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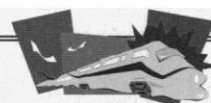


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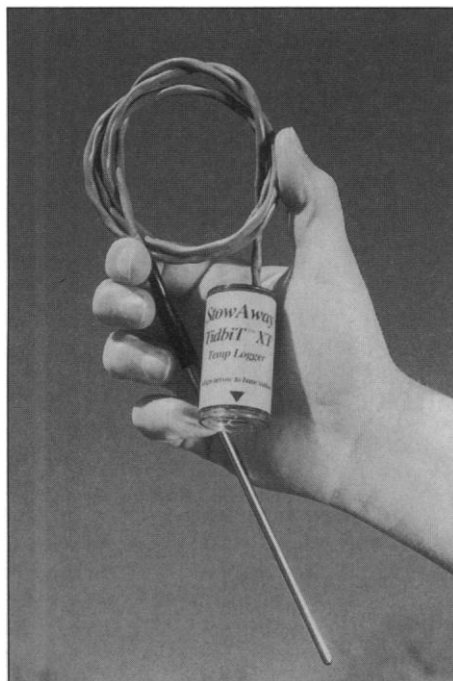
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tated using the editing facility. Comprehensive analysis of secondary structures and a table of properties including melting temperature calculated using nearest neighbor theory and optimal annealing temperature is displayed for each primer. **Premier Biosoft International. Circle 138.**

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Molecular Modeling Software

September 6 1996

and DNA template on top of the wax layer and begins the reaction. EasyStart can be stored at room temperature because the reagent master mix is hermetically sealed under a wax barrier, preventing degradation. **Molecular Bio-Products. Circle 141.**

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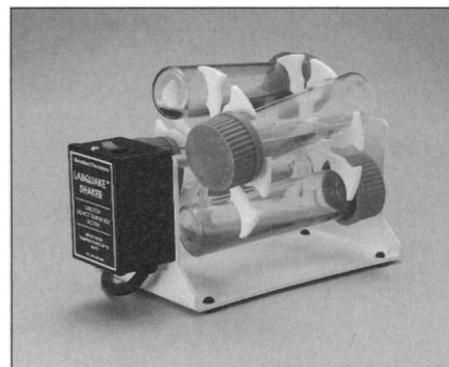
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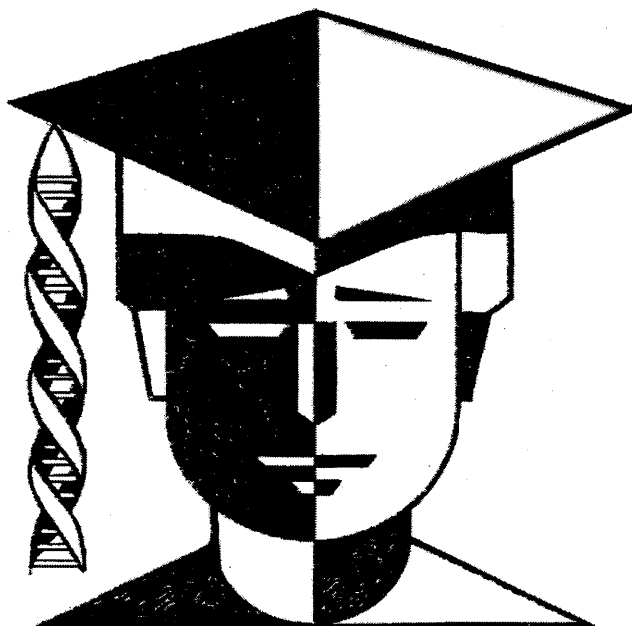
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Branching Out: Careers and Graduate Programs for BS and MS Scientists

This issue of *SCIENCE* contains our annual advertising supplement devoted to opportunities for BS & MS scientists.

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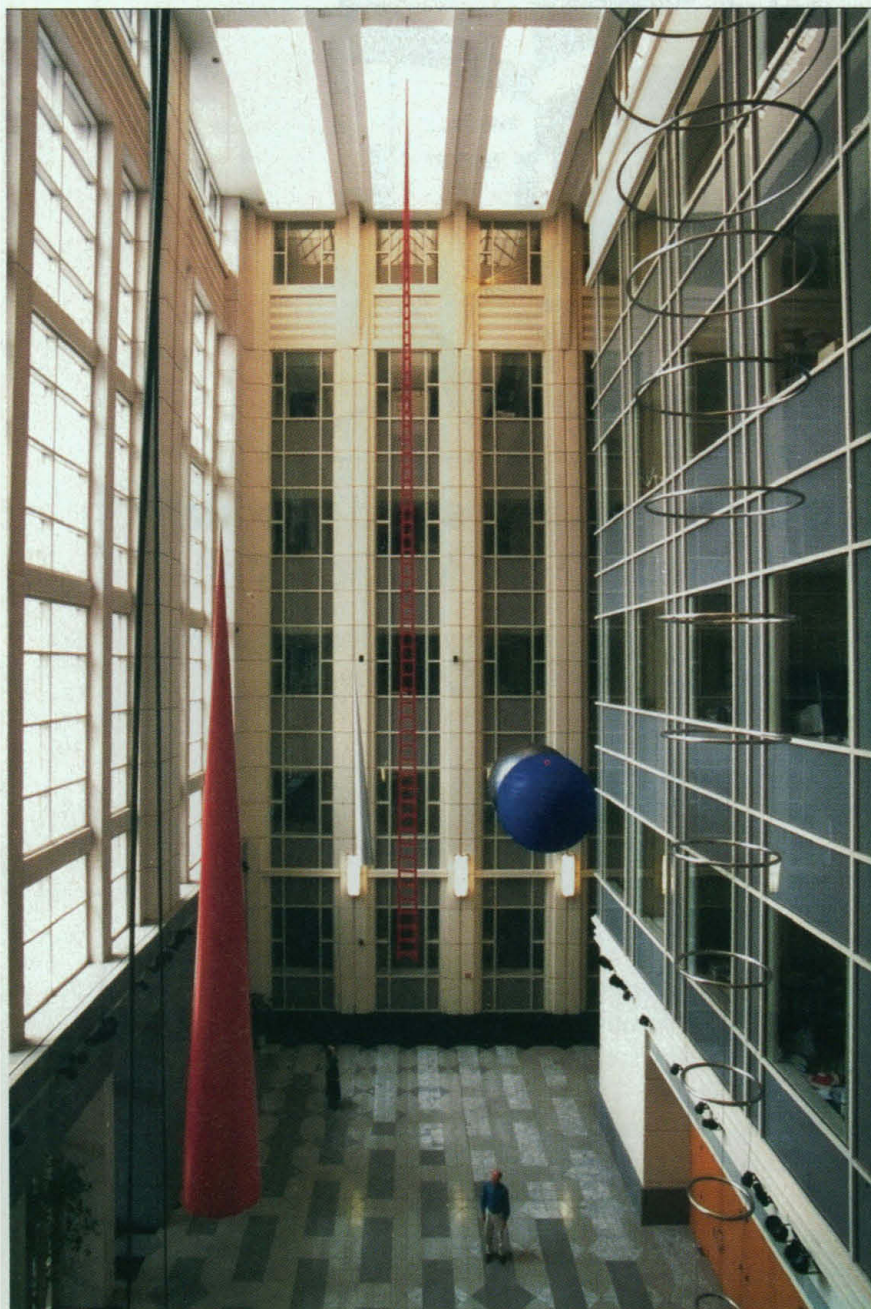
BRANCHING OUT:

CAREERS & GRADUATE PROGRAMS FOR BS AND MS SCIENTISTS

BY
JOHN TIMPANE

The nature of work is changing. In light of the great reorganization in the biopharmaceutical industry and the financial changes facing academic science, anyone who wants to be a professional scientist has to be current, competitive, and versatile. Scientists with BS and MS degrees are showing that they are all three. Below, we visit Hoffman-La Roche, Amgen, Genetics Institute, and NeXstar, as well as graduate programs at the University of Colorado at Boulder, the University of Colorado Health Sciences Center, Washington University, and New York University. We hear from scientists in the United Kingdom concerning the state of European industrial and academic science. Everywhere the message is the same: whatever branch their careers take—medicine, academic research, industrial science—BS and MS scientists, the bulk of the world scientific work force, are doing excellent science wherever science is done.

continued...



Hoffman-La Roche

In the Multidisciplinary Sciences Building at the Roche facility in Nutley, New Jersey, stabiles hang from the ceiling of the Winter Garden, symbolizing aspects of the creative process.

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

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Part I: Career Directions in Industry

"TRAINING FOR THE UNEXPECTED": BS AND MS SCIENTISTS AT HOFFMAN-LA ROCHE

At the Roche facility in Nutley, New Jersey, we met Vince Mattaliano and Nadine Tare of Hoffman-La Roche. With a BS in chemistry from Long Island University and an MS in biochemistry from Fairleigh Dickinson University, Mattaliano has followed a fascinating path to his present position as manager of the medical communications services department. Tare, with a BS in zoology from the University of Illinois, is a principal scientist in the department of inflammation and autoimmune diseases. Below, they discuss careers and career decisions for scientists with BS and MS degrees.

Mattaliano:

I've been at Hoffman-La Roche since 1967, and in many ways you could say my career has done some zigs and zags. I began as a quality control analyst, and I became a biochemist in the department of drug metabolism in 1974. In 1981, I became a medical writer in clinical development, and six years later I became manager of medical communication services.

Tare:

I knew early that research was my real love. My career has taken me to places such as Arnold L. Levine's lab at Princeton and Allen Goldstein's lab at the George Washington University Medical Center, and I began to pick up techniques and expertise in cell biology and biochemistry. Since 1983, I've been in inflammation and autoimmune diseases, where I'm now moving from cell biology into protein biochemistry.

Mattaliano:

I still use my scientific training in my job, especially if you define that as "training for the unexpected." Much of my job involves translating scientific language for consumers and patients (who have no obligation to know medical science). That means I'm constantly learning what our scientists do. Scientific training will always be not just a tool, but indeed the very heart of my career as a writer.

Tare:

I'm still using a great deal of what I first learned, and I'm adding to it all the time. As I mentioned, I'm moving more now into protein biochemistry. As I'm learning a new field, there's a continuum of scientific thinking, meaning I can bring bits of the expertise I've acquired over the years into this new endeavor.

Mattaliano:

In the current environment, there may be better opportunities for the BS/MS scientist in certain capacities in the drug industry than for the PhD. Most large companies hire far more individuals with BS and MS degrees than they do PhDs. The PhD scientist can become quite specialized and be less likely to branch out in new directions.

Tare:

Because flexibility is so highly prized in industry, you see more and more BS/MS scientists with business, law, or finance minors.

Mattaliano:

Or frequently they go back to school once they're here.

Tare:

That can make you tremendously valuable. You can come in and say, "I can do science, and I can manage people, budgets, and time lines." That can be a big advantage in the job market.

Mattaliano:

As for job satisfaction, much of what I worked on in previous positions has percolated up through the product level, and that's tremendously rewarding. I've had a chance to work on exciting projects with international teams of talented and enthusiastic people.

Tare:

I've been part of an international project team involved in the global development of a drug candidate. I did much of the preclinical work and followed it through toxicology, pharmacokinetics, and pharmacodynamics. It was a tremendous awakening. I had never realized what's involved in the whole process, and I could see exactly where my contributions made a difference.

"A BETTER IDEA OF THE OPTIONS": SUMMER INTERNSHIPS AT HOFFMAN-LA ROCHE

This year the Hoffman-La Roche internship program includes 46 interns. Darien Wilson, assistant director of public policy and communications, says that "we receive hundreds of applications a year, and we select participants based on their education and experience." According to Diane Ruffolo, human resources associate, "The aim of our internship program is to

offer students considering careers within our industry the opportunity to experience personal development while they learn about our business, the pharmaceutical industry, and the world of health care. We want this to be a learning experience, not just a summer job."

Amy Johnston, a returnee from last summer, is working in inflammation and autoimmune diseases. "Our lab is studying a gene that may be an important mediator in the initiation of arthritis," she says. "We isolate the gene and then see what happens when we overexpress it or knock it out." Her activities include such skills as cloning; molecular biology; work with transgenic animals, including microinjection; and harvesting and reimplanting embryos.

Stan Liauw, also a returnee, is working in oncology, hoping to develop an animal model to study lung tumor angiogenesis. One of the major technologies he uses is the computer. "There's a lot of literature searching involved," he says, "using Medline and the Internet."

Both Johnston, a junior studying chemistry at Haverford College, and Liauw, a senior in chemical engineering at MIT, see internships as important for career development. "I'm already starting to ask myself just where I would be happiest—will it be medical school, the business world, or industrial science?" Johnston says. "This program is perfect because I wanted to get out, mix with different scientists, ponder my career options." Liauw appreciates being exposed to a broad range of opportunities, and he praises the mentor program, in which each intern is assigned a mentor from a divergent yet appropriate field.

Johnston and Liauw sent out applications to several summer programs. "There are lots of strong companies in New Jersey," Johnston says, "and Hoffman-La Roche had the best." Liauw had heard positive remarks from friends in the program, and he was also drawn "as much by the company name as by the program itself."

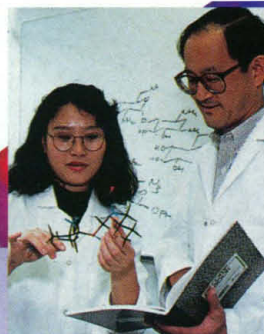
Perhaps the most important thing about a summer internship is that it encourages you to think about the future. Johnston is considering a career in medicine: "Previously, I was thinking mainly of straight practicing, but now, I'm thinking hard about integrating a research component into my future career, maybe getting an MD/PhD." Liauw is also considering an MD/PhD and welcomes the opportunity to perform clinical research in the future: "Working with Hoffman-La Roche or a company like Roche in the future is certainly an attractive possibility."

It could happen. Last year, according to Ruffolo, the company made offers to several former interns, all of whom accepted. As Wilson puts it, "We believe it is important to keep the doors open. If a student is part of our internship program, we want them to leave with a better understanding of what a company like Roche has to offer, as well as a better idea of the options."

continued...

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**Denis Ryono, Ph.D.
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**Christa La Clair
Associate Research Scientist
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**Scott Martin
Research Scientist
Wallingford, CT**

STOPPING OUT, STARTING UP: KERREN KALAI OF GENETICS INSTITUTE

En route to a PhD in chemistry at the University of California at Berkeley, Kerren Kalai decided to take her MS and get a job in industry for a while. "Part of it was I became frustrated," she says. "I didn't really know why I was pursuing the PhD. I felt I needed to take some time out and evaluate my goals." Last September, she took a job as development as-

sociate in the department of biopharmaceutical characterization and analysis (BCA) at Genetics Institute (GI). That move has given her more of a context for doing science and more of an aim for the future.

As an undergraduate at Cornell, Kalai had met Dotsavi Sogah, who became her mentor and research leader. Emerging with a BA in biology and chemistry, she went straight into a PhD program at UC San Diego. When her lab moved to Berkeley, she followed. "I wish I'd taken some time off after my BA," she says, "but I did get a great deal out of my graduate experience."

Although almost everything was new at GI, she felt well prepared. Her background enabled her to absorb information and skills quickly. BCA is responsible in part for developing bioassays used to test promising proteins. Kalai is usually in by 8:30 a.m. and out by around 6:00 p.m. Lab work, including tissue culture, sterile technique, and analytical skills, is a major component of her

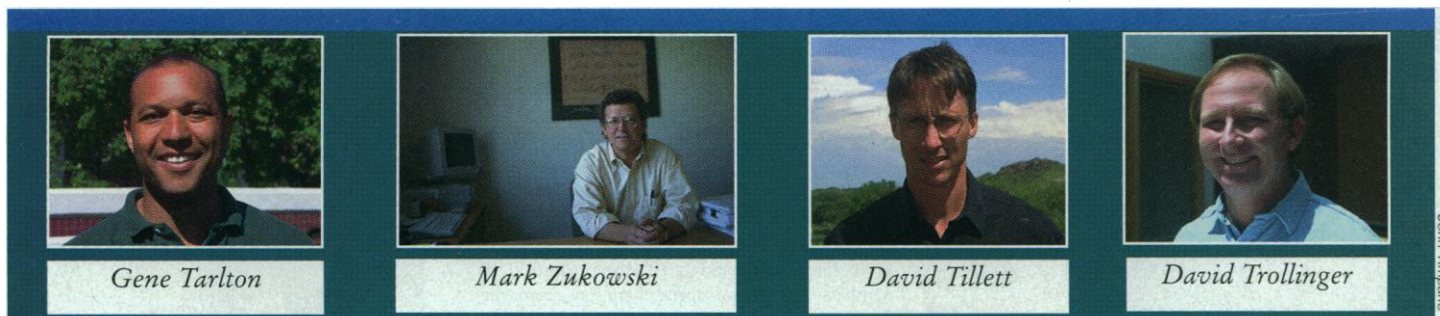
job. She also spends "a great deal of time" at the computer, compiling and analyzing data. Samples come in from departments ranging from discovery research to manufacturing.

She draws on no skill more often than on written and oral communication. "I write memos, and I am constantly communicating results and other data," she says. "I also write reports of varying lengths. Every two months, we write reports on what we've done since the last reporting period." She has also given large, formal departmental presentations, which she calls "a really positive experience—people have had some really good comments and suggestions." Her weekly lab group meetings call for presentations that are, in her words, "less formal but still expected to be prepared and organized."

Kalai recommends summer internships for the BS scientist in search of a direction. She decided to add a major in chemistry after a summer at Allied Signal. "We worked in a polymer group," she says. "I met a lot of chemists and had an opportunity to see what they did every day." She also recommends getting experience in team situations: "In industry, you rely constantly on others, and they rely on you."

Asked whether she has a better idea of her ultimate goals in science, Kalai laughs as she says, "Well, I haven't made a definitive choice between industry or academic science, but now I do feel I want to go back eventually and finish my PhD. Working here has sharpened my appreciation of doing science for a living. I really, really like my work. Whatever path I choose, I know my contributions will be more rewarding because I have more of a context for them now."

THE SCIENCE UP THERE: AMGEN IN BOULDER



You could do worse than do science in Boulder, Colorado. With the Flatiron Mountains as backdrop, it's Bike to Work Day in Boulder, and many at Amgen are coming to work looking quite healthy. "Had to ride to work today," director of chemistry Larry Melvin says. "It's tough. Had to put on an extra layer of suntan lotion." Melvin sees a wide-open diapason of career opportunities for BS and MS scientists.

"These scientists are absolutely key," Melvin says. "We have more BS/MS-level folks than PhDs, so we rely on people at this level to conduct science and research with the highest possible skill, expertise, and integrity. Some of the work is basic—identifying, designing, purifying, and synthesizing molecules—and some is state-of-the-science, as in our miniaturized automated high-speed solid-phase format work.

"Company culture tends to erode distinctions between disciplines and degree levels. We don't have just organic chemists. Some have backgrounds in biology, molecular biology, or biochemistry; some are biologists who have acquired chemistry skills on the job.

"In interviewing a job candidate, I look first for high energy and high ambitions. Next is a good appreciation and understanding of the discipline. A big plus is some research experience. If a BS scientist has done a senior project or summer research, he or she has an invaluable advantage. Such a background shows us that this scientist has been independent, conducted his or her own research. I know such a person will continue that self-education."

Melvin's colleagues share his enthusiasm:

Gene Tarlton associate scientist chemistry

I came here after eighteen years at a large company. I was feeling like a number, like I was getting lost. I'd reached the highest level I could with my BS, and I could see there was a real ceiling. Amgen was starting a small-molecule medicinal chemistry group, and I saw an incredible opportunity for a person of my level. Here, I feel pretty much at home. There's more interaction with many different disciplines: analytical chemists, QBs doing different assays, toxicologists, even patent law

continued...



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Amgen is the world's largest independent biotechnology company. By valuing diversity and opening its doors to a workforce of people who are valued and recognized for their contributions, Amgen continues to build upon a world class organization. We have experienced remarkable success and, as a result, have grown rapidly.

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Under the supervision of the Director of Clinical Research, you will initiate and monitor clinical studies and assist in the summaries of the studies suitable for IND and NDA submission. Prefers RN with 6+ years related clinical research experience.

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In our Clinical Chemistry Department, you will plan, conduct, evaluate and propose basic and applied experimentation and product development within a project. Requires BS and 4+ years experience in cell culture and immunoassay techniques and knowledge of immuno-chemistry or protein chemistry.

The Associate positions will perform and maintain investigational activities within the confines of defined research programs and objectives. Will execute assigned duties in compliance with G.L.P. Requires BS and 2+ years of the above experience and knowledge of Biology or Medical Lab Sciences.

PROCESS DEVELOPMENT...

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Responsible for the development and optimization of freeze drying cycles for pharmaceutical protein products, including design, analysis and freeze drying microscopy studies. Requires a PhD in Industrial Pharmacy, BioChemical Engineering, or Cryobiology with 4+ years of related experience.

Additional positions will direct, plan, conduct and evaluate complex product development projects to expand future product line. Requires BS in Biology, Chemical or Biochemical Engineering, plus 4 years applicable work experience.

Also seeking individuals responsible for the application of methods in physical biochemistry or protein formulation development and characterization of secondary, tertiary and quaternary structure of recombinant proteins. Requires PhD with 4-6 years relevant experience.

VALIDATION...

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Controls and directs the Validation documentation system (CSRs and Protocols), maintains the master logs for Validation documents, and designs, develops and administers database applications for tracking documentation. Requires BS plus 3 years related experience, working knowledge of GMPs, and proficient with MS Word, Excel, Paradox, SQL, Oracle, Delphi or Visual Basic and Powerpoint or Graphics software.

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The NIH Predoctoral Intramural Research Training Award (IRTA) provides support for a year-long research training experience in our state-of-the-art laboratories in Bethesda, Maryland. To be considered, you must have graduated from an accredited college or university no more than 12 months prior to starting the fellowship

and intend to apply to graduate or medical school within the next year. Awards may be granted for an initial 12-month period and be renewed one time for an additional 12 months, based on satisfactory progress towards matriculation at an accredited graduate or medical school. Upon acceptance to graduate or medical school, you may be eligible for additional NIH training awards.

The experiences you gain at the NIH in this program will be valuable wherever your career takes you. Interested candidates should submit a *curriculum vitae*, three letters of recommendation emphasizing your research potential, a statement of your research interests and an official copy of your college transcript to the Coordinator of Student Programs, NIH Office of Education. Candidates must be U.S. citizens or permanent residents.



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people. You get more of a sense of where your work falls, get much more of an overall picture. It's not just make a compound, send it off, get no feedback—you can see the entire process.

We're working in the area of arthritis, which is very exciting because of course a lot of work still needs to be done in solving the arthritis puzzle. It affects almost everyone over 30 in some form. We're looking for ways to slow it down, prevent it, or even cure it. Such unanswered questions make this job really great.

If you want to be an organic chemist, learn the analytical skills—HPLC, column chromatography, NMR, and mass spectroscopy. Get as much hands-on work in those areas as you can, including running the actual experiments and interpreting the results—the less time you need to be trained, the better, and the more you know those skills, the more attractive you'll be.

Making new drugs is a great job. What I like is being involved in all aspects of a drug's development, being right at the forefront of learning about and discovering new cures for arthritis. It's also great to be able to ride your bike to work in the morning and see those mountains clear and sharp.

Mark Zukowski

director

inflammation research

Some of our BS/MS scientists view their jobs as careers, some as stepping stones to something else—either way, it's a good vantage point from which to learn about Amgen, the business end of science, the lab environment. Some stay and grow with the organization, advancing through research associate and associate scientist levels. A rare few have even broken through into the ranks of the research scientists. Some have moved to law, technical writing, and clinical research.

Biologists and chemists here

work hand in hand. We don't have departments so much as functional groups. Within biology, we have the molecular biologists, who do cloning and expression in various host vector systems. In cell biology, the work is with cell lines, monocytes, macrophages, and *in vitro* assays. Our protein chemists isolate the activity of both natural and recombinant proteins, working closely with cell biologists, who do the assays on fractions. Our quantitative biologists come from diverse backgrounds. There's a lot of robotics there, much high-throughput screening, robotic assay work and manual secondary assays. Our pharmacologists are primarily concerned with *in vivo* studies and animal modeling.

In a CV, I look for good technical background, a solid education, of course, and some lab experience. I try to match positions to experience, so I look closely at each candidate's list of expertise. My interest picks up if I see experience in PCR, hybridization, cloning, and expression in more than one cell type. Those are very good skill sets right now. If they've worked on an interesting project, that's also of interest—better yet if they can explain that project and their own role in it. I want people who can understand the science they're doing, take a personal interest.

The interview is critical. I look for enthusiasm, energy, evidence that here we have a self-starter, truly interested in the science and able to talk about it.

David Trollinger

associate scientist
biology

I not only run the DNA sequencing unit but also have my own project, looking at posttranslational modification of proteins. We're looking at a molecule that trimerizes in its native form. I was able to go in, find the gene, express it, do the assay, and see the protein trimerizing.

I'm not considering any further

degrees. It makes more sense to get deeper into the work I'm doing here. I already have more than the equivalent of an MS or a PhD in my work experience. Anyway, rewards at this company are based not on your degree but on the extent of your contribution.

The topics I hear discussed most frequently are interaction of proteins, specifically screening them in yeast 2-hybrid systems; phage display; and of course genome screening, which is still a hot issue, very targeted. Now we're looking at differences between resting and activated cell types. DNA sequencing is still vital. You hear a lot about electronic subtraction, and differential display. PCR and cDNA cloning are now at a very sophisticated level. People with lab experience in those areas have some great opportunities right now.

I really like the small team model. You have true multidisciplinary exposure here. I like being able to go down the hall and find the biochemist, protein chemist, or other scientist who knows the answer to my question.

Those who get an internship at the bachelor level, or stop between BS and MS and get work experience, are doing something that will help them later. I've interviewed lots of bright kids with advanced degrees, but those who went out and got their feet wet, learned what industrial science is all about and then went back to school, those people have a real advantage.

Dave Tillett

associate director
clinical manufacturing

While in discovery research you generally need a PhD to advance to the top, that's not necessarily true in manufacturing. With a strong technical background and good people skills, there really are no limitations. In our manufacturing group, about two thirds to

three quarters have BS degrees, not necessarily in the life sciences, though predominately that.

The ideal job candidate would have some background in microbiology, cell biology, biochemistry, and analytical chemistry, with a good aptitude for mechanical things—and know how to write. Writing skills are important; there is a significant amount of time spent writing operating procedures. Also, experience in project management catches my eye.

A good cross-training in biology and chemistry is important. But the interview is the real key. We really try to get people who can make good judgments, admittedly a hard thing to bring out in an interview. It's also hard to assess a person's technical ability right out of school—a 4.0 GPA is not necessarily the right person to hire. You want to see someone who has performed well, but also someone who has a broad and balanced background.

The job is different every day. On some days you work on the process end, making solutions, operating a fermenter, a chromatography column and/or ultrafiltration skids. Other days, you write documentations. On still other days, you'll write procedures. Troubleshooting wherever and whenever it's needed is a big part of the job.

Our expectations for people are pretty high, going well beyond simply making the product. You have to understand the regulatory environment we're working in, and you have to understand every aspect of production and take responsibility for it. Here, pretty much everyone is trained to be able to perform all parts of the operation.

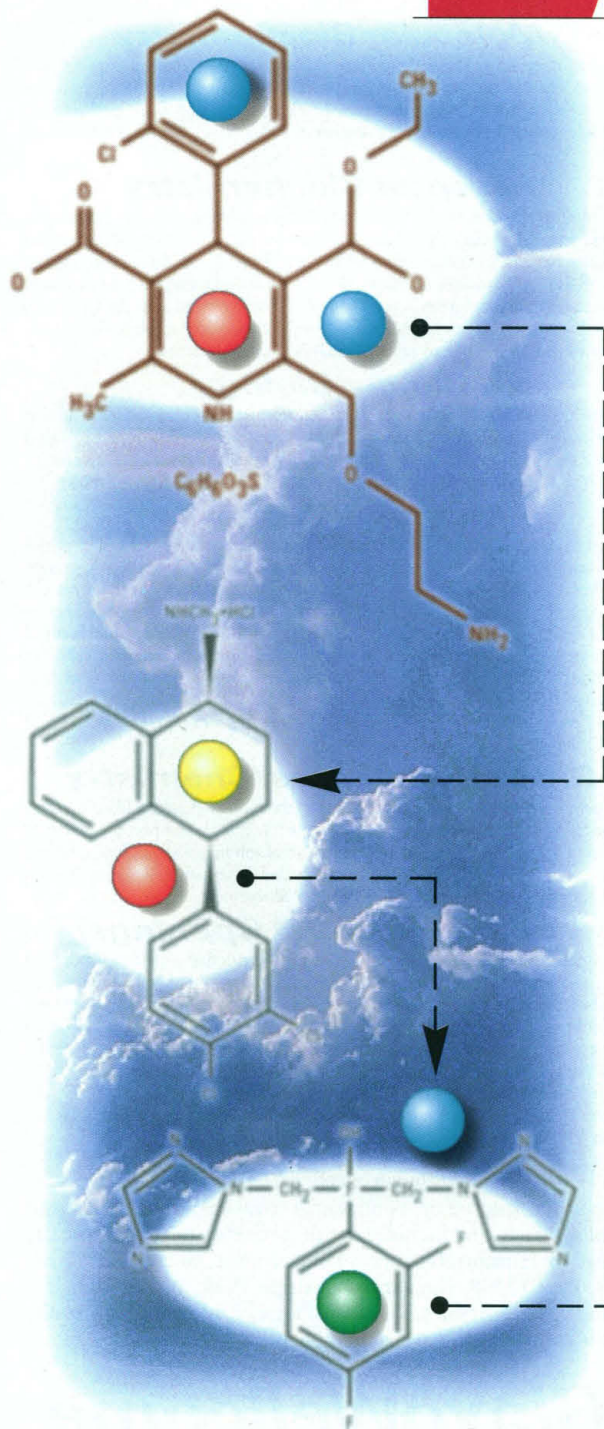
David Paul

manufacturing associate
clinical manufacturing

Clinical manufacturing is different from commercial manufacturing in that we manufacture large-scale proteins for the pre-

continued...

