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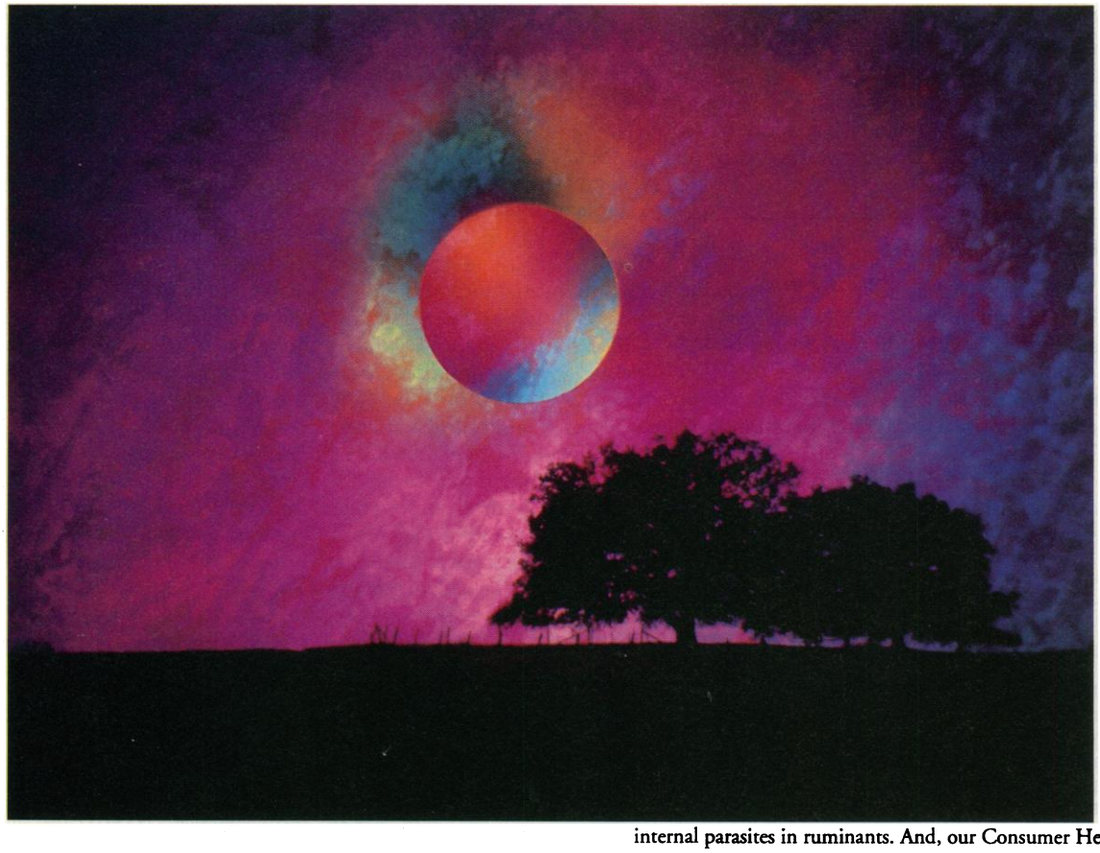

Bert Adler, photography 1989

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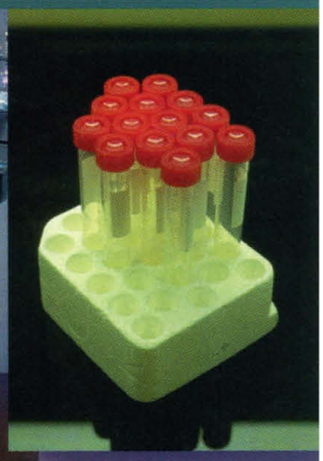
Advertising Supplement
BS & MS Careers in Science 1994

Futures in Academic and Industrial Science for



Graduate Programs

- Baylor
- Indiana University
- NYU
- Scripps
- UCLA

New Jobs, New Science

- Hoffmann-La Roche
- Merck
- Procter & Gamble
- Unilever

Co-ops and Internships

- Biotech
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Recombinant Opportunities

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- Ligand

Temporary and Contract Employment

- Lab Support
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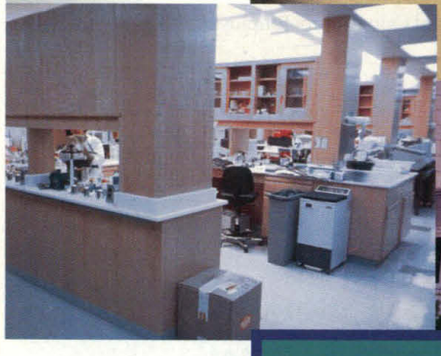
BS & MS Scientists



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Look for text highlighted in this color—it denotes discussion of hot fields and skills

BS and MS scientists face a wide menu of career choices.

On that menu one can find the biotech and pharmaceuticals industries; college and university degree programs; contract research organizations (CRO's); private and nonprofit research institutions; temporary employment agencies; and government science.

Each choice leads to a complex, interactive path, self-guiding, with no two paths exactly alike. Below, a broad range of scientists discuss the paths they have taken and why.

"Critically Important" Scientists. We imagine the scientist as the PhD star with a BS/MS supporting cast. While the PhD is the better-paid and more glamorous degree, the fact remains that most science jobs are held by non-PhD scientists. David W. Robertson, vice president of discovery research at Ligand Pharmaceuticals Inc., La Jolla, California, says, "These scientists are critically important for our industry, both in the conduct of science and in the generation of ideas." More than 20 managers, CEO's, and human resource officers interviewed for this article agreed. Non-PhDs work throughout the corporation, the academy, and government science labs. Some work for a year or two before moving on to medical school or a higher degree; some rise to positions of great responsibility, managing laboratories, publishing papers, and gaining PhD-level respect; some migrate out of the lab and into management, marketing, patent law, and sales.

According to the National Science Board, in 1991 (the latest year available), 337,675 bachelor's degrees and 78,368 master's degrees were awarded in engineering and science. From there, about a third went directly into higher-degree programs. Almost all of the remaining two-thirds got jobs (even in the rough job market of the past five years, science majors have experienced only 2.3 percent unemployment). Many combined work with further education, either taking night courses or working part-time.

Ed Bocko, a biotech consultant, reminds us that in industry "you still see the classic positions for BSs in chemistry and biology: research technicians or research associates doing work in R&D discovery. That's still a strong market. Companies continue to look for degrees from schools with more advanced programs, schools that teach the latest techniques. They're looking for people who can bring with them newer technologies." While research job numbers have held steady or declined slightly in the past two years, manufacturing and production employment is growing. "In process development," Bocko says, "there's a continuing market for the MS in chemical engineering and biochemistry." Growing most quickly of all is the service side—product development, marketing, and sales.

Salaries. According to the National Science Board, most scientists work in industry, although the largest single employer is still the U.S. government. Industry pays the best, followed by government, nonprofits, and academia. PhDs earn by far the highest median salaries, averaging about $60,700 for all sectors. Beginning salary offers to non-PhDs, excluding benefits, vary according to field. In 1993, BS biologists averaged a starting salary of $21,558, compared to a salary of $28,002 for chemists and between $30,000 and $38,000 for engineers. MS salaries "average $4,000 to $8,000 more than the BS level," according to Bocko. Prior experience counts. Non-PhD scientists with outstanding laboratory experience can expect to start higher. As one manager told us, "If a BS comes in with MS-level experience and skills, I'll feel fine about starting him or her at an MS level—and so on."

In academic, governmental, or nonprofit science, scientists are more likely to work in jobs closely related to their degree. In industry, however, flexibility is the watchword. "If you're willing to explore other routes, other parts of the company," says one human resources manager, "there's no telling where you could end up. Use your science training to learn a management role, and then the ceilings disappear."

Romancing the Genome at Merck

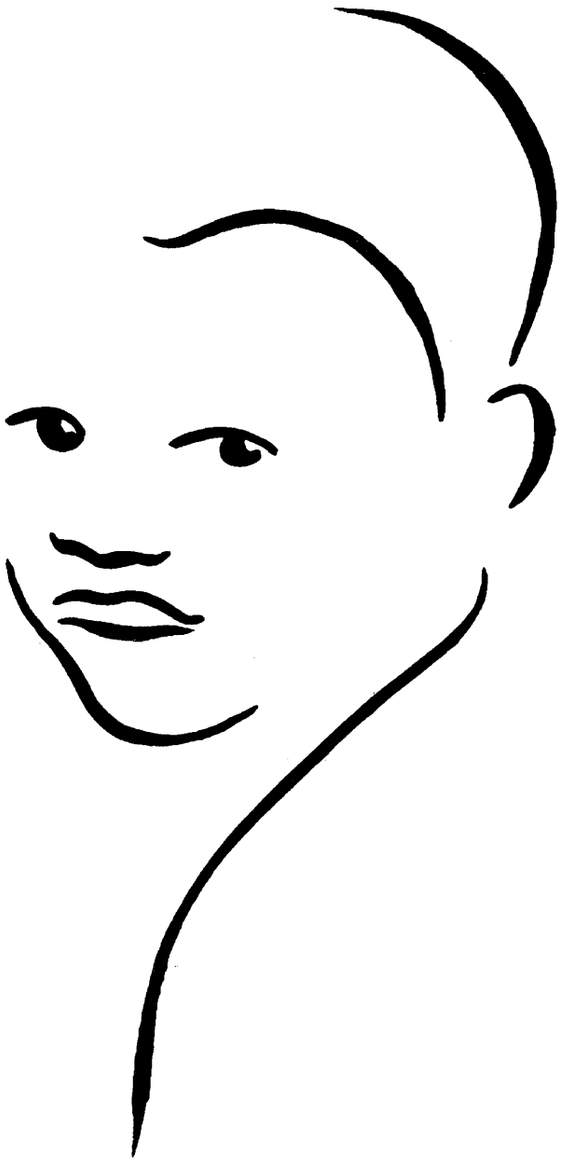
It's not every day you get to create a new department in a new scientific area.

Such was the opportunity that befell Keith Elliston (BA, environmental studies and biology; MA, genetics), associate director of bioinformatics at Merck Research Laboratories (MRL). Personal history played a role. Elliston was en route (he thought) to a PhD in genetics when he began to consult for Merck, teaching DNA sequencing. When the PhD took a hiatus, Elliston accepted a position with Merck. Enter world history: the Human Genome Project. Merck was already an industry leader in computational analysis of biologic data. Microbiologist Richard Goldberg put together Elliston, sequencing, the Genome Project, and computers.

The result was what Elliston calls "one of the first mature computational molecular biology programs in the country." In the fall of 1993, Merck made it official: the department of bioinformatics—the process of collecting, analyzing, and storing worldwide information relating to the Human Genome Project. That includes tracking, classifying, and storing each discovery until a great mind sees its application. At that point, bioinformatics gives way to genomics, the science of relating human genome information to the treatment of human

Cover photos: Top (left to right): Seattle; work station photographed at CTI; test tubes photographed at Scripps; Below (left to right): New lab building photographed at Amgen; building at Hoffmann-La Roche photographed by John Timpane; equipment photographed at Ligand. Photography (unless otherwise noted) and design: Liz Vahlsing; Photo-illustration: Mona Meisami; Digital pre-press: Indian Rock Imagesetting, Inc.

BS/MS Opportunities



Picture a boy of six. A boy whose life takes on dramatic improvement. A boy whose diabetes is now easily managed through an oral drug taken only once a day. Now picture someone else. Imagine a life that's been extended. Or saved. Or a life that, thanks to new medication, no longer includes chronic pain or the need for invasive surgery.

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Central Research

Merck *cont.*

diseases and disorders.

Elliston's job is to keep different project teams abreast of genomic information of interest. "They then determine how the information fits," Elliston says. "For example, I kept our interleukin-1-converting-enzyme cloning group informed about which aspects had been characterized and which hadn't."

"My experience here has been very positive," says Deborah Defeo-Jones (BS, biology with a chemistry minor; MS, genetics), senior research fellow in the cancer biology section of MRL. "I probably have been given more responsibility here than I ever would have been given in academic science, where you need a PhD. I've been exceptionally lucky in the labs I landed in and when." Those labs included I. B. Weinstein's cancer research laboratory at Columbia University, which she calls "an eye-opening experience," and Edward Scolnick's laboratory at the National Institutes of Health.

Top: Keith Elliston and Deborah Defeo-Jones of Merck Research Laboratories; Below: Scientists at P&G (clockwise from top left): Lisa Allgood, Joseph Gardner, Chris Calhoun, Mary Lou Baker

Defeo-Jones followed Scolnick to Merck. Her work cloning yeast *ras* genes was her first breakthrough, and since then, her cancer research has led to a steady series of promotions. Hot fields in her department include *ras* gene research, growth factor signal transduction pathways, growth factor receptor inhibition, and cell cycle regulation. Still, she doesn't recommend the route she has taken. "If you want to reach the very top in research, go for the PhD. I've been lucky. My experience in the lab is what has stood me in best stead. Hands-on laboratory time is the most valuable thing a beginning scientist can acquire."

Like many companies, MRL has instituted a two-tier promotion system so that non-PhD scientists of distinction do not "top out" but rather move to the PhD track and continue their rise. While non-PhDs usually start at a lower level and take longer to achieve PhD-level goals, it has been done. "Essentially, there need not be a glass ceiling here," says Elliston. "You can find non-PhD scientists all the way up to vice president's level. Good work is recognized here no matter where it comes from."

Susan Jenkins (MS, chemistry), associate director of human resources at MRL, says, "We have many non-PhD people who have discovered leads for many products now on the market." One is Al Alberts, a BS scientist whose staff developed a screening program that identified the activity of lovastatin as an inhibitor of HMG-CoA reductase, a key enzyme in cholesterol synthesis. The result is Mevacor®, one of Merck's most important products.

Jenkins, who spent 15 years at the bench before moving to human resources, thinks that entry-level BS scientists these days are "unbelievably" sharp. "They've gotten the message about lab experience, and they know the job arena is competitive." She gives a familiar recipe for an attractive undergraduate degree. "Start right away looking for a professor, a predoc, or postdoc with whom you can do an independent project—sometimes that can lead to a mention on a publication. Look for summer experience. And stay up on the literature."

Elliston is not only exploring a new science; he's also "about a year away" from completing his PhD. "The thing is to be an independent thinker while working as part of a discovery team. That's the key to good science, at Merck and anywhere else."

Procter & Gamble: Science in Unpredictable Settings

"In clinical development, you're certainly doing science, but you're doing it in the world's most unpredictable model—human beings," says Lisa Allgood (BA, biochemistry; MS, immunocytochemistry), section head of worldwide clinical development, gastrointestinal products, the Procter & Gamble Co., Cincinnati, Ohio

"You have to have a firm basic scientific understanding of the compound you're testing. You need to know the medical science. And you have to be able to balance what the consumer wants (in terms of aesthetics, ease of use, safety, and efficacy) with FDA guidelines."

With nearly $3 billion in worldwide health care sales, Procter & Gamble makes and markets both prescription and nonprescription products in 60 countries. Leading brands include Macrobid®, a prescription treatment for uncomplicated urinary tract infections; Metamucil® and Pepto-Bismol®, in the OTC gastrointestinal category; the Vicks-NyQuil line of OTC cough/cold products; and the newest OTC pain reliever, Aleve®. The P&G pipeline includes, among other things, products for the treatment of osteoporosis.

Tim Collins, manager of BS/MS technical recruiting, says that "entry-level BS/MS people will most likely start in drug discovery or drug development, working in a lab with a PhD scientist either doing preclinical work or moving a new chemical entity toward the approval process. We also hire BS and MS chemical engineers for manufacturing, process development, and product development assignments." Many BS/MS scientists move into regulatory affairs and into clinical development as clinical research associates (CRA's). Hot fields at P&G include synthetic organic chemistry and biology (with emphasis on in vivo models

Merck: Research Laboratories photographs taken by John Timpane; Procter & Gamble photographs courtesy of Procter & Gamble

Procter & Gamble *cont.*

and preclinical testing). "We look," Collins says, "for lab experience first and foremost."

Joseph Gardner, associate director of synthetic chemistry and drug design, values scientists versed in structural biology, physical chemistry or biochemistry, and protein or oligonucleotide structure determination. Gardner finds that "the skill level of our new people is increasing, and that leads to heightened expectations on both sides." New chemists want more responsibility, and their supervisors are pleased to let them have it. "P&G has an atmosphere that encourages independence," says chemist Mary Lou Baker (BS and MS, chemistry). "I really appreciate that. Within the boundaries of your particular project, they want you to work as much on your own as you can. That has made me a better chemist."

P&G has instituted a technical recognition system whereby outstanding scientists and engineers at all degree levels can advance up the technologist track. "In the old system," Gardner says, "we had just one level—technician—which accommodated everyone from highschool scientists to MS scientists. There wasn't much latitude, and there was a real divider between non-PhDs and the PhD group. Now it's possible for all scientists to reach the very top of the research ladder. Non-PhDs are being promoted to senior scientists and above every year."

Chris Calhoun (BS, chemical engineering), section head of process development in the pharmaceuticals division, initially chose manufacturing management over process development because he had assumed the latter was too lab-bound. While he enjoyed manufacturing, he eventually saw "more technical impact" in process development. "I saw opportunities to learn the fundamentals of making tablets: characterizing materials, selecting and formulating ingredients, not just showing that something works, but also why it works."

Allgood's first job involved setting up a flow cytometry laboratory at a pharmaceutical company. From there she came to Procter & Gamble, where she has risen steadily in five years. Both she and Calhoun stress the interactive, interdepartmental aspect of their jobs. Allgood has a staff of 13, including two MDs and two PhDs. She consults frequently with the regulatory, clinical, and product development groups. Calhoun's group is similarly diverse. "We have industrial pharmacists, chemical engineers, and packaging engineers; we also have various BS and non-BS scientists working as research associates. Plus there's constant interaction with regulatory scientists, analytical chemists, preformulators, and physical chemists."

Allgood, Collins, and Gardner all suggest that the BS candidate get a range of laboratory experience. "Do a different internship each summer," Allgood says. "See as many different kinds of science as you can." Baker says, "If you get a job in industry early on, try to work toward your PhD over time. That way, you're not a starving grad student, and you're getting work experience at the same time." From Baker's joyful independence to Calhoun's pleasure at "being right in the middle of things," the non-PhD scientists at P&G are working toward, in Allgood's words, "the best possible blend of people and science."

Brad Dayton

Senior university relations representative
Hoffmann-La Roche, Nutley, New Jersey

"The BS and MS degrees are very important at Hoffmann-La Roche and throughout the industry. A four-year undergraduate degree, at the very least, is a prerequisite for just about any position in a scientific field today, from research through sales.

Fields and Skills. Herbert Weissbach, director, Roche Institute of Molecular Biology, mentions molecular biology, genetics, cell biology, and biochemistry. We therefore need good people with experience in recombinant DNA technology, gene sequencing, genetic manipulations, and a wide variety of laboratory skills. Good preparation includes courses in genetics, cell biology, molecular biology, and biochemistry. We look for crossover, too: chemists who take biology, and biologists with experience in organic and physical chemistry.

Paydays. While there's a salary difference between the PhD and non-PhD candidate, the absolute difference, in terms of both salary and advancement opportunity, between an MS and a BS is generally not huge. So our job descriptions typically ask for either a BS- or a PhD-level candidate. But if an MS and a BS are interviewing for the same job, say, in synthetic organic chemistry, the MS may have an edge, because the degree speaks of greater training and experience.

BS/MS Plateau? Industrywide, there clearly is a plateau—especially in research. If you want to get to the very top of the research ladder, my advice is to persevere for the PhD—the extra years of work reap definite benefits.

Branching Out. But a number of successful BS- and MS-level scientists have moved out of research. A common move is to switch to a management track, beginning in clinical research as a CRA, then moving to a project manager position, and on up—often without having to advance your degree. Roche is big, however, on continuing education at all levels. If going back to school means helping the company while helping yourself, we'll encourage you.

In business-related, nonresearch jobs, undergraduate degrees are very important. Clearly, we need the BS in a scientific or technical discipline who has also acquired an MBA. BS/MS scientists also prosper in sales. A case in point is our president and CEO, Patrick Zenner, who started in sales and acquired an MBA along the way. Our CFO, Martin Stadler, started as a lab technician and got his MBA at night.

Cross-Functional Degrees. We're encouraging people to move outside their area of expertise to combine skills and develop their careers. These changes in the job scene reflect changes in the market. Companies are attempting to broaden their product offerings. Roche, for example, recently signed an agreement to purchase Syntex, providing us with a stronger worldwide presence and a deeper product pipeline. Having considered generic and OTC acquisitions, we decided long ago to enhance our position in the exciting world of biotechnology. Many of the best advances in biologic science—for example, in anti-HIV and anticancer therapy—are happening there. We own a controlling share of Genentech, and we've just signed a genomics research agreement with Millennium Pharmaceuticals Inc. It's the 'Build a Better Mousetrap' principle: If you can find the answer to an unanswered question with an innovative product, there is going to be a market for that product—and these days, many answers can be found in biotechnology."

Photography of Brad Dayton by John Timpane

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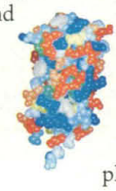

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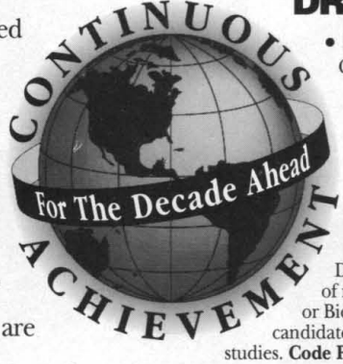

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Develop and implement microplate assays to support the discovery and optimization of novel small molecule drug candidates. This position requires a BS/MS in Chemistry or Biochemistry with a minimum of two years' relevant laboratory experience. The ideal candidate will have experience in high through screening, enzymology,or receptor/ligand studies. **Code PJ**

• Fermentation Research Associate

This position will support Genzyme's Drug Discovery Program through the production of target proteins in mammalian and insect cell cultures, and the production of natural product leads by microbial fermentation. Requires a BS/MS in Biological Science or Biochemical Engineering and 2-4 years of experience in microbial fermentation and mammalian and/or insect cell culture. **Code PJ**

RESEARCH SCIENTIST - PHARMACOKINETICS

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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*; bibliography; three letters of recommendation emphasizing your research potential; a statement of your research goals (approximately one page in length) and the type and purpose of training desired; and an official copy of your college transcript to Coordinator of Student Programs, NIH Office of Education.

