum vitae and names of three references to: **Dr. Simeon Goldblum, University of Maryland School of Medicine, Medical Service (111), VA Medical Center, 10 North Greene Street, Baltimore, MD 21201. An Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL FELLOWSHIP.** Available immediately for biochemist/pharmacologist with recent Ph.D. to work as part of an interdisciplinary team investigating *in vivo* mechanisms of dopamine neurotransmission. Applicants should have experience in neurotransmitter biochemistry. The appointment is for two years with an opportunity for career advancement. Salary: approximately \$29,000 per year, plus fringe benefits (26%). Please send curriculum vitae and three letters of reference to: **Professor J. R. Barrio, Department of Molecular and Medical Pharmacology, B2-086A Center of the Health Sciences, UCLA, Los Angeles, CA 90095-6948.**

**POSTDOCTORAL FELLOWSHIP** in Molecular Biology—A fellowship is available for working in the mechanism of transformation of human breast epithelial cells, mainly on cytogenetics analysis and targeted insertion of genes. The successful candidate should have experience in molecular biology and cytogenetics. Ph.D. in molecular biology and/or molecular cytogenetics or research experience are required. Please send curriculum vitae and references to: **Dr. Jose Russo, Director-Breast Cancer Research Laboratory, c/o M. Michini, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111. FAX: 215-728-2682. We are an Equal Opportunity Employer.**

### POSTDOCTORAL POSITION

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

## POSITIONS OPEN

### FOREST ECOLOGIST

**POSTDOCTORAL RESEARCH ASSOCIATE** position to study the impact of the hemlock woolly adelgid on forest ecosystems in southern New England. The research will examine forest damage and response at a stand, landscape, and regional level. The project will be integrated within the broad spatial and temporal framework of studies on vegetation dynamics resulting from climate change, land-use, and natural disturbance in the Harvard Forest LTER program. The position is available immediately with funding for one year, with additional support contingent on project results and funding. Applicants should have strong field experience in plant ecology and a background in the quantitative analysis of vegetation data. Please send curriculum vitae, description of research interests and three letters of recommendation to: **Dr. Christopher Krueger, Administrator, Harvard Forest, P.O. Box 68, Petersham, MA 01366 by April 15, 1995.**

*Harvard University is an Equal Opportunity Employer and applications from women and minorities are strongly encouraged.*

### POSTDOCTORAL POSITIONS IN BIOTECHNOLOGY

The Center for Advanced Biotechnology at Boston University has openings for **POSTDOCTORAL RESEARCH ASSOCIATES**. Research areas include new DNA sequencing and amplification methods, protein and DNA chemistry, human disease gene discovery, ultrasensitive detection methods, parallel methods of genome mapping, and profiling gene expression, and protein engineering for enhanced nuclear imaging, macromolecular fractionation, and DNA diagnostics. Candidates should send a curriculum vitae and references to: **Dr. Charles R. Cantor (crc@enga.bu.edu) or Dr. Cassandra L. Smith (clsmith@darwin.bu.edu), CAB, Boston University, 36 Cummington Street, Boston, MA 02215. FAX: 617-353-8501.**

**POSTDOCTORAL FELLOWSHIP:** Providence VA Medical Center and Brown University have a full-time, VA-funded fellowship in substance abuse research that is available July 1, 1995. Fellowship provides well-established didactic program, laboratory or clinical research training (60% of time) and clinical training in substance abuse. Special expertise of our research faculty include: signal transduction mechanisms of opiates, alcohol and caffeine (studying receptor, second messenger and protein kinase mechanisms), pre-clinical and clinical pharmacology of drugs of abuse, psychophysiological mechanisms of alcohol and cocaine abuse, and other studies. Applicants must have M.D. with active license to practice medicine. Send curriculum vitae, statement of research/clinical interests and names of three references with telephone numbers, or any inquiries to: **Gary B. Kaplan, M.D., VA Medical Center (151), 830 Chalkstone Avenue, Providence, RI 02908. FAX: 401-457-3305. An Equal Opportunity/Affirmative Action Employer.**

### RESEARCH ASSOCIATE

**POSTDOCTORAL POSITION** to study transduction mechanisms of airway afferents. Expertise in intra- or extracellular recording or epithelial ion transport mechanisms is essential. Strong background in respiratory physiology desirable. Send the curriculum vitae to: **O. P. Mathew, M.D., Department of Pediatrics, East Carolina University School of Medicine, Greenville, NC 27858-4354. Telephone: 919-816-5776; FAX: 919-816-3806. East Carolina University is an Equal Opportunity/Affirmative Action Employer. All applicants must comply with the Immigration Reform and Control Act. We accommodate individuals with disabilities.**

### RESEARCH ASSOCIATE

A **RESEARCH ASSOCIATE** position at Southern University, Baton Rouge in the Research Centers in Minority Institution Program. The position requires at least a M.S. degree in the Biological Sciences, Biochemistry or Microbiology. However, preference will be given to applicants who hold the Ph.D. degree and have experience in protein purification and characterization, *in vitro* protein synthesis and DNA cloning techniques. The position is available immediately and is renewable annually. Please contact: **Dr. C. T. Shih, Department of Biological Sciences, Southern University, Baton Rouge, LA 70813.**

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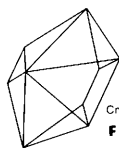
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