Thinking Beyond 2000



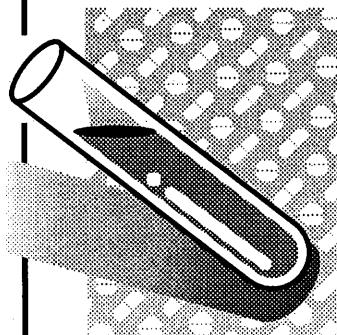
As the next century approaches, Pfizer is committing significant resources to support our goal of enhancing the world's well-being. As a leader in the development of therapeutically unprecedented drugs and life-enhancing treatments, we devote more than \$1.4 billion to research and development each year. The six pharmaceuticals we've introduced in the 1990s now account for half of our worldwide sales. A second wave of drugs in late testing phases will significantly extend our leadership in the next few years. Our efforts in animal health continue to achieve strong success. And with many new development programs underway, we boast perhaps the most impressive research pipeline of any company in our industry.

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- Microbiology
- Molecular Biology
- Organic Synthetic Chemistry
- Pathobiology
- Peptide Chemistry
- Pharmacokinetics
- Pharmacology
- Pharmacy
- Physiology
- Protein Chemistry
- Statistics

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POSTDOCTORAL FELLOWSHIPS

Molecular Sciences

Will study nuclear receptor mechanism of action. Requires Ph.D. in Molecular Biology/Cell Biology or a related area. Prior experience in the analysis of differential gene expression is highly desirable. Refer to Job #ASC2496JM.

Human Genetics

Will assist in rigorous validation of known mutation detection techniques and in the development of novel high throughput methods for mutation scanning. Prior experience in disease gene identification or mutation detection techniques is highly desirable. Refer to Job #ASC2496EL on all resumes.

Molecular Endocrinology

Will isolate/characterize the function and regulation of proteins involved in the signal transduction process with an emphasis on intracellular calcium handling. Will design and conduct experiments to study this process in physiologic and pathophysiologic instances. Requires a Ph.D. in Biochemical Pharmacology, Biochemistry, or Molecular Biology. Experience in protein isolation, purification, single cell isolation, cell culture, calcium imaging, cDNA cloning and expression preferred. Refer to Job #ASC2496PG on all resumes.

Virology

Will conduct research on the inhibition of host-cell apoptosis by viruses of medical interest; investigate whether proteins blocking host-cell apoptosis are produced by these viruses; identify the proteins involved and their mechanisms of action; and plan/execute these studies in collaboration with other members of the research team. Requires recent Ph.D. in Cellular or Molecular Biology, Biochemistry, or Microbiology and skills in standard techniques of molecular biology and mammalian cell culture. Experience in the study of mechanism of apoptosis is desirable. Refer to Job #ASC2496BH on all resumes.

RESEARCH SCIENTISTS

Genomics

One opening is available for an individual to perform molecular biological techniques in support of experiments in genetics and polymorphism detection. **An additional opening** is available for an individual to carry out high-throughput PCR and genotyping of patient DNA samples, manage DNA stocks, and run an ABI377 with appropriate software. **Another opening** requires basic to moderately complex molecular techniques such as PCR, membrane hybridization, genomic and cDNA library construction and cloning. These positions require a BS in Biology, Molecular Biology, Genetics or a related area with 1 year relevant experience and basic computer skills for data analysis. Refer to Job #ASC2496NS on all resumes.

Molecular Sciences

Openings available for individuals to purify/characterize proteins from nanogram to gram quantities. Duties include methods development for analytical pilot scale chromatography and the biochemical characterization of proteins. **Additional openings** are available to assist in the design, subcloning and generation of recombinant plasmids for the expression and initial characterization of heterologous proteins in *E. coli*, recombinant baculovirus and eukaryotic cell expression systems. **Other openings** are available for individuals to be responsible for DNA cloning and analysis, cDNA library construction/screening and tissue culture work. Positions require a BS or MS in Biochemistry, Molecular Biology or a related area with 1-5 years experience in the specific areas noted above. Refer to Job #ASC2496ML on all resumes.

Cellular Sciences

Will perform immunochemical, biochemical, histological and molecular biological techniques in support of experiments in tissue distribution of target genes and proteins. Requires BS, MS or Ph.D. in a Biological Science with minimum 5 years relevant experience. Refer to Job #ASC2496JH on all resumes.

Molecular Biochemistry

Individuals needed to distribute compounds, analyze data and develop/conduct enzyme, receptor and protein/protein binding assays to screen for inhibitors of therapeutic targets. Positions require a BA/BS or MS in a Biological Science discipline with 1-4 years relevant experience. Refer to Job #ASC2496BK on all resumes.

Receptor Biochemistry

One opening is available for an individual with experience in assay automation including programming of liquid handling systems (Tecan, Packard, Beckman) and arm based large scale robotics systems (HP Orca, Zymark). **Additional openings** are available for individuals to design, develop, and conduct ligand binding assays, immunoassays, reporter gene assays, and fluorescent dye based assay for G-protein coupled receptors. Requires BA/BS or MS in Biology, Biochemistry, Pharmacology or related area. Refer to Job #ASC2496DS on all resumes.

Cancer Biology

Will evaluate the in vitro toxicity of a variety of experimental compounds to human cells (leukemic, tumor and primary normal). Requires BS/MS in a Biological Science or chemical discipline with 2 years relevant experience. Refer to Job #ASC2496RD on all resumes.

Metabolic Diseases

Several openings available for individuals who will be part of a team whose goal is discovering drugs for the treatment of diabetes, obesity, and related metabolic disorders. Positions require BS in Biochemistry, Pharmacology, or related laboratory experience. An individual is needed to investigate the effects of drug candidates on the expression of relevant genes. An individual is needed to use biochemical techniques to study metabolic pathways in isolated tissues and cultured cells. An individual is needed to investigate the effects of compounds in vivo and ex vivo in animal models. This includes animal handling, dosing, bleeding, small animal surgery, use of radioisotopes, and biochemical techniques. Refer to Job #ASC2496SJ on all resumes.

Diversity Sciences/Chemistry

Will perform automated synthesis and characterization of chemical libraries using Advanced Chemtech and other robotic equipment. Will also support the Diversity Sciences Department through the optimization of automated solid phase synthesis techniques, HPLC methods and library storage and dispensation. Requires BA/BS in Chemistry. Refer to Job #ASC2496FS on all resumes.

Virology (Several Openings)

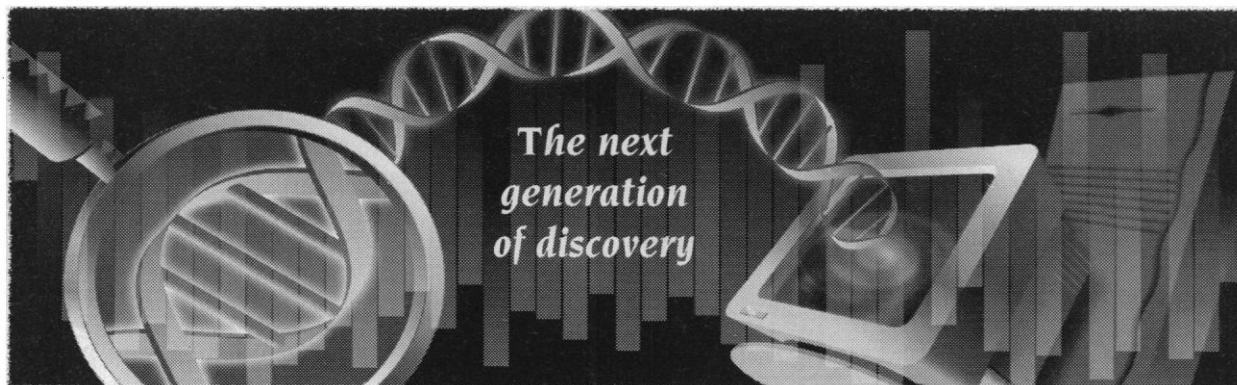
One opening will design and implement assay systems that provide quantitation of virus replication and/or events that represent distinct stages of viral replications. **Another opening** is available for individual to develop cell-based assay methods for the verification and optimization of the antiviral activity of lead compounds against a variety of medically important viruses. **A third opening** is available for an individual to identify/evaluate/develop therapeutics for patients chronically infected with hepatitis B virus (HBV). These positions require a BS/MS in a Biological Science with a minimum of 2 years relevant research experience. Refer to Job #ASC2496KB on all resumes.

Our leadership is reflected in excellent salaries and comprehensive benefits package. For confidential consideration, send your resume, which must include job title, reference number and salary history, to: **Human Resources Department, Glaxo Wellcome, P.O. Box 13398, Research Triangle Park, NC 27709.** (No Phone Calls or Agency Referrals, Please) An Equal Opportunity Employer M/F/D/V

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Postdoctoral Positions: We have a variety of positions available for Ph.D.'s with 0 - 2 years' experience. Opportunities exist in specific disease areas including obesity, atherosclerosis, CNS, oncology and viral vectors. We boast a 2 year program with eligibility for extension. Publications are encouraged.

Research Associates: A variety of opportunities exist for BS/MS graduates with 2+ years' experience.

MOUSE MODELS

Postdoctoral Position: We are looking for Ph.D.'s with experience in the generation and analysis of mouse models.

Cell Culture: This Research Associate will support embryonic stem cell culture activities. A BS and 2 years' cell culture experience required.

Histology: This Research Associate will perform techniques of in situ hybridization and immunohistochemistry in experimental tissues.

EXPERIMENTAL THERAPEUTICS

Flow Cytometry: Utilizing experience in flow cytometric analysis and sorting, this individual will be responsible for the Cell Sorting Unit. A BS and 3-5 years' experience required.

Research Associate: This researcher will study the pathophysiology of allergic reactions in vivo and perform immunological studies in vitro to determine the cellular mechanisms underlying these pathological processes. BS is required.

HUMAN GENETICS

Associate Scientist: Lead a group focused on the genetic mapping of human diseases. Primary responsibility for marker evaluation, isolating new microsatellites and innovating systems for conventional genotyping on key genomic regions as well as contributing to data analysis.

Research Associate: Participate in the marker evaluation process as part of a high-throughput production team. You will design and perform experiments and analyze data in a team-oriented environment. A BS, PCR and computer proficiency a must.

POSITIONAL CLONING

Research Associate: Join a group focused on the positional cloning of disease genes. Responsibilities include genetic and physical mapping, gene identification and mutation detection. BS is required.

Mutation Detection: This Research Associate will develop and utilize mutation detection methods in the evaluation of candidate disease genes. BS is required.

AUTOMATION

Associate Scientist: Work on array and microarray applications related to transcriptional profiling, gene identification and positional cloning. You will participate in technology implementation across diverse projects.

CLINICAL STUDIES MANAGEMENT

Clinical Study Coordinator: Focus on the design, implementation and management of population based studies designed to map the genetic basis of complex diseases. Candidate must be willing to travel and have a clinical background (RN or MD).

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clinical and clinical efforts, rather than for the consumer. Discovery science works on a very small scale. They pass their discoveries on to process development, who typically have manufacturing experience or understanding. My role is the transfer from process development into manufacturing, working out the little troubles that go along with that handoff. It's really challenging, interesting, enjoyable. New chemistries, new processes come in. The engineering problems are fun as well: "I've made up a one-liter buffer. Now how do I make thirty thousand liters of it?"

I picked up my mechanical aptitude on the job. And I keep educating myself at professional training seminars. I'm constantly identifying new equipment, bringing it on board, finding a function for it in our process-

es. I've also had to learn the regulatory end. All big companies have training seminars that update you on GMP changes. I also attend off-site sessions on training and cGMP standards.

I wear a lot of different hats, interacting with regulatory affairs, validation, process development, process engineering, building and construction—you learn a lot. Certainly my experience has taken me to a much higher level of management than I could have experienced on the discovery side. It's action-packed, and you have to be open-minded and flexible to meet the ever-changing demands. Actually, that's what satisfies me most: you never know what the day will bring. It's fun just to come in the door, just to see what today's new puzzle is.

At Amgen's Lake Centre facility

we met five MS-level scientists—Stephanie Hartsel of DNA and peptide synthesis, Christine Ko of biology, John Miller of chemistry, Dave Smiley of process development, and Julia Tseng of biology—to discuss the role of BS and MS scientists in the modern biopharmaceutical company.

Ko: I love doing science. In my present job, at times I wish I had a PhD, which probably would get me further.

Tseng: I got married while I was doing my master's. Having a family and trying to do an advanced degree is a pretty stressful combination. Once the children were grown, I really missed the science and wanted to get back to it.

Hartsel: And once you're making money with a real job, it's really hard to go back to school and be a poor student again.

Miller: My associate-level position is one in which I can grow and progress at my own pace. I considered getting a PhD, but when I looked at the job market,

it didn't seem like necessarily the best decision.

Smiley: You're often more flexible without a PhD. In some cases, you can get a job more easily—and you can move into other jobs.

Miller: Job transitions open up for BS and MS people that often aren't there for PhDs. Since

Smiley: I use many different skills and technologies on the job. I use HPLC and other analytical techniques to understand the fermentation's progress. We work shifts to keep the tanks running.

Miller: In chemistry, we do many of the same things as Dave mentioned. There's a big emphasis on isolating and purifying chemical compounds.

Hartsel: The DNA technology group is responsible for providing DNA to all Amgen researchers, so understanding the biology is important. Often, novel synthetic chemistry is a result of reading a biological study.

Miller: The satisfaction of my job is very hands-on, very concrete. You produce a chemical substance that may or may not go on to do something later. Besides, it's intellectually very stimulating.

Smiley: I like the troubleshooting when things go wrong. Trying to understand a problem and solving it quickly.



John Timpane

you're not as rigidly focused, your career can take some natural progressions.

Hartsel: While I haven't considered going back for the PhD, I do plan to get an MBA. Amgen encourages that kind of move, and people who are good in both science and management are very valuable.

Tseng: Lots of people here are doing that—both MBAs and law degrees.

Science at the heights
(left to right): Dave Smiley, Julia Tseng, Christine Ko, Stephanie Hartsel, John Miller

Tseng: In cell biology, we do tissue culture, monoclonal antibody work, cell adhesion work, *in vitro* assays.

Ko: We do a lot of protein biochemistry, including looking for novel molecules, protein purification, column chromatography, gel electrophoresis, and HPLC.

Tseng: The company here is still small enough so that we can feel a connection to the process and the product.

Ko: I like the mental challenge. In discovery research, you're faced with a disease, and you have to figure out how to attack it, what molecule to use, how to purify that molecule. Another challenge is getting used to switching directions, being flexible. You learn a lot. There aren't any typical days.

continued...

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Research Associates

Neurobiology Unit

PharmD/Preclinical R&D

BS/MS degree in Chemistry with 0-8 years' experience, including providing analytical and formulation/manufacturing support. Familiarity with cGMP, cGLP and regulatory requirements is a must. Knowledge of solid state definition and control technologies and chemical kinetics desirable. Job# SCI830KHA

Preclinical R&D-QA

BS/MS degree in Analytical Chemistry or related field and 5 years' pharmaceutical industry experience with skills in implementing quality systems within Metabolism, Bioanalysis and Pharmacokinetics. Experience with GLP training, *in vivo* metabolism and plasma analysis is a must. Job# SCI830KHB

Pharmacology-Molecular Biology

BS degree in the Life Sciences or equivalent degree in Molecular Biology, Biochemistry or Neurobiology, plus 0-5 years' relevant experience with proven skills in PCR, blotting and cell culture techniques. Job# SCI830KHC

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Inflammatory Diseases Unit

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BS/MS degree with 3-5 years' experience analyzing, testing and validating pharmaceutical agents and transgenic expression on lung function, working with *in vivo* models of human disease. Job# SCI830KHE

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DRESSING FOR WORK AT NEXSTAR

Wherever we went in Boulder, we were usually the only people in suits and ties. We stuck out worst at the offices of NeXstar Pharmaceuticals, where intense and brilliant work is being done by people in jeans and summer skirts. Created when NeXagen purchased Vestar in 1995, NeXstar has a culture based on creativity, independent thinking, and a taste for risk.

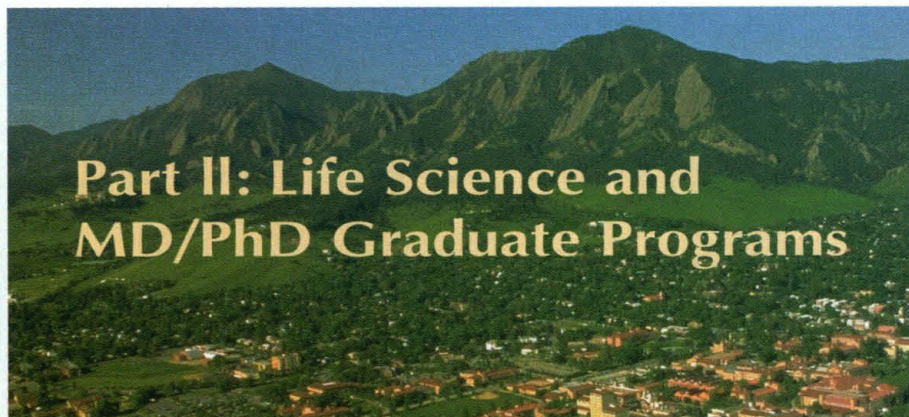
Pamm Monier, senior human resources representative, likes the relaxed energy of a small firm. "We're a lot less structured than many older companies," she says. "That's why, in the people we hire, we're looking for those who can work independently and creatively." She says the casual dress shouldn't mislead anyone: "We have people here who do nothing but work."

BS and MS scientists are an important part of the research effort at NeXstar. "Because we're smaller, these people will probably be much more directly involved in the most important decisions," Monier says. "Because research groups tend to be small—our immunology group, for example, is about 25 strong—everyone is expected to contribute. And our BS/MS people have been doing some great work here. Not everyone has to be a PhD." Recent hiring needs have focused on people in pharmacology, analytical and bioanalytic chemistry, cell biology, and process and synthetic chemistry for research and development.

"We're not looking for nine-to-fivers," Monier says. "You have to be flexible and really interested in the science you're doing." The aforementioned taste for risk—forging into fields and techniques others have ignored—is characteristic both of NeXstar and of the people who work there. With admiration, Monier quotes a piece of prose poetry appearing in a recent job advertisement. The poet was Larry Gold, chairman and chief scientific officer of NeXstar, and he describes the kind of person this casual but intense company wants to attract:

an adventurer, a deep thinker, a person who cherishes exquisite data, and a scientist strong enough to enjoy interactions in a highly charged and driven environment.

"That pretty much says it all," Monier says.



University of Colorado at Boulder

Part II: Life Science and MD/PhD Graduate Programs

EQUAL TEMPERAMENT: THE UNIVERSITY OF COLORADO AT BOULDER

"A very egalitarian place." That's the way people tend to describe the University of Colorado at Boulder. Mark Winey, assistant professor and head of the graduate program in the department of molecular, cellular, and devel-

opmental biology, used the phrase. So did Estelle Steiner, a fourth-year PhD candidate in molecular biology in Winey's lab. Collegiality and equality among faculty and graduate students characterizes Colorado as much as good science does.

The program offers what Winey calls "the advantage of being relatively small": 60 students total, with entering classes six to nine strong out of an applicant pool of around 200 per year. Course work and rotations make up the first year, at the end of which students choose a thesis lab from among more than 40 research laboratories in the department and the division of biochemistry.

"We have a diversity of research opportunities here," Winey says, "including our traditional strength in RNA science, cell biology, and developmental biology, bolstered greatly by the advent of transgenic mouse technology. We have a mass spectroscopy lab, high-energy NMR, x-ray crystallography, confocal, standard electron, and high-voltage electronic microscopy." Among the more exciting research areas, Winey names developmental biology, signal transduction, and genomics.

In applicants, Winey looks for an excellent academic record with research experience—"In the last few years," he says, "we have not admitted anybody without it." A strong letter from the research advisor can overcome defects in the candidate's background. Strong communication skills are essential: "Regardless of what they end up doing," Winey says, "PhD scientists will have to communicate—when they teach, when they collaborate, when they apply for grants."

After her BS, Steiner worked for two years in a research lab, which she says "helped me realize why I wanted to keep going in science." She attended a graduate student-run symposium at Colorado and was impressed: "The students were obviously playing a big role in their own education." Graduate students sit on the committee overseeing graduate studies, help recruit new graduate students, help decide who is accepted, invite speakers for seminars, and attend faculty meetings.

Her lab is studying spindle pole body duplication in *Saccharomyces cerevisiae*. She is focusing on a protein kinase involved both in duplication and in the mitotic checkpoint, and she is now



Among equals: Mark Winey and Estelle Steiner of the University of Colorado at Boulder

John Timpane

continued...



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<http://www.colorado.edu/AcademicLife/GraduateStudy.html>

studying its activity in the cell cycle and how that activity is regulated. That entails kinase assays and mass spectroscopy, subcloning for mutagenesis, and some genetics.

Steiner enjoys the crossover of disciplines and the readiness of her lab mates to help. When asked about her future goals, she replies, "All of us are geared toward academic science, but we know how insecure both academic and industrial employment is at the moment, so we all have our eyes open." Most of all, she enjoys that egalitarianism we mentioned. "Grad school is a stressful time," she says, "and it's nice to have people you can share that with."

“We want people who have done good, original work on a research project and can explain that project to me with that fire in their eyes. If an interviewee is pulling out confocal microscopy photos, saying, 'Look what I did,' I'll catch the excitement."

**ELEGANCE AND ENTHUSIASM:
THE MEDICAL SCIENTIST
TRAINING PROGRAM AT THE
UNIVERSITY OF COLORADO
HEALTH SCIENCES CENTER**

Arthur Gutierrez-Hartmann, director of the medical scientist training program at the University of Colorado Health Sciences Center (UCHSC), is speaking about his MD/PhD program, which emphasizes crossover between hard science and medical science, human support during the tough transitions, and what Gutierrez-Hartmann calls "an uninhibited enthusiasm about the elegance of biology."

Two years ago the program, which comprises faculty at both UCHSC and the University of Colorado at Boulder, obtained an NIH grant and is now a bona fide MSTP. The total number of MD/PhDs is in the 30s, with four fully funded candidates accepted each year. The program is looking for solid GPAs, strong MCATs, substantive and exemplary lab experience, and leadership.

Students must complete and defend their hard-science thesis before entering the clinics. (That guards against the well known thesis let-down.) Applicants interview separately at the medical school, which defers their time in the clinic until they have completed their graduate course work. Most students do research rotations in their first two summers. Medical and graduate course work and thesis research take an average of five and a half to six years, after which students return to the medical school for their core rotations. "We provide a flexible clinical schedule," Gutierrez-Hartmann says, "allowing students to complete the clinical requirement in fifteen to 24 months."

A clinical transition committee supports students through the hardest transitions for the MD/PhD: between thesis and clinic and clinic and internship. Hard science and medicine are two different cultures: the former encourages constant questioning, while the latter encourages more respect for authority and results in a more defined hierarchy. "We teach them appropriate clinical behavior," Gutierrez-Hartmann says, "beginning when they're finishing their thesis, to prepare them for the specific nuances and the traditional culture of the medical environment." Later, when students begin to apply for internships, the committee proactively mentors them on career design, selection of postdocs and fellowships, and pathways to their favored specialties.

Gutierrez-Hartmann worries that with the growing importance of HMOs in the health care scheme, medical schools may become trade schools. "If all we're going to have is gatekeepers, but not people at the

forefront of discovery," he says, "who's going to teach the next generation of doctors? Who's going to teach, not the clinical art, but the art of medical research?" Clearly, he wants to keep the enthusiasm for both arts burning in his students: "I've still got it, and all my colleagues have got it. The best we can do is pass it on."

In 1973, Washington University decided to move away from department-based graduate education and established the division of biology and biomedical sciences. The result is an environment in which students have ultimate flexibility. Each of the faculty members in the division has "dual citizenship," according to Jeffrey I. Gordon, head of the department of molecular biology

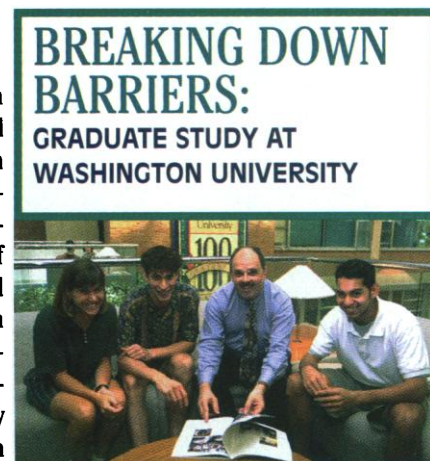
and pharmacology and chair of the executive council overseeing the division. "Each is a member of a department, and each is also a member of an interdepartmental, interdisciplinary divisional program." Thanks to this structure, students can do a dissertation with any of 300 faculty in 24 departments throughout the university. Clinical faculty are involved in training PhD and MD/PhD candidates, and there is close scientific interchange between clinical and preclinical departments.

Each of the eleven programs in the division has a scientific focus reflecting the interests of the participating faculty. Because of the division structure, each program brings together a larger community of scholars than a single department could.

Students select the program they enroll in based on their own interests. Students take a year of course work, during which time they also rotate through three laboratories. Rotations can be done in the lab of any faculty member in that program. Juan J. Martinez, a PhD candidate in molecular biology, remembers his early days as a student: "They gave us a book listing the various faculty and their research interests. As I leafed through it, I found many labs doing fascinating things. I contacted them, and the faculty responded with enthusiasm." After students complete their course work and rotations, they select a thesis lab, usually by the end of the second year.

The environment at Washington University for graduate training in the biological and biomedical sciences is very attractive to prospective students. Stacia Peiffer, a PhD candidate in molecular genetics in the department of surgery, applied because she heard it was a "student-friendly, open program." John Seavitt, a PhD candidate in immunology, applied because he was impressed with the availability of financial support and the "receptiveness of students and faculty" during his interview. Martinez was drawn by the enthusiasm and openness to collaboration he saw: "It seemed to be a great place to train."

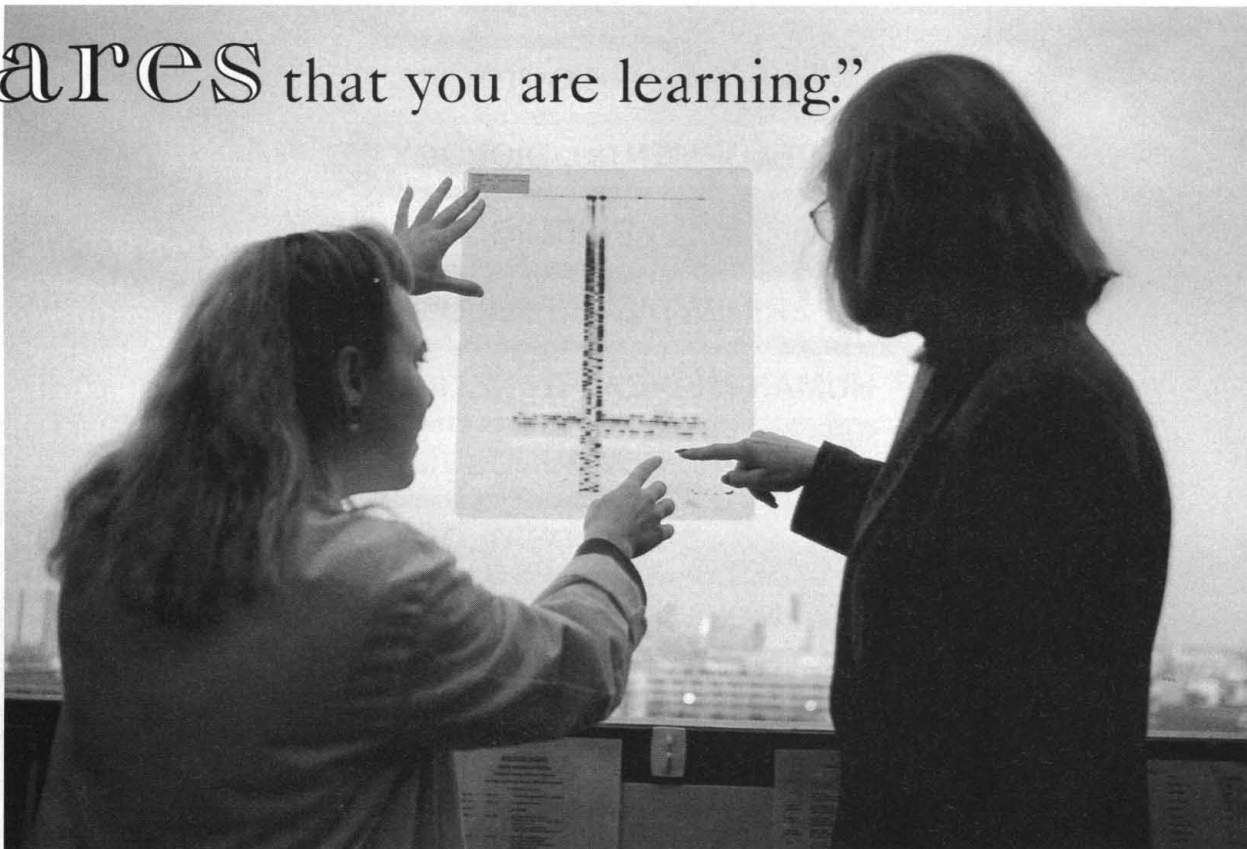
All report they enjoy the bracing intellectual atmosphere. Peiffer likes her freedom to "talk with anyone, get up to speed on almost any aspect of science, if you're willing to seek out the right people." Seavitt enjoys



Interdepartmental at Washington U. (left to right): Stacia Peiffer, John Seavitt, Jeffrey Sich, and Juan Martinez

continued...

“it’s much easier to learn
from someone who
cares that you are learning.”



Those are the words of a student who recently chose the Division of Biology and Biomedical Sciences at Washington University for graduate training. Even a short visit made it clear that graduate study at Washington University takes place in an atmosphere of unobstructed collaboration and collegial support. ♦ The 11 flexible, interdepartmental and interdisciplinary programs will allow you to follow your scientific interests wherever they lead. And, over 300 faculty members are available to provide the direction you need as you begin your career as a scientist. ♦ For more information and an application, contact us at: 1-800-852-9074, or e-mail: dbbs_office@wums.wustl.edu. Our WWW home page address is: <http://medinfo.wustl.edu/dbbs>.