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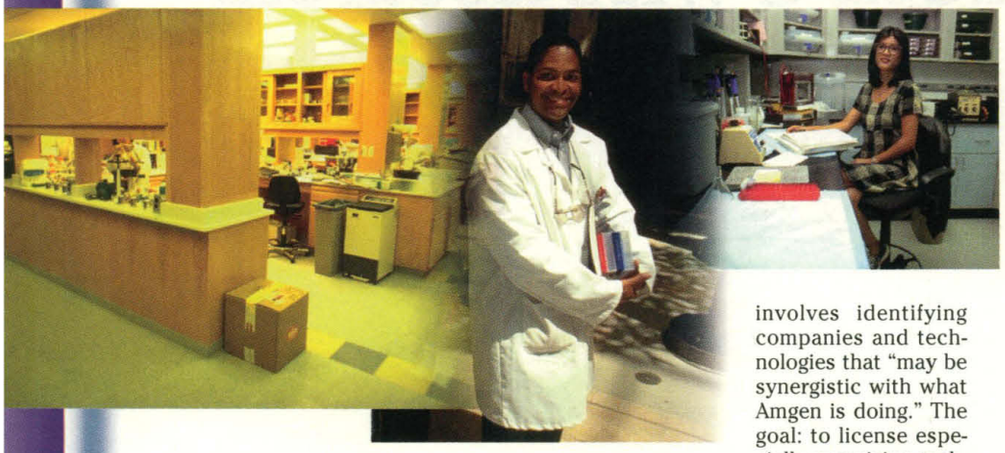
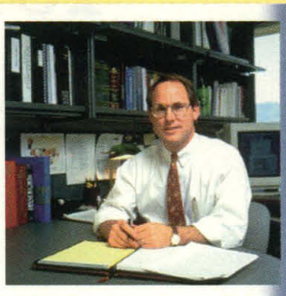
Amgen: Holding Science Aloft

It must be nice to be Amgen. In the first quarter of 1994, it posted a 20 percent increase in first quarter earnings per share—not bad in today's stormy health care environment.





Left to right: new labs at Amgen, Dick Preston Bell, Alberta Chu, Chris Giffin; Below: Jennifer Hsu-Chen

Neupogen® and Epogen®, its two flagship products, are entering new markets and seeking new indications, and three agents—Infergen®, a consensus interferon for the treatment of hepatitis C; a brain-derived neurotrophic factor; and a stem cell factor—are moving through trials.

Hot fields at Amgen include neuroscience, hematology, oncology, soft tissue repair and generation, and a new focus, inflammation. While Amgen PhDs are deservedly famous, this and all biotechs are held aloft by non-PhDs in every department. "We hire many BS/MS scientists in all aspects of science," says Jennifer Hsu-Chen (MS, plant pathology), human resources associate. "You'll find them in molecular biology, neurobiology, cellular biology, pharmacology, protein chemistry, and many other sciences." These people illustrate the true diversity of science jobs available for BS and MS scientists. As Chris Giffin (BS, microbiology; MS, cell biology), manager of product licensing, puts it, "People look for a formula for success, but there is none: everyone here has done it in a unique way."

Hsu-Chen started as a research associate. "But my collaborative experiences in the lab convinced me that I was more people-oriented, so when an opening came in human resources, I went for it." Alberta Chu (BS, general biology), research associate in process development, was studying marine biology at the University of California at San Diego when she took a year abroad in Australia. "That showed me that people were my real focus—and though my job in process development is research-oriented, it's surprisingly a people job too."

Giffin's job, product licensing, involves identifying companies and technologies that "may be synergistic with what Amgen is doing." The goal: to license especially promising technologies down the line. "We also look for promising molecules at companies that may not want to develop them on their own," Giffin says. "In those cases, we would assume development and marketing responsibilities." Such a job calls for a broad knowledge of the industry—and to that end, Giffin has created a database of many biotechnology companies relevant to Amgen's interests. "I review their research programs, learn all the products in development. I do preliminary reviews on interesting possibilities. I believe that it would be hard to do that without a strong scientific background."

After working in clinical trials at the oncology ward of the Ohio State Medical School, Dick Preston Bell (BS, microbiology; MBA), research associate in pharmacology, came to Cetus, one of biotech's first breakthrough companies. "I read about interferon in *Omni* when it first came out and said, 'That's pretty amazing'—and I ended up being one of the people working on it. My boss and I set up a pharmacokinetics lab at Cetus. When he left for Amgen, I followed. Interferon, interleukin-2, many monoclonal antibodies, immunotoxins, and growth factors—about every genetically engineered product that's been marketed so far—I did the pharmacokinetics. Very exciting, very hard work." Somewhere along the line, Bell found the time for an MBA and a sideline in financial services.

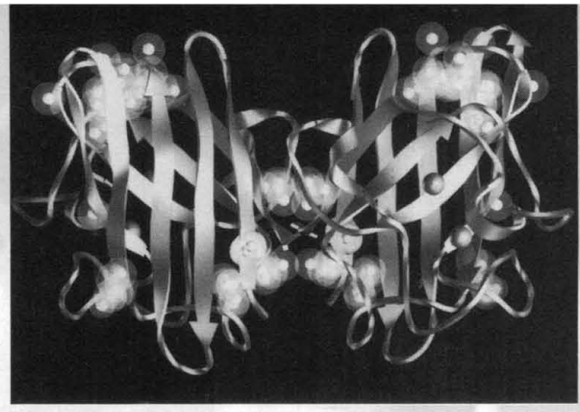
At Amgen, Bell combines science, business, and regulatory experience to ensure that the pharmacokinetics department conforms to FDA standards for good laboratory practices (GLPs). "Someone who has actually worked with FDA guidelines, as I have for 11 years, will best know how to meet them in given instances. I still do bench work, especially assay development and spectrometry."

Giffin recommends that beginning scientists ask themselves some important questions. "For myself, I saw that you could make it in research without a PhD, but you had to be exceptional. I had to ask myself, 'Is research where your strongest talents lie? Is this where you're going to be happiest?' Answering those questions, I realized that I had talents that made me valuable in other roles."

"Biotech is cutting-edge, and people need to be flexible and adaptable to meet new challenges," Hsu-Chen says. Amgen offers a wide range of career development programs for those pondering career changes. "If you don't feel challenged at your current position," Hsu-Chen says, "we think we're making a good investment in helping you identify the skills and talents you could use to go in new directions."

Bell is just beginning to see the full benefit of his BS and MBA: "I'm defining my own career path, creating a niche." When asked about getting a higher degree, Chu says, "I'm thinking about it," while Giffin says, "Sometimes an MBA looks interesting—but what's the benefit? Work is the best school I could find." Chu is already looking toward a future connecting biotechnology with people: "I think my future lies in educating the public about these breakthroughs in science and how they will change our lives."

In this people-oriented company, no one should be surprised that Hsu-Chen is tying on an apron for a Friday afternoon chili cook-off, or that Bell plays violin and guitar, has a novel and a book of poems near readiness, and is an accomplished water colorist. "But I'm not the only one," he says. "Amgen is a place that encourages well-roundedness."



The three dimensional structure of superoxide dismutase determined by John Tainer, Ph.D.

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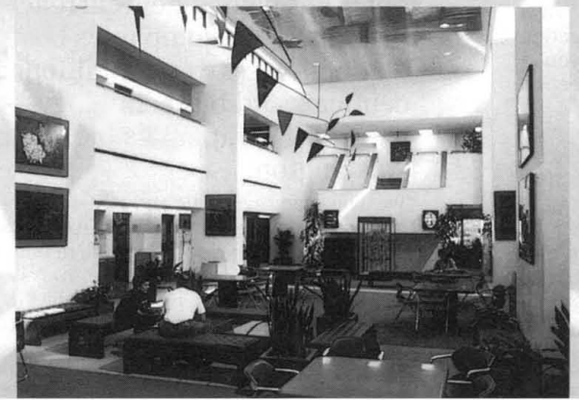
The central gallery of the Molecular Biology Building.



The atmosphere at TSRI is informal and collegial, a place where senior researchers, technicians, postdoctoral fellows and administrative support staff work as a team in the pursuit of scientific excellence. Members of the staff with BS/MS degrees hold positions of responsibility from research technicians to senior laboratory supervisors.

In addition to the more than 2,000 employees at the Institute, including 200 principal investigators and 500 postdoctoral fellows, a program of graduate studies currently houses 100 students enrolled in the doctoral program.

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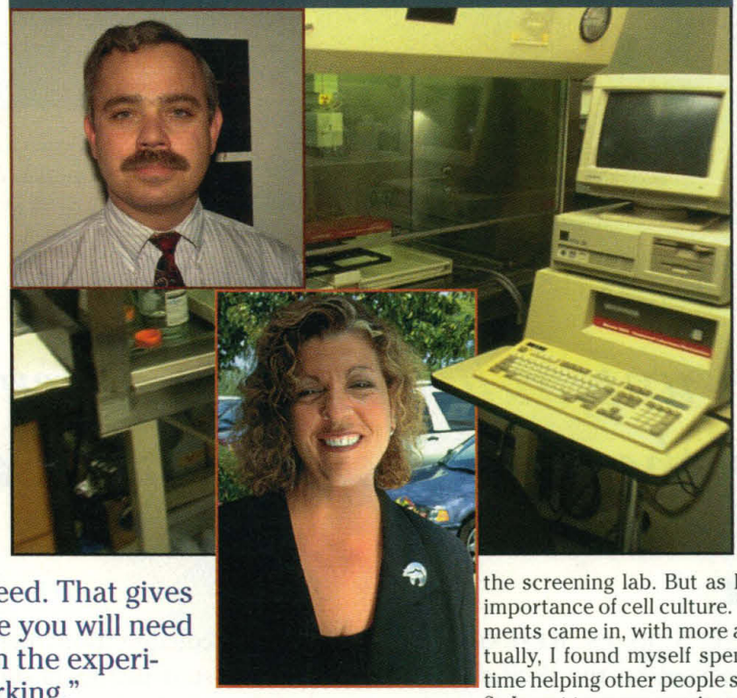
THE SCRIPPS RESEARCH INSTITUTE

The Adrenaline High at Ligand

"This business is very hard work." So says David W. Robertson, vice president of discovery research at Ligand Pharmaceuticals, Inc., La Jolla, California. "Most things don't work out. Frustration is part of the process. You really have to love it and derive a great deal of satisfaction—a rush, a high—when things succeed. That gives you the adrenaline you will need to persevere when the experiments are not working."



Hard workers: David W. Robertson and Abby Esty of Ligand

BS and MS scientists are not just the supporting cast at Ligand; they are key players. "We bring them directly into the process," Robertson says. "In fact, we expect that they'll be contributing to the creative process soon after their arrival.

"Our whole product is information, pure and simple. We're not in manufacturing, meaning that what we have to offer in return for investment is cutting-edge information that can lead to the creation of novel therapeutics."

Where is that cutting edge? Robertson alludes to antisense technology, now extremely hot throughout the biotech industry. "In terms of hot fields, we're very excited about apoptosis. Control of the cell cycle is also very hot. Anything you can do to manipulate or interfere with the way the cell regulates its processes, especially programmed cell suicide—which has obvious interest for cancer therapy—is of great interest right now. Another exciting area is ligand-gated transcription factors as a means of modulating gene transmission in a defined manner."

Also of interest are scientists with experience in many kinds of biology. "It's getting hard to distinguish many of the subdisciplines now," says Robertson, "and so we look for people with a lot of crossover in their background." MS scientists arrive to a higher set of expectations. "They have more training, more skills, more maturity than a newly minted BS. We expect them to begin contributing more quickly—and they do."

"Not all companies have this commitment to non-PhDs," says Abby Esty, manager of cell science in the research administration department of Ligand. "Where Ligand is good is that if you're doing PhD-level work, you get a PhD-level position. That keeps a lot of scientists going."

Esty should know. She followed yet another alternative path to a science career, beginning with a BA in mathematics from UC San Diego—and ending up as a core technology expert. After graduation, she worked in the pediatrics department of the UCSD Medical School "because that is where most of the jobs were." After a while, Esty noticed something. "Biology was a lot more interesting to me than math. I don't think I realized it, but I had started training for a career in science." After learning techniques in cell and tissue culture and molecular biology, she moved into virology, "cloning genes for just about everything." In the process, her name appeared as co-author on a dozen scientific papers, and she compiled a résumé of PhD-level experience and exposure.

After 12 years at UCSD, Esty heard the call of biotech. "It was the early 1980s, when the scene was just starting to blossom in San Diego, with Hybritech and a lot of start-ups. At Ligand, my experience was valued much more than my degree. I was able to move immediately into a supervisory position, equal to a PhD level right off the bat."

At first, she supervised a small working group that handled cell-related assays in the screening lab. But as Ligand grew, so did the importance of cell culture. "More and more departments came in, with more assays to do—and eventually, I found myself spending 80 percent of my time helping other people set up their experiments. So I went to my supervisor and said, 'Why don't we just turn this into my job?'"

By now, Esty is overseeing activities spanning six departments, two buildings, and over 50 people. In addition, she keeps track of the company's reagent inventory, as well as working with purchasing, facilities, and personnel. "I spend my day dealing with experimental design, in vitro assays, modeling systems, new techniques, new equipment, safety, bringing new cell lines in. My job has expanded into a more companywide management position.

"I don't see what purpose a PhD would serve right now," Esty says. "Granted, a BS coming in today wouldn't be able to do what I did just starting out. But if you get experience, anything is possible."

Being Part of the Process at CTI

"Biopharmaceutical" is not a new word, but it has gained new currency as a descriptor for companies bestriding the distinction between traditional pharmaceuticals and biotechnology—companies like Cell Therapeutics Inc. of Seattle, Washington.

"We have many synthetic and analytical chemists working alongside practitioners of the new biology," says Susan Moore, vice president of human resources. "We're only two years old, but we're already in the clinic. And we're always looking for good BS/MS people, in research as well as in clinical and regulatory affairs, quality assurance, and quality control. They really

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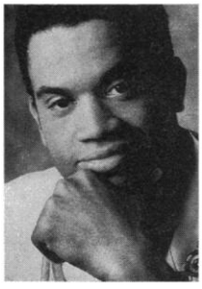

prey nearly oblivious of racial differences and national borders. Next door or in a country half a world away, people suffer. The challenge of battle with such a formidable foe is enormous, and yet the intrinsic worth of each of us demands that the battle be waged. Without compromise.

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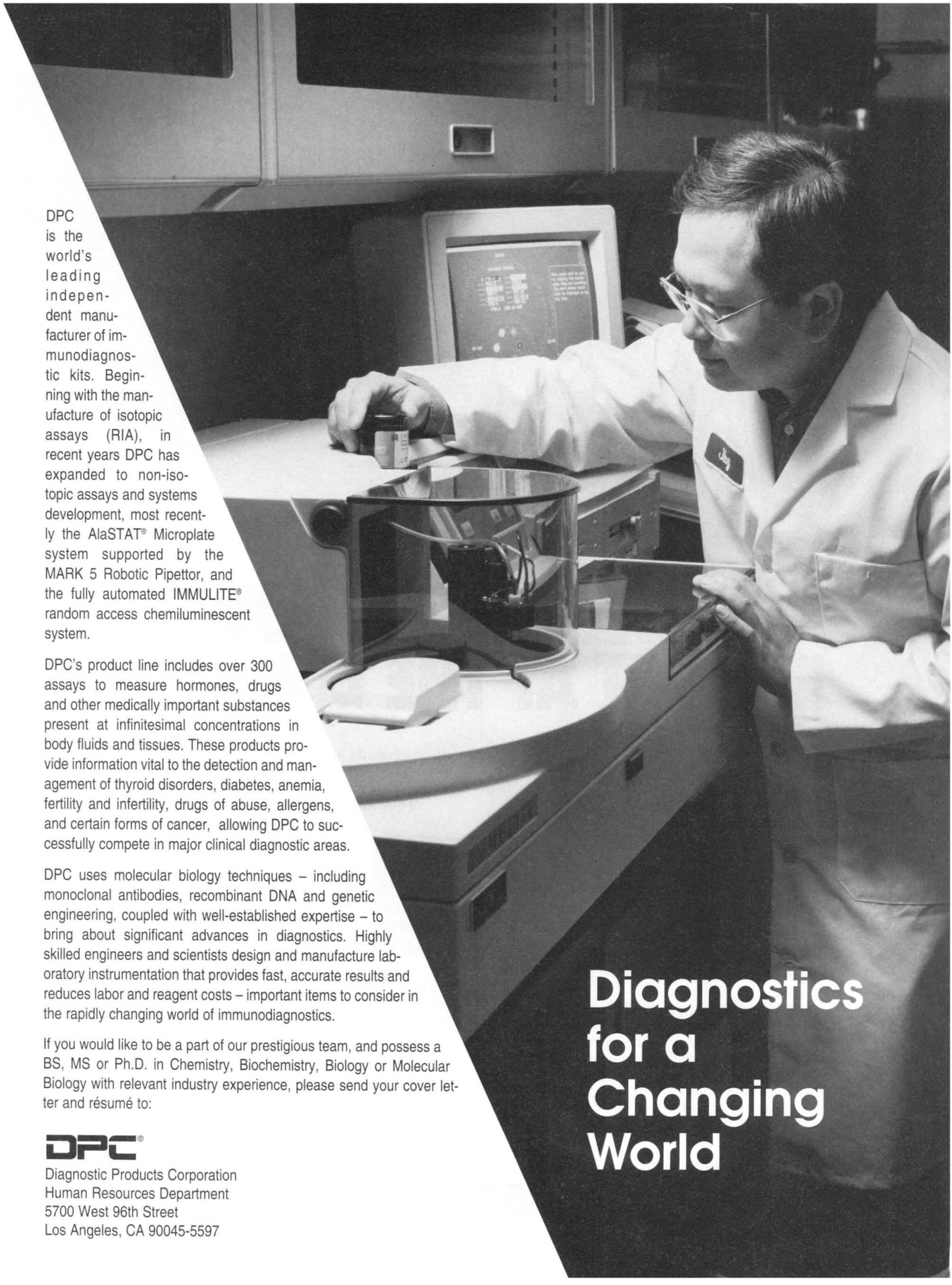

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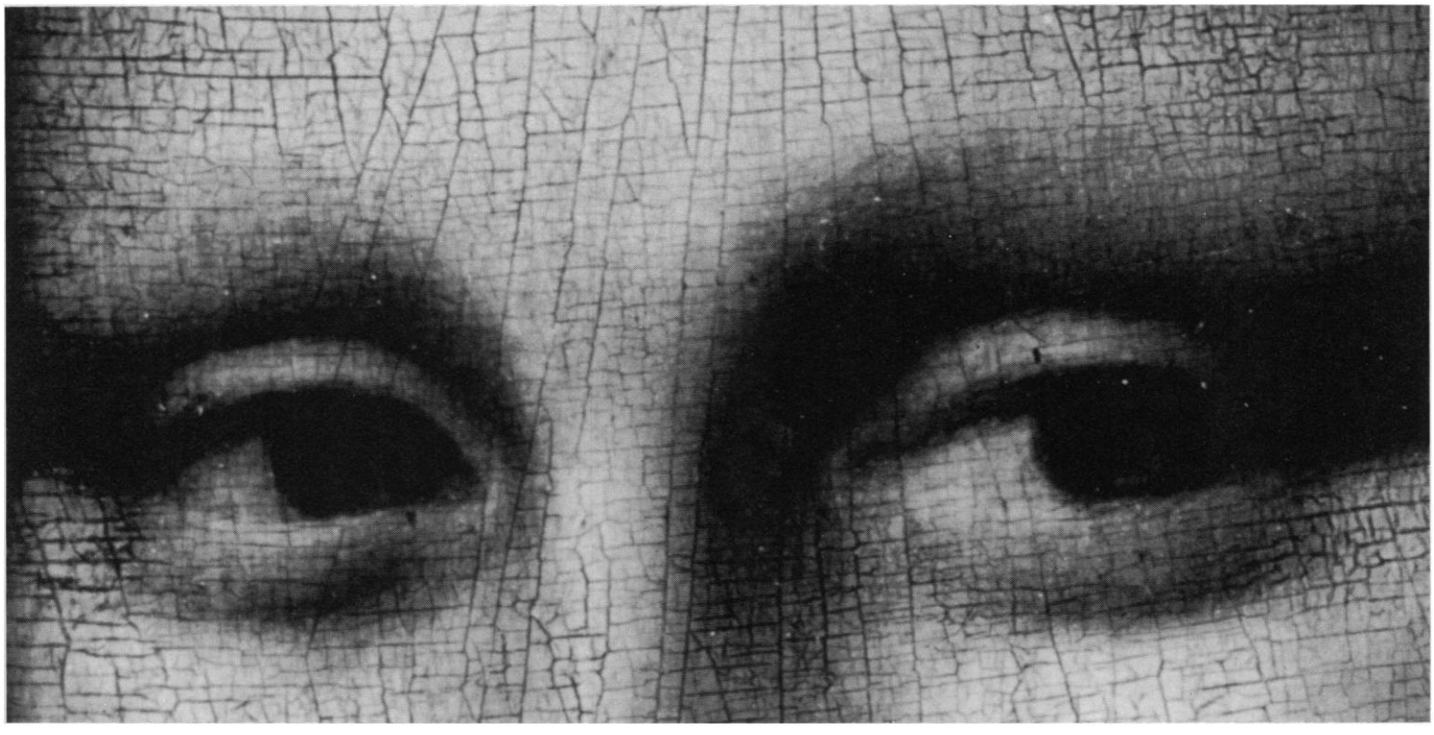

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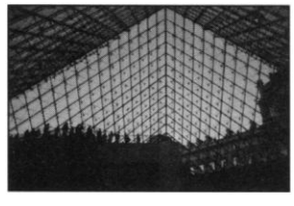

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CTI *cont.*

are the backbone, the ones who are helping make things happen."

At smaller, newer companies, starting scientists are likely to be enrolled directly into the entire process of making drugs. James A. Bianco, MD, president and CEO, says, "We want to bring everyone who works here, researchers especially, into the whole process of bringing a new therapeutic entity from discovery to production. Instead of a relay race that goes from group to group, we want to work in parallel, where everyone continually plays a development and a management role." Hot fields at CTI include genomic research, cell signal transduction, cardiovascular disease, and oncology.

Novel entities at CTI (left to right): James A. Bianco, Allyson Zipp, Jody Watkins Rosen, Stephen Faciszewski, and Susan Moore

Jody Watkins Rosen (BS, laboratory biology), research associate in cell biology, likes the system. "This philosophy of seeing things all the way through to the clinic is much more apparent here than at other companies. You're never working in a vacuum; you always have your eye on the results of your efforts." Everyone at CTI is constantly encouraged, in Bianco's words, "to become cross-functional in drug development." Employees represent many diverse backgrounds, and many are exploring new directions for their careers. Rosen, who points out that she "really enjoys doing the science," is looking for her next career move. "I've been interviewing with regulatory, product development, quality analysis, and quality control. I'm getting a feel for where my talents would fit in best."

"We're always looking for good BS/MS people... they are the backbone, the ones who are helping make things happen."
—Susan Moore, CTI

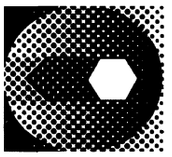
"Finding a Fit" would be a good title for the early employment story of Allyson Zipp (BA, Japanese and chemistry), quality control analyst. "I found that pure research was a little too esoteric for me, yet when I was working in nonscientific positions—management, retail, teaching—I found I missed the rigor of the science environment. I never really found a place that challenged all of my talents all of the time." She came to CTI—as a temporary employee—to get back into science. After a week spent washing dishes, Zipp moved into the analytical chemistry lab, and in six more months she had landed in quality control. Controlling quality involves everything from analytical chemistry to building contracts to FDA guidelines. "I write reports, design protocols, do research, supervise laboratory technicians, and keep in touch with outside contractors and our own clinical, regulatory, and legal departments."