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Graduate Programs in Biomedical Sciences

The University of Cincinnati • College of Medicine



Cincinnati is a cultural and recreational delight. Situated on wooded hills along the Ohio river, this beautiful and friendly city of 1.5 million offers a wide variety of activities and events. The University of Cincinnati with its 16 colleges and 36,000 students (including 6,000 graduate students) is only ten minutes from the vibrant downtown area and riverfront. Graduate students in the Biomedical Sciences have the best of both worlds: the resources of a major university combined with the excellent and innovative research and teaching resources of an outstanding and much smaller College of Medicine.

Graduate programs at the University of Cincinnati Medical College currently have over 400 Masters and Doctoral students in training programs with excellent research opportunities, and ranks in the top 10th percentile in size nationally. Faculty in the College of Medicine and associated Children's Hospital Medical Center have over 75 million research dollars, and a wide variety of research interests that provide graduate students exceptional opportunities for unique research projects and career training. Over 200 renowned scientists are potential graduate student mentors. Doctoral programs provide graduate students with paid tuition and fees, and up to \$16,500 in an annual stipend.

Cell Biology: Over 75 faculty offer exciting research opportunities ranging from basic cell structure and function to gene therapy of brain tumors.

Developmental Biology: Research opportunities in developmental molecular genetics, cell biology and teratology are offered by the 40 faculty in this interdisciplinary program.

Environmental Health Sciences: 100 faculty are involved in broad training programs on the effects of the environment on human health, including Environmental and Industrial Hygiene, Safety and Ergonomics, and Epidemiology and Biostatistics.

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Molecular, Cellular and Biochemical

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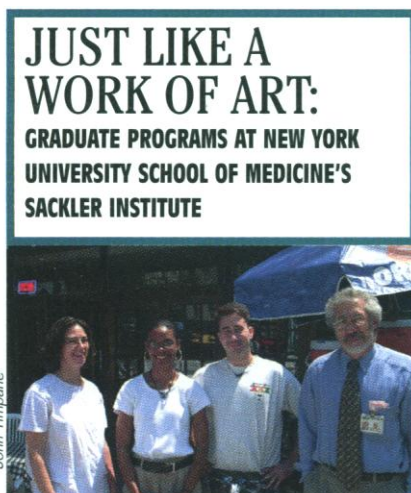
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visit our web page! <http://www.med.uc.edu/pages/infograd.htm>

the floor meetings in which students and faculty from immunology and pathology discuss contemporary data. Martinez likes his Tuesday morning lab meetings, at which he often gives presentations: "It's the best way to get others involved in what I'm doing, and to learn how to take constructive, positive criticism."

Students in the division also experience the interdisciplinary aspects of contemporary biological research. For example, the developmental biology program draws faculty from departments such as biology, pharmacology, genetics, and anatomy and neurobiology. This interplay allows students to employ molecular genetics in understanding key developmental processes from yeast to plants to human beings. The Lucille P. Markey Special Emphasis Pathway in Human Pathobiology introduces PhD students to the study of human disease. Because the university has been at the forefront of developing research partnerships with industry, students are exposed to applied research, offering an advantage to young scientists interested in careers outside academia. Perhaps the ultimate in interdisciplinary programs at Washington University is the widely respected MD/PhD program, which prepares physician-scientists for careers in research and clinical medicine.

Jeffrey Sich, director of admissions in the division of biology and biomedical sciences, says, "Breaking down barriers has been a part of the culture at Washington University for almost a century. Because of its unrivaled flexibility and interdisciplinary nature, students in our division begin their graduate training with few barriers in their way."



JUST LIKE A WORK OF ART:
GRADUATE PROGRAMS AT NEW YORK UNIVERSITY SCHOOL OF MEDICINE'S SACKLER INSTITUTE

Robin Stephens, Medeva Ghee, David Hersh, and Joel Oppenheim of NYU

About 175 PhD candidates join about 80 MD/PhD students and 600 medical students in a program affording students great freedom to cross departmental and disciplinary boundaries. At Christina's at Second Avenue and 33rd Street, we met Medeva Ghee, a fifth-year PhD student; David Hersh, a fourth-year MD/PhD; and Robin Stephens, a second-year PhD. Stephens and Hersh are also president and vice president, respectively, of the Sackler student council, actively involved in enhancing their peers' scientific and social opportunities.

Stephens: I am an immunologist, and I would like to study negative regulation of the immune response.

Ghee: I'm studying gene regulation, specifically how transcription factors interact with the tyrosine hydroxylase gene. It's a fun topic with potential clinical significance.

Hersh: My desire to pursue medicine came first. Research during my

undergraduate summers sparked my interest, and so I spent a year after graduation working as a technician at a lab at NYU. I found that I enjoyed the intellectual challenge and lifestyle enough to include it in my career goals.

Ghee: The great thing here is the diversity of research. The range of programs here and at the medical center broadens your opportunities for collaboration. If you're in biochemistry, you can speak with someone in neuroscience and microbiology. Somewhere you'll find someone knowledgeable about your interests.

Hersh: When I began graduate studies, I wasn't as aggressive in using those resources as I should have been. I had to learn how open it was and be comfortable in seeking help.

Stephens: At NYU the rules are flexible, especially in Sackler's open program. There haven't been any rigid rules about rotations, so students can make sensible decisions across department and disciplinary lines and with their own timing based on their own goals.

Hersh: The MD/PhD program is very supportive. We have a lot of help in making our big decisions, which is good, because the transitions are difficult.

Ghee: Joel Oppenheim [associate dean for graduate studies and director of the Sackler Institute of Graduate Biomedical Sciences] has really helped me in finding a direction. My lab is great, but I was left very much on my own, to find my own thesis project and design my own experiments. Initially, it was rough—adjusting to New York after life in Virginia was rough too.

Stephens: When Dr. Oppenheim came, he saw a big divide between PhDs and MD/PhDs. One of his first moves was to involve them in the Sackler Institute from the start. Everyone's invited, everyone's included. We're getting more integrated all the time, not only between PhDs and MD/PhDs but also among the different departments. And because it's not always easy to stay coherent with classmates and meet incoming students, we're trying to foster social support.

Ghee: The student council is a good source of job information. They put on career fairs and seminars on topics such as "What Can You be with a PhD?" They've brought in people from different professions, exploring alternative careers in science. That's important to me, because although I really want to do research, I don't necessarily want to limit my choices. My near goal is doing a postdoc, preferably in Paris. But I'm also really interested in a research career, perhaps with a cross-degree in business.

Hersh: Everyone has told me that a true 50/50 split between research and clinical medicine is nearly impossible. So I assume that I will eventually have to choose one to focus on, but that decision has to wait until I complete my clinical residency. I'm interested in the field of infectious disease, in particular pediatric infectious disease. I can see myself working for the Centers for Disease Control someday.

Stephens: I want to be a professor. Wish me luck getting a job. I want to do research, and on top of that, I want to teach. I think that teaching should really be taken seriously and merit in the classroom rewarded.

Ghee: With the job market so competitive now, people interested in science should get to know as much as they can about the professional life of scientists. Understand the highs and the lows.

Hersh: Find a good mentor, and find a program like this one, with supportive people.

Stephens: What you're working so hard for are those moments when you read, talk, and do experiments. It comes together, and you've created something that was not there before. Just like a work of art.

continued...

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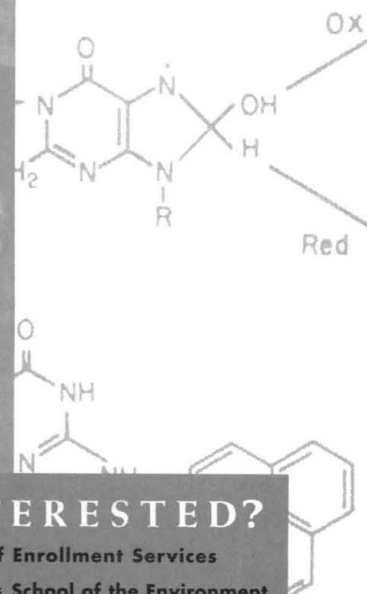
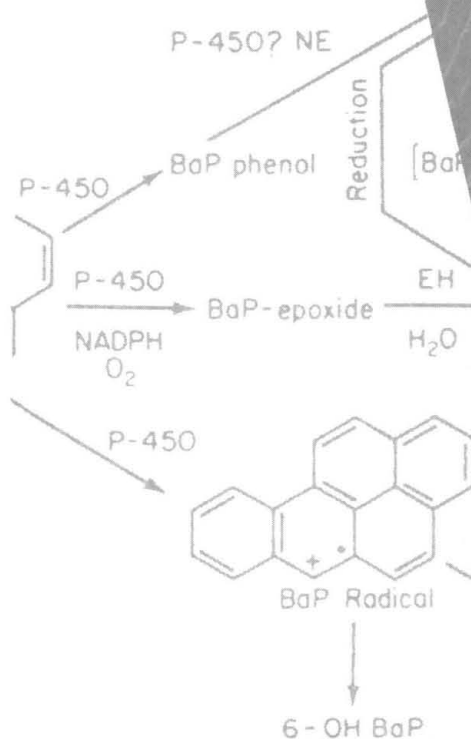
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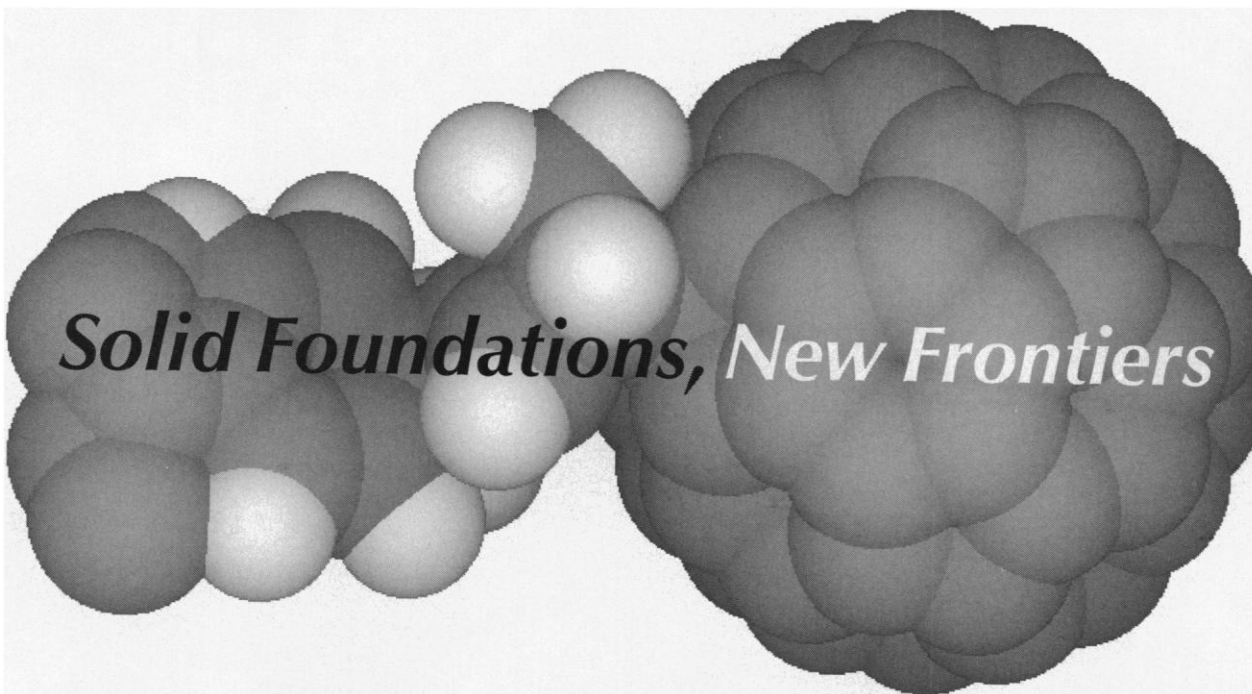
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PART III: EUROPEAN EMPLOYMENT FOR BSc AND MSc SCIENTISTS

In a poll published this March, the *Daily Telegraph* asked UK scientists two questions: were career opportunities better or worse than when they started working, and did they recommend a career in science to interested students? Respondents showed the paradox underlying European science when 70 percent agreed that prospects were worse yet 88 percent still said that they would advise students to "seek a career in science rather than elsewhere."

Job-seekers face a challenging market. As one scientist told us, "It wouldn't be responsible to pretend that the road for BSc and MSc scientists is easy at the moment—but if you're good and prepared to be flexible, the career is there for you." Below, two experts discuss the current state of European science education and employment.

Sandra Thomas

research fellow
science policy research unit
University of Sussex

The European employment market for BSc and MSc scientists is very competitive, but there are definitely opportunities and areas of need. Large companies have undergone the same kinds of structural changes that they have undergone in the States. And although the number of smaller firms (biotech firms, for example) is growing, that sector is nowhere near as strong as it is in the States, and it does not yet offer a comparably large base of employment.

Each year, the large pharmaceutical firms take in a number of BSc and MSc degree holders. The BSc scientists will receive training within the firm and work their way up into different departments, with some going back to school. MSc scientists are more likely to start at a higher level and may achieve project management status in some sectors. To have an edge in the job market, you appear to need three things. The first is youth, the second is good lab skills, and the third is an adjunct of the second: lab skills in an area of critical interest to the company (say, for example, genomics or bioinformatics—preferably both).

Recent reports suggest there is a gap between skills offered by higher education in

Europe and the demand from European industry. Key areas of need include engineering, fermentation, immunology, and information technology. One sees needs in bioinformatics, genomics (some firms, such as SmithKline Beecham, are making a big commitment), and combinatorial chemistry. Certainly there are opportunities for scientists to develop careers in the drug approval process, and there is some demand for scientists to advise patent firms in relation to biotech. These opportunities weren't there five years ago.

I would advise job candidates to make the most of their early years of career development. If you can, get lab experience. Having experience in a US lab is still seen as a considerable advantage, as it has been for some time. Experience in public sector labs is also of value. If you've worked at a good chromosome mapping research group and you have a good range of skills, you're likely to be quite attractive.

Internet Addresses for Institutions Mentioned:

HOFFMAN-LA ROCHE: <http://www.roche.com>

AMGEN: <http://www.amgen.com>

GENETICS INSTITUTE: <http://www.genetics.com>

NEXSTAR: <http://www.nexstar.com>

COLORADO: <http://beagle.colorado.edu/cgi-bin/porter.pl>

UCHSC: <http://www.hsc.colorado.edu/gs/gs/medsci.html>

WASHINGTON UNIVERSITY:

<http://medinfo.wustl.edu/dbbs>

NYU: <http://www.med.nyu.edu/Sackler/HomePage.html>

CENTRE FOR GENOME RESEARCH:

http://ed.ac.uk/edinfo/PUBS/PGRAD/CURRENT/SCIENG/Sci_Eng_05.html

It's also a good idea to be flexible about where you will work. Firms have become very globalized today, and they may move staff around to their different facilities on different continents. Relocation is a fact of life in today's market. Language doesn't seem to be an issue, since the language of science is still predominantly English. But no matter how tough the European career market is, the doors of industry are still very much open for those with a good sense of strategy and the skills to apply that strategy to drug development.

Richard Lathe

research professor
Centre for Genome Research
University of Edinburgh

(Professor Lathe gave his comments via a phone interview.)

The Centre for Genome Research provides PhD training in our own research areas, namely the understanding of how the genome makes the organism, principally using transgenic technology. Our program provides a small number of graduates with hands-on access to transgenic technology both via microinjection and via gene targeting in ES cells. Our research strengths combine top-class molecular biology with gene modification in experimental animals, together with sophisticated physiological analyses. Because doctoral courses are research based, new technology is rapidly imported.

Doctoral courses in the UK do not normally involve a formal taught component. There are no set lectures as there are in the United States or in master's courses (though this is set to change), but students work in research groups and attend seminars presented by internal and external speakers.

Backgrounds for our applicants are usually a 2i or 1 class BSc degree from a recognized UK university in a pertinent subject, e.g., genetics, zoology, biochemistry, pharmacology, and physiology. Applicants include those in possession of the attributes above, as well as individuals from the UK or abroad who have an inappropriate background or grades. Some of these are encouraged to pursue MSc studies before progressing to PhD training.

I foresee a big future at the interface between biology/medicine and computing/artificial intelligence. As for human skills, I would mention innate intelligence and the ability to seek out, ask for, and take advice and assistance from others. Other essential skills include computer experience and some facility in languages. This latter, while somewhat less important in the UK, is especially important in mainland Europe.

Regarding what makes students attractive, I feel the main element is being equipped in areas of current development and interest. Prospects for archaeology and philology graduates are limited; go for robotics and neuroscience. ■

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- Research facilities
- Enrollment information
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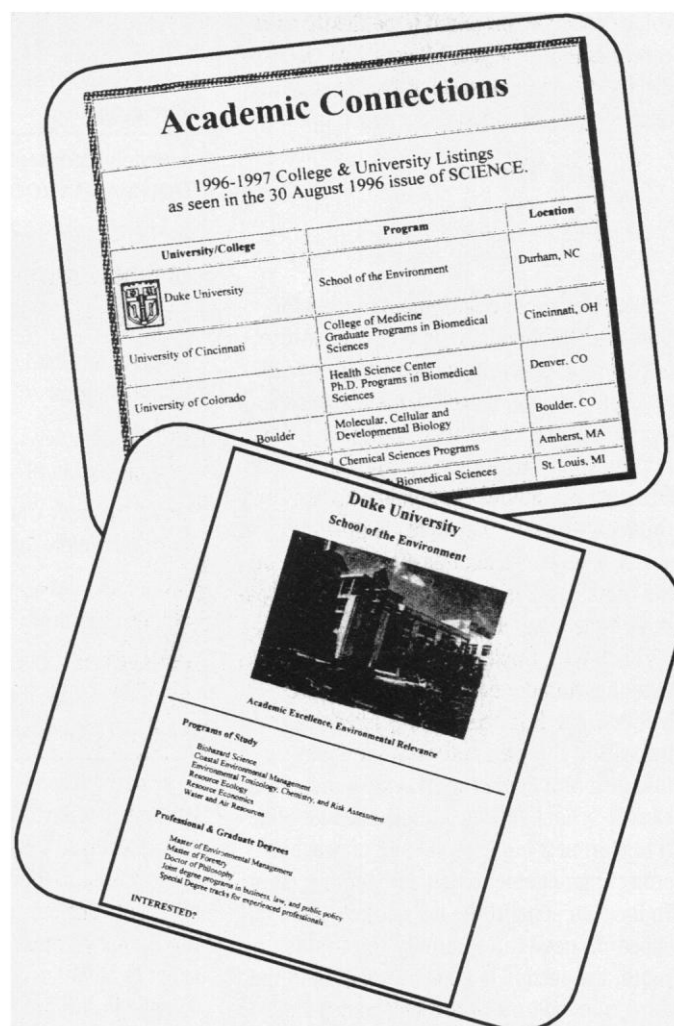
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- University of Colorado
- University of Colorado, Boulder
- University of Massachusetts, Amherst
- Washington University

Look for these, and other top universities and colleges on Academic Connections.

SCIENCE



Click on a graduate school from the listings found on Academic Connections College & University Listings. You'll find details on the university's graduate programs, enrollment policies, faculty, tuition, and other information.

ACADEMIC CONNECTIONS: <http://www.sciencemag.org>

Click the Academic Connections button on the SCIENCE Classifieds On-line SEARCH page

Career Opportunities in Australia!

If you are interested in working temporarily or long term in AUSTRALIA and you meet certain criteria under the Australian immigration laws, we can assist you in obtaining the visa required to gain entry into Australia. You may be eligible to live and work in Australia for up to four years or permanently, depending on your qualifications. Degreed scientists have excellent job opportunities "down under" and we can help get you there! Contact **Ken Onesty** at **Australian Gateways, Inc., 210 Little Falls St., Ste. 201, Falls Church, VA 22046, (703) 538-5344, e-mail at compuserve 104666,2601.**

AMERICAN UNIVERSITY OF BEIRUT Beirut, Lebanon FACULTY OF MEDICINE Academic Appointments

Department of Physiology: The Department of Physiology at the American University of Beirut invites applications for a faculty position at the Associate or Full Professor level in Neurophysiology. Applicants must demonstrate teaching experience and should have independent research expertise in the field of neurophysiology.

Department of Biochemistry: The Department of Biochemistry at the American University of Beirut invites applications for the position of Professor and Chair of the Department of Biochemistry. The candidate must have a Ph.D. or M.D. with training in biochemistry, and have an outstanding record of scientific accomplishments, research funding, graduate and medical education, and evidence of administrative and leadership ability.

For confidential consideration, please submit a comprehensive curriculum vitae and cover letter to:

**Dean, Faculty of Medicine and Medical Center
American University of Beirut
850 Third Avenue, 18th Floor
New York, NY 10022-6297**

**DEADLINE FOR RECEIPT OF APPLICATIONS IS
NOVEMBER 15, 1996.**

The American University of Beirut is an Affirmative Action/Equal Opportunity Employer.

U.S. passports are presently invalid for travel to, in or through Lebanon, and for residence in Lebanon, by order of the Department of State, and therefore applications from individuals who would travel to or reside in Lebanon on a U.S. passport cannot at this time be considered.



SmithKline Beecham
Laboratoires Pharmaceutiques



SmithKline Beecham, one of the world's leading pharmaceutical companies, is dedicated to the discovery and development of drugs which promote human health. The Cardiac Research Center, which is located near Rennes, in Western France, is fully integrated in the worldwide R & D organisation and is engaged in basic research and drug discovery programmes aimed at identifying novel therapeutics for cardiac diseases. To expand our expertise, we have immediate opening for the following positions :

Assistant/associate Director in Molecular Biology

Leading a group of scientists engaged in molecular biological research aimed at discovering novel, genomically derived gene targets for novel drug development, the incumbent will be responsible for initiation and management of all aspects of this research including cloning, expression, localization and other molecular biology related techniques. The position requires intense interactions with SmithKline Beecham transnational functions of the Genomic initiatives, biopharmaceutics, pharmacology and other disciplines.

Qualified candidates must hold a PhD degree in Molecular Biology, Cellular Biology, or related fields with 5-10 years of experience and a strong track record of publication of high quality peer reviewed papers. Published work will demonstrate strong experience in technologies such as DNA and RNA isolation and processing, cloning, Southern, Northern, sequencing, constructs, differential gene expression, in situ hybridization, two hybrid system, phage display methods and experience in yeast/mammalian cell culture. Experience in mouse genetics, transgenic, or knockout models of diseases would be advantageous. Excellent oral and written presentation skills in English are essential, along with good knowledge of computer-based scientific applications. Knowledge of French is desirable but not essential.

Investigator in Molecular Biology

As a core contributor in laboratory research, the incumbent will have responsibility for identifying molecular targets and/or new technical approaches necessary for the development of exploratory research and feasibility studies.

Qualified candidates must hold a PhD in Molecular Biology, Cellular Biology, or related fields with 2-3 years of postdoctoral experience and published results in high quality peer reviewed journals. Published work will demonstrate practical experience in technologies such as cloning, RT-PCR, Southern blots, Northern blots, sequencing constructs, cell transfection, differential gene expression, and experience in yeast/mammalian cell culture. Experience in biocomputing tools to facilitate the discovery of novel genes would be advantageous. Superior oral and written presentation skills in English are a requirement. Knowledge of French is useful but not essential.

Applicants should send a letter of interest, CV, photo and the names of two referees to SmithKline Beecham, Service recrutement, 6 Esplanade Charles de Gaulle 92731 Nanterre cedex, France.

POSITIONS OPEN

DIRECTOR OF THE CENTER OF BIOENGINEERING University of Washington

The University of Washington seeks a candidate for the position of Director of the Center for Bioengineering. The occupant will hold a **TENURED PROFESSORIAL** rank in the Center for Bioengineering, which is in both the College of Engineering and the School of Medicine. The Director will lead actively to further develop the research and teaching programs of the Center. The Center for Bioengineering has active research programs in biomaterials, biomechanics, cellular bioengineering, biomedical systems, molecular bioengineering, biomedical imaging, and biomedical instrumentation. Its graduate program serves more than 100 students of whom the majority are pursuing doctoral degrees. Its undergraduate program serves a small number of superb students who intend to enter either M.D. or M.D./Ph.D. programs. The Center has 30 core faculty, 35 adjunct faculty, and 20 affiliate faculty. The Center for Bioengineering has strong collaborative ties with colleagues in the School of Medicine and the College of Engineering.

Nominations and applications should be submitted to:

**Professor Yongmin Kim, Chair
Bioengineering Director Search Committee
Department of Electrical Engineering
University of Washington
Box 352500
Seattle, WA 98195-2500**

Review of applications will begin on September 1, 1996, and applications will be received until the position is filled. Applications should include a curriculum vitae, a statement of interests and goals, and the names of five references.

The University of Washington is building a culturally diverse faculty, and strongly encourages applications from female and minority candidates. The University is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF CALIFORNIA SANTA BARBARA Department of Molecular, Cellular & Developmental Biology Interdepartmental Graduate Program in Biochemistry/Molecular Biology

We invite applications for two tenure-track **FACULTY POSITIONS** in our expanding research programs in biochemistry; molecular, cellular and developmental biology; and molecular marine biology. Research expertise is sought in any of the following three areas: (1) protein receptors and signalling; (2) basic cellular/molecular biology or biomolecular materials research using marine model systems; and (3) prokaryotic molecular microbiology. One position is to be filled at the Assistant Professor level, while the other could be tenured, depending upon qualifications of the applicant. The Ph.D. degree plus relevant postdoctoral research experience are required. The appointees will be expected to lead vigorous independent research programs and to participate effectively in undergraduate and graduate teaching. Submit curriculum vitae, selected reprints, a brief description of previous and anticipated research, and arrange to have at least three letters of reference sent to: **Faculty Search Committee, Department of Molecular, Cellular & Developmental Biology, University of California, Santa Barbara, CA 93106.** Review of applications will begin December 1, 1996, and will continue until positions are filled. Email: http://lifesci.ucsb.edu/MCDB/mcddb_home.html.

University of California, Santa Barbara is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION available in the Department of Psychology of Virginia Commonwealth University for an individual with research and training interests in behavioral pharmacology. Candidates should have a Ph.D. degree with research experience in laboratory-based studies of behavioral effects of alcohol or drugs of abuse in human subjects. Laboratory space and collaborative research opportunities will be provided at the Medical College of Virginia Health Sciences Campus. Appointment will be in a tenurable position with salary and rank based on level of previous experience; senior scientists are also invited to apply. Send letter describing research plans, curriculum vitae, and three letters of recommendation to: **Dr. Robert L. Balster, Department of Psychology, Box 842018, Virginia Commonwealth University, Richmond, VA 23284-2018.** *Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Employer. Women, minorities, and persons with disabilities are encouraged to apply.*

POSITIONS OPEN

Drake DRAKE UNIVERSITY

ENVIRONMENTAL SCIENTIST: Pending final budget approval, Drake University seeks a teacher/scholar to develop and direct an undergraduate Environmental Science and Policy program that will provide an integrative ecological perspective within a liberal arts setting. This is a tenure-track position with rank and salary dependent on experience and qualifications. Candidates should have the Ph.D. degree, postdoctoral experience, a record of teaching excellence, an active research agenda, and a strong commitment to undergraduate research. A physical, geographical, or life science background is needed with an interdisciplinary orientation that permits developing courses, projects, and internships appropriate to environmental concerns. Familiarity with GIS and/or remote sensing technology is helpful. Applicants should send a letter of application, curriculum vitae, evidence of teaching effectiveness, research goals, relevant reprints, and the names, addresses, and telephone numbers of three references. Mail to: **Ron Troyer, Dean, College of Arts and Sciences, Drake University, Des Moines, IA 50311.** Review will begin October 1, 1996. *Drake University is an Equal Opportunity Employer.*

Dorothy Otto Kennedy Endowed Professor in Pharmaceutical Sciences. The Washington State University College of Pharmacy, Department of Pharmaceutical Sciences is inviting applications and/or nominations for an annual, tenured appointment at the **PROFESSOR** level. A Ph.D. and/or M.D. and research emphasis in immunology/immunotoxicology is required with desired experience in the effects of alcohol on the immune system. The candidate must have a strong extramurally funded research program and a national/international reputation. Duties include sustaining an independent extramurally funded research program, taking an active role in the development of an alcohol and immunology research core in the College and the interdepartmental Alcohol and Drug Abuse Program, teaching and directing graduate students in the Pharmacology/Toxicology graduate program, and providing limited instruction to pharmacy students in the professional doctorate program. Application deadline is October 15, 1996, or until the position is filled. Applications should include a curriculum vitae, the names and addresses of three references, and a statement of research interests and professional goals. Send nominations and applications to: **Thomas R. Jerrells, Ph.D., Chair, Search Committee, College of Pharmacy, Washington State University, Pullman, WA 99164-6510.** Telephone: 509-335-2139; Email: jerrells@mail.wsu.edu. *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.*

PENN STATE CHEMISTRY DEPARTMENT FACULTY POSITIONS

Several **TENURE-TRACK** faculty positions are available starting fall 1997. Our primary teaching needs are in organic and biological chemistry. We are committed, however, to hiring the best person irrespective of area. We encourage research proposals that interface with other disciplines such as biological, materials, and environmental sciences, as well as interests in the more traditional areas of chemistry. The appointees are expected to establish an exceptionally strong and highly visible research program that incorporates excellence in undergraduate and graduate education. A complete résumé, a synopsis of research plans, and three letters of recommendation are required. Review of applications will begin October 2, 1996 and will continue until the positions are filled. Send information to: **Chairman of the Search Committee, Box S, Department of Chemistry, 152 Davey Laboratory, Penn State University, University Park, PA 16802.** *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

The Department of Biochemistry, Duke University Medical Center invites applications for a **FACULTY** position in the area of structural biology. The candidates will be expected to establish strong, independent research programs and to participate in departmental teaching. Send résumé, summary of research interest, and three letters of reference to: **Christian R. H. Raetz, Department of Biochemistry, Duke University Medical Center, Durham, NC 27710.** *Duke University is an Equal Opportunity/Affirmative Action Employer. Consideration of applications will commence in October 1996.*

POSITIONS OPEN

CANCER CENTER DIRECTOR

The University of California, San Diego is seeking a senior cancer researcher at the Professorial level (with tenure) with strong scientific and leadership skills to serve as **DIRECTOR** of its NCI designated Cancer Center. The UCSD faculty conducts a variety of research programs related to cancer, many of which are organized under the aegis of the Cancer Center, an Organized Research Unit within the University partially supported by a federal grant. The Director's major responsibilities will be to: 1) Serve as Principal Investigator of the Cancer Center support grant; 2) Oversee and coordinate the Center's basic science, translational, and cancer control and epidemiology research programs; 3) Manage the interface of the clinical enterprise with the research programs of the Center to maximize translational and clinical research opportunities; 4) Coordinate the efforts of the Cancer Center Foundation to raise funds to support these programs; and 5) Represent the research programs of the Cancer Center to the San Diego lay and scientific community. Applicants for this position (M.D. or Ph.D.) should have a strong background in basic science, translational or clinical research in a discipline directly related to cancer, good communication and leadership skills, and demonstrated management expertise in the organization and operation of research programs. Rank and salary commensurate with experience and qualifications, based on established UCSD salary scales. Interested parties should submit a curriculum vitae and names/addresses of referees by September 20, 1996, to: **Drs. Stephen Wasserman and Webster Cavenue, University of California, San Diego, Department of Medicine, 402 Dickinson Street, Suite 380, San Diego, CA 92103-8811.** *The University of California, San Diego is an Affirmative Action/Equal Opportunity Employer. We encourage applications from women and minorities.*

The Chemistry Department at Michigan State University seeks to fill two **TENURE-TRACK** positions in organic chemistry. While one position will be filled at the assistant professor level, the second position can be filled at either the assistant or a more senior level. To be considered for a senior level appointment, candidates must have a recognized track record of excellence in research and teaching. Outstanding candidates in all areas of organic chemistry are encouraged to apply. Candidates are expected to establish a vigorous research program and pursue excellence in research and teaching at both the graduate and undergraduate level. Applicants must hold a Ph.D. in chemistry or a related field, and should send a current curriculum vitae, a list of publications, and research plans to: **Gerald T. Babcock, Chair, Department of Chemistry, Michigan State University, East Lansing, MI 48824.** Applicants should also arrange to have three letters of recommendation submitted on their behalf. Review of applications will begin 31 October, and will continue until the positions are filled. *Women and minority candidates are especially encouraged to apply. Michigan State University is an Affirmative Action/Equal Opportunity Institution.*

BOSTON UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF OTOLARYNGOLOGY HEAD AND NECK SURGERY Director of Molecular Biology and Basic Head and Neck Cancer Research

The candidate is expected to pursue and develop basic research in molecular biology. Strong emphasis on developing clinical applications of molecular biology research is required. Qualified candidate should possess a Ph.D. and have a solid background in cancer molecular biology. Evidence of aptitude for self-motivated research development is an advantage.