Stephen Faciszewski (BA, chemistry; JD), patent counsel in the CTI legal affairs department, did what he calls "rotgut chemistry" at a small industrial chemical company for six months before moving on to Andersen Consulting, where he learned the arts of management. "It was an atypical path, but it provided me with some great skills and information technologies." Faciszewski got his JD at Georgetown University, partly at night. His job at CTI involves two aims: To define new CTI technologies as precisely as possible and also to procure the broadest possible protection for them under the law. That means working with the inventors of those technologies, learning the science, and understanding the field.

"The BS is just a building block," Moore says. "We're wide open, too young to have set ways of doing things. If you're high-impact, let's put you where your talents are best suited." Thus Rosen, who now works with ELISA, gels, and tissue culture, may someday find herself in management; thus Zipp, who loves semiotics and Japanese, benefits CTI with her genius for doing many things at once. Thus Faciszewski "gets a broad overview of the entire company, one I never could have achieved had I stayed in research." CTI, not surprisingly, likes scientists with crossover degrees. "Our head attorney has a PhD in pharmacology," says Moore. "We like the mix of technical skills and skills outside the degree."

Both Zipp and Bianco recommend that scientists sample a range of sciences to see what they're interested in. "My variegated experience helped show me what I really liked and what I didn't," Zipp says. Rosen agrees: "In your first few years as an undergraduate, take as much science as you can. When you like something, get some applied experience with it."

On the back of CTI company T-shirts is the slogan "NDA in '95." "The only way we'll accomplish that goal is by thinking outside the box," Bianco says. Clearly, his scientists span many categories in this company of fluid boundaries. Zipp, who may finally have found the challenge she craves, says, "It's encouraging to find that there are still jobs where people want you for your brains, where the ability to do more than one thing makes you more rather than less valuable." Faciszewski looks back on his own twisty path to CTI and says, "It's funny how life takes you through these things. There's a purpose."



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Company	Number Enrolled (internships given first)	Degree Field	Prerequisites
PHARMACEUTICALS **Abbott Laboratories** Abbott Park, IL	~200	Biological and chemical sciences, engineering, computer science	Junior and senior undergraduates; graduate students; strong academic record, communication skills
Bristol-Myers Squibb Princeton, NJ	1) PRI Program: ~65 2) National Pharmaceutical Council: 4-6/year	1) BS through PhD and MD in chemistry, biology, and chemical engineering 2) PharmD candidates, pharmacy students	1) Relevant sequence of courses; lab experience 2) C average; enrollment in US College of Pharmacy
Glaxo Research Triangle, NC	~170 nondependents of Glaxo employees ~230 dependents ~30 co-ops	All fields, especially biology, chemistry, pharmacology, accounting, finance	Undergraduates and graduates must be enrolled in school for next year
Hoffmann-La Roche Nutley, NJ	~70 internships; some co-ops for chemical engineering, computer science	Biology and chemistry, pharmacology, chemical engineering, computer science, business	Two or fewer years away from degree; 3.0 GPA or better; computer literacy; strong communication skills
Merck White House Station, NJ	100 for 1994; number fluctuates with need	Biology, biochemistry, chemistry, molecular biology, biomedical engineering, chemical engineering	Completion of junior year or enrollment in master's program toward PhD; good academic record, lab experience
Pfizer Groton, CT	~40, through several programs ~10 co-ops	Biology, medicinal chemistry, pharmacology	Co-ops: BS candidates only w/2 years undergraduate experience; organic chemistry for chemistry co-op
Procter & Gamble Cincinnati, OH	1) Future PhD chemists and life scientists: 30 2) Future chemical engineers: 70-100 3) Research associates: ~10	Chemical and biological sciences, chemical engineering	1) May-June graduates planning on graduate school 2) Good GPA, recommendations 3) Can be first-, second-, third-year undergraduates
Schering-Plough Kenilworth, NJ	~28 for 1994	Biology, chemistry, engineering, biotechnology, toxicology	Sophomores and juniors studying sciences; strong GPA; lab experience
SmithKline Beecham King of Prussia, PA	50 internships 130 co-ops	Biology, chemistry, biochemistry, pharmacology, computer science, environmental science, business, and chemical engineering	Juniors, seniors, graduate students, MD candidates; 3.0 GPA; Applicants for co-ops must certify that school will give course credit
BIOTECH **Amgen** Thousand Oaks, CA	90 internships (~20 in business/finance)	Biology, biochemistry, and related science majors	Juniors and seniors majoring in relevant sciences; prior research experience desirable
Biogen Cambridge, MA	45	Biology, microbiology, biochemistry, molecular biology, chemical engineering	All undergraduates and graduates; lab skills desirable; 3.0 GPA or better for microbiology majors
Chiron Corp. Emeryville, CA	~20	Molecular biology, biochemistry, chemical engineering	Undergraduates with some lab experience
Genentech South San Francisco, CA	~90 internships 1-2 co-ops ad hoc	Life sciences, biology, biochemistry, chemical engineering, computer science, business	Sophomore year or more and enrolled for coming fall; master's candidates also accepted
Genetics Institute Cambridge, MA	31 interns (19-20 life-science; opportunity to return)	Biology, biochemistry, molecular biology, chemistry	Juniors, seniors; previous lab/intern/research experience desirable
Immunex Seattle, WA	20-30 co-ops	Biology, molecular biology, cell biology, chemistry, biochemistry, bioengineering	Undergraduates majoring in science; previous lab experience desirable

Deadline BS	Notes MS	Contact
March 31	Send résumé with GPA, cover letter; indicate field of interest	Mgr., College Relations Dept. 39K, J30 Abbott Park, IL 60064-3500 (708) 937-7000
1) Pref. February/ March; will consider through May 2) Before November 30	1) Multisite; co-op can grow out of internship 2) Work in BMS's US Pharmaceuticals Division	1) Human Resources, BMS PO Box 4000, Princeton, NJ 08543-4000 2) Mary Pat Arostegui National Pharmaceutical Council 1894 Preston White Drive Reston, VA 22091
Pref. by January 1; will consider through mid-February	Internship: send résumé, cover letter specifying internship; co-op candidates recruited through schools only	Human Resources, Glaxo 5 Moore Drive Research Triangle Park, NC 27709
January 1-April 30	Interns take career development courses and make formal presentations	University Relations Hoffmann-La Roche 340 Kingsland Street Nutley, NJ 07110-1199 (201) 235-4035
Mid-January	Company makes effort to find meaningful projects for interns	Lisa Escudero (908) 594-3214
Determined by American Chemical Society, MARC-MBRS; Co-ops: October, March-April	Most internships through 1)ACS; 2)MARC-MBRS; 3)Fellowships through participating schools	Co-ops: Kathi Morianos Employee Relations Pfizer Central Research Eastern Point Road Groton, CT 06340
March 1	Engineers recruited through schools only	Procter & Gamble Co. Miami Valley Laboratories PO Box 398707 Cincinnati OH 45239-8707
End of February	Interns are assigned mentors and work on actual research projects	Company selects participants
Summer interns: before February; Fall co-ops: before July; Spring co-ops: before November	Co-op program is two six-month rotations with 65 students each	Student Coordinator PO Box 1539 King of Prussia, PA 19406
Beginning of February	Internship is a 10-week program; requirements: cover letter, résumé	Amgen Summer Research Internship Program/MS: 10-1-A-411 Job Code: OA-JF-RI-09S 1840 DeHavilland Drive Thousand Oaks, CA 91320-1798
Applications accepted September-April; interviews begin in March	Also co-ops for Biotech Certificate Program in manufacturing division	Keri Littlefield (617) 252-9200
No formal deadline	Fill out employment application	Cynthia Montgomery (510) 655-8730
After January 1 and before April 1	Send résumé; include academic record, relevant lab skills and/or business skills	Genentech Human Resources Summer Internship Programs 460 Point San Bruno Blvd. South San Francisco, CA 94080
After February 1	Program very competitive	Heidi Gregory (617) 498-8600
Co-ops: ongoing	Limited summer opportunities	Immunex Job Line: (206) 389-4060

information provided by companies; chart researched and compiled by Jackie Syrop

The Academic Option

No two graduate programs are alike. Each reflects the personality of its directors and student populations.

Each of the five programs mentioned here—Baylor, UCLA, Scripps, the New York University graduate programs in science and medicine, and the Indiana University program in genetic counseling—imagines the student and the science market differently. Before applying, therefore, research graduate programs thoroughly. Ask your professors for advice. Learn programs' strengths, what labs are doing what work where. And, most of all, decide what you want.

ACCESS to Excellence

For David Meyer, professor of biological chemistry and director of ACCESS, the UCLA graduate program in molecular and cellular life sciences, the idea is "to train independent researchers—that's what both academia and industry are looking for."

In years past, biology graduate programs had tended to be "very traditional, ending up ultimately in academia." But as academia and industry have increasingly collaborated, the aperture has widened, leading to a remarkably flexible graduate program.

ACCESS pools 170 faculty members from 11 departments at UCLA, making them available to students for lab rotations. Incoming graduate students must do three rotations in their first year. They can put off their decision on an area of specialization for a year, at the end of which they choose a mentor and join his or her department.

"What most grad students are looking for is variety: lots of interdisciplinary things going on," says Steve Finkel, senior graduate student in the department of biological chemistry. "The collegiality and interaction among the faculty at UCLA sealed my choice of graduate school. Since then, my treatment has been very liberal. I've been allowed to choose my general area of research, and I'm allowed to pursue my own interests within it. I've always felt a great deal of freedom."

Such freedom counts. "That's something we treasure as academicians and try to give our students," Meyer says, "something that might not be there in industry."

THINKING ABOUT CULTURES has resulted in some fascinating breakthroughs at Merck Research Laboratories.

In this case, it started with a soil culture from Japan. Utilizing sophisticated analysis techniques, Merck scientists discovered, then modified their samples to finally develop ivermectin. This remarkable molecule prevents the leading cause of blindness in Third World countries. It is also the basis for products that have contributed to health in a wide variety of animals.

Science like this can only be the result of the unique contributions of highly-talented scientists working together in an environment that promotes creativity, innovation, and teamwork. If you'd like to be part of this environment, please send your resume to: Merck Research Labs, P.O. Box 200, RY80-A3, Ad#155, Rahway, NJ 07065; or to Merck Research Labs, P.O. Box 4, WP42-2, Ad# A-14, West Point, PA 19486.

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For applicants with doctoral degree:
Procter & Gamble
R&PD Technical Recruiting Dept. PGP3
P.O. Box 398707
Cincinnati, Ohio 45239-8707

For applicants with BS or MS degree:
Procter & Gamble
U.S. Recruiting - R&PD
P.O. Box 599 TN-4 Dept. JSC507
Cincinnati, Ohio 45201-0599

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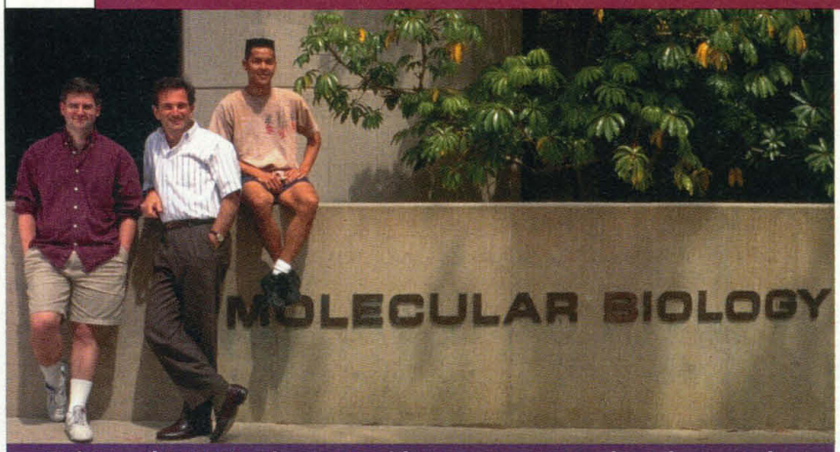

Gainers of ACCESS: Director David Meyer (center) and graduate students Steve Finkel (left) and Huan Phan (right)

As for the academia/industry/government decision, Finkel says, "The true branching off for most grad students here will come not at graduation but after your postdoc. My postdoc will be at the Harvard Medical School, but three or four years down the line, who knows what the job scene will look like?" Huan Phan, senior graduate student in molecular biology, says, "Most students here want to pursue an academic route as far as they can."

Both Phan and Finkel worked as technicians at university laboratories for a year after graduation. "That's pretty common among our group," Phan says. "I'd say 30 to 50 percent of us have done that." Meyer says, "Many of our students coming into ACCESS have worked directly in science before coming here. They have the advantage of hands-on research experience." That makes them very valuable for the labs they join.

"In fact, I'd say that research experience is the most highly valued single aspect of an applicant's background here," says Meyer. "It can outweigh lower GPA and GRE scores. The area may not even matter—if you've helped publish a paper, contributed in some way to scientific thinking, then that is a very strong plus. Computer and math skills are assumed. Where you've studied also matters—the name recognition of your undergraduate institution counts. A letter of recommendation from a professor who worked closely with you in the lab is much more valuable than one from a famous professor whom you had in a lecture course of 200 students."

Getting Leverage at Baylor

But what if you imagine the science market differently—if your main goal is to make your students competitive in an already very competitive market, and where industry is not as much of an option?

Then your program might more closely resemble the new doctoral program in biology at Baylor University. Ken Wilkins, associate professor and director of graduate studies in biology, explains why Baylor decided to create such a program now. "Many four-year degree recipients are sometimes disappointed to find that their degree doesn't get them much leverage in the employment market. We wanted to provide an opportunity for students to continue all the way through to the PhD—not purely in research, but also in teaching, because teaching experience enhances our graduates' value when they leave the program."

Ann Happ Boldt

BS, biology; MS, human genetics
Certified Genetic Counselor
Assistant director, Indiana University genetic counseling program
Board of Directors, National Society of Genetic Counselors

"Genetic counselors are celebrating their twenty-fifth year as a profession. Genetics counseling is an exciting and promising career for the '90s and beyond. Currently, there are about 1,200 genetic counselors in the United States, where 100 to 125 students graduate each year from 16 programs. There are two to three positions per graduate—and, as the Human Genome Project expands our knowledge of human genetics, the profession will continue its rapid growth.

Genetic counselors are health care professionals with a very specialized master's degree that combines medical genetics and counseling. Usually, we work as members of a health care team, providing information to families who have members with birth defects or genetic disorders; drawing pedigrees and identifying at-risk family members; interpreting medical records and test results; explaining patterns of inheritance or recurrence risks; and connecting families with support groups or other organizations.

We are resources for physicians, researchers, and the community at large. We link researchers with families, assist in creating protocols for genetic studies, coordinate tests, and make arrangements for chromosome analysis, DNA studies, and muscle biopsies. I've even been a courier for these samples, taking a blood or tissue sample to Federal Express for priority overnight delivery or escorting a urine sample to the metabolism laboratory.

The biggest challenge of genetic counseling is staying abreast of all the newest advances and gene discoveries. Since some genetic conditions are rare, only one or two labs in the entire country may do a specific test—we have to keep up on who does what. We also must deal with the various ethical, legal, and social issues surrounding the Human Genome Project.

Most genetic counseling students have a background in biology, chemistry, or psychology, including course work in genetics, chemistry, organic chemistry, and biochemistry. An applicant needs at least a 3.0 GPA (overall and in science) to be accepted; GRE's are required at most schools. We also look for candidates who demonstrate leadership and interpersonal communication skills and who have had experience in situations such as planned parenthood, crisis intervention, or other peer counseling.

Course work at the Indiana University genetic counseling program involves a one-and-a-half-year clinical rotation, in which students work closely with genetics counselors, MDs, PhDs, and postdoctoral fellows. There is also intensive course work in cytogenetics, population genetics, clinical genetics, molecular genetics, psychosocial theory, counseling techniques, and ethics.

The average starting salary of a new graduate is approximately $34,000 to $35,000; some experienced counselors' salaries may exceed $60,000. Although many counselors are working in either a prenatal or a pediatric setting, more and more counselors are beginning to develop expertise in various subspecialties such as cancer genetics, teratology, or muscular dystrophies. Other counselors work in commercial laboratories or in public health clinics. Regardless of specialty, genetic counseling is a career in which a person is guaranteed to learn something new every day. For more information on the profession of genetic counseling, please write to Bea Leopold, MA, executive director of the National Society of Genetic Counselors, Inc., 233 Canterbury Drive, Wallingford, PA 19086-6617."

Photography of Ann Happ Boldt courtesy of Indiana University

Howard Hughes Medical Institute

Fellowships for Biological and Biomedical Sciences

The Howard Hughes Medical Institute announces the 1995 competitions for fellowship programs that support training in fundamental biological and biomedical research. Awards, based on international competitions, focus on research directed to understanding basic biological processes and disease mechanisms. Fellowships may be held at academic or nonprofit research institutions.

Predoctoral Fellowships in Biological Sciences

Up to five years of support for full-time graduate study toward a Ph.D. degree in biostatistics, cell biology and regulation, epidemiology, genetics, immunology, neuroscience, or structural biology. Applicants must not have completed the first year of postbaccalaureate graduate study in biology. *Application deadline: early November.*

Postdoctoral Research Fellowships for Physicians

Three years of support for training in fundamental research subsequent to at least two years of postgraduate clinical training and no more than two years of postdoctoral research training. *Application deadline: early January.*

Research Training Fellowships for Medical Students

An opportunity for medical students in the United States to explore a burgeoning interest in fundamental research. Support is awarded for one year of full-time fundamental research in a laboratory at the student's medical school or another institution (except NIH in Bethesda, Maryland). *Application deadline: early December.*

Research Scholars at the National Institutes of Health

Under this joint HHMI–NIH program, medical students in the United States spend an intensive year in research in the intramural program at NIH in Bethesda, Maryland. Residence is provided at the Cloister on the NIH campus. *Application deadline: early January.*

1995 Program Announcements and Applications

For Predoctoral Fellowships:

Hughes Fellowship Program
The Fellowship Office
National Research Council
2101 Constitution Avenue
Washington, DC 20418
United States of America
Telephone: (202) 334-2872
Fax: (202) 334-3419
E-mail: infofell@nas.edu

For Other Programs:

Howard Hughes Medical Institute
Office of Grants and Special Programs
Department AL95
4000 Jones Bridge Road
Chevy Chase MD 20815-6789
United States of America
Telephone: (301) 215-8889
Fax: (301) 215-8888
Internet: fellows@hhmi.org

The Howard Hughes Medical Institute, an Equal Opportunity Employer, welcomes applications from all qualified candidates and encourages women and members of minority groups to apply.

Baylor's strengths lie in aquatic biology, terrestrial ecology, and genetics, fields in which there are fewer opportunities for industrial jobs. "So we're looking more at the academic track," Wilkins says. "Our aim is to complete the student's survey of the science and direct him or her to a research topic that is both interesting and valuable." Students will be taught a core of research methods and techniques, beyond which they will make up their own programs.

Jeffrey Roberts (BS, biology with concentration in ecology) is halfway through his MS in biology and wants to continue through the PhD. "I'd like to be a research professor at a major university. I am already in contact with the University of Saskatchewan and Boise State University, two places that have very strong ecology programs." Ecology beat out medical studies in Roberts's heart. His undergraduate thesis was on the breeding behavior of the Eastern screech owl in response to supplemental feeding. For his master's thesis, he has switched from owls to pocket gophers to broaden his taxonomic base for further study of the behavioral ecology of vertebrates. His teaching experience (in a comparative chordate anatomy lab and in field ecology) has shown him "new ways to approach problems."

"In biology," Wilkins says, "science is growing at such a rapid rate that the undergraduate is fortunate to get just one course in each of the subdisciplines. A BS/BA is not well trained in any one occupation but is poised to go in several directions. A graduate program can at least show the possibilities and make sure that he or she has the experience and the critical equipment to be competitive in the jobs market."

A Place Called Scripps

The Scripps Research Institute of La Jolla, California, welcomed about 20 graduate students last fall, one of whom was Prabha Dias.

After completing a self-designed BS in biology at Harvey Mudd College, Dias hired on as a technician at Scripps. "I wanted to make certain that I wanted research as a career," she says. "Besides, I felt the need to get more lab skills." That she did, learning immunofluorescence, mammalian cell culture, molecular biology, and biochemistry. Encouraged by the head of her lab, who also happened to be the dean of the graduate program, Dias decided to apply to Scripps.

Graduate students do rotations until they go into their thesis laboratories. "Unlike other programs," Dias says, "our rotations are complete projects if at all possible." (Her first rotation was a six-month stint in a crystallography lab.) Graduate students are under no immediate pressure to choose a thesis direction, having until their second year to choose a laboratory. Since there are no undergraduates at Scripps, graduate students need not teach—unless they want to, in which case there are ample opportunities at the local universities.

"This is a good place for independent study," Dias says. "It's small, and there are lots of research opportunities. If you have a good idea, and if they've got room, they'll pretty much let you pursue it."

Enjoying her independence: Prabha Dias of Scripps

New York and National: Graduate and Doctoral Programs at NYU

New York University is the largest private university in the United States, with approximately 50,000 students. NYU is both New York and national, both a great tradition and a hot spot of the latest research in medicine and the sciences.

Joel D. Oppenheim is associate dean for graduate studies and director of the Sackler Institute of Graduate Biomedical Sciences, the umbrella organization for all the graduate and doctoral programs for the NYU school of medicine. "Our programs," he says, "tend to stress research, the importance of basic science, and an academic career course."

Each year between 30 and 40 students are admitted to doctoral programs in biochemistry, cell biology, environmental medicine, microbiology, parasitology, pathology, pharmacology, and physiology. In total, there are about 150 PhD candidates, about 65 MD/PhD students, and 600 medical students. As of the 1995 academic year, entrants will encounter an integrated program, within which they may do rotations within any department in the medical school. Students will usually choose their department after the first year. "Students have made it very clear that this initial flexibility is what they really want," Oppenheim says.

NYU, whose former students include Jonas Salk and Albert Sabin, remains one of the major sources of future American researchers. "Most of our American students—about 75 percent—go on to academic science." Oppenheim says. Applicants should have a strong undergraduate academic background in the sciences, particularly in biology and chemistry. "The latter is vital today," Oppenheim says, "because most major research breakthroughs are happening on the molecular level."

There is no absolute baseline GPA, although "we wouldn't ordinarily look much below a 3.0." Indispensables include mastery of science, exposure to research, and a sense that students know what they're getting into. NYU is flinging the net wider for applicants, from Louisiana to California, Michigan to North Carolina, all genders and races, far exceeding national averages in its enrollments of women (more than 40 percent) and minority students (more than eight percent).

Future Orientation. Future-seekers will find what they are looking for at NYU: molecular mechanisms involved in disease; neuroscience and neurobiology; molecular biology in general; AIDS; and cell communications. The newly created Skirball Institute of Biomolecular Medicine is devoted to advances in molecular medicine. NYU is bringing in 40 new full-time faculty members and a total of 250 additional scientists, swelling the graduate faculty by 25 percent. "Their research," says Oppenheim, "will focus on what we perceive to be the hot fields of the future: molecular mechanisms of pathogenicity, neuroscience, structural biology, and developmental genetics."

AIDS research is a major focus. Designated by the NIH as a major center of AIDS research, NYU not only administers Bellevue Hospital, which has one of the largest AIDS populations in the United States, but also is home to the Aaron Diamond AIDS Research Center.