Send curriculum vitae to: **Nabil Fuleihan, M.D., Chairman, ORL-HNS D616, Boston Medical Center, One Boston Medical Center Place, Boston, MA 02118.**

Two tenure-track **FACULTY POSITIONS** available—open rank: Qualifications include a Ph.D. or M.D. degree; three to four years of postdoctoral experience; evidence of significant research accomplishments; interest in teaching professional and graduate students; plus the ability to attract extramural funding. Preference will be given to applicants in the area of eukaryotic molecular biology. Applicants should send their curriculum vitae, statement of research interests, and three letters of reference to: **Dr. John Fain, Department of Biochemistry, University of Tennessee, Memphis, TN 38163.** *The University of Tennessee is an Equal Employment Opportunity/Affirmative Action/Title VI/Title IX, Section 504/ADA/ADEA Employer.*



Developmental Neurobiologist

The Mental Health Research Institute and the Department of Psychiatry of the University of Michigan are seeking candidates for a tenure-track position in Child Psychiatry and Developmental Neurobiology to be jointly appointed at the Assistant Professor/Assistant Research Scientist level. The appointee will develop an independent research program in the area of nervous system development and childhood mental disorders. Applicants should provide a brief statement of research interests and future plans, a curriculum vitae with bibliography, and three letters of reference. Physician scientists with advanced training in molecular genetics and neurobiology will be given preference. Deadline: October 31, 1996. Send applications to: **Dr. Stanley J. Watson, Chair, Child Psychiatry/Developmental Neurobiology Search Committee, Mental Health Research Institute, University of Michigan, 205 Zina Pitcher Place, Ann Arbor, MI 48109-0720.** *The University of Michigan is an equal opportunity/affirmative action employer and specifically encourages applications from qualified women and minorities.*

The University of California, San Diego, Department of Chemistry and Biochemistry invites applications for several tenure track and tenured faculty positions in biochemistry at the Assistant or Associate Professor level. Candidates must have a Ph.D. and a demonstrated ability for creative research and teaching at the undergraduate and graduate levels. The committee is interested in receiving applications from chemists, biochemists, structural biochemists, and molecular biologists. Applicants will be considered in all areas, but the committee is particularly interested in applicants with an expertise in three areas: macromolecular structure, cell proliferation and growth control, and RNA. Salary commensurate with qualifications and based on University of California pay scale. Positions subject to availability of funds. Candidates should send a curriculum vitae, a list of publications, reprints of up to five representative papers, a summary of research plans, and names and addresses of three references to: **Chair, Biochemistry Search Committee 3-277, University of California, San Diego, Department of Chemistry and Biochemistry - 0332, La Jolla, CA 92093-0332.** The deadline for applications is October 15, 1996, but until positions are filled all applications received will be assured full consideration. *The University of California is an equal opportunity/affirmative action employer.*

Roche

DEDICATED TO THE FUTURE OF SCIENCE.

Our dedication to the future is seen in our ongoing commitment to research, development and manufacture of innovative pharmaceutical products worldwide. We currently have these exciting opportunities available for highly motivated, experienced, scientific professionals to join us in our United States Headquarters in Nutley, New Jersey.

METABOLIC DISEASES

This highly-motivated research team focuses on the development of drugs to treat non-insulin-dependent diabetes mellitus (NIDDM) and obesity. Genetics, genomics, and bioinformatics form the basis for identifying disease-linked genes. Through a broad array of technologies, this team explores the function and biological roles of corresponding gene products in disease initiation and progression, identifies novel drug targets and develops innovative therapeutics.

BS/MS SCIENTIST-BIOCHEMISTRY

Using innovative and state-of-the-art approaches, the successful candidate will purify and characterize native and recombinant proteins and will provide expertise in protein biochemistry to project teams. To qualify for this challenging position, you must have a BS or MS in biochemistry or biology, with 3-5 years experience in protein biochemistry. You must also show strong skills in writing, presentation, and interpersonal communications. (Respond to: Lynn Harac, Dept. LH336KY)

BS/MS SENIOR SCIENTIST-MOLECULAR BIOLOGY

If you're selected, you will support drug discovery efforts through the cloning and characterization of various disease-linked genes. This will require you to know and use biological techniques such as cDNA cloning; heterologous protein expression in E. coli, baculovirus, and mammalian cells; site-directed mutagenesis; western, northern, and southern blot analysis; immunoprecipitations; and signal transduction studies. To be considered for this exciting position, you must have a BS or MS in biology or molecular biology and several years experience that includes background in molecular and cellular biology, cDNA cloning, recombinant protein expression, signal transduction and tissue culture. (Respond to: Stella Strazdas, Dept. SS526JK)

We offer an attractive salary and benefits package in a state-of-the-art work environment. For consideration, please send your resume with salary requirements (indicating appropriate department code in the address) to: **Staffing Dept. _____, Hoffmann-La Roche, Nutley, New Jersey 07110-1199.** No phone calls please. **PRINCIPALS ONLY.** We are an equal opportunity employer.

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POSITIONS OPEN

EVOLUTION OF VIRULENCE GLASER DISTINGUISHED VISITING PROFESSORSHIP IN BIOLOGICAL SCIENCES

Applications are solicited from distinguished scientists interested in visiting the Department of Biological Sciences at Florida International University (FIU), the State University of Florida at Miami. For the 1997 **GLASER VISITING PROFESSORSHIP** we are specifically interested in scientists expert in the area of Evolution of Virulence. The Glaser Professor will offer a short course (10 lectures over a two to three week period sometime during the Spring 1997 semester), give a departmental seminar, and interact with faculty and students. Remuneration is \$8,000 for travel, lodging, and honorarium. FIU is a growing, dynamic public university with 28,000 students. The Department of Biological Sciences has 36 faculty and 70 graduate students (M.S. and Ph.D.). Apply with letter of intent, brief course outline, résumé, and reprints of three relevant publications before 10 October 1996, to: **Dr. Philip Stoddard, Glaser Committee Chair, Department of Biological Sciences, Florida International University, Miami, FL 33199.** *Women and minorities are especially encouraged to apply. FIU is an Affirmative Action/Equal Opportunity Employer.*

CHEMICAL OCEANOGRAPHER

The Institute of Marine Science, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks requests applications for a tenure-track **FACULTY POSITION**. The successful applicant will be expected to establish a vigorous, externally-funded research program, to supervise graduate students, and to teach chemical oceanography and other graduate or undergraduate courses in marine sciences or chemistry. Applicants for any rank will be considered, but at least one year of postdoctoral experience is required. Information on the Institute of Marine Science can be found at <http://www.sfos.alaska.edu:8000/>. Applicants should submit a curriculum vitae, which includes a description of research and teaching experience and recent research funding, a one-page statement of current and future research interests, and the names of three references to: **Dr. Susan Henrichs, Institute of Marine Science, University of Alaska Fairbanks, P.O. Box 757220, Fairbanks, AK 99775.** Applications should be submitted by November 15, 1996. *University of Alaska Fairbanks is an Equal Opportunity/Affirmative Action Employer.*

Pending approval and funding, The Department of Biology at The University of Tampa invites applications for a **TENURE-TRACK** position, beginning in August 1997, to teach Marine Botany, Biology of Plants, Introductory Biology for majors and Biological Science for non-majors. Experience in environmental science is desirable. The department is interested in attracting a broadly trained botanist to complement the marine and environmental science faculty in the department. The candidate is expected to engage in research activities that involve undergraduates. Ph.D. required, prior teaching and research experience with undergraduates desirable. Send curriculum vitae, statement of teaching philosophy, and research interests, official transcripts, and the names, addresses, and telephone numbers of three references who are willing to provide letters of recommendation. Review of applications will begin November 1, 1996, and continue until the position is filled. All materials should be addressed to: **Botany Search c/o Human Resources, The University of Tampa, 401 W. Kennedy Boulevard, Tampa, FL 33606-1490.** Email: <http://www.utampa.edu>. *The University of Tampa is an Equal Opportunity/Affirmative Action Employer.*

CORNELL UNIVERSITY

The Department of Chemistry is searching for a tenure-track faculty member at the **ASSISTANT PROFESSOR** level. Outstanding candidates in the area of **organic chemistry, especially polymer chemistry**, will be considered. A Ph.D. degree is required, and postdoctoral experience is preferred. The successful applicant will be expected to carry out an effective research program and teach both undergraduate and graduate organic chemistry courses. Applicants should submit a curriculum vitae, publication list, summary of research experience, graduate transcript, and a brief statement of research plans. These materials and three letters of recommendation should be sent to: **Chair, Organic Search Committee, Department of Chemistry, Baker Laboratory, Cornell University, Ithaca, NY 14853-1301**, and be received no later than November 15, 1996. *Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator.*

POSITIONS OPEN



EVOLUTIONARY BIOLOGIST

The Department of Biology at Swarthmore College invites applications for a tenure-track appointment at the **ASSISTANT PROFESSOR** level, to begin September 1997. We seek an evolutionary biologist who is committed to combining teaching and research at a small liberal arts college. Teaching responsibilities include a broadly based intermediate-level course in evolution, an advanced seminar in a major area within evolutionary biology, and participation in the Department's introductory biology sequence. The successful candidate will be expected to establish an active research program that will provide opportunities for undergraduate participation. A Ph.D. is required; postdoctoral research experience and teaching experience are desirable. Interested individuals should submit a curriculum vitae along with statements of teaching and research interests, and arrange to have three letters of recommendation sent by October 15, 1996, to: **Dr. Rachel Merz, Department of Biology, Swarthmore College, Swarthmore, PA 19081-1397.**

Swarthmore College is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

THE ERNA AND JAKOB MICHAEL VISITING PROFESSORSHIPS 1997/98 THE JOSEPH MEYERHOFF VISITING PROFESSORSHIPS 1997/98 THE ROSIE AND MAX VARON VISITING PROFESSORSHIPS 1997/98 THE MORRIS BELKIN VISITING PROFESSORSHIP 1997/98

The Weizmann Institute of Science, Rehovot, Israel, offers a limited number of Visiting Professorships in the Natural and Exact Sciences.

The Visiting Professorships are intended for candidates already holding the rank of Full Professor or equivalent and will be for a duration of two months to one year.

Deadline for submission of completed applications is: December 31, 1996.

For further information or application forms, please contact: **The Academic Secretary, The Weizmann Institute of Science, Rehovot 76100, Israel. Telex: 972-8-381300; FAX: 972-8-471667; Email: rsmarjor@weizmann.weizmann.ac.il.** Applications and information are also available on the Internet at: <http://www.weizmann.ac.il>.

THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER FACULTY POSITIONS

The Department of Molecular Biology and Oncology at the University of Texas Southwestern Medical Center invites applications for tenure-track faculty positions at the level of **ASSISTANT OR ASSOCIATE PROFESSOR**.

We are seeking interactive individuals to join a new department with strengths in developmental biology, molecular biology, and genetics. Successful applications should be capable of establishing a vigorous independent research program and should be prepared to participate in teaching in one of several active graduate programs. Scientists working in the areas of signal transduction, gene regulation, differentiation, and development are particularly encouraged to apply.

Applicants should submit a curriculum vitae containing a brief summary of past research accomplishments, a statement of future objectives, and names of three references to: **Eric N. Olson, Chairman, Department of Molecular Biology and Oncology, University of Texas, Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235-9148.** *An Equal Opportunity Employer.*

The Department of Biochemistry, Duke University Medical Center invites applications for a faculty position at the level of **ASSISTANT PROFESSOR**. We welcome candidates in all areas. The candidates will be expected to establish strong, independent research programs and to participate in departmental teaching. Send résumé, summary of research interest, and three letters of reference to: **Christian R. H. Raetz, Department of Biochemistry, Duke University Medical Center, Durham, NC 27710.** *Duke University is an Equal Opportunity/Affirmative Action Employer. Consideration of applications will commence in October 1996.*

POSITIONS OPEN

HAVERFORD COLLEGE

The Biology Department seeks a tenure-track faculty member at the **ASSISTANT PROFESSORIAL** rank for the fall of 1997. The successful applicant will teach introductory and advanced courses in the Biology Department on the structure and function of macromolecules. S/he will receive teaching credit for maintaining an active research program engaging undergraduate students in the study of an important cell biological problem at the macromolecular level. Some topics of interest include, but are not limited to, protein structure, protein:nucleic acid interactions, and biochemical aspects of RNA processing. S/he will also be expected to participate actively in the teaching of non-scientists and of advanced undergraduate students enrolled in the interdisciplinary Area of Concentration in biochemistry and biophysics. Postdoctoral research experience is required. Send curriculum vitae, research plans, teaching interests, and three reference letters by November 15, 1996, to: **Dr. Sid Perloe, Chair of the Biology Search Committee, Haverford College, Haverford, PA 19041.** Questions about the position can also be directed to: **Dr. Philip Meneely in the Department of Biology.** Email: pmeneely@haverford.edu; or Telephone: 610-896-4996.

Haverford College, located 10 miles west of Philadelphia, is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are especially encouraged to apply.

TEACHING OVERSEAS

The Department of Biology at the American University of Beirut (AUB) in Beirut, Lebanon, invites applications for faculty positions in the fields of 1) marine biology and 2) plant taxonomy (with experience in plant ecology), starting October 1, 1997. The completed doctorate is required, with postdoctoral teaching and/or research experience required. Rank will normally be **ASSISTANT PROFESSOR**; usual contract is for three years. The Department offers both bachelor's and master's degrees, with a research thesis required for the master's degree. Candidates will be expected to engage in research, to be qualified to teach on the undergraduate and graduate levels, and to be qualified to supervise student research and thesis writing. The language of instruction is English.

Interested candidates should send a letter of application (with a copy to the Director of Personnel, c/o AUB New York Office) and a curriculum vitae, and should arrange for three letters of reference to be sent before November 15, 1996, to: **Dean, Faculty of Arts and Sciences, American University of Beirut, c/o New York Office, 850 Third Avenue, 18th Floor, New York, NY 10022-6297, USA.** Incomplete and/or late applications will not be considered.

American University of Beirut is an Equal Opportunity/Affirmative Action Employer.

U.S. passports are presently invalid for travel to, in, or through Lebanon, and for residence in Lebanon, by order of the Department of State, and therefore applications from individuals who would travel to or reside in Lebanon on a U.S. passport cannot at this time be considered.

ASSISTANT PROFESSOR VETERINARY MOLECULAR BIOLOGY

Applications are invited for a tenure-track **ASSISTANT PROFESSOR** position. This position is 90% research, 10% instruction, and is supported by a generous start-up package, including technical support. Salary range is \$42,000 to \$50,000 based on experience and qualifications. Required qualifications: Ph.D. or Ph.D./D.V.M. in a biomolecular discipline, postdoctoral experience, and potential to establish, or evidence of, a competitive, independent research program. Areas of research interest for this position broadly encompass molecular and cellular models of infectious disease of viral or bacterial origin and the study of host responses to these agents. Interested applicants should send curriculum vitae, selected reprints, a summary statement concerning research plans and grant proposals, and arrange for three letters of reference to be sent to: **Chair, Search Committee, Veterinary Molecular Biology, Montana State University, Bozeman, MT 59717-3610.** Screening will begin November 1. *ADA/Equal Opportunity/Affirmative Action/Veterans Preference.*

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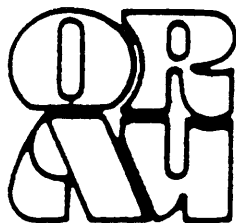
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Oak Ridge Associated Universities PRESIDENT AND CHIEF EXECUTIVE OFFICER

The Board of Directors of Oak Ridge Associated Universities (ORAU) invites nominations and applications for the position of President and Chief Executive Officer. ORAU is a not-for-profit [501 (c) 3] corporation; a multi-university consortium; and a U.S. Department of Energy (DOE) management and operating contractor located in Oak Ridge, Tenn. ORAU serves government, academia, and the private sector in science and technology. ORAU conducts programs with and for its sponsoring institutions and manages the Oak Ridge Institute for Science and Education (ORISE) for DOE. ORISE undertakes national and international programs in education, training, environmental and health sciences, and technical analyses and assessments.

Responsibilities of the President and CEO include: Directing all programs, facilities and personnel of the corporation; exercising strong leadership and direction in pursuing new initiatives and expanding in new directions; exercising overall accountability for successful cooperative and collaborative activities and relationships with and among sponsoring institutions; representing ORAU to DOE, federal agencies, industry, foundations, universities, and other organizations (including non-U.S. entities, when appropriate); and directing the strategic planning enterprises of the corporation.

The successful candidate will have an appropriate combination of the following qualifications: Doctorate in science, engineering, medicine or related field; experience as a faculty member and/or familiarity with university administration; experience in research or research planning and administration; experience with government agencies, including funding procedures and proposal preparation; extensive successful management and business experience, including personnel, fiscal, and program responsibilities; working familiarity with private foundations and other 501 (c) 3 organizations; and a proven record of strong leadership. All candidates must be a U.S. citizen and have exceptional oral/written communications and interpersonal skills.

The position is currently available. The Search Committee will accept applications until the position is filled and will begin reviewing applications September 30, 1996. Salary will be commensurate with education and experience. Starting date is negotiable. Applications should include a letter stating an interest in the position, a complete resume, and names and addresses of at least three references. Nomination letters should include the complete name, title, and address of the nominee. Applications will be confidential.

Send applications and nominations to:

Anthony K. Hyder, Chair, ORAU Search Committee
Center for Continuing Education, University of Notre Dame
P.O. Box 1008, Notre Dame, IN 46556-1008.

ORAU is an Equal Employment Opportunity/Affirmative Action Employer.

Scientist/Sr. Scientist

ZymoGenetics, a Seattle-based biotechnology company located in the historic Lake Union Steam Plant, is looking for a Scientist/Sr. Scientist to join our Research Information Group.

This position will compile/review disparate genetic/phenotypic sources of disease-related and structure-based information relevant to bioinformatics and molecular biology. Working closely with the Biomolecular Informatics department, you will discover novel proteins by database mining. Qualified candidates will have a Ph.D. or M.D. and 2-5 years of experience. Current search skills utilizing literature/internet-accessible data and broad biological knowledge are essential.

As a subsidiary of Novo Nordisk A/S, the world's largest manufacturer of insulin, ZymoGenetics offers an exciting environment characteristic of a small research and development company, along with the scope and stability of a large pharmaceutical corporation. We also offer intellectual challenge, state-of-the-art facilities and a generous benefits package. Please apply by sending your resume or CV, noting reference # 12N296, to: *ZymoGenetics, Inc., Human Resources, 1201 Eastlake Avenue East, Seattle, WA 98102.* ZymoGenetics is committed to Equal Opportunity and Diversity.

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PRIZE



POTAMKIN PRIZE FOR RESEARCH IN PICK'S, ALZHEIMER'S AND RELATED DISEASES

A prize of \$100,000 will be awarded by the American Academy of Neurology to a person(s) in recognition of major contributions to the understanding of the causes and the prevention, treatment, and ultimately the cure for Pick's, Alzheimer's and related diseases.

Candidates may be nominated on a world-wide basis from any of the biological disciplines including bio-chemistry, molecular biology, molecular genetics, pharmacology, immunology, physiology, cell biology, neuropathology or epidemiology.

A nomination application, nominating letter citing the scientific accomplishments of the candidate in detail, two supporting nominating letters, a curriculum vitae, and up to six (6) selected reprints in nine (9) complete sets are required.

The deadline for receipt of materials is November 1st, 1996. No nomination will be considered unless it is complete. The awardee(s) must be present for the AAN Scientific Program, at its annual meeting in Boston, Massachusetts on Tuesday, April 15, 1997.

Request application and submit nomination to:
**Potamkin Prize for Research in Pick's, Alzheimer's
and Related Diseases**

American Academy of Neurology
2221 University Avenue SE Ste. 335
Minneapolis, MN 55414
Phone: 612/623-8115

The Potamkin Prize is funded through the Potamkin Foundation.

POSTDOCTORAL RESEARCH OPPORTUNITIES

Innovative research at Sandoz has been enhancing medicine around the world for over a century. Pioneering drugs have extended and improved the quality of life for countless individuals and revolutionized basic scientific concepts within the transplantation and mental health fields. Our progress is the result of research conducted by professionals who specialize in many different fields. Scientists in our New Jersey laboratories are making exciting discoveries in the fields of Metabolic Diseases and Oncology and are seeking talented postdoctoral fellows to participate in these endeavors. Opportunities now exist in the following areas:

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The successful candidate will be involved in conducting *in vivo* metabolism studies in non-human primates. This will require designing studies, behavioral training of primates, conducting sensitive metabolic procedures, analyzing data and interpreting results. Extensive experience at the doctoral level (or equivalent) in animal physiology, biology, nutrition or a related field, previous *in vivo* experience and strong communication skills are required. Expertise with non-human primates would be advantageous and a background in metabolic diseases, particularly diabetes, is strongly desired. **(Position #PD045)**

TUMOR BIOLOGY

This position will involve studying regulation of apoptosis in tumors. Project includes development of cellular systems to examine effects of chemotherapeutic agents on gene expression and characterization of nuclear proteins that are transcriptionally regulated by chemotherapeutic stress responses. A working knowledge of tumor biology and experience in molecular cloning, tissue culture and protein purification is necessary. A PhD or equivalent in a relevant field with one to three years prior postdoctoral experience is preferred. **(Position #PD046)**

Postdoctoral appointments are for one year but are renewable for a second year by mutual agreement. Scientists work in an environment that encourages creative thinking with ample opportunities for publications and research presentations.

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St. Jude Children's Research Hospital has completed a \$105 million expansion. The new patient care facility opened in 1995. The new facilities will permit an increase of approximately one-third in the size of the scientific staff.

ST. JUDE CHILDREN'S RESEARCH HOSPITAL, a renowned center for biomedical research and treatment of pediatric cancers, has an immediate opening for an ASSOCIATE INVESTIGATOR in the Experimental Oncology Department. This full-time position is available to operate the new Cancer Center Core cell microinjection facility, equipped with a state-of-the-art microprocessor-assisted microinjector and digital imaging microscope. Duties include microinjection of tissue culture cells, performing imaging experiments using fluorescent and brightfield microscopy, as well as maintaining the equipment, under the supervision of the facility director. Candidates must have a Ph.D. with three years of experience in the field of biology. Preference will be given to those with experience in cell microinjection. Experience with techniques of light microscopy is preferred, and familiarity with the operation of personal computers is helpful.

The salary is very competitive and the generous fringe benefits package includes three weeks vacation the first year.

To apply, please send your resume to: **St. Jude Children's Research Hospital, Human Resources Department, 332 N. Lauderdale, Memphis, TN 38101-0318. AA/EOE**

ASSOCIATE SCIENTIST

Molecular Biosystems, Inc., a leader in the development and manufacture of contrast imaging agents for ultrasound is seeking a highly motivated self-starter.

Responsibilities include interacting with inside & outside investigators in initiating, designing, and conducting preclinical safety, efficacy, and pharmacokinetic studies. Participates in project teams and preparation of study protocols, data, reports, INDs, and NDAs.

Requires a Ph.D. in pharmacology, toxicology, or physiology with two years of postdoctoral training and up to two years of preclinical laboratory experience in an industrial research environment. Must have excellent written and oral communication and organizational skills and the ability to travel.

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Head Department of Biological Sciences

The University of Cincinnati College of Arts and Sciences invites applications for the position of Head of the Department of Biological Sciences. The Department of Biological Sciences consists of 27 faculty with approximately 20 Ph.D. students, 40 Masters students, and 400 undergraduate majors. The Department maintains a vigorous research program which spans the broad spectrum of biology with \$1.6 million in external research funding.

Candidates must have a nationally recognized record of scholarly research, proven administrative and leadership skills, and qualify for appointment as full professor with tenure. The Head will be expected to maintain a well-funded research program, and provide leadership in enhancing both research and educational programs at the undergraduate and graduate levels. A priority of the department is to strengthen its graduate program both through an enhancement of its ecology, evolution, and organismal biology component, and through increased interaction of the cell and molecular component with the College of Medicine.

Applicants should send their curriculum vitae, a description of their qualifications, and three letters of reference to: **Chair, Biological Sciences Headship Search Committee, PO BOX 210172, University of Cincinnati, Cincinnati, OH 45221-0172.** Review of applications will begin December 1, 1996, and continue until the position is filled. *The University of Cincinnati is an Equal Opportunity-Affirmative Action Employer.*

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- MA DEP Health-Based TPH Approach for Risk Assessment
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SmithKline Beecham, the world renowned innovator in consumer healthcare and pharmaceutical R&D, continues to experience outstanding success. As a result, we seek to add the following professionals to join our industry-leading scientific team:

Associate Scientist/ Scientist, Cardiovascular Pharmacology

The selected candidate will assist supervisor in initiating and conducting laboratory experiments, maintaining and analyzing laboratory data, helping preparation of scientific reports, and managing the laboratory. You will be expected to maintain a working knowledge of the scientific literature pertinent to current research activities.

Qualifications include a BS or MS degree in biological sciences with 2-3 years of laboratory experience and a background in cellular biology and biochemistry along with solid computer skills. Experience in cardiovascular pharmacology, molecular biology and in the area of receptors, signal transduction and apoptosis is highly desirable. Refer to Job Code H6-0347.

Ph.D. Molecular Biologist

The selected individual will establish and conduct an independent research program in organ remodelling with particular emphasis on prostate and renal disease. The successful candidate will have a Ph.D. in Cell Biology, Molecular Biology, Pharmacology, Biochemistry or related discipline with 2-8 years of relevant postdoctoral and/or industrial experience. He/She must also have expertise in transcription factors and transcriptional regulation. A strong record of scientific publications, superior oral/written communication skills and a high level of motivation

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Located in our state-of-the-art research facility in suburban Philadelphia, SmithKline Beecham offers a competitive compensation/benefits/relocation package. For confidential consideration, please forward your resume and salary requirements, indicating desired job code, to: SmithKline Beecham Pharmaceuticals, Job Code _____, P.O. Box 2645, Bala Cynwyd, PA 19004. We are an Equal Opportunity Employer, M/F/D/V.



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FIVE FACULTY POSITIONS DEPARTMENT OF BIOLOGY THE UNIVERSITY OF CALIFORNIA, SAN DIEGO

The Biology Department at UCSD has a large faculty spanning many areas of biological science and one of the largest and most diverse graduate programs in the country. Two years ago a major long-term expansion of the faculty was initiated. Applications are now invited for five faculty positions. These include one appointment at the Full Professor level for an endowed chair of Neuroethology, and four appointments with strong preference at the Assistant Professor level in the following areas: biochemistry, cell biology, immunology, and ecology and evolutionary biology.

1. The Walter F. Heiligenberg Chair of Neuroethology. An endowment has been established to fund a Chair in memory of Walter Heiligenberg, a former colleague at UCSD, to honor him and to perpetuate the kind of research that he loved. We are seeking a **world leader** in studying the neural basis of natural behavior. We will consider candidates with experience in a broad range of fields, including electrophysiology, pharmacology, anatomy, behavioral biology, and computational neurobiology. Search Committee Chair: William B. Kristan.
2. Assistant Professorial position in Biochemistry/Signal Transduction. Exceptional candidates pursuing innovative approaches to biochemical problems are encouraged to apply. Areas of interest include signal transduction, DNA replication, recombination, and repair, RNA transcription/splicing, and protein synthesis/degradation. Search Committee Chair: James T. Kadonaga.
3. Assistant Professorial position in Cell Biology. Exceptional candidates pursuing innovative approaches to any broad or fundamental aspect of cell architecture, cell function, cell-cell interaction, or cell differentiation are encouraged to apply. Search Committee Chair: Douglass J. Forbes.
4. Assistant Professorial position in Immunology. Individuals with a broad interest in the basic biology of immunity are encouraged to apply. Topics of interest may include: mechanisms of immunoglobulin gene rearrangement, function of cytokines and adhesion molecules in inflammation; molecular basis of autoimmune diseases; signal transduction pathways in lymphocyte activation and apoptosis; ligand-receptor or cell-cell interactions in antigen presentation; and molecular mechanisms of host and pathogen interactions. Search Committee Chair: Jean Y. J. Wang.
5. Assistant Professorial position in Ecology and Evolutionary Biology. We are particularly interested in the areas of microbial evolutionary ecology, host-parasite interactions, and plant-animal interactions. However, applications from researchers working in any area of ecology or evolution are encouraged. Search Committee Chair: Ted Case.