The NYU MD. NYU has a long history of producing academic MDs who teach and do research at medical schools. "We're much more of a specialty-oriented medical school in every major field in medicine," says Oppenheim. "Lately, like other places, we're directing students more toward primary care, but our main concern is to produce specialists with a strong grounding in basic science." Seventy percent of NYU medical students do research before graduating. Most go on to competitive residency programs at major universities, where research experience is almost a prerequisite. A federally funded honors program guarantees students summer research opportunities. Large lectures have given way to smaller team-taught discussion groups that focus on problem solving with both clinical and basic research applications.

MD/PhDs are a true elite. Out of 200 applicants, only about 15 are chosen each year. Applicants tend to be from larger schools. Stellar grades, excellent MCATs, and extensive undergraduate research experience are required.

"It's a fascinating, exciting time here," Oppenheim says. "We're trying to create an esprit de corps among our students. New York makes that easy: there's so much cultural diversity, so much going on." Whether squiring students to the theater or busing them across town to hear Doctorow or Yeltsin, Oppenheim constantly stresses that "students should not try to isolate themselves from the community around them, but rather allow their graduate experience to engage all their thinking processes."

Photograph of Prabha Dias courtesy of Scripps

U C L A

PH. D. PROGRAMS IN

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CELL BIOLOGY

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GENE EXPRESSION

IMMUNOLOGY

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VIROLOGY

PATHOGENESIS

MOLECULAR EVOLUTION

NEUROBIOLOGY

PLANT MOLECULAR BIOLOGY

STRUCTURAL AND COMPUTATIONAL BIOLOGY

To provide students with maximal choice and flexibility in selecting a research specialization, the basic science departments at UCLA offer a combined recruitment, admission and first-year program. This initiative, known as UCLA ACCESS to Programs in the Molecular and Cellular Life Sciences, represents a simple, flexible mechanism for maximizing research choices throughout the first year of graduate study. As part of this program, students are able to select research projects from 150 faculty mentors according to changing perceptions, interests and goals without regard to traditional departmental boundaries. Ethnic, gender and cultural diversity are both a strength and a priority at UCLA and we solicit and encourage applicants who will increase and strengthen our diversity.

All Ph.D. students are fully supported through a variety of sources including the following federally sponsored pre-doctoral training programs:

Cellular and Molecular Biology, Genetics, Atherosclerosis, Tumor Cell Biology, Biotechnology, Tumor Immunology, Microbial Pathogenesis, Chemistry/Biology Interface Training

For information and application materials:

UCLA ACCESS
Molecular Biology Institute, University of California, Los Angeles
Los Angeles, CA 90024-1570
(800) ATG-UCLA or (310) 206-5280

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***TEL:* 314/882-2816; *FAX:* 314/884-9676**
***EMAIL:* MolBioDR@Mizzou1.Missouri.edu**
311 Tucker, MU, Columbia, MO 65211
INTERNET CONNECTION VIA GOPHER
Address: Showme.Missouri.edu **Port:** 70
Pathway: Campus Information & Gopher Servers ➳ Gopher: Gopher Servers around UMC ➳ Molecular Biology Program

Four-year graduate awards are $14,000 per year, plus full fee and tuition waivers. The Program also administers a predoctoral training grant in *Cellular and Molecular Biology* from the National Institutes of Health. The grant provides trainees with stipends and funds for travel and research expenses.

In addition, the Program offers postdoctoral fellowships — competitive two-year awards of $22,000 per year.

Interdisciplinary Plant Group

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FOR MORE INFORMATION
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NYU Medical Center

Sackler Institute of Graduate Biomedical Sciences

New York University School of Medicine

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Post-doctoral research positions

Located at New York University Medical Center, one of the largest teaching and research complexes in the world, the Sackler Institute offers research opportunities and training in the basic medical sciences. The Institute encompasses the Basic Medical Science Departments at the Medical Center that offer a variety of interdisciplinary training programs. More than 220 Ph.D. and M.D./Ph.D. candidates, and a similar number of post-doctoral fellows, pursue research in an unparalleled academic environment with an internationally recognized faculty. Competitive stipends and housing are available to all students.

For program information, contact:

CELLULAR AND MOLECULAR BIOLOGY
Antonio J.D. Rocha, Coordinator, **212-263-5798.**

ENVIRONMENTAL ONCOLOGY
Dr. Arthur Penn, Graduate Advisor, **914-351-5126.**

MEDICAL AND MOLECULAR PARASITOLOGY
Dr. Laura Pologe, Graduate Advisor, **212-263-6763.**

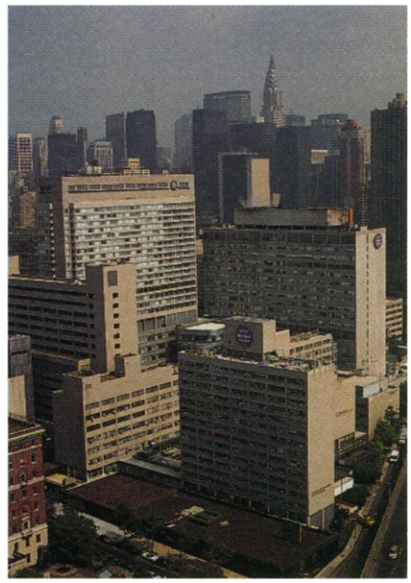
MICROBIOLOGY
Dr. David Frendewey, Graduate Advisor, **212-263-7660.**

NEUROSCIENCE AND PHYSIOLOGY
Dr. Kerry Walton, Graduate Advisor, **212-263-5432.**

PHARMACOLOGY
Dr. Arnold Stern, Graduate Advisor, **212-263-7118.**

MOLECULAR ONCOLOGY AND IMMUNOLOGY
Dr. Robert B. Carroll, Graduate Advisor, **212-263-5347.**

MEDICAL SCIENCES TRAINING PROGRAM
(M.D./PH.D.)
Ms. Arlene Kohler, Administrative Officer, **212-263-5649.**



New York University Medical Center
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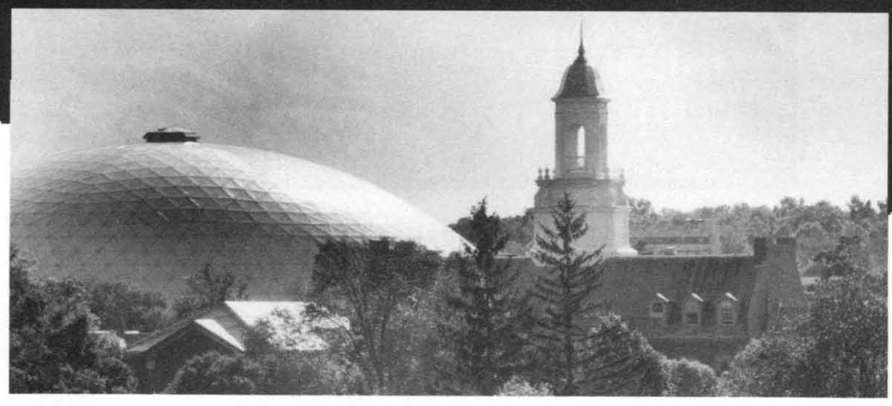
Ms. Diana Polz
The Sackler Institute
NYU School of Medicine
550 First Avenue
New York, NY 10016

Tel: 212-263-5648
FAX: 212-263-7600
E-mail: sackler-info@nyumed.med.nyu.edu

NYU is a private, nonsectarian university and an equal opportunity employer. The Sackler Institute strongly encourages applications from women and under-represented minority students.

UNIVERSITY OF CONNECTICUT



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Biotechnology
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Genetics
Microbiology
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For more information on our graduate programs, including our minority scholarships and assistantships, contact:

Graduate Admissions Office U-6
University of Connecticut
438 Whitney Road Extension
Storrs, CT 06269

(203) 486-3617

UCONN: WHERE OPPORTUNITIES BEGIN.

Temps

On any given day in the United States, fully 1,635,000 temporary employees of all sorts are at work, according to Bruce Steinberg, spokesman for the National Association of Temporary Services. Although no one has yet determined how many scientists are included in that number, Steinberg says that the technical and medical sectors account for about 18 percent of a payroll that totals $19.3 billion a year. As it has to every other sector of U.S. employment, the word "temporary" has come to science.

High temp: Linda Gregory of FMC via Lab Support

Kevin Petersen, marketing manager for Lab Support, a service providing science professionals on temporary assignment, says, "Non-PhD scientists are our business, with close to 75 percent of our employees holding bachelor's degrees. The biotech and pharmaceuticals industries provide half our business." Lab Support started out in 1986 emphasizing PhDs, but founders quickly learned that clients wanted the BS in chemistry, biochemistry, or microbiology who had two to four years of lab experience and who could come in for two weeks to three months and sometimes longer. About 20 percent of Lab Support's scientists stay on permanently with their employers after three to six months on assignment. "That makes sense," says Petersen. If a person is good, why say goodbye? Many of our people have created niches for themselves."

One scientist, whom we'll call Beth (BS, environmental chemistry; MS, environmental science), was working toward a PhD in chemistry and toxicology when her graduate advisor's grant money dried up. Jobs in toxicology were scarce in her area at that time, so she tried Lab Support. Soon she had been hired as a research scientist at Bristol-Myers Squibb.

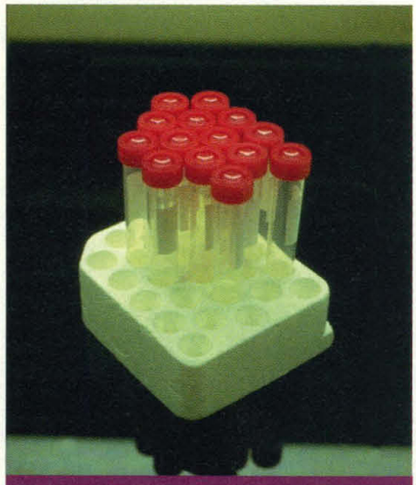
"I have gotten a chance to get some excellent industrial experience," she says. "Every day here I work full-time with instrumentation. Here I can learn more about GLPs and SOPs—things I had little chance to work with in school. When I look for a permanent job, that will help me." Beth's work involves derivitization and quantitative determination of metabolites.

"In the next one to two years, I need to look for a permanent job. (If this one turns permanent, that would be nice.) Failing that, I'd like to finish my PhD."

The growing use of scientific temps reflects the downsizing in biopharmaceutical companies over the last three years, the changing face of American employment, and changing expectations among scientists. Employers appreciate the lower overhead and lower liability of temporary employees. Using temporary employees also affords flexibility to companies with seasonal or contractual work. And, as Petersen points out, "The traditional 'permanent' job that lasts 30 years at the same company isn't around that much anymore. Because science and industry change so fast, many people are now looking only five to 10 years down the line. True, most of our employees are looking for something stable, but there is a percentage that would prefer for the time being to work on assignment. They like the flexibility and the lifestyle. Many of our people are just out of college or have two to three years of experience and are looking to gain more. Some are unsure of what kind of work they want to do. This is their chance to experiment with different work situations and different companies."

Some are like Linda Gregory (BS, chemistry), a chemical technician at FMC, Princeton, New Jersey. One of her first jobs was in an organic chemistry laboratory, where she worked with mass spectroscopy, IR, and NMR. "I did purification and made stereoisomers. It was very good basic training. If we wanted to use an instrument, it was there. If we wanted to do a technique, we could."

After a move to New Jersey in 1970, Gregory decided to stay home with the kids. Except for brief stints, there followed 23 years away from science. "When the youngest was old enough, I realized I wanted to ease back into the work force. I liked the idea of starting as a temporary—the chance to get some experience along with the opportunity to update your skills." Lab Support helped her send out exactly one résumé, and, in her words, "Pow!" After three days, Gregory went from part-time to full-time. In six months on the job, she has already been trained on a size exclusion chromatograph, a supercritical fluid extractor, and a nitrogen analyzer. "It's so diversified," she says, "you have to be willing to say, 'Yes I can do that, yes, I can learn.'"



Temporary work is not for everyone. Many temporary services do not offer benefits. "If you need to support a family," Gregory says,"it could be a very insecure, very stressful mode of existence. On the other hand, if you're flexible and have an open mind, temporary employment is a good way to keep diversifying and upgrading your skills. You could work for a year learning mass spectrometry or doing scale-up reactions for pilot plants—a whole spectrum of things. Most people my age would be thinking about retirement—but I can start thinking about starting my career."

What are Linda Gregory's future plans? "Hard to say," she says, laughing. "They keep saying here that I'm not leaving."

Taking out a Contract:

Careers at Pharmaco LSR

A gigantic shuffle is taking place: companies downsizing, rightsizing, reorganizing, looking for ways to do things more quickly, more cheaply, yet more profitably.

For some, that means strategic alliances, partnerships, collaborations, and out-licensing. And for many others, it means turning to a contract research organization or CRO. There are over 600 CRO's in the United States alone—and they hire many non-PhD scientists.

Robert S. Joslin, head of Joslin & Associates, a pharmaceutical consulting firm,

Photography of Linda Gregory by John Timpane

Pharmaco LSR *cont.*

says, "Companies now realize they can't do everything by themselves, and they're increasingly turning over various aspects of the drug production process to contract R&D firms. CRO's have been very much in vogue for clinical research and regulatory affairs for years. There's a great deal of contract manufacturing. And now companies are moving their bioanalytical, process development, product development, and validation phases to CRO's."

"It is the trend; it's where biotech and pharmaceuticals are going and where they'll continue to go," says Lisa Bailey Radebaugh, clinical operations liaison at Pharmaco LSR, one of the largest CRO's in the world, employing over 1,700 people. "CRO's have sprung up over the past decade out of a need for pharmaceutical companies to outsource their work. We can take their compound all the way from Phase I to FDA submission. We're like a mini-pharmaceutical, except we don't do the discovery research and we don't manufacture."

Carol Breslauer, associate director of clinical development services, says, "When you consider the cutbacks of the last two to three years, it makes a lot of sense to contract with companies like us. With all the good people we're hiring—and we've been very impressed with the sharp, excellent BSs we've seen—we can provide quality that matches or exceeds the standards of our most demanding clients." To keep those standards high, Pharmaco LSR has a rigorous in-house training program.

CRA's. Pharmaco LSR hires many BS- and MS-level people to be CRA's and project managers. Radebaugh emphasizes the need for experience in clinical work—either at a pharmaceutical company or another CRO. "If you know your way around the forms and protocols, you have a real advantage over the competition in landing a job. We have nearly 100 CRA's, of whom from one-third to one-half have a medical background. The rest are from a varied background: BSs in pharmacy or medical technology; physician's assistants; BSs in biology with clinical experience." Breslauer says, "The BS itself need not be in a clinical field per se. If you have been productive, if you have held positions of responsibility, and if your work has been recognized in awards and good references, we take those things extremely seriously."

"In the business end of things, to tell you the truth, it's not so crucial to have the advanced degree. It's the experience that counts."
—Lisa Bailey Radebaugh, Pharmaco LSR

Besides a strong science background, CRA's must have extremely good organizational skills. Sixty to seventy percent of the job is travel. "You have to be able to work over the phone in airports," Breslauer says. CRA's ensure that the nurses, MDs, and coordinators at the testing site are following the clinical protocol and complying with FDA requirements. "The trick is to be cohesive yet correct, to build the team while producing solid data for the study," says Radebaugh. Required: the human touch. "You have to be able," says Breslauer, "to question decisions without being threatening and while building rapport." The job pulls on two potentially opposite characteristics—detail orientation (can you read page after page of data, alert for small errors?) and big-picture orientation (can you be warm, engaging, humane, team- and project-oriented?).

Project Managers. Both BS and MS scientists work as project managers; the latter are coveted for their experience and training—and they're hard to find. "Project managers have to be able to

Jim Conti

Manager of staffing and relations programs
Unilever Research U.S.,
Edgewater, New Jersey

"Unilever is a multibillion-dollar, multinational corporation that includes Lever Brothers, Elizabeth Arden, and Calvin Klein. Unilever Research U.S. is the only research development facility in the U.S. for Unilever. About two-thirds of our scientists are BSs and MSs, and they do the same things that our PhD scientists do. That's because we consider our entry-level people scientists, not technicians; our universities are producing true scientists who can come in and conduct scientific research right away.

BS/MS scientists are critical to the discovery process. Their role in decision making related to projects grows with their experience in the company. We have people with bachelor's and master's degrees as project leaders and managers. Lee Ilardi, project leader in our organic chemistry section, began at Unilever as a BS chemist and gained her masters at night.

Skin research—on everything related to the form and function of skin—is our hottest field, as we conduct everything from background research to product science for Elizabeth Arden and Chesebrough-Pond's products. We need cell biologists, molecular biologists, biochemists, and chemists in physical, analytical, organic, and inorganic chemistry, as well as chemical engineers. Because we have many alternative career tracks for our scientists, we encourage furthering education and cross-functional degrees. We're trying to get more scientists into areas such as marketing and management because, let's face it, they're the ones who know best the technology we have developed. We hope they can translate that understanding for our consumers to show them the value the new technology delivers. All our patent attorneys have their undergraduate degrees in science. Jim Potocki, a BS in chemical engineering, started with our Lever Brothers product development group and has recently moved to marketing at Lever House in New York. He is almost done with his MBA from New York University. Bruce Howell, who has a BS in chemistry, started in organic chemistry and now works in human resources; he is also pursuing an MBA at NYU. We encourage people to continue their education, and we'll finance that education 100 percent.

We have a dual career ladder, offering a technical and a managerial track. At a certain point in his or her career, the scientist and his or her managers agree on which track best fits that scientist's career goals and skill base. People can attain the same level on either track. That way, they need never 'top out,' but rather can rise as high as their talents permit.

Communication skills, both written and verbal, are absolutely, positively critical. Our scientists simply must be able to report their findings in a coherent fashion. (We've seen technically brilliant people who simply can't tell you what they've done.) Managerial skills per se are less important—we have courses that help scientists build on such skills—but some experience with being a member of a team, some team-building skills, are important parts of a candidate's background."

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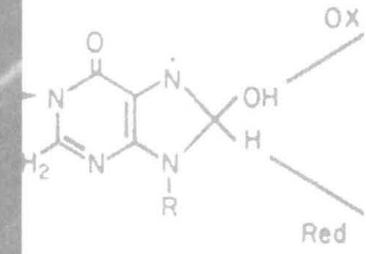

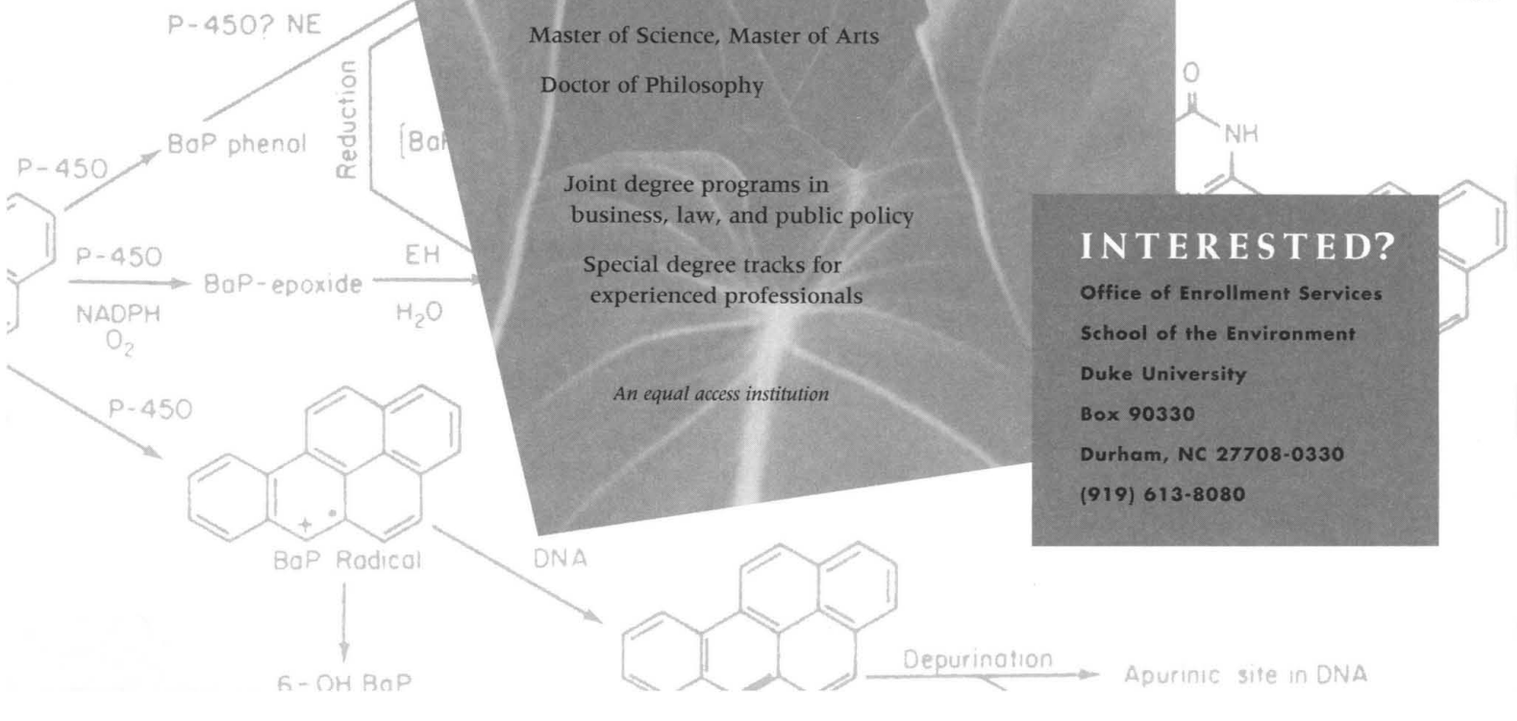

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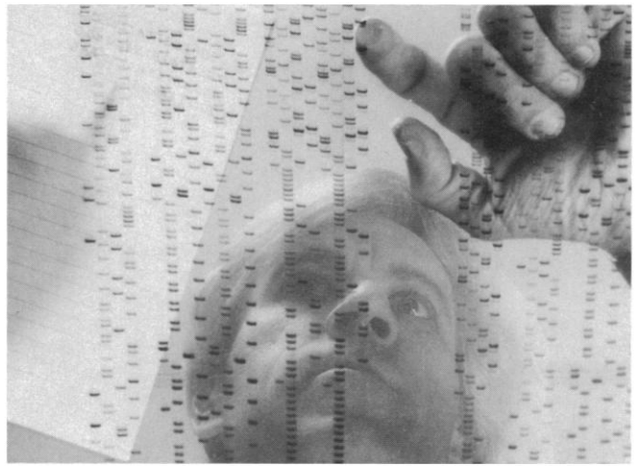

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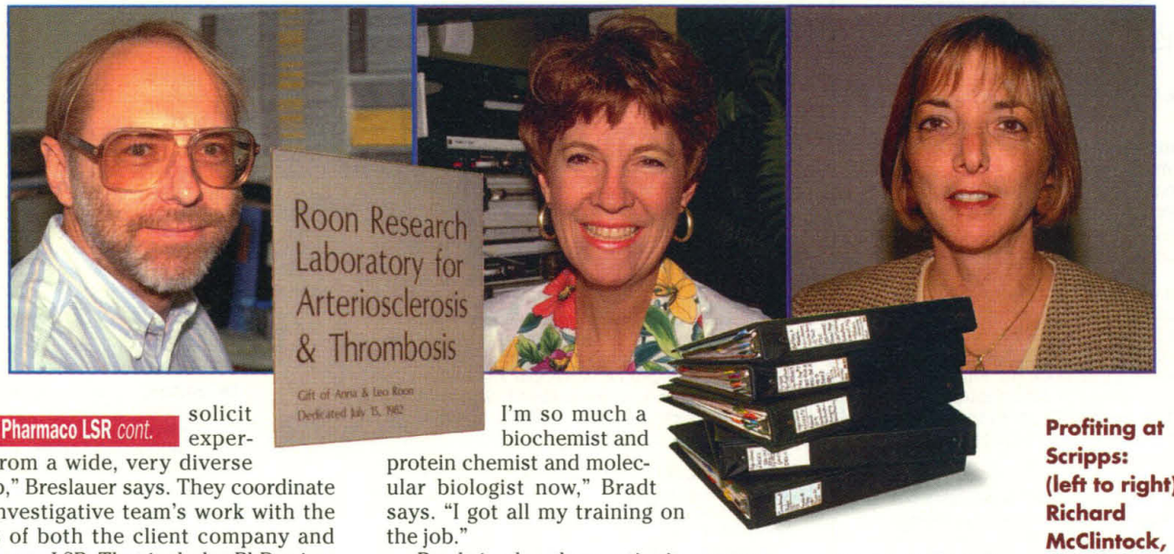

Profiting at Scripps: (left to right) Richard McClintock, Bonnie Bradt, Paula Dean

Pharmaco LSR *cont.*

solicit expertise from a wide, very diverse group," Breslauer says. They coordinate the investigative team's work with the goals of both the client company and Pharmaco LSR. That includes PhD scientists, administrative assistants, PhD-level regulatory experts, executive directors, and vice presidents. The project manager thus must combine clinical expertise with charm and the ability to think quickly.

"As a rule," Radebaugh says, "a BS can rise higher in our company than at a traditional pharmaceutical firm." Both Radebaugh and Breslauer are good examples. Radebaugh has a BS in health care sciences. "I've thought about an MS," she says, "but in the business end of things, to tell you the truth, it's not so crucial to have the advanced degree. It's the experience that counts." Breslauer, who "was sleuthing around in the lab when I was 15," has a BS in medical technology and an MS in public health. "This job is fun, and very diverse. It's not the job—and not the kind of company—for the employee who likes sameness day to day."

Nonprofit Science at Scripps

"I wouldn't want to have a different job," says Bonnie Bradt, senior research associate, department of immunology, at the Scripps Research Institute, La Jolla, California. "I get to do the work, while someone else writes the grant proposals."

After getting her BS in zoology and MS in biology, both at UC Davis—"with a concentration in entomology, if you can believe that"—Bradt followed yet another unconventional route to her present position.

Her lab, under the direction of Neil Cooper, is studying the reaction of the human immune system to the family of herpesvirus, including Epstein-Barr virus, cytomegalovirus, and herpes simplex. "My training seems so long ago—I'm so much a biochemist and protein chemist and molecular biologist now," Bradt says. "I got all my training on the job."

Bradt is also the continuity person, the memory of her lab. "When our postdocs leave, they take with them the technologies they've developed. I make sure that these techniques are written down thoroughly, and I learn them myself. I've been here for 22 years—that alone makes me the one people come to with questions about equipment and techniques."

Scripps hires about 130 entry-level technicians each year, positions that require a BS or the equivalent. Paula Dean, vice president of human resources, says, "The very best BS or MS can rise as far as the technical head of a laboratory, and they'll publish along with their principal investigator. That takes a long time, but while the number of non-PhDs who have stayed with us to achieve that level are few, they are among our most valuable, most crucial people here."

Scripps, funded primarily through the NIH and other federal agencies, is a haven of the latest basic biomedical research—in immunology, molecular biology, cell biology, chemistry, neurobiology and neuroscience, and vascular biology. What's hot at Scripps is what's hot. Job-seekers with experience in cloning techniques, isolation, hybridization, library screening, PCR, and sequencing—the skill set for the new biologies—are especially highly valued. Immunology labs prize those with experience in antibody production, ELISA, Western blotting, and tissue culture. "We look at lab experience very closely," says Dean. If we have 100 job applications right out of college, we'll screen them first for lab skills and techniques."

Richard McClintock, research assistant in the department of experimental hemostasis and thrombosis, originally wanted to study oceanography at Florida State University. "But the year I entered, they announced they were closing the oceanography department." After taking his BA in chemistry at Florida State, McClintock attended California State University at San Diego, where he did research on HPLC. "My teaching experience was almost as important as my scientific experience," he says, "both in sharpening my own problem solving and in helping me work with postdocs and technicians in the lab."

Before he had finished his degree, McClintock got a job in the peptide biology laboratory at the Salk Institute, where he spent a decade becoming an expert on the use of HPLC in purifying peptides and peptide natural products. McClintock was at the lab that first isolated corticotropin releasing vector, GRF, and somatostatin. When a friend at Scripps asked him if he knew of an HPLC specialist in protein purification, he suggested himself. For five years McClintock has worked in the fields of hemostasis and thrombosis, investigating von Willebrand factor and the biology of blood clotting in Zaverio Ruggieri's lab. "My techniques apply pretty well to this field, so that part was easy. I did have to learn another aspect of science—taking apart a molecule and figuring out what part does what. Also, there is a good deal of *E.coli* cell culture work. There has been a fair amount of having to learn while doing."

Such learning has led Bradt to what she calls "a very great deal" of responsibility. "My boss depends on me: I take care of the lab, train new technical people—everything from ordering what the postdocs need to helping people learn how to drive. There's paperwork, meeting deadlines for renewal of animal and human subject protocols, keeping track of the money—in addition to all of the experiments."

When she has time, entomology is still a passionate hobby. "People in the labs still bring me bugs from their backyards."

John Timpane, PhD, writes frequently about the pharmaceuticals and biotechnology industries

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Outstanding candidates are being sought for tenure-track positions to join a rapidly growing group of 30-plus members in the Program in Molecular and Cellular Biology. Candidates should have strong research programs within the broadly defined areas of biochemistry and cell, molecular and developmental biology which will serve to complement those areas of research currently in existence. Candidates should have demonstrated evidence of productivity. Teaching duties are modest and will be primarily at the level of graduate student and postdoctoral fellow education. Salary, space and start-up funds are competitive with national levels. Interested individuals should submit curriculum vitae, a brief description of research plans and the names of three individuals who will serve as references to: **Dr. Douglas M. Stocco, Chair, Search Committee, Program in Molecular and Cellular Biology, Texas Tech University Health Sciences Center, 3601 4th Street, Lubbock, TX 79430** before 1 January 1995. *Equal Opportunity Employer.*

GENETICIST. The Biology Department of Albion College announces a tenure-track position as **ASSISTANT PROFESSOR** to begin in August 1995. A Ph.D. is required, and teaching experience is preferred. The successful candidate will be expected to teach upper level, undergraduate courses in general genetics with lab, including some human genetics, and introductory techniques in recombinant DNA technology. The candidate will also share responsibilities in introductory biology courses. Facilities include TEM, SEM, an incubator-shaker, controlled environment chambers, and a 135-acre nature center. A research program incorporating undergraduate students is expected. Albion College encourages applications from women and minority candidates. Send letter of application, current curriculum vitae, transcripts, and three letters of reference to: **Dr. Ruth E. Schmitter, Chair, Biology Department, Albion College, Albion, MI 49224.** Deadline for applications is October 15, 1994. *Albion College is an Equal Opportunity Employer.*

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A newly created section of Gastroenterology Research seeks tenure-track faculty members at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Positions are targeted for basic investigation in an exciting new program focused on intestinal inflammation. Successful candidates will interact with an established program in mucosal immunity. Special consideration will be given to individuals with interest in apoptosis, cell activation/interaction, and the biology of endothelial or mesenchymal cells. Offer includes ample laboratory space in a brand-new research building, equipment, supplies, and salary negotiable depending on qualifications. Interested individuals should send curriculum vitae and correspondence to: **Dr. Claudio Fiocchi, Head of Research, Division of Gastroenterology, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106-4952.**
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TENURE-TRACK FACULTY POSITION UNIVERSITY OF SOUTHERN CALIFORNIA

Applications are invited for a tenure-track position at the **ASSISTANT/ASSOCIATE PROFESSOR** level in the Department of Pharmaceutical Sciences, School of Pharmacy, located on the Health Sciences Campus. Outstanding candidates with research interests preferably in the area of **macromolecular drug transport** and/or **cancer therapeutics**, and with a strong background in molecular biology, are invited to apply. Applicants must possess a Ph.D. or equivalent degree in the biological, chemical or pharmaceutical sciences. Participation in team teaching at both the professional and graduate levels is required. The Search Committee will begin acting on applications on November 1, 1994. Please submit curriculum vitae, selected reprints, a short statement of future research plans, and names and addresses of three references to: **Wei-Chiang Shen, Ph.D., Search Committee Chairman, Department of Pharmaceutical Sciences, University of Southern California School of Pharmacy, John Stauffer Pharmaceutical Sciences Center, 1985 Zonal Avenue, Los Angeles, CA 90033-1086.** *Equal Opportunity Employer/Male/Female/Disabled.*

POSITIONS OPEN

ASSISTANT PROFESSOR, BIOENGINEER. The Institute of Gerontology at the University of Michigan invites applications from bioengineers studying muscle contractility at the single cell level with emphasis on the role of the individual protein components and other regulatory factors. Candidates should have a Ph.D. in bioengineering, or in another field of engineering, with evidence of training in muscle physiology. A minimum of two years of postdoctoral experience is required. The candidate is expected to develop an independent research program, participate in an interdisciplinary group investigating molecular and cellular mechanisms of skeletal muscle impairments in old animals, and teach in graduate and professional courses. A joint tenure-track appointment as an Assistant Professor in an appropriate academic department is negotiable. Applicants should send a letter of interest with summary of past research experience and current/future goals, a curriculum vitae with list of past and current research support, and also should arrange forwarding of at least three letters of recommendation to:

Dr. Richard C. Adelman, Director
Institute of Gerontology
University of Michigan
300 North Ingalls
Ann Arbor, MI 48109-2007

Review of the applications will begin on November 1, 1994, and continue until a suitable candidate is identified. *The University of Michigan is an Affirmative Action/Equal Opportunity Employer.*

The Department of Microbiology, University of Minnesota, invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level, available April 1, 1995. Candidates are expected to develop independent research programs that will complement and strengthen the department in areas of current emphasis—microbial pathogenesis, host defenses and immunology, or microbial structure, function and development. Candidates will obtain extramural support to develop and teach graduate/undergraduate courses in relevant areas, supervise and train Ph.D. students, and participate in appropriate departmental and collegiate activities. Candidates will have Ph.D. in microbiology, immunology, or related biological science discipline or M.D. and at least two years of postdoctoral experience. Closing date for receipt of applications is December 31, 1994, but earlier applications are encouraged and will be considered promptly.

Candidates should submit curriculum vitae, summary of research interests, and the names of three references to: **Patrick M. Schlievert, Ph.D., Chairman of the Search Committee, Department of Microbiology, University of Minnesota Medical School, Box 196 UMHC, 420 Delaware, SE, Minneapolis, MN 55455.**
The University of Minnesota is an Equal Opportunity Educator and Employer.

ECOLOGIST UNIVERSITY OF IOWA

The Department of Biological Sciences invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level in ecology related to conservation biology. The successful candidate will be expected to develop a strong research program with significant field component in either ecological genetics or community ecology. Teaching duties will include introductory biology or general ecology and an advanced course in candidate's area of specialty. Preference will be given to candidates with postdoctoral experience. Consideration of applications will begin November 1, 1994. Applicants should send curriculum vitae, reprints, and statement of research and teaching interests, and have three letters of recommendation sent to: **Dr. Steve Hendrix, Search Committee Chair, Department of Biological Sciences, University of Iowa, Iowa City, IA 52242.** *The University of Iowa is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR OF BIOLOGY

Tenure-track position at Berry College beginning 1 January 1995. We seek a plant ecologist committed to excellence in undergraduate teaching, who will develop a research program involving undergraduates. The department has research emphases in ecology and evolutionary biology. Submit curriculum vitae, description of teaching and research interests, and three references by September 16, 1994, to: **Dr. Barbara Mixon, 5036 Mount Berry Station, Mount Berry, GA 30149-5036. Fax: (706) 802-0307.** *Berry College is an Equal Opportunity Employer. Minorities and women are encouraged to apply.*

Public Invitation to Participate in a New Research and Development Project on "Development Of New Refrigerant And Other Substances For Efficient Use Of Energy"

Announced by the New Energy and Industrial Technology Development Organization on August 25, 1994

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

Theme of the Research Project

"Development Of New Refrigerant And Other Substances For Efficient Use Of Energy"

Outline of the Research Work to be Entrusted

Recently, ozone-depleting substances such as CFC have become regulated by international agreement in consideration of global environmental issues.

Therefore, the purpose of this project is the research and development of new substances, mainly for refrigerant blowing agents and solvent applications, which have not only low global warming potential and zero ozone depletion potential, but also will contribute to saving energy at the same time.

Procedures for Application

- Qualification Criteria

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

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

- Explanatory Meeting

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

Date: Thursday, September 8, 1994
Time: 14:00 to 15:00
Place: Syoyu Kaikan 1st Floor
3-1-1, Kasumigaseki, Chiyoda-ku, Tokyo
Tel: 03-3593-3421

- Further Information

For further information regarding the research and development work to be entrusted under the above project, please contact NEDO by telefax as follows: . . . New Energy and Industrial Technology Development Organization

Contract Division, Accounting Department
28th Floor, Sunshine 60 Building
1-1, Higashi-Ikebukuro 3-chome
Toshima-ku, Tokyo 170 Japan
Telefax: 03-5992-1184

POSITIONS OPEN

MOLECULAR IMMUNOLOGIST

The Department of Medical Microbiology, University of Manitoba, invites applications for a tenure-track position at the rank of **ASSISTANT PROFESSOR** beginning after January 1, 1995. Appointment is subject to final budgetary approval.

The successful candidate will hold a Ph.D. and/or M.D. degree and will have research experience and a superb publication record in the area of molecular immunology and immune recognition. Advanced skills in molecular biology and peptide chemistry are essential. Duties include the establishment of an active independently funded research program in the area of microbial virulence and immunopathogenesis, and participation in undergraduate medical and graduate teaching programs. Salary will be commensurate with experience and qualifications.

Applicants should send their curriculum vitae and summary of research interests together with the names of three referees to: **Dr. R.C. Brunham, Professor and Head, Department of Medical Microbiology, University of Manitoba, Room 543, 730 William Avenue, Winnipeg, Manitoba R3E 0W3, Canada.** Informal inquiries may be directed to Dr. Robert Brunham at **204-789-3524** or **FAX: 204-783-5255**. Closing date for receipt of applications is November 1, 1994.

The University of Manitoba encourages applications from qualified women and men, including members of visible minorities, aboriginal people and persons with disabilities. The University provides a smoke-free work environment, save for specially designated areas. This advertisement is directed to Canadian citizens and permanent residents.

BIOCHEMIST—ASSISTANT PROFESSOR. The Department of Chemistry at Union College invites applications for a tenure-track position to begin fall 1995. The candidate is expected to have a Ph.D. with a strong background in organic chemistry. Preference will be given to those with postdoctoral experience. Applicants should have the potential for excellence in undergraduate teaching and research. Applications should include a curriculum vitae, a statement on the applicant's interests in teaching, an outline of research interests (with a list of start-up needs), transcripts from undergraduate and graduate institutions and three letters of recommendation. All materials should be sent to: **Prof. L. A. Hull, Chair, Department of Chemistry, Union College, Schenectady, NY 12308. FAX: 518-338-6795.** Review of applications will begin immediately with the expectation that we will fill the position by mid-December, 1994. Union College is a small, selective undergraduate institution with particular strengths in science and engineering. *Union College is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR. The University of Montana invites applications for an academic year, tenure-track position in Wildlife Population Ecology. Review of applications will begin 26 September 1994 and continue until appointment is made. A Ph.D. in Wildlife Biology or related field is required. Send résumé, three letters of reference (one from a supervisor), and letter of interest to: **Wildlife Biology Search Committee, School of Forestry, The University of Montana, Missoula, MT 59812.** *The University of Montana is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR FISHERIES AND WILDLIFE BIOLOGY

Utah State University's Fisheries and Wildlife Department and the Uintah Basin Campus have an entry-level position to teach three courses or approximately 15 credit hours per quarter in fisheries and wildlife and natural resources; coordinate outreach programs with the campus department; advise students in their academic endeavors; and supervise student field experience. This position offers excellent opportunity for developing a Native American education initiative. Requires Ph.D. in fisheries or wildlife biology, broad educational background and interest in natural resources, and deep commitment to teaching and outreach education. Send curriculum vitae, transcript, statement of teaching interest, and philosophy, and three letters of reference to: **Dr. Laird M. Hartman, Director, USU Uintah Basin Education Center, 987 East Lagoon Street (1244-9), Roosevelt, UT 84066. Telephone: 801-722-2294.** Incomplete applications will not be considered. *Utah State University is an Affirmative Action/Equal Opportunity Employer.* Position open until filled.

TENURE-TRACK ASSISTANT/ASSOCIATE PROFESSOR TRANSGENICS
Michigan State University

Applications are invited to head a newly funded transgenic core facility in the Physiology Department at Michigan State University at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. The successful candidate will supervise the construction of transgenic animals, i.e., mice, and oversee staff in the production and maintenance of transgenic animals. Significant experience in the generation of transgenic animals is required. The goal of this facility is to provide transgenic animals for use by investigators both within the Physiology Department and in other university departments. In addition, the candidate will be expected to develop a vigorous externally funded research program and participate in departmental teaching programs. Interested individuals should provide a complete curriculum vitae, a brief statement of research interests, experience in construction of transgenic animals, bibliography and copies of key publications or reprints. Applicants should arrange for at least three letters of recommendation to be sent from scientists who can evaluate their accomplishments and future potential for research and teaching. Applications should be sent to: **Chairperson, Transgenic Animal Search Committee, Department of Physiology, Michigan State University, East Lansing, MI 48824-1101.** Applications accepted until position is filled.

FACULTY POSITION IN METABOLIC REGULATION
MICHIGAN STATE UNIVERSITY DEPARTMENT OF PHYSIOLOGY

The Department of Physiology invites applications for up to two tenure-track appointments for positions of **ASSOCIATE/ASSISTANT PROFESSOR**, preferably at the Assistant Professor level. We seek outstanding candidates with a Ph.D. degree or equivalent, with training in physiology, biochemistry or molecular biology. Expertise should be in the area of metabolic regulation. Preference will be given to those individuals using modern molecular approaches to understand normal and disease processes associated with disorders of metabolism, e.g., diabetes. Candidates are expected to develop a vigorous externally funded research program and to teach undergraduate, graduate, or medical students. Interested individuals should provide a complete curriculum vitae, a brief statement of research interests, bibliography and copies of key publications or reprints. Applicants should arrange to have at least three letters of recommendation sent from scientists who can evaluate their accomplishments and future potential for research and teaching. Applications should be sent to: **Chairperson, Metabolic Regulation Search Committee, Department of Physiology, Michigan State University, East Lansing, MI 48824-1101.** Applications accepted until position is filled. *Michigan State University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

EXPERIMENTAL MYCOLOGIST UNIVERSITY OF GEORGIA

The Department of Botany invites applications for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level beginning September 1, 1995. The successful candidate is expected to have strong graduate or postdoctoral training in mycology, a knowledge of fungal diversity, and a demonstrated ability to conduct independent research. The development of an internationally recognized research program in mycology is expected. Teaching responsibilities will include a graduate level course in Experimental Mycology. Among research areas of interest are: growth and development, cell biology, evolution, and host-pathogen interactions.

Applications should include the following: 1) curriculum vitae; 2) statement of teaching and research interests; 3) three letters of reference; and 4) no more than three reprints of representative research.

Please forward application materials by November 1, 1994, to:

Dr. David Porter
Chair of the Search Committee
Department of Botany
University of Georgia
Athens, GA 30602

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

DEPARTMENT OF BOTANY UNIVERSITY OF WASHINGTON
ASSISTANT PROFESSOR, PLANT SYSTEMATICS

ASSISTANT PROFESSOR, Department of Botany, University of Washington. Applicants are sought for a tenure-track position in Plant Systematics at the level of **ASSISTANT PROFESSOR.** The successful candidate must be qualified to teach undergraduate and graduate courses in plant systematics, develop a rigorous research program in molecular plant systematics/evolution, and curate the herbarium. Please send curriculum vitae, statement of teaching and research interests, and up to three publications, and arrange to have three letters of recommendation forwarded to: **Dr. E. Van Volkenburgh, Chair of Search Committee, Department of Botany KB-15, University of Washington, Seattle, WA 98195.** Priority will be given to applications received by 30 November 1994. *The University of Washington is building a culturally diverse faculty and strongly encourages applications from women and minority candidates. Affirmative Action/Equal Opportunity Employer.*

DEPARTMENT PLANT BIOLOGY THE UNIVERSITY OF TENNESSEE

The Department of Botany invites applications for a tenure-track **ASSISTANT PROFESSORSHIP** in developmental plant biology to begin August 1, 1995. Applicants should have a Ph.D. with postdoctoral experience preferred. A commitment to excellence in research and teaching is required. The successful applicant will be expected to establish a vigorous externally funded research program using modern genetic, molecular and/or cellular approaches in the study of plant developmental biology and to supervise graduate students at the M.S. and Ph.D. levels. Candidates will be evaluated on the basis of research accomplishments and teaching effectiveness. Application materials should include curriculum vitae, a statement of research goals/plans, and a statement of teaching interests and philosophy. This material and three letters of reference should be sent to: **Dr. Les Hickok, Developmental Plant Biology Search, Botany Department, University of Tennessee, Knoxville, TN 37996-1100.** Screening of applicant files will begin November 15, 1994. *University of Tennessee, Knoxville is an Equal Employment Opportunity/Affirmative Action/Title IX/Section 504/ADA Employer.*

ASSISTANT PROFESSOR NEPHROLOGY–The VA Medical Center and affiliated University of Arkansas for Medical Sciences are seeking a physician with demonstrated research scholarship, original papers, and at least two years of lab research experience after clinical training. The position involves seven months attending time on in-patient clinical service and year-round out-patient clinics. Candidates must show ability and commitment to clinical dialysis research. Salary and rank commensurate with qualifications. Starting date October 1994. Send applications to: **Warren Shelton, Human Resources Management (05C/NLR), VA Medical Center, 4300 West 7th Street, Little Rock, AR 72205.** Questions may be directed to: **Sudhir Shaw, M.D., Chief, Nephrology. Telephone: 501-660-2030.** *Equal Opportunity Employer.*

ASSISTANT PROFESSOR BIOLOGICAL CHEMISTRY/MOLECULAR BIOLOGY

The Department of Biological Chemistry, College of Medicine, University of California, Irvine invites applications for a tenure-track appointment at the **ASSISTANT PROFESSOR** level. Individuals with research experience and interests in the areas of molecular genetics, macromolecular processing and its control, structural biology and developmental processes are particularly encouraged to apply. Faculty members are expected to develop strong, independent research programs and to participate in the teaching of medical students and graduate students in a campus-wide joint graduate program in molecular biology, genetics and biochemistry.