Ph.D. and postdoctoral experience are required. Salaries will be commensurate with stature and based on the UC scale. The number of positions filled from this ad is contingent upon the availability of funding. **Application deadline is October 21, 1996.** Please submit a CV with your phone and FAX numbers and email address, bibliography, statement of professional goals and research interests, and the names, addresses, phone and FAX numbers and email addresses of three references to **Ms. Susan Piercy, Department of Biology 0346; The (insert position title) Search, University of California, San Diego, 9500 Gilman Drive, La Jolla, California 92093-0346.** Please identify the position you wish to be considered for and indicate the journal advertisement to which you are responding. *The University of California, San Diego, is an Affirmative Action/Equal Opportunity Employer.*

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Responsibilities: Development and management of clinical research activities in human subjects including management of clinical trials pertaining to generics, Novel Drug Delivery Systems and NCE's in several parts of the world.

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Liaison with hospitals both in India and abroad.

Interaction with Regulatory Authorities.

Provide a high degree of technical expertise, motivation and leadership to teams of scientists.

Qualification and Experience: MD or Ph.D in Clinical Medicine or Clinical Pharmacology.

Minimum 15 years of experience in clinical drug research with a reputed drug research institute/pharmaceutical company.

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Sound understanding of pre-formulation, bio-equivalent generics and Novel Drug Delivery Systems.

Good knowledge of worldwide regulatory requirements, pharmaceutical manufacturing, validation and cGMP aspects.

Ability to co-ordinate Research Collaborations and guide joint development programmes.

Director (Analytical Research)

Responsibilities: Direct large Analytical Research groups.

Supervise stability studies, methods development, characterisation of impurities, degradation patterns of drug substances and complete analysis of dosage forms and bulk drugs as per specifications.

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Provide a high degree of technical expertise, motivation and leadership to teams of Research Scientists.

High level of interface with Manufacturing, CQA and Regulatory groups.

Qualification and Experience: Ph.D or M.Sc in Pharmacy or Analytical/Organic Chemistry with at least 15 years of relevant experience.

Excellent working knowledge of sophisticated instruments such as HPLC, GC, NMR, UV and LC/MS systems.

Should be well versed with cGLPs and International Regulatory requirements.

Director (Chemical Research)

Responsibilities: Manage Chemical Research Programmes of high quality. Design and execute comprehensive synthesis plans aimed at discovering and optimising innovative chemical synthesis.

Supervise all activities pertaining to the synthesis of drug

substances, from the basic stage to commercialisation.

Provide scale-up and trouble-shooting advice to manufacturing, as well as define / recommend procedures and solutions for technology development.

Provide a high degree of scientific direction and leadership to teams of Research Scientists.

Qualification and Experience: Ph.D in Organic Chemistry with at least 15 years of relevant experience. Proven expertise in innovating new chemical routes, which could lead to commercialisation and obtaining international patents.

Should possess substantial publication record both in scientific journals and patents literature.

Director (Novel Drug Delivery Systems)

Responsibilities: Design and development of Novel Drug Delivery Systems, specially Sustained Release dosage forms, using state-of-the-art technology.

Evaluation of methodologies for designing Controlled Release Formulations and implementation of Novel Drug Delivery Technology under cGMP environment.

Supervise development of innovative formulation and processing techniques.

Manage external research collaborations associated with drug delivery programmes.

Provide a high degree of technical direction, motivation and leadership to teams of scientists.

Qualification and Experience: Ph.D in Science (Pharmaceutical or Polymer) with 12-15 years experience in Sustained Release Drug Delivery Systems.

Comprehensive knowledge of both general processing and Sustained Release Technology equipments.

All these are senior positions in the company. Selected scientists will enjoy freedom of operation and the responsibility that goes with it. This will include independent handling of the relevant division and all its functions.

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We currently have an opening for a Sr. Research Associate to develop and perform receptor binding and *in vitro* functional assays for drug discovery and pharmacology research. Candidates must have a BS or MS in a biological science with at least 6 years' (BS) or 3 years' (MS) laboratory experience. The position requires a solid background in radioligand binding assays, cell signaling and/or functional assays, assay development, and tissue culture; and excellent written/oral communication and technical skills.

Amylin offers a stimulating work environment and an excellent salary and benefits package. If interested, please send your resume to: C. Wiese/Job Code CM, Amylin Pharmaceuticals, Inc., 9373 Towne Centre Drive, San Diego, CA 92121. Via e-mail: mworley@amylin.com. Or visit our web page at www.amylin.com.

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The newly formed medicinal and combinatorial chemistry department has openings for BS/MS chemists with a solid background in organic chemistry and some research experience in organic synthesis. Responsibilities include the synthesis, purification, and characterization of novel therapeutic agents using traditional and automated synthetic methods. A unique opportunity also exists for an individual interested in maintaining analytical instruments (LC-MS, HPLC, NMR, FT-IR, etc.) and to carry out automated, solution and solid phase synthesis of small organic molecules. CODE: S-C8

Molecular Biology

We are seeking several BS/MS scientists with at least 3 years of experience in molecular biology for a project expressing mammalian signal transduction proteins in yeast. Background in cellular and molecular biology or biochemistry is required. Experience with yeast is a plus and experience in gene cloning and protein analysis is preferred. CODE: S-M8

Cadus offers competitive salaries and benefits as well as excellent opportunity for career growth in a stimulating collaborative environment. Send CV and List of References, indicating job code, to: Cadus Pharmaceutical Corporation, 777 Old Saw Mill River Road, Tarrytown, NY 10591-6705. Cadus is an Equal Opportunity Employer.

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POSTDOCTORAL FELLOWSHIPS

Molecular and Cellular Biology

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Interested candidates should submit a c.v. with cover letter describing interests and goals to: **Dan Lawlor, Human Resources, Zeneca Pharmaceuticals, 1800 Concord Pike, Wilmington, DE 19850-5437.** An Equal Opportunity Employer M/F.

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A Business Unit of Zeneca Inc.

TENURE TRACK POSITION Scripps Institution of Oceanography

Applications are invited for a faculty position at the Assistant or Associate level in the broad area of **marine sedimentology/stratigraphy/paleoceanography**. The specific area of research is open but fields such as high-resolution paleoclimatology, carbonate and phosphate sedimentation, Mesozoic and Cenozoic ocean history, and Quaternary ocean dynamics would best complement existing research strengths. We intend to fill this position at the Assistant level (tenure-track) but will consider appointment at a higher level in exceptional circumstances; exact rank and salary will be commensurate with qualifications and experience in accordance with University of California academic policy and pay scales. Applicants must show evidence of excellence and independence in research as demonstrated by their publication record and letters of reference and will be expected to maintain a strong extramurally-funded research program. The position will involve teaching and research supervision at the graduate level, and the appointee will be expected to play a role in the undergraduate Earth Sciences degree program. Applicants must hold a doctoral degree at the time of appointment. Applications should include a detailed resume with a description of research interests and teaching plans, a publication list, and the names and addresses of at least three referees. Send applications by November 15, 1996 to **Chair, Sedimentology Search, SIO Graduate Department, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0208.** UCSD is an Equal Opportunity/Affirmative Action Employer.

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 one of the largest biotechnology employers in Massachusetts has been fueled by our collaborative work environment focused on the future. This culture attracts and inspires some of the brightest minds whose ideas sustain us as a leader in the industry.

Join us in making even more advancements that improve quality of life for all of us.

POST DOCTORAL FELLOWSHIP

Position available in the Articular Cartilage section of the Bone and Connective Tissue Department. This group is focused on articular cartilage metabolism, osteoarthritis and cartilage repair, with particular interest in the involvement and effects of the TGF- β superfamily. The successful candidate will have research experience in the general field of connective tissue, but specific emphasis depends on the candidate's field of expertise and interests.

To apply for the above position, send curriculum vitae and references to Dr. Elisabeth Morris at the address listed below or email: emorris@genetics.com

ADDITIONAL OPPORTUNITIES

- Discovery Research
- Small Molecule Drug Discovery
- Process and Product Development
- Preclinical Research & Development
- Clinical Development
- Manufacturing and Quality Control
- Facilities and Technical Services

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, and an on-site exercise facility.

For consideration, please send or fax resume to: Human Resources Department, Genetics Institute, Inc., 87 CambridgePark Drive, Cambridge, MA 02140. Fax: (617) 876-8847. Genetics Institute is dedicated to building strength through diversity.

GENETICS INSTITUTE

Harnessing the Body's Power to Heal

PRODUCTS THAT STIMULATE THE IMMUNE SYSTEM. CAREERS THAT STIMULATE THE MIND.

Alpha-Beta Technology is the leader in carbohydrate-based biopharmaceutical product development. Our lead product, BETAFECTIN™, a drug targeted for the prevention and treatment of infection, is now in Phase III clinical trials. Continuing research and product development efforts have resulted in the creation of the following new positions:

Microbial Immunologist

We are seeking a creative, team-oriented, Industry experienced Senior Scientist to lead a research program focused on investigating the role of novel carbohydrates in the regulation of natural defenses against infectious challenges. Qualified candidates must have Ph.D. or M.D. with extensive experience in microbiology, immunology and *in vivo* bacterial, viral, and fungal disease models. A demonstrated research track record as well as excellent oral and written communication skills are also essential.

Experimental Hematologist

We seek a creative, team-oriented Senior Scientist to develop and lead a research program to investigate the role of novel carbohydrates in the regulation of hematopoiesis with applications toward facilitating multilineage hematopoietic recovery following cytotoxic therapies. Qualified candidates must have Ph.D. or M.D. with extensive experience in *in vivo* and *in vitro* experimental hematology techniques, including CFU-Meg, BFU-e, CFU-GEMM, long-term cell cultures, flow cytometry, and progenitor cell isolation. A demonstrated research track record as well as excellent oral and written communication skills are essential and Industry experience is preferred.

Alpha-Beta Technology Inc., located in Central Massachusetts, offers competitive salaries and a strong benefits package that includes 3 weeks vacation immediately, 401(k) Plan with Company match, and an environment that fosters professional development and teamwork. Please send c.v. in confidence to: **Alpha-Beta Technology, Inc., Attn: Myra L. Patchen, Ph.D., c/o Nancy Seals, Human Resources Manager, One Innovation Drive, Dept. SC, Worcester, MA 01605. e-mail: hrdept@abti.com.** Equal Opportunity Employer M/F/D/V.

ALPHA-BETA
TECHNOLOGY

Director, Division of Intramural Research Programs NATIONAL INSTITUTE OF MENTAL HEALTH NATIONAL INSTITUTES OF HEALTH

The National Institute of Mental Health invites nominations and applications for the position of Director, Division of Intramural Research Programs (DIRP), located in Bethesda, Maryland. This program is the largest scientific research center in the world focused on mental health, mental illness, and behavioral and brain research. Its diverse research programs employ over 900 employees in 24 laboratories and clinical branches.

Responsibilities of the Director, DIRP, include the overall management of all scientific, fiscal, and personnel resources. The Director is involved in planning and directing basic and clinical research, supervising the training of scientists, implementing national science policy, and administering and evaluating research programs.

Minimum qualification requirements include a degree of Doctor of Medicine, Doctor of Philosophy, Doctor of Osteopathy, or a bachelor's or higher degree in an academic field related to the health sciences, and progressively responsible experience in developing, administering, and evaluating biomedical research programs.

The person selected for the position may receive a career appointment to the Executive Service with an annual salary range of \$100,526 to \$122,688. Physicians may be eligible for a Physician's Comparability Allowance up to \$20,000 per annum. And, a recruitment bonus of up to 25% of base pay may be available. Alternately, this position may be filled through an appointment in the Public Health Service Commissioned Corps or via eligibility for appointment in the Senior Biomedical Research Service, where the salary is set commensurate with education and experience and may range up to \$148,400.

Further information about the position and qualification requirements may be obtained by contacting Patricia Middleton at (301) 443-9094. Completed applications should be submitted to Ms. Middleton at the **Personnel Management Branch, National Institute of Mental Health, Parklawn Building, Room 7C15, 5600 Fishers Lane, Rockville, MD 20857**. Completed applications must be postmarked by the closing date of the vacancy announcement, October 18, 1996.

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR STRUCTURAL MOLECULAR BIOLOGIST/BIOCHEMIST University of Illinois at Chicago (UIC)

The Laboratory for Molecular Biology (LMB) of the Department of Biological Sciences at the University of Illinois at Chicago invites applicants for a faculty position at the level of **ASSISTANT PROFESSOR** beginning September 1997.

Candidates with a research program addressing biological problems from a structural perspective are sought. Successful candidates will be expected to pursue a vigorous independent research program and to contribute to the department's undergraduate and graduate teaching effort. New X-ray crystallography and NMR facilities have recently been installed on campus. LMB facilities are located in the new Molecular Biology Research Building, which also houses molecular biologists from other departments.

Applications should include a curriculum vitae and a summary of research plans. In addition, candidates should arrange to have at least three letters of recommendation forwarded to the search committee. For fullest consideration, applications should be received by November 1, 1996. Send application and letters of reference to:

Chairman

Search Committee for Structural Biologist
University of Illinois at Chicago
M/C 567

Laboratory for Molecular Biology
900 S. Ashland Avenue
Chicago, IL 60607

*University of Illinois at Chicago is an Affirmative Action/
Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR OF PHARMACOLOGY AND TOXICOLOGY

The Department of Pharmacology and Toxicology at the University of North Dakota School of Medicine invites nominations and applications for a tenure-track twelve month appointment at the **ASSISTANT** or **ASSOCIATE PROFESSOR LEVEL**. The appointment is anticipated to begin January 1, 1997. Applicants should have a Ph.D. in pharmacology and/or toxicology or related discipline and/or an M.D. with significant research experience. We seek excellence in research of any subdiscipline and excellence in teaching. Currently the departmental faculty is well funded from the NIH and NSF. The applicant will be expected to initiate and maintain a vigorous and independently funded research program. The applicant will also have significant participation in team taught pharmacology and toxicology teaching at the undergraduate, graduate, and professional student level. Applicants should send a letter of application, complete curriculum vitae, statement of research interests and development plan, and arrange three letters of reference to: **Paul N. Epstein, Chairman of the Search Committee, Department of Pharmacology and Toxicology, University of North Dakota School of Medicine, 501 North Columbia Road, Grand Forks, ND 58202-9037.** Applications will continue to be screened until the position is filled, but should be received by October 15, 1996, for full consideration. *University of North Dakota is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR BIOCHEMISTRY

Applications are invited for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level in the Department of Chemistry and Biochemistry at Utah State University. The successful applicant will actively participate in the Ph.D. degree program in biochemistry and will be expected to develop a nationally recognized research program that complements our existing faculty interests. Applicants working on metals and free radicals in protein and nucleic acid biochemistry are encouraged to apply. Teaching responsibilities will include undergraduate and graduate biochemistry and general chemistry courses. A Ph.D. degree and postdoctoral experience are required. A curriculum vitae, outline of planned research, statement of teaching philosophy, and three letters of recommendation should be sent to: **Biochemistry Search Committee, Department of Chemistry and Biochemistry, Utah State University, Logan, UT 84322-0300.** Review of completed applications will begin 15 October 1996 and will continue until the position is filled. Logan is located in the scenic Cache Valley, which offers rural and small city living adjacent to outdoor recreation areas. *Utah State University is an Equal Opportunity/Affirmative Action Employer, and applications from women and minorities are encouraged.*

POSITIONS OPEN



Two new positions, **ASSISTANT** or **ASSOCIATE PROFESSOR** (tenure-track), beginning January or August 1997: 1) Marine Biologist with strong background in biochemistry who will teach core course in biochemistry, 2) Coastal Plant Biologist specializing in tidal, wetland, estuarine, or marine systems. Applicants will teach undergraduate and graduate courses and maintain an active research program. Ph.D. with postdoctoral experience required. Send curriculum vitae, research and teaching interests, graduate transcripts, selected reprints, and names of three references to: 1) **Dr. Joseph Pawlik** or 2) **Dr. Martin H. Posey, Department of Biological Sciences, University of North Carolina at Wilmington, Wilmington, NC 28403-3297** by 1 October 1996. *Affirmative Action/Equal Opportunity Employer.*

TENURE-TRACK ASSISTANT PROFESSOR IN DEVELOPMENTAL NEUROSCIENCE Department of Neurobiology and Anatomy University of Utah School of Medicine

The neuroscience community at the University of Utah has grown rapidly in recent years through the addition of new faculty and expansion of the interdepartmental graduate program. Developmental neuroscience on campus has been expanded by the addition of **Drs. Kendal Broadie, Erik Jorgensen, Stanley Kater, Villu Maricq, Mark Noble, Margot Mayer-Proschl, Sheryl Scott, Mahendra Rao and Monica Vetter.** The Department of Neurobiology and Anatomy now has an opening for one **ASSISTANT PROFESSOR**. Applicants must have a Ph.D., M.D., or equivalent degree and postdoctoral research experience. The ability to develop a very strong independent research program in nervous system development is of paramount importance. A strong commitment to teaching medical and graduate students is also required. Send a curriculum vitae, a statement of research interests, and names and addresses of three references to: **Dr. T. N. Parks, Chair, Department of Neurobiology and Anatomy, University of Utah School of Medicine, Salt Lake City, UT 84132, U.S.A.** Deadline is January 15, 1997, or until suitable candidates are identified. *Equal Opportunity/Affirmative Action Employer. We strongly encourage applications from women and minorities. Visit our department at web site: www-na.med.utah.edu.*

MOLECULAR BIOLOGIST/ MOLECULAR GENETICIST

The University of Nevada, Reno invites applications for a 12-month tenure-track position at the level of **ASSISTANT PROFESSOR** in the Department of Biochemistry. We seek applications from individuals with research expertise in molecular processes underlying human disease. *Women and minority candidates are particularly encouraged to apply.* Candidates must hold a Ph.D. in a relevant area, have had a minimum of two years of postdoctoral experience, and possess a proven record of research achievement. She/he will be expected to develop an extramurally funded independent research program and to participate in the teaching program of the department. Salary will be commensurate with qualifications and experience. Appointment will be held jointly in the School of Medicine and the Nevada Agricultural Experiment Station. Applicants should submit a letter detailing their research interests and future plans, a complete curriculum vitae, and arrange to have three letters of recommendation sent by November 1, 1996. Send applications to: **Dr. Carol Condit, Search Committee Chair, Department of Biochemistry/200, University of Nevada, Reno, NV 89557-0014.** *Equal Opportunity Employer/Affirmative Action.*

California Institute of Technology invites applications for a tenure-track position as **ASSISTANT PROFESSOR** in the field of inorganic chemistry. The initial appointment will be for four years. Outstanding individuals with a Ph.D. and a strong commitment to research and teaching excellence are encouraged to apply. Submit curriculum vitae, publication list, a description of proposed research, and three letters of recommendation to: **Professor J. K. Barton, Inorganic Chemistry Search Committee, M/C 127-72, California Institute of Technology, Pasadena, CA 91125.** Applications should be received by November 15, 1996. *The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE/FULL PROFESSOR DEPARTMENT OF BIOCHEMISTRY University of Illinois College of Medicine

Applications and nominations are invited for a tenure-track faculty position at the level of **ASSISTANT/ASSOCIATE/FULL PROFESSOR** in the area of developmental gene regulation and cell differentiation. We are especially interested in individuals using transgenic vertebrate systems to investigate problems related to gene expression in the context of development and medicine. Applicants should have a Ph.D., postdoctoral experience, a strong record of research accomplishments, and demonstrable potential for the development of an independent research program. The Department is one of six basic science departments in the largest College of Medicine in the United States and consists of 18 full-time faculty and 13 joint appointees. In recent years we have recruited several senior and junior faculty and are most interested in fostering independent research in an environment of interactive collegiality. Applications should include a curriculum vitae, a summary of current and future research plans, and the names, addresses, and telephone/FAX numbers of at least three individuals for references. All inquiries will be held in confidence. Review of applications will begin after October 1, 1996. Send applications or nominations to: **Chair, Developmental Search Committee, Department of Biochemistry (M/C 536), University of Illinois College of Medicine, 1819-53 W. Polk Street, Chicago, IL 60612.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION BIOCHEMISTRY AND BIOPHYSICS University of California, San Francisco

The Department of Biochemistry and Biophysics, University of California, San Francisco offers a tenure-track **ASSISTANT PROFESSOR** position. Individuals working in modern biology, including cell biology, development, biological structure, genetics, and biochemistry will be considered. Candidates should hold a Ph.D. or M.D., and will be expected to establish a dynamic research program and be a top quality teacher in graduate/professional school courses. By October 30, 1996, submit a curriculum vitae, summary of research accomplishments, description of future research plans, major publications, and three to five letters of recommendation to: **Search Committee, Biochemistry and Biophysics, University of California, San Francisco, CA 94143-0448.** *The University of California, San Francisco is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

EVOLUTIONARY MORPHOLOGIST

The Department of Biological Anthropology and Anatomy, Duke University Medical Center, invites applications for an **ASSISTANT PROFESSORSHIP** on the tenure-track with primary teaching responsibility in human gross anatomy, and a research program in some aspect of mammalian evolutionary morphology, such as biological anthropology, paleontology, experimental functional morphology, genetics, or phylogenetic systematics (morphologic or molecular). Deadline for receipt of applications is October 15, 1996. Send curriculum vitae, one-page statement of research goals/interests, list of courses taught, and names and addresses of three references to: **Evolutionary Morphologist Search, BAA Search Committee, Department of Biological Anthropology and Anatomy, Box 3170, Duke University Medical School, Durham, NC 27710.** *Duke University is an Equal Opportunity/Affirmative Action Employer.*

DARTMOUTH COLLEGE

The Program in Cognitive Neuroscience and The Department of Psychology at Dartmouth College announce two openings in the area of human cognitive neuroscience starting in the fall of 1997. Candidates must be experienced in some aspect of cognitive neuroscience research and committed to excellence in teaching. Of the two openings, one is at the **ASSISTANT PROFESSOR** level, and one is **OPEN AS TO RANK.** For candidates at the Assistant Professor level, postdoctoral training is highly desirable. *Dartmouth College is an Equal Opportunity/Affirmative Action Employer and encourages applications from minorities and women.* The review of applications will begin on October 15, 1996, and continue until the positions are filled. For further information please contact: **Michael S. Gazzaniga, Professor of Psychology, Chair, Search Committee, Program in Cognitive Neuroscience, Dartmouth College, Hanover, NH 03755-3547.**



ILLINOIS STATE POLICE
RESEARCH & DEVELOPMENT COORDINATOR
Springfield, Illinois
Equal Opportunity Employer

The Research & Development Laboratory of the Illinois State Police, Division of Forensic Services, is seeking an R&D Coordinator to conduct research in DNA analysis; develop procedures in DNA analysis of forensic evidence; coordinate statewide integration of DNA technology into the forensic biology program; coordinate research efforts in the DNA specialty; and maintain the highest level of quality control. Anticipated hiring date is January 1, 1997.

Completion of four years of college, preferably supplemented by a Master's degree with emphasis on coursework in one of the biological, natural, physical or forensic sciences or related disciplines. Requires two years of forensic science work experience such as can be gained at the advanced caseworker level.

Perform original and applied research to develop/optimize DNA analysis procedures; participate in collaborative studies; complete project proposals and reports for research conducted. Coordinate the implementation of DNA technology to staff labs; provide technical training to staff on evidence handling, court testimony, and analytical procedures; complete documentation for training programs. Assist with development and documentation of quality assurance procedures and design and participate in validation studies for DNA analysis. Perform DNA casework. Assist with budget projections and preparation.

Salary Range: \$30,432 - \$64,584 (Annual)
 Respond to: **Ms. Susan Johns**
 (by October 1, 1996) **Illinois State Police**
1810 S. Main Street
Morton, IL 61550-2983
Fax: 309-263-8424

MOLECULAR BIOLOGY SCIENTIST

Medtronic, Inc., a recognized leader in implantable, life-sustaining biomedical products, has an opening for an experienced Molecular Biology Scientist. This accomplished person will provide scientific and strategic leadership to Medtronic in the areas of molecular biology and genetic engineering. The position is at the Center for Biomaterial Research (CBR) located at our Promeon facility, in Brooklyn Center, MN, a suburb of Minneapolis.

He/she will establish a molecular biology laboratory to complement the existing cell biology laboratory and conduct applied research to determine what opportunities exist to leverage Medtronic's technologies in the emerging field of molecular medicine. The successful candidate must possess a graduate technical degree (PhD) in the biosciences area, preferably in molecular or cell biology with a research focus that made use of advanced molecular biology techniques.

Additional qualifications include a minimum of 5 years experience conducting independent research with a preferred minimum of 2 years of industrial based research. A strong publication record and experience in providing technical direction to others is also required. A solid understanding of biomaterials would be an asset.

Please reference Job #09792, Molecular Biology Scientist, in your response. Send resume in confidence to: **Medtronic Promeon Division, Human Resources-G230, 6700 Shingle Creek Parkway, Brooklyn Center, MN 55430.** Equal Opportunity Employer.

Medtronic



Oregon Health Sciences University
Biochemistry & Molecular Biology
ASSISTANT PROFESSORS (2)

The Department of Biochemistry and Molecular Biology at OHSU, School of Medicine, is committed to a period of significant expansion. We are recruiting tenure track faculty at all levels, although our emphasis is on junior colleagues. We wish to recruit outstanding young scientists studying problems of central interest to biochemists and molecular biologists.

We will offer attractive start-up packages, competitive salaries, and the opportunity to participate in the growth and development of a dynamic and interactive department in a highly desirable location. Faculty will be expected to establish competitive research programs and assist in graduate and medical school teaching. Applicants at the Assistant Professor level should have a Ph.D. with several years of postdoctoral experience. Applications should be received by September 30, 1996.

Interested applicants should send a copy of their curriculum vitae, a description of their research plans and interests, and the names of three references to:

Professor Jack H. Kaplan, F.R.S.
Faculty Search

Department of Biochemistry and Molecular Biology
Oregon Health Sciences University
3181 S.W. Sam Jackson Park Road, L224
Portland, OR 97201-3098

OHSU is an Affirmative Action/Equal Opportunity Employer.

UNIVERSITY OF CALIFORNIA, DAVIS

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SANTA BARBARA • SANTA CRUZ

OFFICE OF THE DEAN

SCHOOL OF MEDICINE
 DAVIS, CALIFORNIA 95616

BASIC SCIENCE DEPARTMENTS IN THE SCHOOL OF MEDICINE

**BIOLOGICAL CHEMISTRY, CELL BIOLOGY AND HUMAN ANATOMY,
 HUMAN PHYSIOLOGY, MEDICAL MICROBIOLOGY AND
 IMMUNOLOGY, PATHOLOGY, PHARMACOLOGY AND TOXICOLOGY,
 HUMAN PHYSIOLOGY**

The Basic Science Departments, School of Medicine, at the University of California, Davis, are soliciting applications for four (4) full-time tenure track positions at the Assistant Professor level. Applicants should have the Ph.D. and/or M.D. degree and at least two years of productive postdoctoral experience. Individuals selected will be expected to build a successful, independent research program and to achieve excellence in the teaching of basic sciences to medical and graduate students. The most important criteria in the consideration of applicants are: 1) a record of excellence, creativity and initiative in research, which establishes a strong potential to build a vigorous and competitive research program; and 2) a demonstrated ability to communicate effectively as a teacher. Research areas of particular interest include, but are not limited to: cell signaling, molecular recognition, structural biology, integrative biology, pathogenic mechanisms, and molecular pharmacology. Letters of interest, curriculum vitae, up to three representative reprints, synopses of research plans (past, present, and future goals), summary of teaching experience/philosophy, and the names/addresses of four references should be forwarded to: **Chair, Basic Sciences Search Committee, c/o Don Martensen, School of Medicine, Dean's Office, University of California, Davis, CA 95616.** These positions will be "Open Until Filled;" applications will be accepted until December 31, 1996. For additional information see our web site at: <http://medsponsoredprograms.ucdavis.edu/pages/SOMOR/recruit.html>. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

VICE CHAIR FOR RESEARCH DEPARTMENT OF PEDIATRICS

The Department of Pediatrics, Case Western Reserve University (CWRU) is seeking a nationally-recognized scientific leader at the **ASSOCIATE PROFESSOR/PROFESSOR** tenure-track level, for the position of Vice Chair of Research. This position will include: 1) the development of a developmental, cell, or molecular biology program with major interdisciplinary interactions with basic/clinical departments of CWRU; 2) increasing the overall Departmental grant portfolio through mentoring of junior and senior faculty and maximizing inter-departmental collaborations and training initiatives; and 3) working directly with the Chairman to develop an overall Departmental thematic research program, which includes remodeling of research infrastructure, development of new wet and dry laboratory space, core facility coordination, and new faculty recruitment. The successful applicant must have an M.D. and/or Ph.D., and a proven track record of scientific accomplishment, extramural research support, and academic/administrative leadership. Submit curriculum vitae to: **William Dahms, M.D., Search Committee Chair, Department of Pediatrics, Rainbow Babies and Childrens Hospital, 11100 Euclid Avenue, Cleveland, OH 44106-6003.** *Case Western Reserve University is an Equal Opportunity/Affirmative Action Employer; applications from qualified women and minority candidates are encouraged.*

ASSISTANT PROFESSOR—Reproductive Biology of Horticultural Crops, tenure-track, research, and teaching. Department of Horticulture, Purdue University. The successful candidate will be expected to develop a nationally recognized research program supported by extramural funds and utilizing the tools of molecular genetics, biochemistry and/or cellular biology to address problems related to the reproductive biology of horticultural crops. The incumbent will teach an undergraduate course and a section of a graduate course in Plant Growth and Development that emphasizes reproductive development. A Ph.D. in horticulture, plant biology, or a related discipline is required, and postdoctoral research experience is desirable. Screening of applicants will begin October 31, 1996. Applicants should submit curriculum vitae, transcripts, statement of research and teaching interests and goals, copies of representative publications (up to five), and three letters of reference to: **Dr. Robert J. Joly, Search Committee Chair, Department of Horticulture, Purdue University, 1165 Horticulture Building, West Lafayette, IN 47907-1165.**

Purdue University is an Equal Opportunity/Affirmative Action Employer.