Applicants should send curriculum vitae, statements of proposed research and three letters of recommendation by November 1, 1994, to: **Search Committee Chair, Department of Biological Chemistry, College of Medicine, University of California, Irvine, CA 92717-1700.**

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

Life Sciences & Space Medicine Conference '95, a joint effort of the National Aeronautics and Space Administration/Johnson Space Center (NASA/JSC) and the American Institute of Aeronautics and Astronautics (AIAA), hereby issues an official *Call for Scientific and Technical Papers.*

Submissions for presentation will be considered on the following topics: *Medical Sciences and Systems, Biological Sciences and Systems, Human Factors Engineering, Space Physiology, Extra-Vehicular Activity, Applications of Technology to Life Sciences, and International Cooperation in Life Sciences.*

Send your abstract of at least 600 words no later than 19 September 1994 to:
AIAA, The Aerospace Center, Dept. A1
370 L'Enfant Promenade SW, Washington, DC 20024-2518. For more information, call 1-800-615-0190.

LIFE SCIENCES & SPACE MEDICINE CONFERENCE '95
Bringing Space Benefits Down To Earth

UNSW

THE UNIVERSITY OF NEW SOUTH WALES

SCHOOL OF ANATOMY

ASSOCIATE LECTURER OR LECTURER

Tenured or Tenurable Appointment

Salary: Associate Lecturer $A29,117 - $A39,495 per annum or Lecturer $A41,574 - $A49,370 per annum. Level of appointment and commencement salary are dependent on qualifications and experience.

Applications are invited for appointment as Associate Lecturer or Lecturer in the School of Anatomy. The School is responsible for teaching gross anatomy, histology, neuroanatomy and embryology to medical and science students. It also has an active research program in all these areas with particular strengths in neuroanatomy and developmental neurobiology.

Applicants should have experience in teaching one or more of the above areas, as well as possessing a developed research program with the potential to attract external funding. The minimum qualification is a medical degree or a relevant PhD. A knowledge and understanding of EO/AA principles is required.

A clinical loading of $A13,673 per annum will also be payable to an appointee with medical qualifications registrable in New South Wales.

The position is available from January 1995. Appointment will either be with tenure or on the basis of a contract with provision for conversion to tenure. A tenurable appointment for an Associate Lecturer, comprises an initial contract period of three years, with the possibility of a further two year contract and provision for conversion to tenure. Membership of an approved University superannuation scheme is a condition of employment for this position.

Enquiries may be directed to Associate Professor David Tracey on telephone (61 2) 385 2471, facsimile (61 2) 313 6252, email D.Tracey@unsw.edu.au.

Applications close 16 September 1994.

PLEASE QUOTE Ref 423SCI

APPLICATION PROCEDURE

Written applications systematically addressing the selection criteria QUOTING REFERENCE NUMBER, and a complete résumé should be sent to: The Recruitment Officer, Human Resources, The University of New South Wales, Sydney 2052 Australia by applications close date. Include business and private telephone numbers; (copies of academic transcript and qualifications where appropriate); and the names, addresses, and preferably facsimile numbers of at least two referees. People from EEO groups are encouraged to apply. 39026

Equality of employment opportunity is University policy
The University is a smoke free work environment

ENDOWED CHAIR
BASIC CANCER RESEARCH

Tulane University Medical Center seeks an eminent scholar for the Zimmerman Chair in Basic Cancer Research and Associate Director for Basic Research of the Tulane Cancer Center. Candidates should hold the Ph.D. and/or M.D. with credentials suitable for appointment with tenure at rank of Associate Professor or Professor in a basic science department of Tulane University Medical Center. Candidates should have significant and recognized scientific accomplishments in the molecular biology of cancer and demonstrated administrative ability to develop and focus research programs in cancer biology. The Cancer Center interacts with Graduate Program in Molecular and Cell Biology, Center for Bioenvironmental Research, Tulane Primate Research Center, School of Medicine, and School of Public Health and Tropical Medicine. Resources include, in addition to an endowed chair, generous research space on a newly-opened cancer research floor, extensive core equipment, and the opportunity to participate in the recruitment of additional basic science faculty. Send letter & CV: Roy S. Weiner, M.D., Director, Tulane Cancer Center, 1430 Tulane Avenue SL-68, New Orleans, LA 70112-2699.

An Affirmative Action / Equal Opportunity Employer

Integrated Genetics, a 600 person $50M biotechnology firm, applies advanced molecular biology techniques to develop and provide high quality, sophisticated genetic testing services to physicians, hospital laboratories, and health maintenance organizations throughout the United States and internationally. We seek ambitious, energetic individuals to join the team of highly talented and respected scientists and clinicians developing new and viable genetic tests and technologies to be utilized in our clinical laboratories.

RESEARCH SCIENTIST, SR. RESEARCH ASSOCIATE

Recent Ph.D or M.S. with 5-7 years' experience needed in order for this bench scientist to develop sequencing-based platforms in DNA diagnostics lab utilizing state-of-the-art sequencing, Northern blot analysis and general manipulation of nucleic acids. Experience in human genetics a plus.

RESEARCH ASSOCIATE-FISH

Participate in the development of enhanced fluorescent in situ hybridization technology for use in prenatal diagnosis of maternal blood. Involves optimization of FISH parameters, sample preparation and analysis. Requires M.S./B.S. degree with strong experience in molecular biology and FISH.

RESEARCH ASSOCIATE

Utilize contemporary molecular biology skills to clone and characterize the transcriptional units of disease-causing genes. Cloning, Southern and Northern analysis, DNA sequence analysis and PC or MAC experience is needed.

DNA LAB SUPERVISOR

Manage the largest molecular DNA diagnostic laboratory in U.S. Must have extensive clinical or research experience in molecular techniques such as PCR, Southern blot analysis, sequencing, and RNA manipulations. Excellent managerial skills as well as the ability to interact with R&D, and the other labs throughout the country is required.

Integrated Genetics offers excellent compensation and benefits including incentive stock options, a 401(k) plan with company match, tuition reimbursement, and extensive insurance plans. Our facility is located 30 minutes west of Boston and has its own lecture hall, fitness facility and library.

Please send your resume to: Human Resources-SM894, One Mountain Road, Framingham, MA 01701.

An equal opportunity employer.

INTEGRATED GENETICS

ASSISTANT PROFESSOR OF GENETICS

Applications are invited for a tenure-track position in the Department of Genetics with primary research and teaching interests in the **molecular genetics of eukaryotes**. Those with research interests in fungal genetics or molecular genetic approaches to cellular and developmental biology are especially encouraged to apply. The candidate will be expected to develop a strong creative research program and have a commitment to teaching at the undergraduate and graduate levels. The appointment could begin as early as September 1, 1995. Apply before December 5, 1994 by sending a curriculum vitae, list of publications, brief statement of research interests and three letters of reference solicited by the applicant to:

Dr. Robert Ivarie
Search Committee
Department of Genetics
University of Georgia
Athens, GA 30602-7223

The University of Georgia is an Equal Opportunity/Affirmative Action Employer

The Department of Genetics at the University of Georgia consists of 18 faculty members, including three members of the National Academy of Sciences. In addition to its vibrant research atmosphere, the department takes pride in the quality of its graduate student training program which is supported, in part, by NIH/NSR training grants. The selected candidate will be provided start-up funds, equipment and excellent laboratory facilities in a recently completed, state-of-the-art research building. Athens, located 70 miles from Atlanta in the rolling hills of northern Georgia, provides a pleasant, college-town, living environment. For additional information, contact Professor Robert Ivarie, chairperson of the search committee, at telephone number (706) 542-1424, fax number (706) 542-3910, or e-mail address: ivarie@bscr.uga.edu.

CDC

CENTERS FOR DISEASE CONTROL AND PREVENTION

NIOSH

National Institute for Occupational Safety and Health

Chief, Toxicology and Molecular Biology Research Branch. The National Institute for Occupational Safety and Health (NIOSH) within the Centers for Disease Control and Prevention (CDC), is seeking applications for the Chief of the Toxicology and Molecular Biology Research Branch (TMBRB) within the newly created Health Effects Laboratory Division. The purpose of TMBRB is the development of new, innovative and molecular programs which examine the toxic effects of workplace exposures/agents on human, animal and cellular systems. This includes the leadership of the following specialized areas: toxicology, including immunotoxicology, neurotoxicology, genetic and reproductive toxicology; microbiology, including bacteriology, mycology, parasitology, and virology; cellular and molecular biology; immunology; and animal and human biology.

NIOSH is searching for a leader in the field of occupational safety and health who has the ability to direct a highly technical scientific research program which develops strategies to identify, prevent, ameliorate, and control occupational diseases. This program has national and international effect in that it deals with occupational hazards found in virtually all facets of employment within the United States and abroad. The ability to interact with representatives of other Federal, state and local agencies, labor groups, private industry, foreign occupational health organizations, and academia is required. An MD/Ph.D. is desirable. CDC/NIOSH is an equal opportunity employer and offers a smokefree environment. Please send resumes or requests for additional information regarding this position to the Morgantown Human Resources Office, NIOSH, 1095 Willowdale Road, Morgantown, West Virginia 26505.

Chief, Exposure Assessment Branch. The National Institute for Occupational Safety and Health (NIOSH) within the Centers for Disease Control and Prevention (CDC), is seeking applications for the Chief of the Exposure Assessment Branch (EAB) within the newly created Health Effects Laboratory Division. The purpose of EAB is to develop and establish new and innovative programs which examine the toxic effects of workplace airborne particulates and chemical, physical and biological agents and exposures. This position supervises a group of the following specialized areas: toxicology, microbiology, industrial hygiene, chemistry, etc. This program has national and international effect in that it deals with occupational hazards found in virtually all facets of employment within the United States and abroad.

NIOSH is searching for a leader in the field of occupational safety and health who has the ability to direct a substantial segment of a highly technical scientific research program which develops strategies to identify, prevent, ameliorate, and control occupational diseases. The ability to interact with representatives of other Federal, state and local agencies, labor groups, private industry, foreign occupational health organizations, and academia is required. An MD/Ph.D. is desirable. CDC/NIOSH is an equal opportunity employer and offers a smokefree environment. Please send resumes or requests for additional information regarding this position to the Morgantown Human Resources Office, NIOSH, 1095 Willowdale Road, Morgantown, West Virginia 26505.

Chief, Analytical Support Branch. The National Institute for Occupational Safety and Health (NIOSH) within the Centers for Disease Control and Prevention (CDC), is seeking applications for the Chief of the Analytical Support Branch (ASB) within the newly created Health Effects Laboratory Division. The purpose of ASB is to provide analytical services to all workplace and laboratory studies performed at NIOSH which are used by NIOSH research and service programs in the development of strategies to identify, prevent, and control workplace hazards and occupational disease. The position supervises a state-of-the-art analytical laboratory staffed with a team of professionals of various specialties which provide a wide range of analytical services for NIOSH programs, such as: agriculture; biotechnology; construction; indoor air quality; infectious diseases, etc. NIOSH research and the resulting recommendations, which are predicated in part upon the laboratory analysis conducted by this Branch, directly influence the health and well-being of workers around the country.

NIOSH is searching for a leader in the field of occupational safety and health who has the ability to plan, direct, and execute the analytical activities and services of the Branch and provide overall guidance to a staff of highly qualified research personnel. The ability to interact with representatives of other Federal, state and local agencies, labor groups, private industry, and academia is required. An MD/Ph.D. is desirable. CDC/NIOSH is an equal opportunity employer and offers a smokefree environment. Please send resumes or requests for additional information regarding this position to the Morgantown Human Resources Office, National Institute for Occupational Safety and Health, 1095 Willowdale Road, Morgantown, West Virginia 26505.

Chief, Engineering and Control Technology Branch. The National Institute for Occupational Safety and Health (NIOSH) within the Centers for Disease Control and Prevention (CDC), is seeking applications for the Chief of the Engineering and Control Technology Branch (ECTB) within the newly created Health Effects Laboratory Division. The purpose of ECTB is to develop and establish engineering solutions for the control of occupational disease including the development of personal protective equipment, computerized workplace simulations, mathematical models, industrial fabrication and systems for preventing/minimizing worker exposure to hazardous chemical, biological, and physical agents. The position directs a substantial segment of a highly technical scientific research program which develops strategies to identify, prevent, ameliorate, and control occupational diseases.

NIOSH is searching for a leader in the field of occupational safety and health who has the ability to plan, direct, and execute the engineering activities and services of the Branch and provide overall guidance and direction for this program to a staff of highly qualified professional personnel. The ability to interact with representatives of other Federal, state and local agencies, labor groups, private industry, foreign occupational health organizations, and academia is required. An MD/Ph.D. is desirable. CDC/NIOSH is an equal opportunity employer and offers a smokefree environment. Please send resumes or requests for additional information regarding this position to the Morgantown Human Resources Office, NIOSH, 1095 Willowdale Road, Morgantown, West Virginia 26505.

Chief, Pathology and Physiology Research Branch. The National Institute for Occupational Safety and Health (NIOSH), within the Centers for Disease Control and Prevention (CDC), is seeking applications for the Chief of the Pathology and Physiology Research Branch (PPRB) within the newly created Health Effects Laboratory Division. The purpose of PPRB is to examine the effects of workplace exposures on human and animal body functions through the use of state-of-the-art research methods and approaches in a focused, applied and preventive multi-faceted laboratory program. The position supervises highly technical scientific research work in such areas as: cellular, molecular, organ and whole body pathology; whole body and cellular physiology; cell biology; imaging; microscopy; molecular probes; animal pathology and physiology, histology; cellular and organ structure/function; pharmacology. The work managed and personally performed by this position has substantial public health implications for workers both in the United States and abroad.

NIOSH is searching for a leader in the field of occupational safety and health who has the ability to plan, direct, and execute the investigative activities and services of the Branch and provide overall guidance to a staff of highly qualified research personnel. The ability to interact with representatives of other Federal, state and local agencies, labor groups, private industry, foreign occupational health organizations, and academia is required. An MD/Ph.D. is desirable. CDC/NIOSH is an equal opportunity employer and offers a smokefree environment. Please send resumes or requests for additional information regarding this position to the Morgantown Human Resources Office, NIOSH, 1095 Willowdale Road, Morgantown, West Virginia, 26505.

POSITIONS OPEN

ASSISTANT PROFESSOR
DEPARTMENTS OF BIOCHEMISTRY AND PHARMACOLOGY
UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE

Candidates for **ASSISTANT PROFESSOR** (tenure-track) must hold a Ph.D. or equivalent degree, have at least two years of postdoctoral training, and be highly capable in research and teaching. Individuals working in the areas of polymorphisms in drug-metabolizing or detoxifying enzymes, in DNA repair capacity, in genetic predisposition to specific environmentally related diseases, or alterations of oncogenes and/or tumor suppressor genes are especially encouraged to apply. The position is associated with a NIEHS-supported Center for Environmental Health Sciences. The School of Medicine has core facilities for the synthesis and sequencing of peptides, flow cytometry, and mass spectrometry. The successful applicant will be expected to develop and maintain an independently funded research program and to participate in the training of medical, dental, and graduate students. Interested individuals should submit a curriculum vitae, list of four persons familiar with the candidate's qualifications, and a brief statement of research interests to: **Search Committee, Department of Biochemistry, University of Louisville School of Medicine, Health Sciences Center, Louisville, KY 40292.** Applications will be accepted up to November 1, 1994, or until a suitable candidate is identified. *The University of Louisville is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF ENTOMOLOGY

Insect Behavior-Insect/Plant Interactions: 12-month, tenure-track position (33% teaching, 67% research). Incumbent will develop and teach behavior as part of an undergraduate course and will develop and teach a graduate course. Incumbent will develop an active graduate and research program stressing the behavioral basis of insect-plant interactions and/or the behavioral ecology of important arthropods. Expertise in either molecular, organism, population, or community approaches will be advantageous and postdoctoral experience is desirable.

Applicants should address interest in position in regard to teaching and research. Send transcripts and résumé that includes publications and professional activities along with five selected published papers (maximum), and names and address of four references to: **Insect Behavior Search Committee, c/o Dr. Ray Frisbie, Professor and Head, Department of Entomology, Texas A&M University, College Station, TX 77843-2475.** Closing date: October 15, 1994.

Texas A&M University is an Equal Opportunity/Affirmative Action Employer.

MOLECULAR CANCER IMMUNOLOGIST

at the University of Arizona Health Sciences Center. The position is tenure-track at the level of **ASSISTANT PROFESSOR** with an appointment in the Department of Microbiology and Immunology and at the Arizona Cancer Center. Applicants should have a Ph.D. or M.D. and have demonstrated expertise in the field. The successful candidate will be expected to develop an independent, competitive research program in cancer-related molecular immunology. An interest in the application of state-of-the-art immunological techniques to clinical problems would be an advantage. *Women and minorities are encouraged to apply.*

Submit a curriculum vitae and three letters of recommendation to: **Dr. Garth Powis, Director of Basic Science, Arizona Cancer Center, Tucson, AZ 85724.** Applications will be considered September 1, 1994, until the position is filled. *The University of Arizona is an Equal Employment Opportunity/Affirmative Action/ADA Employer.*

POSTDOCTORAL ASSOCIATE POSITION, Laboratory of Molecular Biophysics, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Available December 1994 to study the free radical metabolism and toxicity of xenobiotics and metals. Requires a Ph.D. in one of the medical sciences and at least three years of postdoctoral experience in animal metal toxicity and the application of electron spin resonance spectroscopy (including spin trapping) to *in vivo* detection of free radicals. Salary range $40,000 to $50,000 annually. Send curriculum vitae and three letters of reference by September 9, 1994, to: **Bruce Wiggins (HNV87) Personnel Office, NIEHS, P.O. Box 12233, Research Triangle Park, NC 27709.** *NIH is an Equal Employment Opportunity Employer.*

POSITIONS OPEN

FIELD BOTANIST

The Biology Department at Loyola Marymount University invites applications for a tenure-track position at the level of **ASSISTANT PROFESSOR**, beginning August 1995. The applicant will be expected to teach courses in two or more of the following areas: plant or general ecology, plant evolution or systematics, and plant physiology or plant physiological ecology. The applicant will also be expected to contribute to the Department's general biology course offerings, teach undergraduate seminars in the area of specialty and supervise undergraduate research. Development of an active research program and pursuit of extramural support will be expected. A Ph.D. is required. Send curriculum vitae, statement of teaching and research interests, and names of three references by Oct. 10, 1994, to: **Dr. Howard Towner, Department of Biology, Loyola Marymount University, 7101 West 80th Street, Los Angeles, CA 90045-2699. Telephone: 310-338-7776; FAX: 310-338-4479; Email: htowner@Imumail.Imu.edu.** *Loyola Marymount University is an Affirmative Action/Equal Opportunity Employer and especially welcomes applications from women, minorities and persons with disabilities.*

The Department of Biological Sciences and Biomedical Sciences invite applications for a joint faculty position at the rank of **ASSISTANT PROFESSOR.** Salary and set-up package will be competitive. The successful candidate will be expected to establish an active research program with promise of external funding in an area of structural, biochemical, molecular or cellular biology, using computational analysis as a major research tool, and to participate in graduate and undergraduate teaching. The candidate will be able to interact with a large group of biologists working on exciting problems in molecular, biochemical, cellular, developmental, neurobiological, ecological, and computational biology. Excellent computing and other core research facilities are available. Start date as early as January 1, 1995. Please submit materials before September 30, 1994; however applications will be accepted until position is filled.

Applicants should send a letter of intent, curriculum vitae, statement of research plans, and arrange for at least three reference letters to be sent to: **Dr. David Shub, Chair, Search Committee, Department of Biological Sciences, University at Albany, 1400 Washington Avenue, Albany, NY 12222.**

The University at Albany, SUNY, is an Equal Opportunity/Affirmative Action Employer. Applications from women, minorities, handicapped persons and special disabled or Vietnam-era veterans are especially welcome.

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

Applicants must have a Ph.D., M.D., or equivalent degree, postdoctoral research experience, and the ability to develop a strong independent research program. Applicants with demonstrated research expertise in any aspect of nervous system development will be considered. A strong commitment to teaching medical and graduate students is also required; prior teaching experience in a medical school basic science curriculum is preferred. These positions will not require teaching of human (gross) anatomy. Send a curriculum vitae (including bibliography and list of grant support), 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 February 1, 1995, or until suitable candidates are identified. *Equal Opportunity/Affirmative Action Employer. We encourage applications from women and minorities.*

ASSOCIATE DIRECTOR of Vincent Center for Reproductive Biology is sought to manage day-to-day affairs of the Center. Candidate must be an M.D. and/or Ph.D. with advanced training and research accomplishments in Reproductive Biology and assisted reproductive technologies.

Salary and medical school faculty appointment commensurate with education and achievements.

Please send curriculum vitae to: **Isaac Schiff, M.D., Chief, Vincent Memorial Gynecology Service, Massachusetts General Hospital, Boston, MA 02114. FAX: 617-726-7548.**

Massachusetts General Hospital is an Equal Opportunity Employer.

POSITIONS OPEN

MOLECULAR/CELL BIOLOGY ASSISTANT/ASSOCIATE PROFESSOR

The Biology Department seeks applicants for the position of **ASSISTANT/ASSOCIATE PROFESSOR.** Applicants must have demonstrated outstanding potential for independent work in the area of Molecular or Cell Biology. The Biology department consists of 19 faculty most of whom employ genetic and molecular approaches to problems in cell, molecular and developmental biology, evolutionary biology and ecology. Many additional faculty with interests in Cell and Molecular Biology are located in the adjacent Medical School. Applicants should submit, as soon as possible, but before November 1, 1994, a curriculum vitae, bibliography, a description of research and teaching interests and ask three references to send letters of recommendation to: **Chairman, Molecular/Cell Search Committee, Department of Biology, University of Rochester, Rochester, NY 14627.** *The University of Rochester is an Affirmative Action/Equal Opportunity Employer.*

DIRECTOR, UCR/UCLA PROGRAM IN BIOMEDICAL SCIENCES
DIVISION OF BIOMEDICAL SCIENCES UNIVERSITY OF CALIFORNIA, RIVERSIDE

Responsible for leadership of the research and educational activities of the Division of Biomedical Sciences at University of California, Riverside (UCR). Duties include leadership of and active participation in the research activities of the Divisional faculty at UCR and the Ph.D. program in Biomedical Sciences; supervision of an accelerated seven-year educational program leading to the B.S. degree from UCR and the M.D. degree from the UCLA School of Medicine; serving as Chairperson of the Division of Biomedical Sciences (15 ladder-rank faculty positions in basic Medical Sciences disciplines at UCR and seven adjunct positions at the associated Harbor/UCLA Medical Center teaching facility); and maintaining liaison among UCR, UCLA, Harbor/UCLA Medical Center, the UC Office of the President, and other applicable state and national agencies. Requires: (a) Ph.D. or M.D. degree; (b) A strong and active research program in biomedical sciences; (c) Familiarity with medical school basic sciences instruction; (d) Evidence of success in managing strong academic programs; (e) Qualification for appointment as a Full Professor in the University of California system. Starting date: July 1, 1995.

Please send nominations *or* letter of application, résumé, and names of at least three references by October 1, 1994, to: **BMSP Program Director Search Committee, Division of Biomedical Sciences, University of California, Riverside, CA 92521-0121.**

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

The Department of Biological and Environmental Science at Georgia College is seeking applicants for the position of **CHAIR AND ASSOCIATE PROFESSOR OR PROFESSOR.** A Ph.D. in a biological science with demonstrated excellence in undergraduate education and research, and a record of achievement within the candidate's area of specialization, are important selection criteria. Administrative experience is desirable. The selection process will begin November 22, 1994, and continue until a successful candidate is identified. The appointment date is July 1, 1995. This is a 12-month tenure-track position that also involves substantial undergraduate and graduate teaching and graduate master's thesis supervision. The department is staffed by 12 full-time and three part-time faculty members and serves 200 undergraduate majors and 30 graduate students. Georgia College is located in historic Milledgeville, the antebellum capital of the state, and the student population totals 5800. Applicants should submit: 1) a letter of application detailing reasons for being interested in the position, academic/teaching philosophy, a statement of the applicant's leadership style, and names and telephone numbers of four references; 2) a curriculum vitae; and 3) letters of recommendation from four references. Submission of *official* transcripts from all Colleges or Universities attended will be required of those finalists invited for an interview. SEND ALL MATERIALS TO: **Chair, Biology Search Committee, Department of Biological and Environmental Sciences, CBX 81, Georgia College, Milledgeville, GA 31061. Telephone: 912-454-0860.** *Georgia College is an Affirmative Action/ADA/Equal Opportunity Employer. African-Americans, women, and other minorities are encouraged to apply.*

Public Announcement Regarding New Research and Development Projects on a ^{13}C-MRS System for Non-invasive Measurement of Metabolism in the Brain, an Esophageal Vocalization Aid System, a Robot for Carrying Food Trays to the Aged and Disabled and a Multi-media System for the Handicapped

Announced by the New Energy and Industrial Technology Development Organization on August 26, 1994

In order to promote the research and development of industrial technologies, the New Energy and Industrial Technology Development Organization (NEDO) would like to inform all interested companies and research organizations regarding the four research and development projects described below. These new projects are being undertaken as part of the Research and Development Program on Medical and Welfare Equipment Technology of the Agency of Industrial Science and Technology, Ministry of International Trade and Industry of Japan.

Themes of the Research and Development Projects

1. "R&D of a ^{13}C-MRS System for Non-invasive Measurement of Metabolism in the Brain"
2. "R&D of an Esophageal Vocalization Aid System"
3. "R&D of a Robot for Carrying Food Trays to the Aged and Disabled"
4. "R&D of a Multi-media System for the Handicapped"

Outline of the Research and Development Work to be Entrusted

1. *R&D of a ^{13}C-MRS System for Non-invasive Measurement of Metabolism in the Brain*
   The purpose of this project is to develop a MRS (Magnetic Resonance Spectroscopy) System using a carbon-13(^{13}C) labeled compound which will clearly indicate the metabolism of glucose, amino acids, etc. in the brain and enable an early diagnosis of brain troubles such as senile dementia.
2. *R&D of an Esophageal Vocalization Aid System*
   The purpose of this project is to develop an aid system for esophageal vocalization which enables laryngectomees with the ability to make esophageal speech to communicate even in a noisy environment. The system will consist of small microphone, a thin speaker, a specially designed IC, battery, etc.
3. *R&D of a Robot for Carrying Food Trays to the Aged and Disabled*
   The purpose of this project is to develop a mobile robot system for delivering meals to reduce the burden on care takers at facilities for aged and disabled people. This robot system, which will operate autonomously and also through remote supervisory control and have interactive functions, will consist of a mobile unit, a compact manipulator and a device to recognize surrounding conditions.
4. *R&D of a Multi-media System for the Handicapped*
   The purpose of this project is to develop a system which will assist the visually impaired in the use of multi-media systems through a graphical user interface (GUI). The system will consist of hardware such as tactile devices, and software for controlling auditory and tactile devices as well as software to transform visual information into auditory and/or tactile information.

Procedures for Application

(1) Qualification Criteria

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

1. The applicant must have previous research and development experience in the field covered by or related to the project and possess the organizational structure, human resources and research facilities required to carry out the project work.
2. The applicant must be in sound financial condition and have the ability to manage its finances and facilities as necessary to smoothly carry out the project work.
3. The applicant must be able to comply with NEDO's instructions to fully carry out the project work.
4. The applicant must attend the explanatory meeting held by NEDO as set forth in item (2) below or be represented at the meeting by a responsible agent or representative who is capable of accurately conveying the contents of the meeting in detail.

(2) Explanatory meeting

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

Date: Friday, September 9, 1994
Time: 14:00 to 16:00
Place: NEDO's Head Office
30th Floor, Sunshine 60 Building
1-1, Higashi-Ikebukuro 3-chome
Toshima-ku, Tokyo Japan

(3) Further Information

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

New Energy and Industrial Technology Development Organization
Contract Division, Accounting Department
28th Floor, Sunshine 60 Building
1-1, Higashi-Ikebukuro 3-chome
Toshima-ku, Tokyo 170 Japan
Telefax: +81-3-5992-1184

National Institutes of Health
Public Health Services
Department of Health and Human Service

The National Institutes of Health (NIH), Office of the Director, invites applications for the exciting and challenging position of Director, Office for Alternative Medicine, GS-601/601-15. This office is responsible for reviewing current programs and offering recommendations to implement unconventional medical practices. The incumbent serves as the senior staff specialist, spokesperson and coordinator for a national program to enhance public understanding of biomedical research and to stimulate greater interest in unconventional medical practices.

The formal vacancy announcement which describes the specific duties and necessary qualifications may be obtained by calling (301) 402-4111 and referring to announcement number: #OD-94-1077. Applicants are required to submit an application for Federal employment (SF-171), available at all Job Information Centers and Federal Personnel Offices to:

National Institutes of Health
Building 31, Room 1C27
31 CENTER DR MSC 2264
BETHESDA, MD 20892-2264

U.S. Citizenship required
NIH is an Equal Opportunity Employer

THE NATIONAL RESEARCH COUNCIL
in cooperation with the
EPA
U.S. Environmental Protection Agency
is offering

Postdoctoral and Senior Research Associateship awards

tenable at the
EPA'S ENVIRONMENTAL RESEARCH LABORATORY, ATHENS, GA

Research opportunities are available in the areas of:
- Biodegradation of pesticides, PCB's pentachlorophenol and creosote wastes.
- Modeling of anaerobic degradation processes in soils and sediments.
- Biodegradation of crude oils in wetland environments—process studies and modeling.
- The role of soil and plant enzymes in degradation of hazardous waste.

Associateship awards will be offered for research to be conducted at the EPA Athens Environmental Research Laboratory. Awards include stipends that begin at $35,000 per annum for recent Ph.D. recipients and are appropriately higher for senior researchers.

For further information contact:
Maxine Kellum, U.S. EPA, Athens-ERL
960 College Station Road, Athens, GA 30605-2720
TEL: (706) 546-2231 FAX: (706) 546-3126

Applications must be submitted directly to the NRC, and are accepted on a continuous basis throughout the year. Those postmarked by January 15, 1995 will be reviewed in the February competition, by April 15 in June, and by August 15 in October.

For application materials contact:

The National Research Council
Associateship Programs (TJ 2094/EB)
2101 Constitution Avenue
Washington, DC 20418
FAX: (202) 334-2759

SCIENCE's 1994 Recruitment Advertising Calendar of Events

2 September: Frontiers in Medicine Editorial Focus.

16 September: NIH Research Week; Meeting Bonus Distribution, Bethesda, MD.

23 September: CAREERS IV Editorial Focus; La Jolla, CA & Cambridge, MA Biotech/Pharmacuetical Job Fair Distribution.

30 September: Genome Map Editorial Focus; Human Genome Conference Distribution, Washington, D.C.; Lab Expo Distribution, London, England.

7 October: Human Genetics Meeting Bonus Distribution, Montreal, Canada.

28 October: Frontiers in Biology Editorial Focus.

4 November: Science Education Editorial Focus; Bonus Distribution to 18 Major Minority Science Organizations; Medica '94 Meeting Bonus Distribution, Dusseldorf, Germany.

For Advertising Information
call Janis Crowley in the U.S. at (212)496-7704
or fax to (202)682-0816.
In Europe, call (44) 0223 302067
or fax to (44) 0223 302068.

Symposium on

GROWTH HORMONE SECRETAGOGUES

Sponsored by Serono Symposia, USA
December 8–11, 1994
The DonCesar Hotel
St. Petersburg Beach, Florida

This two and one-half day, intensive, state-of-the-art symposium will honor Nobel Laureate Roger Guillemin and features an internationally renown faculty. The objectives of the meeting are to review basic and clinical aspects of contemporary research with growth hormone secretagogues. The meeting will focus on the effects of naturally occurring growth hormone releasing factors and the family of xenobiotic peptidyl and nonpeptidyl growth hormone releasing compounds.

Faculty:

Barry B. Bercu, *Co-Chair*	Michael Berelowitz	Marc Blackman
James Edwin Blalock	Cyril Bowers	Felipe F. Casanueva
Romano Deghenghi	Stephen Frawley	Lawrence Frohman
Marie Gelato	Ezio Ghigo	Boas Gonen
Roger Guillemin	Teresa Kubiak	Zvi Laron
Kelly Mayo	Frank A. Momany	Roy G. Smith
Franco Vaccarino	Richard F. Walker, *Co-Chair*	William Wehrenberg
Matthew Wyvratt		

Submission of abstracts for posters is encouraged. A limited number of abstracts will be presented as oral plenary papers. There are some competitive travel funds available for fellows and junior faculty. For further information regarding brochures, registration and abstract forms, please contact: **Leslie Nies, Serono Symposia, USA, 100 Longwater Circle, Norwell, MA 02061; Tel: 800-283-8088 or 617-982-9000/Fax: 617-982-9481**

THE ROBERT A. WELCH FOUNDATION
38TH CONFERENCE ON CHEMICAL RESEARCH
CHEMICAL DYNAMICS OF TRANSIENT SPECIES

October 24-25, 1994
Westin Oaks Hotel, Houston, Texas

MONDAY, OCTOBER 24

RICHARD J.V. JOHNSON, Chairman of the Board of Directors
YUAN T. LEE, Introductory Remarks

SESSION I
DUDLEY HERSCHBACH, Discussion Leader

DANIEL M. NEUMARK, *"Studies of Transient Species Using Negative Ion Photodetachment"*

WILLIAM H. MILLER, *"Quantum Theory of Chemical Reactions"*

HENRY F. SCHAEFER, III, *"[10] Annulene: Was Hückel Right After All?"*

RICHARD N. ZARE, *"Competition Between Abstraction and Insertion in the Reaction Family M(Be, Mg, Ca, Sr, Ba) + HX(F, Cl, Br, I)→MX + H"*

SESSION II
JAMES L. KINSEY, Discussion Leader

C. BRADLEY MOORE, *"Energy States and Energy Flow Near the Transition States of Unimolecular Reactions"*

EDWARD W. SCHLAG, *"ZEKE Spectroscopy of Transient Species"*

ROBERT E. WYATT, *"Quantum Dynamics of Energy Flow in Molecules"*

AHMED H. ZEWAIL, *"Transient Species at Femtosecond Resolution"*

TUESDAY, OCTOBER 25

SESSION III
JOHN C. POLANYI, Discussion Leader

SYLVIA T. CEYER, *"Transient Species in Surface Chemical Dynamics: Bulk H in Catalytic Hydrogenation and F Atoms Abstracted by Si"*

W. CARL LINEBERGER, *"Time-Resolved Dynamics in Large Molecular Cluster Ions"*

GILBERT M. NATHANSON, *"Bouncing Gases off Liquids: Molecular Beam Studies of Transient and Not-So-Transient Solvation"*

J. PETER TOENNIES, *"Novel Diffraction Techniques for Probing the Transition State in Surface Diffusion and Transients in the Condensation of Helium"*

1994 WELCH AWARD IN CHEMISTRY LUNCHEON

F.A. COTTON, *"Windows of Opportunity: The Postwar Emergence of Inorganic Chemistry"*

JACK HALPERN, *"Some Mechanistic Aspects of Asymmetric Catalysis"*

SESSION IV
RICHARD E. SMALLEY, Discussion Leader

JOHN I. BRAUMAN, *"Intermediates and Transition States in Gas-Phase Ionic Reactions"*

ROBERT W. FIELD, *"Caught in the Act of Isomerization"*

HELMUT SCHWARZ, *"Oxygenation of Hydrocarbons by "Bare" Transition-Metal Oxides"*

ADVANCE REGISTRATION FORM

_____ **I will attend the conference.** _____ **I will attend the luncheon.**

Dr. Mr. Mrs. Ms. _____
(Last) (First) (Middle)

Position _____

Organization _____

Department _____

Address _____

The conference is open to all and there is no registration fee. Advance registration will be acknowledged and accepted in order of receipt, to within the capacity of the available space. Prior to October 10, 1994 make your hotel reservations directly with The Westin Oaks Hotel. Their telephone nos. are 800-228-3000 or 713-960-8100.

Return the above form by October 10 to: The Robert A. Welch Foundation
4605 Post Oak Place, Ste. 200
Houston, TX 77027

POSITIONS OPEN

DEAN, SCHOOL OF SCIENCE

California State University (CSU), Hayward, invites applications and nominations for the position of **DEAN**, School of Science, effective fall 1995. The School, one of four at CSU Hayward, has nine departments: Biology, Chemistry, Geology, Health Sciences, Math/Computer Science, Nursing, Physics, Psychology, and Statistics and has 125 faculty, 40 staff, 2400 majors, and offers bachelor's, master's, and certificate programs. The Dean, assisted by the Associate Dean, is the administrative officer of the School and reports directly to the Provost. Qualifications include: eligibility for appointment in one of the School's departments; a record of significant achievement in university teaching, research, and administration, including a record of successful fiscal and resource management; experience with advanced technologies; a commitment to increasing the diversity of faculty, students, and staff; experience in shared governance and participative management; and excellent communication and interpersonal skills. The Dean is expected to take a strong leadership role in the University and the School and to foster excellence in teaching, student and faculty research, School development, recruitment, and the generation of new resources. Letters of application should be accompanied by a curriculum vitae and the names of five references. Review of applications will begin 1 November 1994. For a full description of the position, call **510-881-3437** or FAX: **510-888-4747**. Please direct all correspondence to: **Search Committee for the Dean, School of Science, c/o Office of the Provost, California State University, Hayward, CA 94542.**

CSU is an Equal Opportunity/Affirmative Action Employer.

JUNIOR FACULTY; Harvard Medical School, Department of Biological Chemistry and Molecular Pharmacology (BCMP)

The Department of Biological Chemistry and Molecular Pharmacology invites applications for one tenure-track position at the **JUNIOR FACULTY** level.

We seek individuals in the area of structural biology with focus on NMR spectroscopy on RNA, nucleic acid/protein interactions, and aspects of RNA function.

Applicants should submit by October 15, 1994, curriculum vitae, bibliography, statement of research plans and arrange for four letters of recommendation to be sent to: **Professor Gerhard Wagner, BCMP, Harvard Medical School, 240 Longwood Avenue, C1-213, Boston, MA 02115.**

Harvard University is an Equal Opportunity/Affirmative Action Employer and encourages the applications of qualified women and minorities.

Penn State University, Chemistry Department, **FACULTY POSITIONS**. Tenure-track faculty positions are available starting fall 1995 in the areas of organic, biological and material chemistry. Each appointment can be at any level and the appointee is expected to establish an exceptionally strong and highly visible research program. Commitment to excellence in undergraduate and graduate teaching is also essential. At the junior level, postdoctoral experience is preferred. A complete résumé, a synopsis of research plans and three letters of recommendation are required. For appointment at the senior level, evidence of an established record of widely recognized research excellence is required. Senior applicants need only send a résumé. Review of applications will begin October 15, 1994, and continue until the positions are filled. Send information to: **Chairman of the Search Committee, Box CE1, Penn State University, Department of Chemistry, 152 Davey Laboratory, University Park, PA 16802.** *An Affirmative Action/Equal Opportunity Employer, women and minorities encouraged to apply.*

UNIVERSITE DE BRUXELLES (BELGIUM)

The department of chemistry of the Faculty of Science invites application for a **FULL-TIME POSITION** at the professorial level ("chargé de cours") in the area of organic chemistry (synthesis).

Candidates must hold a Ph.D. degree, have demonstrated ability for creative research and be fluent in French. This person will complement the current Organic Chemistry Laboratory. Duties include teaching at the undergraduate level.

Applicants must send a curriculum vitae, a list of publications, reprints of five papers at the most and outline a research project. Review of applications will begin on the 15th of October 1994. Applications must be sent to the **Rector of the University; ULB; CPI 130; avenue Roosevelt, 50; 1050 Bruxelles (Belgium).**

COKER COLLEGE

THE J. C. DANIEL CHAIR IN CHEMISTRY

Coker College invites applications for the recently endowed J. C. Daniel Chair in Chemistry. The person holding the **CHAIR** must have the Ph.D. and be an experienced organic chemist who excels in the teaching of undergraduates. Applicants must have demonstrated success in undergraduate teaching, in directing undergraduate research, and in obtaining extramural funding. Responsibilities include teaching general, organic, and advanced-level chemistry courses in specialty areas during the regular academic year plus supervising undergraduate research and in alternating summers pursuing professional development. This is a tenure-track, 11-month position; the initial appointment will be for three years at the Associate Professor rank with a salary in the low-to-mid $50's. In addition, the endowment provides $7,000 per year to support research activities and $5,000 for undergraduate research stipends. Interested applicants should send a curriculum vitae, three letters of reference, and a description of their teaching philosophy and research plans by October 1, 1994, to: **Dr. Peter Fichte, Chemistry Chair Search, Coker College, Hartsville, SC 29550.**

DIRECTOR

Bigelow Laboratory for Ocean Sciences, West Boothbay Harbor, Maine, invites applications for the position of **DIRECTOR**. Bigelow is an independent, nonprofit organization conducting basic research on processes affecting the productivity of the oceans, coastal seas and estuaries. Bigelow is pursuing an ambitious long range plan to expand its scientific staff and facilities. Development of educational opportunities and new endeavors in applied research are important components of the plan.

The Director will be an accomplished, respected research scientist with an entrepreneurial spirit, knowledgeable in the scientific interest of the Laboratory, and with an established research program. Demonstrated abilities applicable to current operation and pursuit of Bigelow's diversification goals will be important factors in candidate selection.

Letters of application should include research interests, professional goals and a curriculum vitae, and be sent to: **Director Search Committee, Bigelow Laboratory, P.O. Box 475, West Boothbay Harbor, ME 04575.** Candidate selection will begin October 1, 1994, and the search will remain open until an appointment is made. *Bigelow is an Equal Opportunity Employer.*

FACULTY POSITION: Biochemistry department seeks a Ph.D. with productive postdoctoral experience who is able to (1) establish an independent basic research program that complements existing departmental programs in the structure and function of blood and matrix macromolecules and their receptors, (2) serve as mentor to graduate students through a program with George Washington University, and (3) attract outside funding after an initial period of support of two to three years. Please send curriculum vitae, a concise future research plan and names of three references by September 15, 1994, to: **Biochemistry Search Committee, Holland Laboratory, American Red Cross, Rockville, MD 20855.** *Equal Opportunity Employer, Male/Female/Disabled/Veterans.*

The Departments of Molecular and Human Genetics, and Pediatrics are jointly recruiting a **DIRECTOR** for the Baylor College of Medicine Mental Retardation Research Center (MRRC). The Baylor MRRC was founded in 1988, and is one of the 14 NICHD-supported Centers dedicated to the study of the prevention, treatment, and amelioration of mental retardation and developmental disabilities. The Baylor MRRC currently supports eight core laboratories, 53 research projects, 48 investigators from 13 departments, and one New Project Development Awardee. The successful applicant will be a Physician Scientist with an established research commitment to the molecular biology of mental retardation. Board certification in a Medical Genetics specialty and Pediatrics are desirable. Applicants should send a letter describing their commitment to mental retardation research and a current curriculum vitae, and should request that three letters of reference be sent to: **C. Thomas Caskey, M.D., Chairman, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030.** *Baylor College of Medicine is an Equal Opportunity/Affirmative Action Employer.*

PRINCETON UNIVERSITY DEPARTMENT OF MOLECULAR BIOLOGY

The Department of Molecular Biology invites applications for a tenure-track **FACULTY POSITION** in the neurosciences. Candidates should have broad knowledge of the nervous system and experimental neurobiology and be able to develop an independent research program. Strong emphasis will be placed on candidates able to combine molecular studies with cellular and/or system techniques. The department has extensive facilities that include confocal and electron microscopy, FACS, oligonucleotide/peptide synthesis and a transgenic mouse facility. The successful candidate will participate in the Molecular Biology as well as the Neuroscience Graduate Programs. Ph.D.s or M.D.s with postdoctoral research experience should send a curriculum vitae, short summary of research interests and three letters of reference to:

Neurobiology Search
Department of Molecular Biology
Princeton University
Princeton, New Jersey 08544

Princeton University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION. The Institute of Chemical Toxicology, Wayne State University invites applications for a tenure-track **ASSISTANT PROFESSOR** position. The successful candidate should have an M.D., extramural funding and will be expected to maintain an independent extramurally funded research program in chemical- and gender-mediated effects on regulation of gene expression during development. The candidate will be expected to develop translational research programs between basic science and clinical investigators with a focus on molecular toxicology research and to play a leading role in the Human Applications Research Component of an NIEHS- funded Center. Applicants should submit their curriculum vitae, copies of three publications, a statement summarizing their research interests and three letters of recommendation to: **Dr. Raymond F. Novak, Director, Institute of Chemical Toxicology, 2727 Second Avenue, Room 4000, Detroit, MI 48201.** Applications will be accepted through October 1, 1994. *Wayne State University is an Affirmative Action and Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE/FULL PROFESSOR DEPARTMENT OF MOLECULAR BIOLOGY AND BIOCHEMISTRY

The Department of Molecular Biology and Biochemistry at Rutgers, The State University of New Jersey, New Brunswick (Busch campus), invites applicants for a **FACULTY POSITION**. The Department has a scientifically diverse faculty and is especially interested in applicants in the areas of RNA processing, DNA replication, transcriptional control, signal transduction, cell cycle control, or developmental genetics. Strong candidates in other areas will also be considered. The department is an important part of the expanding program in molecular biology at the Busch campus where the Center for Advanced Biotechnology and Medicine, the Waksman Institute and the Robert Wood Johnson Medical School are also located. We have strong consolidated, interdepartmental graduate programs in molecular biosciences. The position offered is highly competitive with regard to start-up funds, laboratory space and salary. Please send curriculum vitae, list of publications, summary of research activities, a research plan, and three letters of recommendation to: **Dr. Robert M. Krug, Chairman, Department of Molecular Biology and Biochemistry, Rutgers, The State University of New Jersey, Center for Advanced Biotechnology and Medicine, 679 Hoes Lane, Piscataway, NJ 08855-1179.**

Rutgers University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION NEUROBIOLOGY

A position is available to study the development of the brain of *Drosophila*. We are studying mutants in which photoreceptor axons fail to form their normal connections to neurons in the brain. The project will involve further developmental characterization of the mutants and molecular analysis of the corresponding loci. Please send a letter of application with your research interests, curriculum vitae, and the names of references to: **Dr. Samuel Kunes, Room 433, Fairchild Building, 7 Divinity Avenue, Harvard University, Cambridge, MA 02138.**

Massachusetts Institute of Technology

Faculty Position

The Department of Earth, Atmospheric, and Planetary Sciences invites applicants for a junior faculty position in planetary science. Candidates are sought who have broad research interests complementary to the existing planetary science faculty and who can interact constructively with faculty in other disciplines in the Department. Areas of interest include planetary geology and geophysics, planetary atmospheres, planetary radar astronomy, and solar system formation, although exceptional applicants with other specializations will be considered. Emphasis will be placed on rigor and creativity in planetary science research and interest in teaching at the graduate and undergraduate level.