JUNIOR FACULTY POSITION

The Vascular Research Division of the Department of Pathology at the Brigham and Women's Hospital, Harvard Medical School is searching for an **ASSISTANT PROFESSOR** of pathology (tenure-track) to conduct an independent basic research program in the pathogenesis of vascular disease, with an emphasis on receptor/signaling molecular biology in vascular cells, and to participate in other academic programs of the Department. Qualified M.D., Ph.D., or M.D.-Ph.D. candidates (*especially women and minorities*) with three to five years of postdoctoral training in experimental pathology or molecular biology should send a curriculum vitae and summary of research interests, and ask three referees to submit letters to: **Dr. Michael A. Gimbrone, Jr., Director, Vascular Research Division, Department of Pathology, Brigham and Women's Hospital, 221 Longwood Avenue, LMRC-401, Boston, MA 02115-5817.**

Equal Opportunity/Affirmative Action Employer.

CORNELL UNIVERSITY

The Department of Chemistry is searching for a tenure-track faculty member at the **ASSISTANT PROFESSOR** level. Outstanding candidates will be considered with research in **experimental biophysical chemistry** focused in areas other than x-ray crystallographic or NMR determination of structure. The successful applicant will be expected to teach physical chemistry and special topics courses and carry out an effective research program. A Ph.D. degree is required, and postdoctoral experience is preferred. Applicants should submit a graduate transcript, curriculum vitae, publication list, and separate summaries of research experience and research plans. These materials and three letters of recommendation should be sent to: **Chair, Biophysical Search Committee, Department of Chemistry, Baker Laboratory, Cornell University, Ithaca, NY 14853-1301,** and be received no later than November 15, 1996. *Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator.*

POSITIONS OPEN

ASSISTANT PROFESSOR POTATO GENETICS AND BREEDING UNIVERSITY OF MINNESOTA, ST. PAUL

Applications are invited for a 12-month tenure-track position in potato genetics and breeding at the **ASSISTANT PROFESSOR** level. Required: Ph.D. in horticulture, plant breeding or related discipline with demonstrated expertise in plant genetics. Desirable: graduate-level course work and experience in plant quantitative genetics, plant pathology, entomology, and molecular biology, including the use of molecular markers in quantitative genetics and plant breeding; experience in potato breeding or production; and effectiveness in oral and written communication, and teaching. The successful candidate will be expected to conduct individual and collaborative research on the genetics of pest and disease resistance and other traits that are important in sustainable potato production systems; provide leadership for a potato cultivar improvement program; work effectively with clientele groups; and be involved in undergraduate and graduate education. Applicants should submit a curriculum vitae, a statement of teaching and research interests as related to this position, and the names, addresses, and telephone numbers of three references to: **Chair, Potato Genetics Search Committee, Department of Horticultural Science, University of Minnesota, 305 Alderman Hall, St. Paul, MN 55108.** Application materials must be received by September 30, 1996. *The University of Minnesota is an Equal Opportunity Educator and Employer.*

THREE TENURE-TRACK BIOLOGY POSITIONS

The Department of Biology at James Madison University invites applications for **TENURE-TRACK, ASSISTANT PROFESSOR** positions in 1) Comparative Morphology; 2) Environmental Microbiology; and 3) Genetics beginning August 1997. In addition to advanced courses in areas of expertise, the morphologist will teach cadaver-based human anatomy, the microbiologist will teach general microbiology, and the geneticist will teach introductory genetics. Candidates must show evidence of excellent teaching and communication skills and a strong potential for establishing a research program involving undergraduates and master's students. The department encourages the use of innovative techniques in instruction and is committed to promoting collaborative research between faculty and students. Ph.D. required. See <http://www.jmu.edu/biology/jobs.html> for more information. Submit curriculum vitae, summary of research interests and goals, and statement of teaching philosophy. Arrange to have sent three letters of recommendation. Direct application materials to the chair of the appropriate search at: **Department of Biology, James Madison University, Harrisonburg, VA 22807.** Applications received by October 7, 1996, will be assured consideration. *James Madison University is an Equal Opportunity/Affirmative Action/Equal Access Employer and especially encourages applications from minorities, women, and persons with disabilities.*

ASSISTANT PROFESSOR University of Alabama at Birmingham

The Department of Biochemistry and Molecular Genetics at the University of Alabama at Birmingham is seeking applications for a **TENURE-TRACK** position from individuals that work with *Drosophila*. The specific area of research is open; individuals working on any aspect of signal transduction, biochemistry, cell or molecular biology are encouraged to apply. Applicants should forward a curriculum vitae, statement of research plans, and at least three letters of recommendation by October 10 to: **Dr. Jamila I. Horabin, Department of Biochemistry and Molecular Genetics, University of Alabama at Birmingham, Birmingham, AL 35294.** *An Equal Opportunity/Affirmative Action Employer.*

TRANSGENIC TECHNICIAN

We are seeking a technician with experience in generating transgenic mice to run a multi-user facility for the generation of transgenic and knockout lines. The successful applicant must have injection experience in this field and be proficient in oocyte injection and reimplantation procedures. Will generate transgenic animals as well as supervise a junior technician in these procedures. Salary commensurate with experience, plus an excellent benefits package. Please FAX or mail curriculum vitae to: **Dietmar Kappes, Fox Chase Cancer Center, c/o Human Resources-MAS, 7701 Burholme Avenue, Philadelphia, PA 19111.** FAX: 215-728-2412; Telephone: 215-728-5374; Email: dj_kappes@fccc.edu. *Equal Opportunity Employer.*

POSITIONS OPEN

GRANTS PROGRAM OFFICER INFORMATION SYSTEMS

Howard Hughes Medical Institute, the nation's largest private philanthropic organization, conducts scientific research at leading academic medical centers throughout the United States. Currently, we have an opening for a Program Officer at our headquarters in Chevy Chase, Maryland.

Responsibilities involve managing the development of new and ongoing information systems on education and research grant competitions, awards, and outcomes; preparing summaries of information system-based data for program assessment activities; and coordinating all phases of the development and production of grants publications. Duties also include identifying and implementing electronic and technological resources and continuing the development of the grants home page.

Requirements include a Ph.D. in biology or equivalent experience in a scientific field and at least five years of management experience. Experience with the creation and analysis of large databases in areas of science education, training and research; thorough knowledge of hardware, software, and communication technologies; and experience with program budget and publications management preferred. Excellent communication, analytic, and writing skills are essential.

HHMI offers a competitive salary and excellent benefits package. Please send your résumé and salary requirements to: **Howard Hughes Medical Institute, Attention: RP, Human Resources Department, 4000 Jones Bridge Road, Chevy Chase, MD 20815-6789.** Email: <http://www.hhmi.org>. *Equal Opportunity Employer.*

Howard Hughes
Medical Institute

DIVISION OF BIOLOGY CALIFORNIA INSTITUTE OF TECHNOLOGY

The California Institute of Technology Biology Division is accepting applications for one or more tenure-track **ASSISTANT PROFESSOR POSITIONS** in the area of immunology. The term of initial appointment is normally four years, and appointment is contingent upon completion of a Ph.D. degree. Successful applicants are expected to participate in immunology teaching as well as to generate a creative and productive research program that will interface with the diverse scientific interests represented in the Biology Division.

Applicants should submit a curriculum vitae, list of publications, and a brief statement of teaching experience, research interests and plans. In addition, the candidate should arrange to have three letters of reference sent to the search committee to coincide with receipt of the application. All materials should be sent to:

**Professor P. H. Patterson
Immunology Search Committee
Division of Biology 216-76
California Institute of Technology
Pasadena, CA 91125**

The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Women and minorities, veterans and disabled persons are encouraged to apply.

ASSISTANT OR ASSOCIATE PROFESSOR DEPARTMENT OF PHARMACOLOGY

A **TENURE-TRACK** position is available for an energetic individual taking a molecular and/or cellular approach to modern pharmacological research problems. Candidates should have strong evidence of sustained creativity and a temperament that facilitates collegial and collaborative interactions. Qualified Ph.D. or M.D. candidates with research interests in the areas of structural biology or cell growth regulation, and with a track record of research funding, are especially encouraged to apply. The successful candidate will receive excellent, new laboratory space and handsome startup funds in a setting that fosters her or his professional development. Our multi-departmental graduate programs provide a large pool of graduate students, and the successful candidate will also participate in medical student training. Emory University is located in a wooded, residential area in the outskirts of Atlanta, and has undergone rapid growth in molecular and cellular biomedical research programs. Check us out at <http://www.emory.edu/PHARMACOLOGY/>. Applicants should send curriculum vitae, representative reprints, a summary of current research and future plans, and names of three or more referees to: **Raymond Dingleline, Chairman, Department of Pharmacology, Emory University School of Medicine, Atlanta, GA 30322.** *Equal Opportunity Employer.*

**AMERICAN SOCIETY FOR MICROBIOLOGY
AND
NATIONAL CENTER FOR INFECTIOUS DISEASES
1997 POSTDOCTORAL RESEARCH ASSOCIATES PROGRAM**

Up to eight associate positions will be awarded by the American Society for Microbiology for full-time research on infectious diseases which cause significant public health problems. Associates will perform research in residence at the National Center for Infectious Diseases (NCID) which is headquartered at the Centers for Disease Control and Prevention (CDC) in Atlanta, GA. In addition to Atlanta, NCID operates laboratories in Ft. Collins, CO, Anchorage, AK, and San Juan, Puerto Rico.

Eligible fields of study include:

Bacterial and Mycotic Diseases
Viral and Rickettsial Infections
Nosocomial Infections
HIV/AIDS
Vector-borne Infectious Diseases
Sexually Transmitted Diseases
Parasitic Diseases

The associate positions are limited to individuals who either earned their doctorate degree (Ph.D., Sc.D., M.D., D.V.M., or D.D.S.) or have completed a primary residency after May 1994. Exceptions may be made for those with more experience. All qualified applicants are eligible to apply. While citizens of other countries who have a full command of the English language will be considered, preference will be given to qualified U.S. citizens and permanent residents. Qualified applicants will receive consideration without regard to race, creed, color, age, sex, or national origin. Diversity among associates is encouraged. The program provides an annual stipend of \$30,000 with a medical benefits package and up to \$4,000 for professional development.

The application deadline is December 1, 1996. The Postdoctoral Research Program is administered by the American Society for Microbiology. All inquiries regarding this program should be addressed to: ASM/NCID Postdoctoral Research Program, American Society for Microbiology, 1325 Massachusetts Avenue, N.W., Washington, D.C. 20005; Fax: (202) 942-9329; E-mail: TrainingInformation@asmusa.org. The Booklet and Application is available on ASM's home page at <http://www.asmusa.org/educrc/edu23e.htm>.

ASM

AMERICAN SOCIETY FOR MICROBIOLOGY

CDC/NCID

CENTERS FOR DISEASE CONTROL AND
PREVENTION/NATIONAL CENTER FOR
INFECTIOUS DISEASES

B.S./M.S. Chemists

Synthetic Organic Chemistry



COMMITTED TO
WORLDWIDE
LEADERSHIP IN
HEALTHCARE

Wyeth-Ayerst Research, a major division of Fortune 150 American Home Products Corporation, invites B.S./M.S. Chemists to participate as members of our interdisciplinary research team at our Princeton, NJ or Pearl River, NY pharmaceutical research facilities.

The successful candidates will be involved in the design, synthesis and characterization of novel compounds as part of our multi disciplinary drug discovery efforts. Requirements include a B.S./M.S. in Chemistry with 0-5 years research experience in synthetic organic chemistry. Experience in modern synthetic methods and an aptitude for practical organic chemistry are preferred.

Wyeth-Ayerst offers an excellent compensation and benefits package in a highly professional environment. Please send your resume (clearly indicating location of interest) with salary requirements to: Wyeth-Ayerst Research, Human Resources Dept., Position #OPSCI-1208, P.O. Box 7886, Philadelphia, PA 19101-7886, or fax your resume (in fine mode if possible) directly into our centralized Research resume database at (610) 989-4854. e-mail:

jobs@RAMAIL1.wyeth.com
(ASCII format, no attachments,
subject: resume). Principals
Only. Equal Opportunity Employer,
M/F/D/V.

**WYETH
AYERST**



OLD DOMINION UNIVERSITY DEAN COLLEGE OF SCIENCES

General Description: As the chief academic officer of the College, the dean is responsible for all instruction, research, and public service programs within the College. The dean reports to the provost and vice president for academic affairs.

Institutional Context: Old Dominion University is a state-assisted, doctoral-granting institution which enrolls nearly 17,000 students, including 5,500 graduate students. The University is located in Norfolk, one of seven cities making up the Hampton Roads region of Virginia, a major seaport and recreation area with a population in excess of 1.4 million people. The Norfolk Naval Base, the largest naval base in the world, is three miles from the campus. Major federal research installations that focus upon space, aeronautics, oceanography, and nuclear physics are nearby.

The College of Sciences offers degrees in the areas of Biological Sciences, Chemistry and Biochemistry, Computer Science, Geological Sciences, Mathematics and Statistics, Oceanography, Physics, and Psychology. The College offers a wide range of undergraduate and graduate programs, including doctoral programs in nine areas. A full-time faculty of 156 generated over \$7 million in external research funding during fiscal year 1995.

Responsibilities: The dean is expected to provide dynamic leadership in teaching, research, and professional service. The person selected should be able to stimulate a collegial, intellectual environment, promote the continued development of nationally recognized research programs, and work productively with faculty, staff, and students. The dean should be able to represent the College within the University and the professional community as well as to outside agencies and the general public.

Qualifications: The successful candidate will have an earned doctorate, a record meriting appointment as a full professor in a department of the college, and administrative experience at the level of academic department chair or the equivalent. Candidates must have a strong commitment to academic excellence and an ability to work with diverse constituencies.

Applications/Nominations: Application materials, including a resume and the names, addresses, and telephone numbers of five references, should be sent to:

Dr. Lindsay L. Retrie, Chair
College of Sciences Dean Search Committee
c/o Office of Academic Affairs
Old Dominion University
Norfolk, Virginia 23529-0011
Phone: (757) 683-3260 • FAX: (757) 683-3004

Initial screening of applicants will begin October 15, 1996, but applications will be accepted until the position is filled.

Old Dominion University is an equal opportunity, affirmative action institution and requires compliance with the Immigration Reform and Control Act of 1986.

FACULTY POSITIONS IN STRUCTURAL BIOLOGY

Columbia University Department of Biological Sciences

The Department of Biological Sciences of Columbia University is expanding its faculty to include scientists with research programs in the area of structural biology. Two positions are currently available at junior and/or senior levels. Preference will be given to individuals with expertise in the application of X-ray crystallography or NMR technology to protein and/or protein-nucleic acid structure. Substantial start-up packages and extensive laboratory space will be made available to successful candidates. Further information may be obtained from Alex Tzagoloff, Search Committee chair.

Nominations and applications for senior positions should be accompanied by a curriculum vitae. Applicants for junior positions should, in addition, provide a statement of research goals and arrange to have 3 letters of reference sent as soon as possible.

The deadline for applications is November 1, 1996. All materials should be addressed to:

Ms. Sadiah Kaufman
Department of Biological Sciences

Columbia University
600 Fairchild, Mail Code 2402
New York, NY 10027

Do not contact the Chair directly.

*Columbia University is an affirmative
action/equal opportunity employer.*

POSITIONS OPEN

PRODUCTS DEVELOPMENT ASSISTANT for data collection related to products functions on various geological formations and underground conditions used by petroleum exploration, well drilling, and selection of new products for development based on the analysis of industry data monitoring and performing quality control of products in the current and future programs of the firm. Requirements: B.S. in geology. Experience: two years in the job or two years as a geologist. Experience must be in the area of petroleum exploration, utilization of tools and equipment used in the geophysical processes, and in the underground water resources investigation. Six months of experience is required in monitoring the performance of tools and equipment used in drilling of various geological formations and underground conditions. Data collection, modification, and preparation of relevant summary reports about performance of the tools and equipment used in production. Experience must also be in the assignment of appropriate tools from available tools alternatives for the implementation of underground drilling of various geological formations and underground conditions, as well as six months of experience in quality control and drilling techniques, and the selection of cutting tools from available pool of alternatives. Please send résumé and proof of requirements in duplicate (no calls) to: **ES Sp Prgrms Reference Number 1966, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216.** Those who are not authorized to work permanently in the U.S. need not apply.

ASSISTANT PROFESSOR of Wildlife Science. Tenure-track, nine-month position for a broadly trained vertebrate ecologist with experience in wildlife-habitat relationships and/or population ecology related to forest management. Ph.D. required. Must be able to teach courses in a vertebrate ecology specialty, and in wildlife-forest relationships, and be willing to assist in other undergraduate courses. Additional duties will include advising graduate and undergraduate students. The successful applicant's teaching and research are expected to contribute to an increasing emphasis in interdisciplinary approaches with the College and with other university programs. Although the College is seeking a person at the assistant professor rank, appointment may be made at the rank of associate professor or professor under unusual circumstances and commensurate with the qualifications of the individual. Send cover letter, course transcripts, résumé, and three letters of recommendation to: **Dr. David A. Manuwal, Chair of Wildlife Search Committee, College of Forest Resources, University of Washington, Box 352100, Seattle, WA 98195-2100. Email: auklet@u.washington.edu.** Deadline for applications: 1 October 1996. The University of Washington is building a culturally diverse faculty and strongly encourages applications from female and minority candidates.

California State University Fullerton, Department of Chemistry and Biochemistry is seeking applicants for a full-time tenure-track position as **ASSISTANT PROFESSOR** of Biochemistry with an interest in protein structure, to begin September 1997. Candidates must be committed to excellence in teaching biochemistry lecture and laboratory courses at both the undergraduate and master's levels and to the development of a productive research program involving students at both levels. Applicants must have postdoctoral experience and a strong biochemistry background. Our program encourages collaboration, and we are particularly seeking candidates to utilize the resources of the CSU systemwide Center for Molecular Structure, a modern facility for protein/small molecule x-ray crystallography and molecular modeling housed in our department. Send curriculum vitae; research plans; a summary of teaching philosophy and preferences; and three letters of recommendation, before October 15, 1996, to: **Dr. Maria Linder, Department of Chemistry and Biochemistry, California State University, Fullerton, CA 92634.** Affirmative Action/Equal Opportunity Employer. Women and minority candidates are particularly encouraged to apply.

PLANT SCIENTIST

NovaFlora, Inc., is an early stage plant biotechnology company pursuing the development of value-added ornamental plants. An immediate opening exists for a Ph.D. level plant scientist with expertise in plant tissue culture, post-harvest physiology, and/or germplasm and tissue preservation. Send curriculum vitae, names and telephone numbers of three references, and statement of research interests to: **Dr. Michael S. Dobres, NovaFlora, Inc., University City Science Center, Suite 350, Philadelphia, PA 19104. FAX: 215-387-4311.**

POSITIONS OPEN

DIRECTOR VASCULAR BIOLOGY UNIT

The Department of Medicine at Indiana University School of Medicine is seeking to fill an endowed chair for a Director of a new Vascular Biology Unit. The unit will have both basic research and clinical missions and function in a school wide interdisciplinary and inter-departmental fashion. The candidate M.D. and/or Ph.D. must have a strong record of research accomplishment and experience in directing or participating in vascular biology program project type efforts. In addition to his/her own research, the Director will be expected to facilitate the creation of new research and clinical programs, taking advantage of extant expertise in the IU School of Medicine. Tenure-track rank of **ASSOCIATE** or **FULL PROFESSOR** and salary will be commensurate with experience. Please send curriculum vitae to: **Alain Baron, M.D., Professor of Medicine, Director, Division of Endocrinology and Metabolism, Indiana University Medical Center, 541 North Clinical Drive, CL 459, Indianapolis, IN 46202-5111. FAX: 317-278-0658; Email: alainb@medicine.dmed.iupui.edu.** Indiana University is an Affirmative Action/Equal Opportunity Educator and Contractor. Minorities/Females.

POSITIONS AT SANDIA NATIONAL LABORATORIES

The Combustion and Physical Sciences Center at Sandia National Laboratories, Livermore, California, has two current openings for Ph.D. **STAFF SCIENTISTS** in experimental research. One focus area is the elucidation of chemical mechanisms in high-temperature combustion systems. Expertise in the application of laser- and mass-spectroscopic measurements to chemical systems is required. The second focus area involves the development and application of sensitive and selective chemical-analysis techniques. Candidates must have a broad range of skills in chemistry and/or biochemistry. Applicants for these positions should send a résumé, with names of references, a statement of research expertise, and copies of college transcripts to:

**Sandia National Laboratories
c/o Anna Isham, MS 9111, HR Department CA0014
P.O. Box 969
Livermore, CA 94551-0969**

U.S. citizenship normally required. Sandia National Laboratories is an Equal Opportunity/Affirmative Action Employer.

STAFF SCIENTIST I—Responsible for working with Quality Control and R&D organizations to develop methods necessary to characterize manufacturing process streams for major biotechnology company, including the support of process trouble shooting efforts. Duties include hands-on bench activities and coordinating stream characterization studies of other scientists. Minimum requirements include a Ph.D. in biochemistry and four years of experience with a biotechnology or pharmaceutical company in the characterization of proteins, glycoproteins, and carbohydrate chemistry, of which three years was providing developmental and diagnostic support to a cGMP operation. This experience should include work with analytical methods necessary for structural characterization of these biomolecules as well as methods necessary to characterize nucleic acids. Salary range is \$53,320 to \$69,500 per year for a five-day, 40-hour work week. Qualified applicants respond with curriculum vitae in duplicate to: **Ms. Pamela Kurtzer, Genzyme Corporation, One Kendall Square, Building 1400, Cambridge, MA 02139.**

GRADUATE, POSTDOCTORAL, SABBATICAL TRAINING OPPORTUNITIES IN BIOLOGY OF TRANSGENIC PLANTS

DOE/NSF/USDA-sponsored **FELLOWSHIPS** at North Carolina State University and CIBA GEIGY Agricultural Biotechnology Research Unit are available to study (1) use of transgenic technologies to enhance disease resistance in important crop species and (2) epigenetic phenomena influencing transgene expression and inheritance. Further information and application materials may be obtained from: **Jennifer Ballard, Department of Plant Pathology, Box 7616, North Carolina State University, Raleigh, NC 27695-7616; Telephone: 919-515-6985; FAX: 919-515-7716; Email: jennifer_ballard@ncsu.edu.** Inquiries from established industrial or academic scientists interested in three-month sabbaticals are also encouraged. Review of applications will begin November 1, 1996. North Carolina State University is an Equal Opportunity Employer.

POSITIONS OPEN

Positions are available to study the molecular and cell biology of endothelial nitric oxide synthase (eNOS). The lab is interested in understanding the expression, biosynthesis, post-translational modifications, targeting and oligomerization of eNOS in the context of cardiovascular diseases. Individuals with strong experience in cell biology, biochemistry, molecular biology with an integrative background are sought. Please send curriculum vitae and names of three references to: **William C. Sessa, Yale University School of Medicine, Boyer Center for Molecular Medicine, 295 Congress Avenue, New Haven, CT 06536; FAX: 203-737-2290; Email: william.sessa@yale.edu.**

RESEARCH SCIENTIST

RESEARCH SCIENTIST position available to study human ovarian carcinogenesis and molecular basis of drug resistance in ovarian cancer models. Applicants should have a strong background in molecular biology and biochemistry. We are located in the suburbs just outside of Philadelphia in a newly constructed research center equipped to support state-of-the-art biomedical research. Send curriculum vitae and three references to: **Debra Savage, Human Resources Specialist, The Lankenau Hospital, Employment Office, 100 Lancaster Avenue, Wynnewood, PA 19096.** Equal Opportunity Employer.

PUBLIC HEALTH SCIENTIST, M.P.H./M.S./M.A. (B.A./B.S. if know science and public affairs) needed for epidemiology, clinical studies, toxicology, risk assessment/management/communication, health policy. Could manage projects, publish, teach, travel, work on high-profile policy-setting public health and environmental issues. Send letter, curriculum vitae, two-page writing sample to: **Health and Environmental Sciences, 1711 N Street, NW, Washington, DC 20036, code: KS.**

VASCULAR BIOLOGY THE UNIVERSITY OF VIRGINIA Outstanding Opportunities for Graduate Students and Postdoctoral Fellows

The University of Virginia offers a multidisciplinary program in Vascular Biology emphasizing physiology, pharmacology, biophysics and cell biology of the vessel wall. Thirty-one investigators are participants in a training program with a long history of successful mentoring of both graduate students and postdoctoral fellows. Our particular strengths are in the areas of biophysics, cell signaling and microcirculation. Laboratory investigations are underway in cell-cell communication, cardiac, smooth muscle and endothelial cell electrophysiology, smooth muscle cell signal transduction and leukocyte-endothelial cell interactions. Positions include stipend, health insurance, and travel. Details of the faculty interests, a description of the program, and application forms can be found on World Wide Web at: <http://www.med.virginia.edu/inter-dis/cvrc>. Interested and competitive applicants can also apply directly to: **Dr. Brian R. Duling, Department of Molecular Physiology and Biological Physics, University of Virginia, P.O. Box 10011, Health Sciences Center, University of Virginia, Charlottesville, VA 22906-0011.** These positions are restricted to permanent residents or citizens of the United States. The University of Virginia is an Equal Opportunity Employer.

POSTDOCTORAL ASSOCIATE POSITIONS

Three **POSTDOCTORAL ASSOCIATE** positions available immediately to clone transcription factors, to study the immune regulation and pharmacology of serotonin receptors, and to generate knock-out mice. Excellent writing skill is essential. Send résumé and names and addresses of three references to: **Dr. Jean C. Shih, Department of Molecular Pharmacology, School of Pharmacy, University of Southern California, 1985 Zonal Avenue, Los Angeles, CA 90033.** University of Southern California is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION

NIH-funded postdoctoral position available immediately to study the molecular pathogenesis and genetics of cervical cancer. Experience in molecular and/or cellular biology preferred. Send curriculum vitae and names of three references to: **Dr. Kathleen R. Cho, Department of Pathology, The Johns Hopkins University School of Medicine, Room 659 Ross Research Building, 720 Rutland Avenue, Baltimore, MD 21205. Email: kcho@welchlink.welch.jhu.edu.** Affirmative Action/Equal Opportunity Employer.

FACULTY POSITION

MOLECULAR BIOLOGIST OF MUSCULOSKELETAL TISSUES

The Department of Orthopaedics and the Department of Microbiology and Molecular Genetics at UMDNJ-New Jersey Medical School invite applications for a tenure-track faculty position. Preference will be given to applicants with research programs in cell and molecular biology relating to musculoskeletal tissue.

The successful candidate will be expected to establish an independent research laboratory within the Department of Orthopaedics in close collaboration with its established Biomechanics/Biomaterials Unit and the Department of Microbiology and Molecular Genetics. Appointment is expected at the level of Assistant Professor; however, distinguished applicants at senior levels will also be considered with support commensurate with the candidate's qualifications and experience.

Applicants should submit a complete curriculum vitae including future research plans to: Fred F. Behrens, M.D., Chairman, Department of Orthopaedics, New Jersey Medical School - UMDNJ, Doctors Office Center, 90 Bergen Street, Suite 5200, Newark, New Jersey 07103. The UMDNJ is an Affirmative Action/Equal Opportunity Employer, m/f/d/v, and a member of the University Health System of New Jersey.



VIRAL VACCINE RESEARCH

Wyeth-Lederle Vaccines and Pediatrics (WLVP), a member of the Wyeth-Ayerst family, is recognized internationally as a leader in the research, development and manufacture of vaccines for prevention of viral and bacterial diseases.

Join **Wyeth-Lederle Vaccines and Pediatrics** for the opportunity for professional growth. We seek experienced candidates to staff key positions in Viral Immunology Research at our Pearl River, New York R & D facility. These positions require a specialization in Immunology or Virology.

RESEARCH IMMUNOLOGIST/SCIENTIST

Mucosal Immunologist

Ph.D. with 2-4 years postdoctoral experience. Knowledge of mucosal cellular and antibody assay techniques. Background in anti-viral immune responses preferred.

Cellular Immunologist

Ph.D. with 2-3 years postdoctoral experience in humoral and cellular immunology. Knowledge of mucosal systems an asset. Experience with viral agents and human cell assays preferred.

Additional positions are available in Viral Vaccine Research for:

SR. RESEARCH ASSOCIATES/RESEARCH ASSOCIATES

BS or MS Molecular Biology or Biology or Biochemistry with 1-3 years experience in the following areas:

- Gene Expression and DNA/RNA cloning analysis and manipulation
- Virus propagation, characterization and purification

WLVP offers the ideal environment to spark your enthusiasm and challenge your ingenuity. In support of your research efforts you will have and use state-of-the-art resources and equipment. The free flow of scientific and technical knowledge is encouraged by frequent in-house seminars and company sponsored participation in conferences and worldwide symposia. Our research scientists are encouraged to establish their reputations by developing a strong record of publications. We offer competitive compensation and benefits package, including savings plan. If you are ready to contribute to a challenging program, send your resume including salary history to: **Wyeth-Lederle Vaccines and Pediatrics, Human Resources, #140, 401 North Middletown Rd., Pearl River, NY 10965.**



**Wyeth-Lederle
Vaccines and Pediatrics**
Protecting Families Through Immunization®
Principals Only Please.
An Equal Opportunity Employer.

Faculty Position (Rank Open)

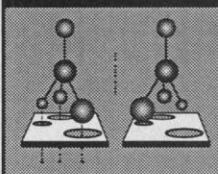
Department of Materials Science and Engineering, University of Illinois at Urbana- Champaign

The Department of Materials Science and Engineering at the University of Illinois at Urbana-Champaign invites applications for a regular, full time, tenure-track or tenured faculty position in biomaterials. To be considered for a tenured position, the applicant must have recognized national and international stature. Applicants for a junior position are preferred and should have strong qualifications for teaching materials science and engineering at the undergraduate and graduate levels. Candidates will be expected to develop an outstanding research effort of their own. Successful candidates must have a distinguished record of accomplishment in one or more of the areas specified.

Applicants must hold an earned doctorate in an appropriate field. Salary and rank will be commensurate with qualifications. The proposed starting date for this position is Fall 1997 or earlier. All interested applicants are asked to provide a professional curriculum vitae including teaching experience, a list of publications, and an outline of a few pages describing their proposed program of research. Candidates for tenure-track positions should also request that three (3) letters of reference be sent directly to the department. Candidates for tenured positions should include the names, addresses, and telephone numbers of at least three (3) references. To ensure full consideration, applications must be received prior to December 15, 1996. Interviews may take place during the application period, but a final decision will not be made until after the deadline for applications.

Applications should be addressed to: Chair, Faculty Search Committee, Department of Materials Science and Engineering, 1304 W. Green Street, Urbana, Illinois 61801. Telephone: (217) 333-1440. Fax: (217) 333-2736.

The University of Illinois is an Affirmative Action, Equal Opportunity Employer.



CELGENE CORPORATION is an international leader in the development and application of biocatalysis for the production of chiral intermediates and bulk pharmaceuticals. We seek highly motivated individuals who desire to be integral members of a multidisciplinary team in an entrepreneurial environment. Business growth has created openings for experienced R&D and sales personnel in the following positions:

R&D DIRECTOR

Direct the activities of scientific and engineering groups in the R&D of chemical/biochemical processes for the production of chiral intermediates and bulk active drug substances. Required to develop strategies for expansion and diversification of technology base consistent with corporate objectives. The ideal candidate will have a Ph.D. in Biochemical Engineering or Biochemistry, with over 5 years' pharmaceutical industry experience, with some in R&D management. Understanding of biocatalysis and asymmetric chemistry is required. **(Position 96-30)**

GROUP LEADER, BIOCATALYSIS

Lead a team of scientists engaged in biocatalysis research for the production of chirally pure intermediates and bulk active drugs. The activities of this team range from biocatalyst discovery and improvement to application research. Requires a Ph.D. in Biochemistry, with a strong background in enzymology and a working knowledge of molecular biology and its application to protein engineering. 3-5 years' hands-on industry experience, including supervisory responsibilities, is required. A strong knowledge of enzyme kinetics and thermodynamic principles is also essential. **(Position 96-31)**

GROUP LEADER/MANAGER, AGROCHEMICAL R&D

Identify and develop agrochemical leads accessible through proprietary chemistries. Responsibilities will include coordinating synthesis and testing, patent research and analysis, and liaison with industry participants. Should have Ph.D. in Organic Chemistry, good communication and supervisory skills, and relevant industry experience including a strong knowledge of current agrochemicals. **(Position 96-38)**

DIRECTOR OF SALES

Responsible for building a pharmaceutical sales force focused on the US HIV/AIDS market. Must have experience building a sales team, incentive system, and effectiveness measurement systems. Successful candidate will have a minimum of 10 years' pharmaceutical sales/marketing experience. **(Position 96-35)**



We offer competitive salaries and generous benefits including a 401(k) program. Our modern facility in Central NJ, between NYC and Philadelphia, provides an attractive environment conducive to personal growth and achievement.

Interested applicants should send a detailed resume, indicating position # and salary requirements, to: HR Manager, Dept. NSL, Celgene Corporation, 7 Powder Horn Drive, Warren, NJ 07059, or fax it to (908) 271-4184. No phone calls or agencies, please. Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITIONS available for: 1. Studies of how p53 recognizes DNA damage and interacts with cellular replication and repair systems. Will involve electron microscopy (EM) and molecular approaches including gel shift assays; 2. Studies of *in vitro* mechanisms of DNA replication using EM as a primary tool. Systems to include T7, T4, E. coli and HSV-1, and collaboration with Drs. Charles Richardson, Charles McHenry, Nancy Nossal, and Robert Lehman; 3. Studies of chromatin structure related to human disease, including the structure of integrated HIV-1 DNA, and the unusual chromatin structure of triplet repeats that expand in myotonic dystrophy and fragile X diseases. To involve tissue culture, chemical probing, and EM. Submit curriculum vitae and three letters of references to: Dr. Jack Griffith, Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC 27599-7295. The University of North Carolina at Chapel Hill is an Affirmative Action/Equal Opportunity Employer.

WAYNE STATE UNIVERSITY SCHOOL OF MEDICINE

Two **POSTDOCTORAL POSITIONS** are available in the Department of Pathology.

Position 1: To study growth factor and/or DNA damage-induced apoptotic pathways. Strong background in molecular and cellular biology required. Send requests to: Dr. Hyeon-Reh Choi Kim.

Position 2: To study the regulation of activation of matrix metalloproteinases in cancer. Applicants should have a strong background and experience in enzymology, protein chemistry, and molecular biology. Research involves structure-function. Send requests to: Dr. Rafael Fridman.

Qualified applicants should send curriculum vitae, a brief description of research experience, and three names of references to: Dr. Kim (Position 1) or Dr. Fridman (Position 2), Department of Pathology, Wayne State University, 540 East Canfield, Detroit, MI 48201.

POSTDOCTORAL POSITION DEPARTMENT OF PHYSIOLOGY TULANE UNIVERSITY SCHOOL OF MEDICINE

POSTDOCTORAL POSITION available to join an ongoing NIH-funded project investigating the role of tyrosine phosphatase 1B in insulin/IGF-I action (see *Journal of Biological Chemistry*, 268: 25455, 1993 and *Journal of Biological Chemistry*, 271: 19810, 1996). Previous experience with general molecular biological techniques, cell culture, and signal transduction biological techniques essential. Send curriculum vitae and three references to: Dr. Jyotirmoy Kusari, Department of Physiology, SL39, Tulane University Medical Center, New Orleans, LA 70112-2699. Telephone: 504-584-1628; FAX: 504-584-2675.

POSTDOCTORAL ASSOCIATE: cell biology/biochemistry. Position available immediately to join a National Science Foundation-funded project involving the investigation of cyclin dependent kinase (CDK) activities in the regulation of nerve cell function. A Ph.D. in the biological sciences is required, as is expertise in protein purification. Experience in *Drosophila* molecular genetics would be an asset. The position is renewable for up to three years, and opportunities for some college-level teaching are available if the candidate desires. Send cover letter describing research skills, complete curriculum vitae, and the names and telephone numbers of three references to: Dr. Michael H. Roberts, Chair, Department of Biology, Box 5805, Clarkson University, Potsdam, NY 13699-5805. Clarkson University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE

Individual is sought for a **POSTDOCTORAL POSITION** in mucosal immunology available September 1, 1996, to study antigen-presenting cell/T cell interactions in mucosal inductive sites of the upper respiratory tract. Opportunity to work with a committed group of investigators studying human and animal respiratory and enteric infectious diseases. Applicants must have a molecular biology background and some immunological experience to assist in the development of novel vaccine delivery systems to mucosal tissues. Send a letter of application, curriculum vitae, and names of three references to: Dr. David W. Pascual, Veterinary Molecular Biology, Montana State University, Bozeman, MT 59717-3610. FAX: 406-994-4303; Email: uvdp@trex.oscs.montana.edu.

ADA/Affirmative Action/Equal Opportunity/Veteran's Preference.

POSITIONS OPEN

MICROBIAL GENOME ANALYSIS

The Center of Marine Biotechnology (COMB) of the University of Maryland Biotechnology Institute is seeking three postdoctoral **RESEARCH ASSOCIATES** in the area of microbial genomic DNA analysis, focusing on Bacteria and Archaea from extreme environments. Two researchers in the laboratory of Dr. Frank Robb will work on genomic analysis, including hypothermophilic Archaea and other prokaryotes from extreme environments, the use of subtractive cloning and RDA analysis, and direct cloning from environmental DNA. The third position is a senior postdoctoral position which will supervise a sequencing and gap-filling team in addition to personal research on genome analysis of organisms from extreme environments. In addition to the qualifications listed above and extensive experience in the areas mentioned, candidates for the senior position must possess the ability to supervise other team members. The group will work in collaboration with related National Science Foundation and Department of Energy funded projects which are aimed at functional analysis of enzymes from extremophiles. Qualifications include a Ph.D. from an accredited university in a related field and hands-on experience in bioinformatics, as well as a broad molecular genetics background including automated DNA sequencing. Enthusiasm for research with organisms from extreme environments is important.

Salary for all three positions is commensurate with experience and qualifications. Please send curriculum vitae, statement of research interests (indicating position FR96-4a for the first two positions or FR96-4b for the senior position) and the names, titles, and addresses of three references by September 30, 1996, to: Ms. Tyra Burman, Position FR96-4a (or FR96-4b), Center of Marine Biotechnology, Suite 236, Columbus Center, 701 East Pratt Street, Baltimore, MD 21202. An Affirmative Action/Equal Employment Opportunity Employer.

POSTDOCTORAL POSITION Synthetic Organic Chemistry Rosensteil Basic Medical Sciences Research Center Brandeis University

Available immediately. Synthesis, purification, and characterization of potential therapeutic agents. A strong background in medicinal or organic synthetic chemistry is essential. The successful candidate will work closely with biochemists and X-ray crystallographers in a focused and energetic interdisciplinary environment devoted to new drug discovery using a combination of rational design and combinatorial chemistry techniques. A curriculum vitae and two letters of recommendation should be sent to: Professor Dagmar Ringe, c/o Dr. Steve Gallion, Rosensteil Basic Medical Sciences Center, Brandeis University, 200 South Street, Waltham, MA 02254.

POSTDOCTORAL RESEARCH ASSISTANT

A two-year **POSTDOCTORAL RESEARCH** position is available in the vector biology program of the Department of Entomology at Auburn University. The successful candidate will join a research team analyzing insect salivary factors that permit blood-feeding and pathogen transmission. A Ph.D. in entomology or related areas, with experience in pharmacology, biochemistry, or molecular biology is required. Please send curriculum vitae with three letters of reference to: Dr. E. W. Cupp, Department of Entomology, 301 Funchess Hall, Auburn University, AL 36849-5413. Telephone: 334-844-5006; FAX: 334-844-5005; Email: ecupp@ag.auburn.edu.

Two **POSTDOCTORAL POSITIONS** available to study the molecular biology of cancer and aging. Particular emphasis is placed on understanding the possible roles of DNA repair and transcription in this relationship. Broad experience in molecular biology and tissue culture required. Please send curriculum vitae and three letters of reference to: Michele K. Evans, M.D., Laboratory of Molecular Genetics, National Institute on Aging, National Institutes of Health, Mail Box 01, 4940 Eastern Avenue, Baltimore, MD 21224; FAX: 410-558-8157; Email: mc42v@nih.gov. National Institutes of Health is an Equal Opportunity Employer.

POSTDOCTORAL POSITION available to study molecular mechanisms of long chain fatty acid transport in mammalian cells (see *Cell*, 79: 427-436). M.D. or Ph.D. and experience in molecular biology and cell biology required. Send curriculum vitae and names of three references (with FAX numbers) to: Dr. J. Schaffer, Washington University School of Medicine, 660 South Euclid Avenue, Box 8086, St. Louis, MO 63110. FAX: 314-362-8957.

POSITIONS OPEN



RESEARCH ASSOCIATE/ POSTDOCTORAL POSITIONS

The University of Miami School of Medicine Departments of Neurology and Molecular and Cellular Pharmacology invite applications for the position of **RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW**. Positions are available (two to four years) to study the neuroadaptive regulation of monoamine neurotransmitters and neuroreceptors in human brain. Multidisciplinary studies include pharmacokinetics, drug development, biochemical and molecular biology approaches. Expertise in one of the above areas is required. Possibility for long-term employment and advancement. Salary and benefits competitive. Send curriculum vitae to: Deborah C. Mash, Ph.D., University of Miami School of Medicine, Department of Neurology, D4-5, 1501 NW 9th Avenue, Room 4013, Miami, FL 33136. Telephone: 305-243-5888; FAX: 305-243-3649; Email: dmash@mednet.med.miami.edu.

POSTDOCTORAL POSITION IN SOIL MICROBIAL ECOLOGY

A position is available to study the relationship between microbial and plant community composition and the biogeochemical processes that link them along natural and manipulated gradients of plant productivity and diversity in successional old-fields. Experience in cellular and molecular analyses of microbial communities is required.

Applications should be sent to: Dr. Kay Gross or Dr. Mike Klug at the Kellogg Biological Station, 3700 East Gull Lake Drive, Hickory Corners, MI 49060, and should include: a curriculum vitae, statement of research interests, and three letters of reference. Application deadline is October 1, 1996. Preferred start date is January 1, 1997, and is for two years.

POSTDOCTORAL FELLOW POSITIONS

POSTDOCTORAL POSITIONS are open immediately: M.D., Ph.D., to investigate growth factor, cytokine signal transduction, identification, characterization of novel receptors. Creative and self-motivated scientist with proven molecular and cell biological skills desired.

Please send curriculum vitae, a statement of research interest and accomplishments, and three references to: Dr. Thomas F. Deuel, M.D., Division of Growth Regulation, Beth Israel Hospital, Harvard Medical School, 330 Brookline Avenue, RE-213, Boston, MA 02215. Beth Israel Hospital/Harvard Medical School is an Equal Opportunity Employer.

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION available immediately to study the molecular basis of T- and B-cell activation by mycoplasma and bacterial superantigens and the role of superantigens in autoimmune and infectious disease. Candidates must be experienced in molecular immunology/genetics and in the techniques for gene cloning, expression and modification. Opportunity to advance. Send a letter of research accomplishments/interests, curriculum vitae, and names of three references with addresses to: Dr. Barry C. Cole, Internal Medicine, University of Utah School of Medicine, 50 North Medical Drive, Salt Lake City, UT 84132. Telephone: 801-581-4536; FAX: 801-581-5393. Equal Opportunity Employer.

POSTDOCTORAL POSITIONS available to investigate RNA recognition by eukaryotic RNA-binding proteins or prokaryotic gene regulation at the level of mRNA stability. Molecular biological, biochemical, and genetic strategies will be used. Beginning in 1997, research will be conducted at the Skirball Institute (New York University Medical Center). Send curriculum vitae, a brief summary of research experience, and the names of two references to: Dr. Joel G. Belasco, Department of Microbiology, Harvard Medical School, 200 Longwood Avenue, Boston, MA 02115. Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH POSITION is available immediately at the University of Pennsylvania to study Pax and Hox transcription factors in murine cardiac development and myogenesis. Experience in molecular biology and development required. Send a curriculum vitae and three references to: University of Pennsylvania, c/o Dr. Jonathan Epstein, 433 Curie Boulevard, 809 Stellar-Chance Labs, Philadelphia, PA 19104-6100. FAX: 215-573-2094.

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Agouron Pharmaceuticals, Inc., is a recognized pioneer and leader in the field of protein structure-based drug design. We are headquartered in La Jolla, a flourishing center for scientific research currently located on the southern coast of California and still expanding. Due to our rapid growth, we are seeking the following professionals to join our team.

MS/BS VIROLOGIST

Requires a BS or MS degree in the biological sciences; 1-5 years' experience encompassing cell culture, and infectious virus preparation and characterization. (Code: KEP)

MS/BS PHARMACOLOGIST

Responsibilities include pharmacokinetic and efficacy testing to assist in the development of new cancer therapeutics. Requires a BS or MS degree in Biology or related field, a minimum 2 years of hands-on laboratory experience working with murine models of cancer, and experience with HPLC is a plus. (Code: OS)

MS/BS BIOCHEMIST

Applicants should have experience with enzyme kinetics, assay development, protein purification and kinetics computer software. (Code: CP)

We offer competitive salaries and benefits in addition to an intellectually stimulating environment. Please send resume to: Human Resources, Agouron Pharmaceuticals, Inc., 10350 N. Torrey Pines Road, La Jolla, CA 92037-1020; e-mail: jobs@agouron.com. Home page: <http://www.agouron.com>. EOE.



Agouron
Pharmaceuticals, Inc.

Editor, *Biological Psychiatry*

The Society of Biological Psychiatry seeks applicants for the position of Editor of the Society's international journal, *Biological Psychiatry*. Editor has responsibility for directing the editorial and publication process and oversight of the activities of Associate Editors and Managing Editor. Candidates must have outstanding professional status and recognition in the field of biological psychiatry and clinical neuroscience; a reputation for personal and professional integrity; superb writing, editorial and journalistic skills; breadth of scientific interest, depth of scientific expertise, and alertness to social and ethical issues of importance to science; familiarity with the editorial process; knowledge of skilled reviewers; and an understanding of electronic publishing. Membership in the Society is desirable.

Applicants should submit a curriculum vitae, the names of a minimum of three references (excluding Society officers), a statement of practicalities (location, institutional support, estimation of time available, and relevant experience), and a letter of commitment and support of time and space from the applicant's chairperson or institution by December 1, 1996, to either:

John F. Greden, M.D., Chair
Search Committee for Editor, *Biological Psychiatry*
Department of Psychiatry
University of Michigan Medical Center
1500 E. Medical Center Drive
Ann Arbor, Michigan 48109-0704
(313) 763-9629 Ofc; (313) 936-9761 Fax; gredenj@umich.edu E-mail

or

Katherine A. Halmi, M.D., Co-Chair
Search Committee for Editor, *Biological Psychiatry*
Westchester Division
NY Hospital, Cornell Medical Center
21 Bloomingdale Road
White Plains, New York 10605
(914) 997-5875 Ofc; (914) 997-5781 Fax; halmi@rs1.med.cornell.edu E-mail

For further information, contact either Dr. Greden or Dr. Halmi

The Society of Biological Psychiatry is an Equal Opportunity Employer

Educational/Research Opportunities at the Santa Fe Institute

Summer 1997

The Santa Fe Institute's (SFI) multidisciplinary research program is devoted to the study of complex systems, especially complex adaptive systems. Research topics include but are not limited to the economy, the immune system, biomolecular sequence and structure, models of evolution, and adaptive computation methods.

Two SFI summer programs introduce students to complexity science and its multidisciplinary approach. *Women and minorities are strongly encouraged to apply.*

Complex Systems Summer School, June 1-27, 1997, for graduate students and postdoctoral fellows, an intensive introduction to complex behavior in mathematical, physical and living systems.

Summer Research Experiences for Undergraduates, June-August, 1997, students work with a faculty mentor on an individual project that focuses on the computational properties of complex systems.

For application information: <http://www.santafe.edu/sfi/visitor>; email: edu97@santafe.edu

Support for these programs comes from the National Science Foundation and the National Institutes of Health.

Clinical Research Scientists

Penn State is a premier research institution, ranked thirteenth nationally in total research and development expenditures and second nationally in private industry sponsored research support. In 1994-95, the University's total research and development expenditures were \$344.3 million. A major portion of the research activities takes place at the University Park Campus and at the College of Medicine in Hershey. The Pennsylvania State University's NIH funded General Clinical Research Center (GCRC) is recruiting three or four funded physician scientists to help fulfill our key mission of human investigation. Scientists in the areas of aging, diabetes/obesity, epidemiology, sleep and cardiovascular/autonomic control are sought. One position, an endowed professorship in human research in the College of Health and Human Development, will serve as medical director at the University Park GCRC site. Clinical and pathophysiologic collaboration at the College of Medicine is encouraged.

At the College of Medicine, the position of Associate Director for the GCRC is sought. This investigator will have the opportunity to collaborate with muscle metabolic, neural control, and sleep programs. Senior funded investigators with innovative human investigation programs are being recruited for the remaining positions. Attractive starter packages as well as outstanding facilities are available for all positions. Interested candidates should send a C.V. to **Hershey Medical Center, College of Medicine, Pennsylvania State University, P.O. Box 850, Hershey, PA 17033**, care of Lawrence Sinoway, M.D., GCRC Director and William J. Evans, Ph.D., Director of the Noll Physiological Research Center. *The Pennsylvania State University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply. For your health, Hershey Medical Center is a smoke-free campus.*

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Just like developing a pharmaceutical product, finding a new career requires the proper elements. At MedImmune, we believe that providing a challenging environment which encourages creativity is the best way to ensure success. We're certain you'll find your formula for success in one of the following career opportunities:

Protein Biochemist/Purification (Scientist)

Work on the expression, purification, and characterization of recombinant proteins for development as candidate vaccines for infectious diseases. Qualified candidates will possess a Ph.D. with 2-4 years experience or M.S. with 4-6 years experience in biochemistry, molecular biology, microbiology or related discipline; significant experience with current methodologies in protein purification and characterization (HPLC, LC, etc.), and molecular cloning and recombinant protein expression in *E. coli*, with emphasis on application of these techniques to membrane proteins.

Microbiologist/Immunologist (Research Assistant Associate)

Develop recombinant vaccines for infectious diseases. Qualifications include a B.A./B.S. or M.S. in microbiology, immunology, biochemistry or related discipline; significant experience with current immunochemical techniques including ELISA, immunoblotting/protein gel electrophoresis, cultivation of infectious microbial agents, and/or experience in animal modeling. Experience in molecular cloning and recombinant protein expression in *E. coli* would be an asset.

Microbiologist/Molecular Biologist (Associate Scientist and Scientist)

Your responsibilities will entail molecular cloning, expression, and evaluation of recombinant proteins as candidate vaccines for infectious diseases. To qualify, you should have a Ph.D. or equivalent with at least 2

years experience, or M.S. with 2-4 years experience in microbiology, immunology, molecular biology, or related discipline; significant experience with current methodologies in recombinant protein expression in *E. coli*, immunochemical characterization (ELISA, immunoblotting, etc.), and *in vivo* modeling of infectious diseases with emphasis on application of these techniques to membrane proteins. Experience in the cultivation of infectious bacteria and in animal handling desirable.

Molecular Biologist/Yeast Expression (Scientist)

You will be responsible for expression, purification, and characterization of recombinant proteins in yeast for the development of candidate vaccines. Requirements include a Ph.D. with 2-4 years experience or M.S. with 4-8 years experience including vector and strain selection, generation of recombinants, optimization of expression, and protein purification. Familiarity with both *Saccharomyces* and *Pichia* is preferable.

Immunologist/Signal Transduction (Scientist)

Maintain responsibility for determining the intracellular pathways and proteins responsible for energy and programmed cell death by select antibodies to T cells and NK cells. Qualified candidates will possess a Ph.D. or equivalent with 2-4 years of experience in lymphocyte signaling with skills in biochemistry and molecular biology.

MedImmune offers competitive salaries, an excellent benefits package and significant opportunity for career advancement. For immediate consideration, please indicate position of interest and forward your resume to: **MedImmune, Inc., Human Resources, Dept. SCI, 35 West Watkins Mill Road, Gaithersburg, MD 20878.** EOE, M/F/D/V.



DIRECTOR OF CNS

Gensia, Inc. is a research-based publicly-held biopharmaceutical company. Our mission is focused on the discovery, development, and commercialization of innovative drug and device products for the acute-care market. Gensia has recently secured a major collaborative agreement with Pfizer for the discovery and development of novel analgesic compounds. Consequently, Gensia is searching for an experienced and innovative Director of CNS, with a proven track record in the pain area, to head this program and the other activities of the CNS department.

The successful candidate would have a record of achievements demonstrating an ability to create, lead, and manage research programs in a highly competitive and dynamic scientific environment. Personal attributes will include integrity, high scientific standards, goal orientation, the ability to motivate a strong technical staff, and the desire to work as part of a team. This position requires a Ph.D. in biological science (pharmacology, biochemistry, molecular biology, or related sciences) plus several years of industrial experience.

Gensia, Inc. offers a competitive compensation package including a stock option program and comprehensive benefits, in a fast-paced, highly stimulating environment. The Research Department occupies an outstanding new, state-of-the-art facility of over 80,000 square feet, located in San Diego, California. Qualified applicants are invited to send a resume with cover letter to: **Gensia, Inc., Human Resources, CODE: CNS/GT, 9360 Towne Centre Drive, San Diego, CA 92121-3030, or fax to 619-622-5540 or email in ASCII format to human.resources@gensia.com.** We are proud to offer equal employment opportunities and a culturally diverse workplace.



G E N S I A®

Synaptic Pharmaceutical Corporation has immediate openings for staff positions in our Molecular Biology and Pharmacology Departments. Successful candidates will join a multi-disciplinary team focused on the discovery of novel G protein-coupled and kinase receptors expressed in the CNS.

Molecular Pharmacology:

Scientist: Applicants should have a Ph.D. or M.D. degree in neuroscience or pharmacology and a minimum of eight years of relevant academic or industrial experience. Strong independent research background and knowledge of receptor binding, signal transduction, neurotransmitter release, and general physiology is essential. (Dept: 185a)

Research Associates: Applicants should have an MS or BS degree and at least two years of academic or industrial experience in the area of receptor binding and/or second messenger assays. (Dept: 185b)

Histopharmacology:

Scientist: Applicants should have a Ph.D. in a neuroscience-related field, 2 years of postdoctoral experience, and demonstrated expertise in one or more of the following areas: quantitative receptor autoradiography, *in situ* hybridization histochemistry and immunocytochemistry. Practical expertise in either molecular biology or protein biochemistry would also be beneficial. (Dept: 186a)

Research Associates: Applicants should have an MS or BS degree with some experience in neuroanatomical techniques such as *in situ* hybridization histochemistry, immunocytochemistry, receptor autoradiography or northern blot analysis. (Dept: 186b)

Molecular Biologist:

Scientist: Applicants should have a Ph.D. and a minimum of 2 years postdoctoral experience with demonstrated expertise in Molecular Biology and a proven record in expression cloning. The successful candidate will be a highly motivated individual with primary interest in the molecular biology of neuropeptide receptors. (Dept: 187)



Pharmaceutical Corporation

For consideration, indicate to which position you are responding and send resume in confidence to:

Human Resources Manager, Dept #, Synaptic Pharmaceutical Corporation, 215 College Road., Paramus, New Jersey 07652.

Receptor Molecular Biology / Pharmacology

The Science of Agricultural Genetics

RESEARCH ASSOCIATE

Grain Traits - Industrial Products (Job #GT-603)

We seek a highly motivated and energetic individual to join a group devoted to research and product development in the area of storage carbohydrate manipulation in the seeds of crop plants. The applicant must be experienced in the contemporary techniques of molecular biology (DNA/RNA isolation, DNA sequencing, cDNA/genomic library construction and screening, Northern and Southern blotting, PCR, vector construction, expression of eukaryotic proteins in heterologous systems). Familiarity with protein biochemistry techniques (cell fractionation, 1- and 2-D gel electrophoresis, Western blotting, HPLC and FPLC) will be a strong plus. Ability to work in a team environment is essential. EDUCATION/EXPERIENCE: MS in biochemistry or a closely related field, or BS with 2 years of experience in the described techniques.

We offer competitive salaries and excellent, comprehensive benefits such as 401(k), tuition and relocation reimbursement. Des Moines is a prospering heartland city that ranks well above the national averages in affordability and education. Our location provides a mix of beautiful open spaces and city life advantages. For confidential consideration send 3 copies of your resume, names of 3 references, and cover letter indicating job number by September 20, 1996 to: Pioneer Hi-Bred International, Inc., Attn: PERSONNEL (Job #GT-603), P.O. Box 1004, Johnston, IA 50131-1004.

Pioneer Hi-Bred International, Inc., is the world leader in agricultural genetics. Founded in 1926, we are a publicly held company that invests more than \$115 million in research and product development. Pioneer® brand products are grown in almost every crop-producing continent in the world. At our headquarters in Des Moines, Iowa, we're adding to our Research team.



PIONEER HI-BRED INTERNATIONAL, INC.
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Wayne State University

CELL AND DEVELOPMENTAL BIOLOGY

The Department of Biological Sciences invites applications for tenure-track positions at the full, associate, and assistant professor level. We are seeking individuals whose primary research interest is in molecular and genetic analysis of cellular function and development. We are developing a strong interactive core of researchers with overlapping and complementary interests. Individuals working with a variety of model systems from microbial to vertebrate are encouraged to apply.

Wayne State University is one of the nation's largest research universities, and the Department of Biological Sciences is in the midst of a significant expansion which includes recently occupying a new seven-story Biological Sciences research building. In addition to generous research space, the department houses and operates animal rooms, greenhouses, and core facilities for *Drosophila*, imaging and microscopy, and DNA synthesis and sequencing.

Substantial space and start-up funds are available to successful candidates who will be expected to establish and maintain an extramurally funded research program and participate in departmental teaching programs.

Women and minority candidates are encouraged to apply. Review of candidates will begin immediately and continue until all positions are filled.

Send curriculum vitae, a description of current and long-range research plans, three representative papers, and the names of four references to:

Jack Lilien
Chair, Department of Biological Sciences
Wayne State University
Detroit, MI 48202

Wayne State University is an equal opportunity/affirmative action employer.

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CELL BIOLOGIST

We seek a talented individual to support clinical and non-clinical production of cell culture products. As a member of a diverse group of scientists working in a state-of-the-art Mammalian Cell Culture Plant, you will be responsible for providing technical support in assessing cell physiology at various stages of mammalian cell culture fermentations. This will include assisting in methods development for optimum cell propagation and scale-up, as well as preparing, maintaining and testing cell lines used in production. To qualify, you will need a BS/MS in Cell Biology/Physiology and 5+ years of mammalian cell culture experience. Expertise in cell line maintenance and testing, scale-up and cell culture media development essential. To be considered for this position, please respond to Dept. BD96-08-JW.

ASSISTANT SCIENTIST Protein Purification

Assist in developing purification processes for recombinant proteins and viruses produced by bacteria nad mammalian cell cultures. The results of your success will impact directly on new applications in human pharmaceuticals.

Qualifications must include a BS in Biochemistry, Biology, Protein Chemistry or related field with up to 4 years relevant experience, or an MS with 0-2 years experience in purification and characterization of proteins. Familiarity with HPLC, FPLC and conventional chromatographic techniques desired. Team player with strong communication skills a must. To be considered for this position, please respond to Dept. BD96-10-JW.

We offer an excellent compensation package including a competitive salary and comprehensive benefits. For prompt, confidential consideration, we invite you to forward a resume indicating the Dept. Code for your position of interest and salary requirements to: Human Resources-JW, Schering-Plough Research Institute, 2015 Galloping Hill Road, Kenilworth, NJ 07033-0539. We are an equal opportunity employer. *We regret we are unable to respond to each resume. Only those selected for an interview will be contacted.*



**Schering-Plough
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POSITIONS OPEN

POSTDOCTORAL POSITION

A POSTDOCTORAL POSITION is available to study the mechanisms regulating src-like kinases in breast cancer. Applicants should have a Ph.D. in biochemistry, cell biology, or related discipline. Experience in signal transduction, including assessment of kinase and phosphatase activity and use of gene manipulation to study signaling in mammalian cells is desirable. Send curriculum vitae, representative publications, and three letters of recommendation to: **Dr. Lewis G. Sheffield, Endocrinology-Reproductive Physiology Program, 1675 Observatory Drive, University of Wisconsin, Madison, WI 53706.** University of Wisconsin is an Affirmative Action/Equal Employment Opportunity Employer.

POSTDOCTORAL POSITION Yale University School of Medicine

A POSTDOCTORAL POSITION for a recent Ph.D. is available to study developmentally regulated genes/proteins of the parasitic protozoan, *Leishmania*. Candidates should have a background in molecular biology; experience in pathogenesis and immunology desirable. Send curriculum vitae and the names, addresses, and telephone numbers of three references to: **Dr. D. McMahon-Pratt, Yale University School of Medicine, Department of Epidemiology and Public Health, P.O. Box 208034, 60 College Street, New Haven, CT 06520-8034.**

POSTDOCTORAL FELLOWSHIP available to study proteins involved in the regulation of coronatine, a phytotoxin produced by the bacterium *Pseudomonas syringae* (see *J. Bacteriol.*, 177: 6160). Specific aims will involve mutagenesis of regulatory genes, protein purification, and assays designed to investigate the function of the regulatory proteins. Experience in basic molecular techniques, mutagenesis, protein purification, and enzymology is desirable. Send résumés to: **Dr. C. Bender, 110 Noble Research Center, Oklahoma State University, Stillwater, OK 74078. FAX: 405-744-7373; Email: cbender@okway.okstate.edu.** Oklahoma State University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL POSITIONS HARVARD MEDICAL SCHOOL Hematopoietic Gene Regulation, Leukemogenesis, and Gene Therapy

POSTDOCTORAL/RESEARCH ASSOCIATE positions available immediately to investigate stem cell gene regulation and the use of specific promoters in gene therapy applications using adeno associated virus (AAV) vectors in Dr. Daniel Tenen's lab, or to study transcription factor AML1 in cell differentiation and leukemogenesis in Dr. Dong-Er Zhang's lab. Extensive experience in transcription factor research, stem cell biology, and/or AAV required. FAX or mail curriculum vitae and three letters of reference to: **Harvard Institutes of Medicine, Room 951, 77 Avenue Louis Pasteur, Boston, MA 02115. FAX: 617-667-3299.**

University of California, Los Angeles. POSTDOCTORAL POSITION is available immediately to study the molecular and cellular physiology of Ca-dependent K channels. Molecular biology, biochemical, immunocytochemical, and electrophysiological techniques are used to unravel the mechanisms of channel function, their coupling to cell-signaling pathways, and how sexual hormones and aging affect their expression. Ph.D. in physiology, physics, biochemistry, or molecular biology. Preferred background: electrophysiology and modeling of channel function. Send curriculum vitae and three references to: **Dr. L. Toro, UCLA, Department of Anesthesiology, BH-612 CHS, Box 951778, Los Angeles, CA 90095-1778.**

POSTDOCTORAL POSITION available for a motivated individual to study gene expression in human neurotrophils. Applicants should have a Ph.D., M.D., or equivalent and experience in molecular biology. This NIH grant-funded position is immediately available. Send curriculum vitae and three letters of reference to: **Dr. H. Hank Simms, M.D., Department of Surgery, Brown University, Rhode Island Hospital, APC-103, 593 Eddy Street, Providence, RI 02903.** Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately on an NIH-funded project to investigate the role of proteins mediating presynaptic mechanisms of neurotransmitter release. Research will involve an integrated approach including generation of transgenic and/or knockout mice with a multi-level analysis of gene expression, neurotransmitter release, and impact on behavior, particularly hyperkinesia. Applicants must have a Ph.D. with a strong background in molecular genetics and neurobiology. Send curriculum vitae and names of three references to: **Michael C. Wilson, Department of Biochemistry, University of New Mexico Health Sciences Center, Basic Medical Sciences Building, Albuquerque, NM 87131-5221. FAX: 505-277-5389.** The University of New Mexico is an Affirmative Action/Equal Opportunity Employer and Educator.

POSTDOCTORAL POSITION UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER

A POSTDOCTORAL POSITION is available immediately to study enhancement of recognition by modified oligonucleotides. Projects include hybridization to duplex DNA and telomerase, and the intracellular delivery of modified oligomers. Equal Opportunity Employer.

Please send curriculum vitae and a brief statement of relevant research interests to:

**University of Texas Southwestern Medical Center
Attention: Dr. David Corey
5323 Harry Hines Boulevard
Dallas, TX 75235-9050**

POSTDOCTORAL POSITION

Position available immediately for a Ph.D. to study the role of the stress response in mediating diseases of the human urinary tract. Studies employ human tissue and cell culture and do not require animal experimentation. Research experience in molecular biology is essential. Send curriculum vitae and the names of three references to: **Dr. Donald Sens, Department of Pathology, West Virginia University, P.O. Box 9203, Morgantown, WV 26506-9203. FAX: 304-293-6249.**

Wanted: Committed, ambitious scientist. Must be a team player with a vision for the future. M.D./Ph.D., Ph.D., M.S. or B.S. degree necessary.

Does this describe you?

If it does, then plan to attend the bioSCIENCE Career Fairs sponsored by SCIENCE. The bioSCIENCE Career Fairs offer the perfect opportunity for scientific professionals to meet in person with representatives from top biotechnology and pharmaceutical companies, universities, governmental agencies and institutions.

Next 1996 bioSCIENCE Career Fair

Palo Alto, CA on the Stanford Campus in Palo Alto, Oct. 4-5
Tresidder Memorial Union/Oak Lounge and Cypress rooms

Oct. 4: 11 am - 4 pm
Oct. 5: 11 am - 3 pm

To pre-register, please submit your resume or CV via fax: (202) 289-6742, or via e-mail: bioscience@aaas.org. Please remember to bring multiple copies of your CV or resume with you to the Career Fairs, a copy will be necessary to register. Admission to the event is free.

bioSCIENCE CAREER FAIRS

bioSCIENCE Career Fair Information On-Line:
<http://www.sciencemag.org>
(Choose SCIENCE Classified Advertising from the menu)

MASS SPECTROMETER ENGINEER

The **Jet Propulsion Laboratory** is a federally-funded research and development center operated for NASA by the California Institute of Technology located in Pasadena, California.

We are currently seeking an individual to support on-going research and development in ion and electron beam instrumentation for interplanetary science measurements and earth-based applications. Duties will include leading the development of new concepts in electron and ion sources, electron/ion/x-ray detectors and associated optical systems.

Qualified candidates will have a PhD in Physics, EE or similar discipline and 0-2 years practical laboratory experience (or MS with 6 years or BS with 8 years) in electron and ion beam instrumentation, including electron/ion sources and detectors.

Ideal candidates will have experience in the development of mass spectrometers, electron microscopy and x-ray analysis methods. Experience with x-ray and gamma ray detectors is also desired.

Please submit resume and salary history to:

Staffing, Dept. Code: T-63
Jet Propulsion Laboratory
California Institute
of Technology
4800 Oak Grove Drive
M/S 249-104
Pasadena, California 91109

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JPL
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VACCINE FORMULATION SCIENTISTS

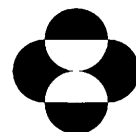
Merck Research Laboratories, a leader in pharmaceutical and biological research, is seeking highly motivated individuals to work on the characterization, stabilization, lyophilization and delivery of proteins and live viruses in support of human vaccine development.

The successful candidates will examine the physical, chemical and immunological integrity of vaccines during formulation processing and storage. The determination of pathways of inactivation at the molecular level will be emphasized. Application of these findings to the design and scale-up of stable vaccine formulations for clinical use will be essential.

A PhD, with 0-5 years experience, or an MS with 5-10 years experience, in biochemistry, virology, bioengineering, pharmaceutical technology or related disciplines or the equivalent is required. A diverse scientific background combining these technical areas or previous experience with lyophilization technology is desired but not essential. As part of a multidisciplinary and highly interactive team, excellent communication skills are also required.

Excellent salary and benefit programs accompany this position at our modern research facilities located 25 miles northwest of Philadelphia.

Please send curriculum vitae with cover letter and the names of three references to: **Personnel Manager, Ad #D-67, MRL Human Resources WP42-2, Merck Research Laboratories, P.O. Box 4, West Point, PA 19486.** Only candidates selected for interviews will receive responses. EEO/AA/VH Employer.



MERCK

Research Laboratories

Microbial Genome Analysis

The Center of Marine Biotechnology (COMB) of the University of Maryland Biotechnology Institute is seeking 3 postdoctoral Research Associates in the area of microbial genomic DNA analysis, focusing on bacteria and archaea from extreme environments. Two researchers in the laboratory of Dr. Frank Robb will work on genomic analysis, including hypothermophilic Archaea and other prokaryotes from extreme environments, the use of subtractive cloning and RDA analysis, and direct cloning from environmental DNA. The third position is a senior post-doctoral position which will supervise a sequencing and gap-filling team in addition to personal research on genome analysis of organisms from extreme environments. In addition to the qualifications listed above and extensive experience in the areas mentioned, candidates for the senior position must possess the ability to supervise other team members. The group will work in collaboration with related NSF and DOE funded projects which are aimed at functional analysis of enzymes from extremophiles. Qualifications include a Ph.D. from an accredited university in a related field and hands-on experience in bioinformatics, as well as a broad molecular genetics background including automated DNA sequencing. Enthusiasm for research with organisms from extreme environments is important.

Salary for all 3 positions is commensurate with experience and qualifications. Please send curriculum vitae, statement of research interests (indicating position FR96-4a for the first 2 positions or FR96-4b for the senior position) and the names, titles, and addresses of 3 references by September 30, 1996, to: **Ms. Tyra Burman, Position FR96-4a (or FR96-4b), Center of Marine Biotechnology, Suite 236, Columbus Center, 701 E. Pratt Street, Baltimore, MD 21202.** An AA/EEO Employer.

NEUROSCIENCE—ANATOMY FACULTY POSITION

The Department of Anatomical Sciences has a tenure-track position available for appointment beginning on or before July 1, 1997. Applicants should hold a Ph.D., M.D. or equivalent degree. Appointment will be made at the Associate or Full Professor level, though advanced Assistant Professors will be considered. The candidate is expected to have a funded and established independent research program in neuroscience. Opportunity exists for joint affiliation with the Oklahoma Center for NeuroSciences (OCNS). Teaching responsibilities will be in the team-taught Microanatomy course for professional and graduate students. Candidates should have sufficient experience in teaching Microanatomy to assume an immediate and effective role in the course. Applicants should submit curriculum vitae, with an accompanying summary of past and proposed research interests, teaching experience, and names of three references.

Review of applicants begins October 1, 1996, and will continue until the position is filled.

Send all materials to: **Raymond E. Papka, Ph.D., Professor and Chairman, Department of Anatomical Sciences, University of Oklahoma Health Sciences Center, Post Office Box 26901, Oklahoma City, Oklahoma 73190. (405) 271-2377; Fax: (405) 271-3548; e-mail: raymond-papka@uokhsc.edu.**

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Position available immediately for highly motivated individual to study the development and application of recombinant lentivirus-

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based vectors for somatic gene transfer in animal models of metabolic and endocrine disorders. Applicants must have a

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Please send curriculum vitae and the names of three references to: **Savio L. C. Woo, Ph.D., Institute of Gene Therapy and Molecular Medicine, The Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574.** EOE.

The Mount Sinai Medical Center

POSITIONS OPEN

POSTDOCTORAL POSITIONS UNIVERSITY OF MICHIGAN DEPARTMENT OF RADIATION ONCOLOGY

POSTDOCTORAL POSITIONS in the Division of Radiation and Cancer Biology are available immediately to study potential applications of gene transfer therapy to radiation oncology. An additional position to study growth regulation in human breast cancer cells is also available. The Division includes nine laboratories, with several areas under investigation relating to gene therapy including enzyme/prodrug radiation sensitizers, radiation-induced promoters, radiation-induced and growth factor regulated signal transduction, DNA damage repair pathways, and triggering of p53 induction and apoptosis. The successful candidates will have a Ph.D. and a strong background in cell biology, molecular biology, or molecular pharmacology. Interested applicants should send their curriculum vitae and names of three references to: **Theodore S. Lawrence, M.D., Ph.D., Department of Radiation Oncology, University of Michigan, 1331 East Ann Street, Room 3001, Ann Arbor, MI 48109-0582.** Equal Opportunity Employer.

POSTDOCTORAL POSITION X-ray Crystallography and Drug Design Rosenstein Basic Medical Sciences Research Center Brandeis University

Available immediately. The position forms part of a highly focused and energetic interdisciplinary team devoted to new drug discovery using a combination of rational design and combinatorial chemistry techniques. Applicants must have a strong background in protein biochemistry/enzymology and be willing to learn or increase skills in protein crystallography. The successful candidate will be responsible for performing structural analyses of ligand-protein interactions and managing relevant bioactivity assays. This position offers excellent experience for those with either industrial or academic career interests. The position will last one year, with the possibility of two years upon mutual agreement. Send curriculum vitae, statement of research interests, and two letters of recommendation to: **Professors Greg Petsko and Dagmar Ringe, c/o Dr. Steve Gallion, Rosenstein Basic Medical Sciences Center, Brandeis University, 200 South Street, Waltham, MA 02254.**

POSTDOCTORATE POSITION

The Division of Pulmonary Medicine, Allergy/Clinical Immunology at Children's Hospital Medical Center is seeking a Ph.D. and/or M.D. focused on molecular mechanisms of allergic inflammation. Research is focused on eosinophil biology, eosinophil trafficking healthy and disease states and the role of chemokines and their receptors in allergic and tumor responses. Approaches used include molecular and cellular biology, gene discovery, mouse transgenic and homologous recombination, and immune models in animals. Applicants should have extensive experience and/or interest in these areas. Send curriculum vitae and cover letter to:

Marc Rothenberg, M.D., Ph.D.
Division of Pulmonary Medicine, Allergy/
Clinical Immunology
Children's Hospital Medical Center
3333 Burnet Avenue
Cincinnati, OH 45229-3039

Children's Hospital Medical Center is an Affirmative Action/Equal Opportunity Institution. Women and minorities are encouraged to apply.

A **POSTDOCTORAL POSITION** is available to study a novel chloroplast protein import pathway. *Engelma* chloroplast protein precursors are polypeptides. They are transported as integral membrane proteins to the Golgi apparatus prior to chloroplast import and processing (see *JBC*, 270: 13084, 1995; *The Plant Cell*, 8: 43, 1996). Research is focused on reconstituting Golgi to chloroplast transport, chloroplast protein import, and processing protease characterization. Experience in biochemistry, cell or molecular biology preferred. Send curriculum vitae, research experience and three letters of recommendation to: **Steven D. Schwartzbach, School of Biological Sciences, E207 Beadle Center, University of Nebraska-Lincoln, NE 68588. FAX: 402-472-8722.** University of Nebraska-Lincoln assures reasonable accommodation under the Americans with Disabilities Act; contact Marty Schell at 402-472-1107 for assistance.

POSITIONS OPEN

POSTDOCTORAL POSITIONS Cellular and Molecular Immunology

Two postdoctoral positions are available immediately to study 1) the role of novel costimulatory molecules in developing Th1 and Th2 subsets, and 2) the function of new chemokines and their mechanisms of action in inhibiting HIV infection. A solid background in cellular immunology and molecular biology is highly desirable. Please send your curriculum vitae, and names and telephone numbers of two references to: **Byoung S. Kwon, Ph.D., Indiana University School of Medicine, Department of Microbiology and Immunology, 635 Barnhill Drive—MS 255, Indianapolis, IN 46202. Telephone: 317-274-3950; FAX: 317-274-4090; Email: KKWON@SUNFLOWER.BIO.INDIANA.EDU.** Indiana University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION CELLULAR AND MOLECULAR NEUROPHYSIOLOGY IN DROSOPHILA

Applications are requested for a **POSTDOCTORAL FELLOW** position to study cellular neurobiology using a multidisciplinary approach in the model organism, *Drosophila melanogaster* (available January 1997). Qualified candidates should have a strong interest in electrophysiological analysis of synaptic mechanisms as a complement to genetic and molecular characterization of *Drosophila* neurological mutants. While no electrophysiology experience is required, manual dexterity and some aptitude for working with computers and other electronic equipment are essential. Salary is guaranteed for 1.5 years with the possibility of extended funding. Send curriculum vitae and reference information to: **Dr. Richard Ordway, Department of Biology, The Pennsylvania State University, 208 Mueller Lab, University Park, PA 16802. Email: RWO4@psu.edu.** An Affirmative Action/Equal Opportunity Employer; women and minorities encouraged to apply.

POSTDOCTORAL POSITIONS

POSTDOCTORAL POSITIONS are available immediately to investigate the recently discovered binding sites (cClqR and gCqR) for the complement subcomponent Clq on human blood platelets and umbilical vein endothelial cells (*J. Immunol.*, 152: 5896-5901, 1994; *Semin. Hemmatol.* 31: 320-328, 1994). Ph.D. and/or M.D. cell biologists, molecular biologists, and immunologists are needed to elucidate the cellular and biological properties of both binding sites, their cellular and subcellular distribution, and their physiological potential in thrombosis and inflammation.

Submit curriculum vitae and three references by mail or FAX to: **Dr. Ellinor Peerschke, Professor of Pathology, Cornell University Medical Center, 525 East 68th Street, New York, NY 10021. FAX: 212-746-8192.** Equal Employment Opportunity/Affirmative Action/Minorities/Females.

POSTDOCTORAL POSITION available immediately on an NIH-funded project to investigate the role of proteins mediating presynaptic mechanisms of neurotransmitter release. Research will involve an integrated approach including generation of transgenic and/or knockout mice with a multi-level analysis of gene expression, neurotransmitter release and impact on behavior, particularly hyperkinesis. Applicants must have a Ph.D. with a strong background in molecular genetics and neurobiology. For more information or to apply send curriculum vitae and names of three references to: **Michael C. Wilson, Department of Biochemistry, University of New Mexico Health Sciences Center, Basic Medical Sciences Building, Albuquerque, NM 87131-5221. FAX: 505-277-5389.** The University of New Mexico is an Affirmative Action/Equal Opportunity Employer and Educator.

Applications are invited for an immediate **POSTDOCTORAL FELLOWSHIP** to study the structure and function of S100 proteins using NMR spectroscopy. Candidates with a Ph.D. degree in chemistry, biochemistry, or biophysical chemistry are preferred. Please send a curriculum vitae and the names and phone numbers of three references to: **Dr. David J. Weber, University of Maryland School of Medicine, Department of Biochemistry and Molecular Biology, 108 N. Greene St. Baltimore, MD 21201. Telephone: 410-706-4354; FAX: 410-706-0458; Email: weber@noe.ab.umd.edu.** An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION CANCER/STRUCTURAL BIOLOGY

A **POSTDOCTORAL POSITION** is available immediately to join a team studying the structural biology of the enzyme glutamyl hydrolase and the role of glutamyl hydrolase in antifolate activity, drug resistance, and folate growth dependence. Projects include structure-function studies using site-directed mutagenesis, and the structural characterization of this glycoprotein using NMR, mass spectrometry, and crystallography. Experience in molecular biology, protein expression systems, and protein characterization is desirable. Please send a curriculum vitae and the names of three references to: **Dr. John Galivan or Dr. Thomas J. Ryan, Wadsworth Center, New York State Department of Health, P.O. Box 509, Albany, NY 12201-0509. FAX: 518-473-2900; Email: jhg01@health.state.ny.us.**

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ANNOUNCEMENTS

CALL FOR NOMINATIONS BUSSE RESEARCH AWARDS

Promoting international research in gerontology, two Busse Research Awards will be given at the XVth International Congress of Gerontology, Adelaide, Australia, August 1997. Two gerontologists (**JUNIOR or MID-CAREER**) who have made significant contributions to aging research will be selected. One award will recognize a scientist from the social/behavioral sciences; the other, from the biomedical sciences. Awards: \$2000 each, with up to \$2,500 provided for travel/living expenses. Awardees must present a lecture based on their research at the Congress.

Deadline for receipt of applications: October 30, 1996.

For information and application forms contact:

Harvey Jay Cohen, M.D.,

Jury Chair,

Busse Research Awards,

Center for Aging,

Box 3003,

Duke University Medical Center,

Durham, NC 27710, USA.

Telephone: 919-660-7502

FAX: 919-684-8569

Email: ray00004@mc.duke.edu.

RESEARCH ASSOCIATES IN SPACE BIOLOGY

The advances in the space shuttle program and development of the space station have allowed the development of space biology science that offers exceptional opportunities for research. NASA is offering **RESEARCH ASSOCIATE AWARDS** at the postdoctoral level for scientists to conduct space biology research in a university laboratory or nongovernmental research institute of your choice that can provide the necessary facilities and research environment. Projects should be in the gravitational and space biology discipline. The awards are: \$20,000 for the first year and \$22,000 for the second year. Funding will begin July 1 to October 1, 1997. U.S. citizens and permanent resident aliens with Ph.D., M.D., D.V.M., D.M.D. or equivalent degrees are eligible to apply. Proposals are due February 17, 1997. For information and application booklet contact: **Dr. Gerald Sonnenfeld, Department of General Surgery Research, Carolinas Medical Center, P.O. Box 32861, Charlotte, NC 28232. Telephone: 704-355-2639. FAX: 704-355-7203.**

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RESEARCH BIOLOGIST Cell Biology

We currently have a position available in Cell Biology for a BS/MS-level Research professional with experience in tissue culture and cell biology/molecular biology. The successful candidate will be involved in developing inhibitors of key regulators of cancer, human papillomavirus, and the cell cycle. Technical skills in tissue culture, protein analysis, apoptosis, molecular biology, and flow cytometry are desired. At least 2 years of research experience is required.

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Post-Doctoral Position in Molecular Pharmacology at St. Jude Children's Research Hospital

The laboratory is interested in defining signal transduction pathways involved in growth, differentiation, and most importantly, chemotherapeutic drug resistance in neuroblastoma. We are currently focused on the role TRK family receptors have in neuroblastoma, especially whether neurotrophins are involved in a novel mechanism of drug resistance. The institution offers a rich collaborative research environment with exceptional facilities. The position should provide an outstanding opportunity for career development in molecular pharmacology.

The ideal candidate will have a strong background in applying molecular biology to signal transduction problems, coupled with an interest in pharmacological approaches to elucidating signal transduction pathways. Interested candidates should send a curriculum vitae and the names of three references, as soon as possible, to: **David Middlemas, Department of Molecular Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, P.O. Box 318, Memphis, TN 38101-0318. AA/EOE**

Nutritionist

**Department of Agriculture (USDA)
Agricultural Research Service (ARS)**

Position/Location: The National Program Staff, Agriproducts and Human Nutrition Sciences Branch at the Agricultural Research Service, USDA, Beltsville, Maryland, has an opening for a National Program Leader for Nutrition.

Responsibilities: To lead and coordinate agricultural research programs relating to human nutrition and the food supply. To provide leadership and coordination for programs that creatively expand the knowledge base needed to make nutrient and dietary recommendations to the public and resolve issues associated with dietary guidance, food assistance and relation of nutrition to health, food supply and processing, food composition and biotechnology. To participate in implementation and operations planning and review teams to assess, validate, and initiate programs or program shifts needed to reflect national priorities and policies. To participate in Agency budget development and serve as a technical expert for advice on technical policy and issues.

Qualifications/Salary: Bachelor's or higher degree in dietetics, food, nutrition, or closely related science. A Ph.D. is desirable. Candidates must have experience with human nutrition research related to nutrient functions and requirements as well as demonstrated ability to administratively lead and coordinate research programs. For specific qualifications, see vacancy announcement. The appointment is a permanent full-time position and requires U.S. citizenship. Salary commensurate with experience (\$73,486—\$95,531).

To Apply: For an application package with complete qualification requirements and instructions, contact the Human Resources Division (301) 344-4638 or (301) 344-2288, and request vacancy announcement number ARS-D-H-6-024. For information on the position, contact Ms. Wilda Martinez at (301) 504-6275, fax: (301) 504-6699.

Effective Date: Applications must be marked ARS-D-H-6-024-B610 and postmarked by October 7, 1996.

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PROFESSOR AND DIRECTOR EYE RESEARCH INSTITUTE OF OAKLAND UNIVERSITY

Applications and nominations are invited for the position of Director of the Eye Research Institute of Oakland University. The candidate must have a Ph.D. and/or M.D. degree, a distinguished record of scholarly activity as evidenced by a strong publication record, and a vigorous, nationally recognized vision research program. The successful candidate will have academic credentials commensurate with the rank of Professor and a record exhibiting strong administrative skills as well as the ability to attract research support. The new Director will be expected to provide leadership to a group of well-established, productive vision researchers while conducting his or her own active eye research program and interacting with clinical faculty in the investigation of disease-oriented visual disorders. Individuals with an interest in retinal disease are particularly encouraged to apply. Generous space and start-up funds are available, and the successful candidate will also be able to participate in the recruitment of a new junior faculty member.

The Eye Research Institute is an independent academic unit of Oakland University, a state-supported institution situated on a 1400-acre campus, 25 miles north of Detroit, with an enrollment of 13,600 students in baccalaureate and graduate programs. The Institute is a major center for ophthalmic research and conducts basic studies on eye diseases that cause blindness. Eight faculty members and a support staff of 25 carry out research in the biochemistry, physiology, and molecular biology of the cornea, lens, retina, and intraocular fluids. In addition, a formal affiliation exists between the Institute and the Ophthalmology Department of a major area hospital allowing for collaboration on clinical projects and a joint ophthalmology residency and fellowship program. Oakland University holds a Core Center Grant for Vision Research awarded by the National Eye Institute.

Applicants should send a curriculum vitae, 3 to 5 selected reprints, and the names of 3 references by December 1, 1996, to: **Frank Giblin, Ph.D., Chair, Search Committee, Eye Research Institute, Oakland University, Rochester, MI 48309-4401.**

Oakland University is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minorities.

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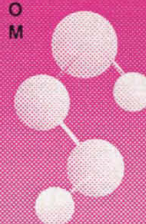
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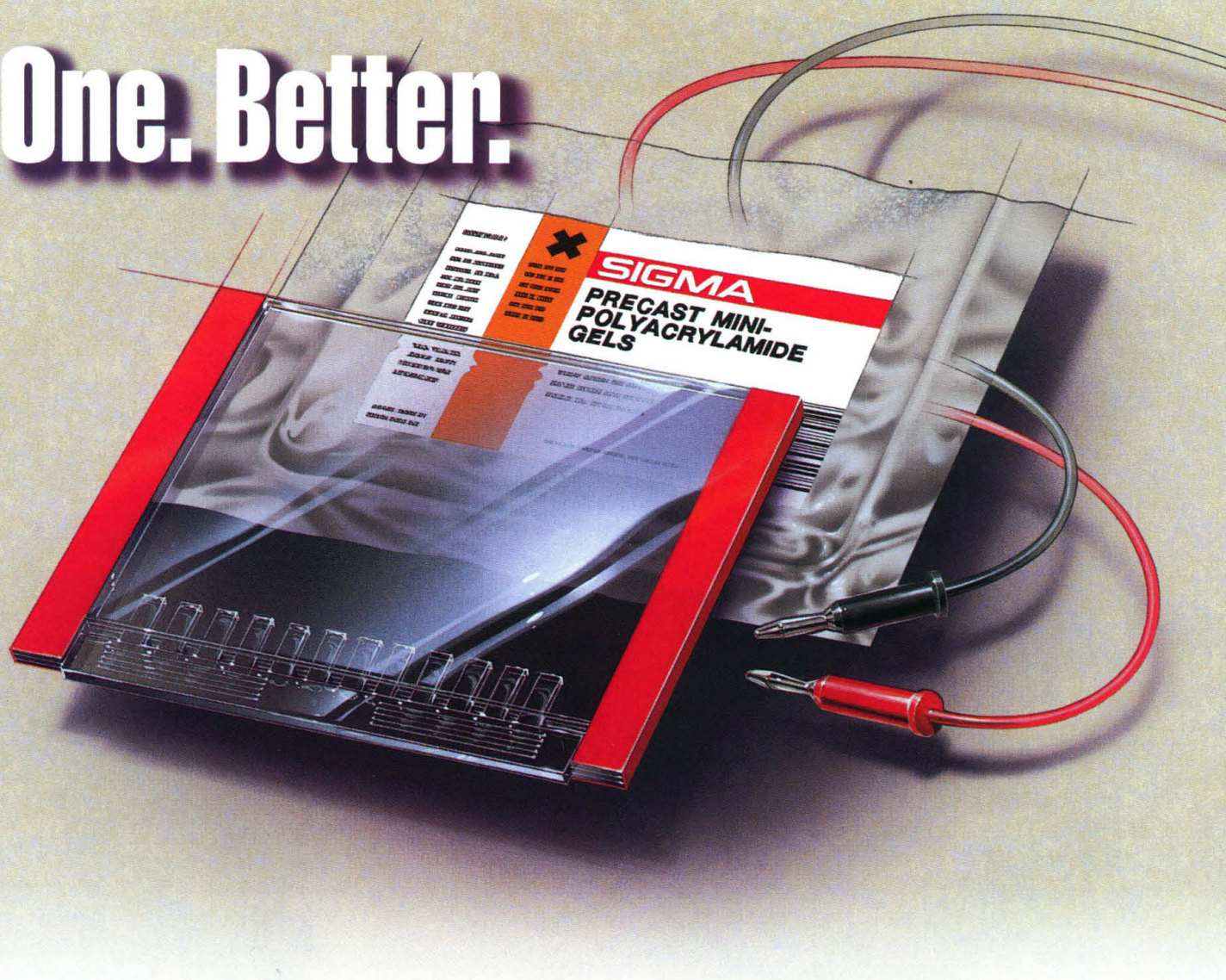
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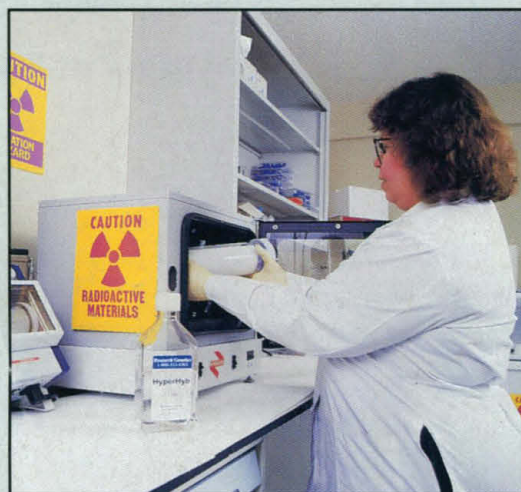
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