MIT

Interested individuals should send curriculum vitae, a statement of research and teaching interests, and references to: **Professor Thomas H. Jordan, Head, Department of Earth, Atmospheric and Planetary Sciences, Room 54-918, MIT, Cambridge, MA 02139; email: thj@mit.edu.** Minority and female applicants are particularly encouraged to apply.

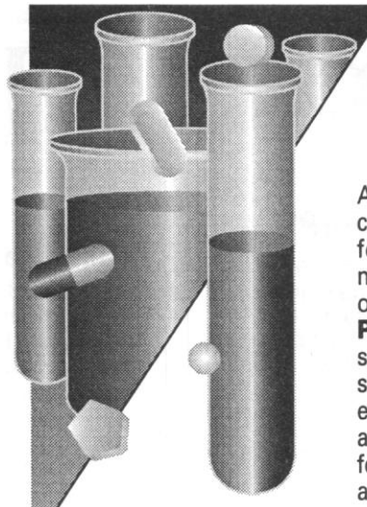
MIT is an Equal Opportunity/Affirmative Action Employer
MIT is a non-smoking environment

ANIMAL BEHAVIOR: INTERDISCIPLINARY TRAINING AT THE UNIVERSITY OF CALIFORNIA, DAVIS

Opportunities are available for Graduate Training and Undergraduate Summer Fellowships through the Research Training Group in Animal Behavior, supported by the National Science Foundation. The aim of the program is to provide broadly interdisciplinary training for outstanding students to address problems in the study of animal behavior. A second explicit aim of the program is to increase representation of under-represented groups in the behavioral and biological sciences. Selection will be based on academic accomplishment and promise of ability to benefit maximally from interdisciplinary training.

GRADUATE TRAINING: 4 years of support, annual 9-month stipend of $9,324 plus payment of tuition and education fees (applicants must apply separately to a PhD graduate program at UC Davis). DEADLINE: December 15, 1994.

UNDERGRADUATE SUMMER FELLOWSHIPS: 2-month research internships, $750 stipend plus, room, board and roundtrip transportation to Davis. DEADLINE: January 15, 1995. All applicants must be US citizens or permanent residents. The University of California is an Equal Opportunity/Affirmative Action Employer. To receive an application contact: Jeni Trevitt, Animal Behavior Program, University of California, Davis, CA 95616, Phone (916) 752-4863, fax (916) 752-8391, e-mail jmtrevitt@ucdavis.edu (please specify graduate or undergraduate application).



POSTDOCTORAL FELLOWS

At the Glaxo Inc. Research Institute, located in Research Triangle Park, N.C., the focus is drug discovery and development through novel research. As part of our commitment to research, our **Postdoctoral Fellowship Programs** support scientific endeavors and scholarships through the development of researchers at the early stage of their careers. We are currently seeking to fill **four openings** for Postdoctoral Fellows in the following areas:

MEDICINAL CHEMISTRY

We seek a recent Ph.D. in Synthetic, Organic or Medicinal Chemistry to design and prepare affinity labels for ligand-receptor mapping. **Please refer to Job # ASC911720 on all resumes.**

MOLECULAR BIOLOGY
BONE MECHANO-SENSITIVITY

Individual will clone, express, and functionally analyze mechano-sensitive receptor systems from bone tissue. The prospective fellow will interact with an interdisciplinary team of physiologists, molecular, and cellular biologists concentrating on the biology of osteoporosis. The ideal candidate must have a strong background in molecular biology and an interest in mechano-transduction and/or bone biology. Experience with receptor/cellular signaling or the biology of ion channels would be very beneficial. **Please refer to Job # ASC911721 on all resumes.**

GLUCOSE TOXICITY & INSULIN RESISTANCE

Individual will use molecular biology techniques to explore the role of cytosolic O-linked glycosylation in desensitization of the insulin responsive glucose transport system. The successful candidate should have a strong background in molecular biology, experience in cell biology and signal transduction, and demonstrable oral and written communication skills. An interest in Type II diabetes, insulin resistance, genetics, and adipocyte/muscle physiology is desirable. **Please refer to Job # ASC911722 on all resumes.**

MEMBRANE TRAFFICKING & GLUCOSE TRANSPORT

Individual will study mechanisms regulating membrane trafficking of the glucose transporter GLUT4. A strong background in cell biology and biochemistry is required. Experience in membrane trafficking and signal transduction is desired. The candidate should have a keen interest in Type II diabetes. **Please refer to Job # ASC911723 on all resumes.**

These Fellowship openings offer you the opportunity to strengthen your scientific reputation and career advancement by publication and presentation of outstanding research conducted in an excellent environment. In addition, Glaxo is proud to offer a highly competitive compensation package. Applicants should send their curriculum vitae, a statement of research interest, a list of professional references, and the Job # of interest, to: **Human Resources Department, Glaxo Inc., P.O. Box 13398, Research Triangle Park, N.C. 27709.** (No Phone Calls or Agency Referrals, Please.) An Equal Opportunity Employer M/F/D/V.

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STONY BROOK

STATE UNIVERSITY OF NEW YORK

POSTDOCTORAL FELLOWSHIPS

These Fellowships are funded by a training grant from NINDS and are available to support research training at SUNY at Stony Brook in Molecular, Cellular, Systems and Behavioral Neuroscience. Applicants must be US citizens or permanent residents. Women and minorities are especially encouraged to apply. Salary in accordance with established NIH guidelines. For further information concerning opportunities contact faculty members listed below directly or the Program Director, Dr. Lorne Mendell, Department of Neurobiology & Behavior,
State University of New York at Stony Brook,
Stony Brook, NY 1 1 794-5230.
Tel. 516-632-8616, Fax 516-632-6661.
An Affirmative Action/EEO employer.

Paul Adams	Michael Frohman	Susan McLaughlin
David Amaral	James Gnadt	Lorne Mendell
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Paul Brehm	Robert Hitzemann	Peter Rapp
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Albert Carlson	Mary Kritzer	Jakob Schmidt
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Craig Evinger	Gary Matthews	Stephen Yazulla
Marian Evinger	David McKinnon	
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1477-sc

PENN

UNIVERSITY of PENNSYLVANIA

Director

Institute for Medicine and Engineering

The University of Pennsylvania seeks outstanding candidates for the position of Director of the newly created Institute for Medicine and Engineering. The successful applicant will be of international stature in his/her chosen area of research and will provide academic leadership to establish a premier institute that interfaces medicine and engineering. Applicants should have demonstrated qualifications in education, research, and administration, and be eligible for a faculty appointment with tenure. The University of Pennsylvania is searching simultaneously for a Director of the Institute for Medicine and Engineering and a Chair of the Department of Bioengineering. It is expected that these individuals will work closely together.

The University is an equal opportunity, affirmative action employer. Women, minority, and international candidates are encouraged to apply. Letters of interest, CV, and names of reference should be sent to:

Arthur K. Asbury, M.D.
Chair, Search Committee
Professor and Acting Chair,
Department of Neurology
University of Pennsylvania
3 West Gates
Philadelphia, PA 19104-4283

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

RESEARCH OPPORTUNITIES IN BIOMOLECULAR SIMULATIONS

The Molecular Theory Group in the Department of Physiology and Biophysics of Mount Sinai School of Medicine covers a diverse research program in computational molecular biophysics. Projects include electrostatic effects in proteins, electronic structure of biomolecules, metalloproteins, Monte Carlo simulations of molecular assemblies, structure and function of membrane proteins, protein-DNA interactions, radiation damage to DNA, Ca-binding proteins, and sensitivity analysis in molecular simulations.

Mount Sinai

Openings for postdoctoral associate and graduate students are currently available in the laboratories of R. Osman, H. Weinstein, and C.F. Wong. Applications are invited from candidates with experience in one or more computational approaches including Quantum Chemistry, Brownian and Molecular Dynamics, and Macromolecular Structure Analysis and Modeling.

Research topics will include:

1. **Structural and dynamic properties of radiation damaged DNA (Osman; Wong)**
2. **Structure, function and signal transduction in membraneproteins (Osman; Weinstein)**
3. **Protein-DNA interactions in regulation of gene expression (Osman; Weinstein)**
4. **Structure-functions relations in EF-hand types of Ca-binding proteins (Weinstein)**
5. **Structure-function relationships by sensitivity analysis of biomolecular simulations(Wong)**
6. **Enzymatic repair of radiation-damaged DNA (Osman)**

Please send your CV indicating areas of interest and names of three references in confidence to: **Department of Physiology and Biophysics, Box 1218, The Mount Sinai Medical Center, One Gustave L. Levy Place, New York, NY 10029-6574.** An Equal Opportunity Employer.

The Mount Sinai Medical Center of New York

Massachusetts Institute of Technology

Faculty Positions

Department of Earth, Atmospheric, and Planetary Sciences

(1) The Department seeks to expand research, faculty interaction, and teaching in the area of fluid-rock systems. The position is in the general area of fluid transport within all geological systems in the earth's crust, ranging from petroleum and ground water reservoirs to magma systems and active faults. Particular emphasis will be placed on candidates involved in the dynamic modeling of fluid-rock systems.

(2) The Department also seeks to expand research in the area of surface processes on both the earth and the terrestrial planets. Areas of interest include dynamic geomorphology, the surface geology of active tectonic areas, and the study of climatic processes.

We hope to attract candidates who will interact with other areas of strength within the Department, particularly in geology, geophysics, geochemistry, paleoclimatology and meteorology. Preference will be given to junior applicants; minority and female applicants are particularly encouraged to apply.

Interested individuals should send curriculum vitae, a statement of research and teaching interests, and references to: **Professor Thomas H. Jordan, Head, Department of Earth, Atmospheric and Planetary Sciences, Room 54-918, MIT, Cambridge, MA 02139; email: thj@mit.edu.**

MIT

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MIT is a non-smoking environment

DRUG DISCOVERY IN HEMATOPOIESIS

SmithKline Beecham Pharmaceuticals, a worldwide leader in pharmaceutical research, has two challenging opportunities within the Department of Molecular Virology and Host Defense, a 46-member group whose activities encompass basic and applied research on many aspects of molecular virology and the immunology of infectious diseases including discovery of novel anti-virals, viral pathogenesis, immunomodulation and hematoregulatory cytokine research.

Experimental Hematologist

As a Senior Investigator, the successful candidate will have responsibility for new research initiatives in collaboration with multidiscipline/multinational program teams investigating natural and synthetic hematopoietic agents/cytokines and their application to infectious disease and oncology. A Ph.D. or equivalent in a biological science and a minimum of 4 years postdoctoral experience investigating differentiation of hematopoietic stem cells and/or lineage-committed progenitor cells at the cellular and molecular levels are required. Candidates with specific interests in signal transduction events and regulation of apoptosis in response to hematoregulatory cytokines and growth factors are encouraged to apply. Outstanding applicants with broader backgrounds in other aspects of cell biology relevant to hematopoiesis will also be considered. Refer to Job #H0294.

Scientist

Working with a Senior Investigator, you will carry out experimental strategies for evaluating the mechanism of action of hematoregulatory compounds, and will establish new assays for studying signal transduction events in hematopoietic cells. The qualified candidate will have a BS or MS in a biological science with a least 3 to 6 years postgraduate experience. Excellent laboratory skills are required including experience with cell and tissue culture, small animal models, cell isolation and purification, receptor binding assays and a working knowledge of basic molecular and biochemical techniques preferably applied to the study of hematopoietic lineage cells. Experience with data analysis and good communication skills are a must, with industry experience preferred. Refer to Job #H0295.

Located in our state-of-the-art research facility in suburban Philadelphia, SmithKline Beecham offers a competitive compensation and benefits package, including relocation, and a stimulating work environment in which to grow and excel. For confidential consideration, please send resume with salary history to: SmithKline Beecham Pharmaceuticals, Job #__ , PO Box 679, Conshohocken, PA 19428. We are an Equal Opportunity Employer, M/F/D/V.

SB
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Pharmaceuticals

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A future with CTI could be therapeutic for your career.

If you're an energetic, flexible player in the biopharmaceutical community, CTI can give you the potential you've been looking for. Founded on a critical new discovery, we're succeeding in finding new ways to develop far safer and more effective therapeutics than previously existed. If you're comfortable with a fast pace and entrepreneurial atmosphere, consider these opportunities at CTI.

We anticipate year-end expansion in the following areas:

- **Immunology**
- **Inflammation**
- **Lipid Biochemistry**
- **Quality Control**
- **Regulatory Affairs**
- **Clinical Research**

Located in metropolitan Seattle, CTI is in the heart of the technology corridor within one of the world's most spectacular natural settings. Our competitive reward programs are tailored to encourage and recognize outstanding contributions and achievements.

For consideration, please send CV to: **Cell Therapeutics, Inc., 201 Elliott Avenue West, Suite 400, Seattle, WA 98119.**

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CELL THERAPEUTICS, INC.
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POSITIONS OPEN

FACULTY POSITIONS
UNIVERSITY OF MASSACHUSETTS MEDICAL CENTER

Immediate openings for senior tenured or junior tenure-track positions in an interdepartmental Molecular Medicine Program. Rank will be commensurate with ability and experience. The appointments will be in one of the basic science departments. The laboratories for the Program are housed in a new building that contains approximately 80,000 square feet of modern research space. Core facilities for tissue-culture, media preparation, DNA synthesis, digital imaging microscopy, peptide synthesis, fluorescence-activated cell sorting, and transgenic mice are available. The position will be highly competitive with regard to start-up funds, laboratory space, and salary.

The Program seeks individuals of outstanding research potential in the broadly defined areas of structural, molecular, or developmental biology. Applicants should send a curriculum vitae, statement of research interests, and names of three references to: **Dr. Michael P. Czech, Director, Program in Molecular Medicine** or either of the **Search Committee Co-Chairmen, Drs. Michael Green and Roger Davis, University of Massachusetts Medical Center, 373 Plantation Street, Worcester, MA 01605.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION, BACTERIAL PATHOGENESIS
UNIVERSITY OF MIAMI SCHOOL OF MEDICINE

The Department of Microbiology and Immunology at the University of Miami School of Medicine invites applications for a tenure-track faculty position at the **ASSISTANT PROFESSOR** level. An individual utilizing a molecular approach to study any aspect of bacterial pathogenesis is sought. All applicants should have several years of postdoctoral experience and a commitment to establishing an externally funded independent research program. Quality research facilities, start-up funds, and salary will be provided to the appointee. Applicants should have a Ph.D., M.D., or equivalent degree. The appointee will be expected to participate in graduate and medical training programs. Interested applicants should send a curriculum vitae, a statement describing research achievements and future research goals, relevant reprints, and the names of three references to: **Bacterial Pathogenesis Search Committee, University of Miami School of Medicine, Department of Microbiology and Immunology (R-138), P.O. Box 016960, Miami, FL 33101.** The review of applications will continue until the position is filled. *The University of Miami is an Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON
DEPARTMENT OF ANATOMY

Rush Medical College is seeking an academic leader for the Department of Anatomy. The department includes 8.5 faculty members and has major responsibility for teaching Rush Medical students in the pre-clinical years. The candidate should have demonstrated ability and interest in teaching and administration, and proven research skills to establish a strong independent research program. Candidates should qualify for appointment at the level of **PROFESSOR** at Rush Medical College. Closing date for responses: November 1, 1994. Letters of interest with current curriculum vitae or letters of nominations should be sent to: **Theodore Mazzone, M.D., Chairman, Search Committee for Chairperson of Anatomy, Rush-Presbyterian-St. Luke's Medical Center, 1653 West Congress Parkway, Chicago, IL 60612.** *Rush is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOW

A position is immediately available for a **POSTDOCTORAL FELLOW** in the Department of Experimental Pathology. The position will study signaling transduction of fibroblast growth factors. Experience in molecular biology, protein phosphorylation, and protein kinase analysis is required. Qualified candidates should send a curriculum vitae, addresses and phone numbers of three references to: **Xi Zhan, Ph.D., Department of Experimental Pathology, Holland Laboratory, American Red Cross, 15601 Crabbs Branch Way, Rockville, MD 20855.** *Equal Opportunity Employer, Male/Female/Disabled/Veterans.*

POSITIONS OPEN

Wayne State University

FACULTY POSITIONS
DEPARTMENT OF CHEMISTRY

Wayne State University Chemistry Department invites applications for two **FACULTY POSITIONS** beginning in the fall of 1995. It is anticipated that these appointments will be in (1) the area that spans the analytical/physical interface and (2) an area related to materials chemistry. The department is particularly interested in increasing its expertise in instrumental areas of analytical/physical chemistry. Successful candidates will be expected to demonstrate a commitment to teaching in our program from the undergraduate through graduate levels and to establishing an outstanding program of original research. Appointments are likely to be at the assistant professor level although more senior appointments are possible for exceptional candidates. Candidates should send a curriculum vitae, a proposed research program and arrange to have three letters of recommendation sent to: **Chairman, Faculty Search Committee, Department of Chemistry, Wayne State University, Detroit, MI 48202.** An initial deadline for receipt of applications is October 24, 1994. *Wayne State University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.*

FACULTY POSITION
PLANT-MICROBE INTERACTIONS

The Botany Department of the University of Toronto invites applications for a tenure-track position in Plant-Microbe Interactions at the **ASSISTANT PROFESSOR** level, starting July 1, 1995. The successful candidate should have a Ph.D. and, preferably, postdoctoral experience. Research areas of particular interest include plant-parasite interactions at the molecular, cellular, genetical, biochemical or physiological levels, but other areas of plant-microbe interactions will be considered. Teaching responsibilities will include participation in team-taught undergraduate and graduate courses in appropriate areas of biology such as plant-microbe interactions, plant pathology, cell or molecular biology. Applicants should submit a curriculum vitae, a statement of research and teaching interests, and arrange for three letters of reference to be sent to: **Professor V.J. Higgins, Chair, Department of Botany, University of Toronto, 25 Willcocks Street, Toronto, Ontario, M5S 3B2 Canada** by October 31, 1994. *In accordance with Canadian Immigration regulations, this advertisement is directed towards Canadian Citizens and permanent residents of Canada. In accordance with its Employment Equity Policy, the University of Toronto encourages applications from qualified women or men, members of visible minorities, aboriginal peoples and persons with disabilities.*

POSTDOCTORAL POSITIONS (two) open for recent Ph.D.s to study the molecular mechanisms of adrenergic receptor mediated signal transduction processes in the state-of-the-art facilities of The Unit of Regulatory and Molecular Biology. Candidates with experience in, one or inclusive, areas of biochemistry, molecular biology and pharmacology are encouraged to apply. Send curriculum vitae and two letters of recommendation to: **Rameshwar K. Sharma, Ph.D., The Unit of Regulatory and Molecular Biology, Pennsylvania College of Optometry, 1200 West Godfrey Avenue, Philadelphia, PA 19141.** *Equal Opportunity Employer, Male/Female/Disabled/Veterans.*

POSTDOCTORAL POSITION
DEPARTMENT OF MOLECULAR BIOLOGY AND BIOCHEMISTRY

A **POSITION** is available to participate in research on the regulation of pre-mRNA splicing and of the nuclear export of mRNAs. A particular focus is on the mechanism by which the influenza virus NS1 protein regulates these two posttranscriptional processes (*Genes Dev.*, **8**: 1817, 1994; *J. Virol.*, **68**: 2425, 1994; *J. Virol.*, **68**: 2433, 1994).

Please send curriculum vitae, summary of research interests and three letters of reference to: **Dr. Robert M. Krug, Chairman, Department of Molecular Biology and Biochemistry, Rutgers, The State University of New Jersey, Center for Advanced Biotechnology and Medicine, 679 Hoes Lane, Piscataway, NJ 08855-1179.**

Rutgers University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

MOLECULAR NEUROBIOLOGY POSTDOCTORAL POSITION available now to study role of MEF2C, an SRF-related transcription factor, in development of cerebral cortex. Experience in cell culture, transfections, *in situ* hybridization, and/or immunostaining preferred. Please send curriculum vitae and three letters of recommendation to: **Dr. Dana Leifer, LCI 7, Department of Neurology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06511.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCHER

The Marine Life Research Group/California Cooperative Oceanic Fisheries Investigations (CalCOFI) of Scripps Institution of Oceanography, invites applications for a **POSTDOCTORAL INVESTIGATOR** in California Current studies for one to two years. CalCOFI is a 45-year-old interdisciplinary investigation of the biology, chemistry, physics, and paleoecology of the California Current System. The field of study is open, but preference will be given to applicants whose proposed research is related to CalCOFI objectives. Contact: **Mary Olivarria** at **619-534-2868** or **Email** to **molivarria@ucsd.edu** for an information package. Submit curriculum vitae, statement of proposed research, and names of three references to: **Dr. M. M. Mullin, Director, Marine Life Research Group, Scripps Institution of Oceanography, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0227** by 31 October 1994. Salary will be commensurate with experience and based on UC salary scales; benefits are included. *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION—IMMUNOLOGY

The University of Maryland Cancer Center and the Department of Microbiology and Immunology, University of Maryland School of Medicine invite applications for a tenure-track faculty position at the level of **ASSOCIATE** or **FULL PROFESSOR** for our joint research program in immunology. Applicants must have a Ph.D. and/or M.D. degree, extensive research experience in molecular or cellular biology of immune and/or hematopoietic systems, and a strong record of research accomplishments with sustained extramural funding. Successful candidates will be expected to lead independent research programs, to participate in the development of collaborative program projects, and to contribute to teaching of medical and graduate students. Minorities and women are encouraged to apply.

Applicants should submit their curriculum vitae, an outline of current and future research interests, selected reprints, and names of three references to the following address: **Kristin M. Abraham, Ph.D., Chair, Immunology Search Committee, Department of Microbiology and Immunology, University of Maryland School of Medicine, 655 West Baltimore Street, Bressler Research Building 13-007, Baltimore, MD 21201.**

The University of Maryland at Baltimore is an Equal Employment Opportunity/Affirmative Action/ADA Employer.

POSTDOCTORAL POSITION

Available to study isozymes of human aldehyde dehydrogenase. Recent graduates with experience in protein chemistry and/or enzymology or in cDNA cloning are encouraged to apply. Salary commensurate with experience.

Submit curriculum vitae and letters of reference to: **Dr. Regina Pietruszko, Center of Alcohol Studies, Rutgers University, P.O. Box 969, Piscataway, NJ 08855-0969.** *Rutgers University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL ASSOCIATE
McLAUGHLIN RESEARCH INSTITUTE

A **POSTDOCTORAL POSITION** is available at the McLaughlin Research Institute (MRI) in Great Falls, Montana to study growth factor function in cardiovascular disease and development. The project entails transgenesis and gene targeting in gain and loss function experiments to produce mouse models for studies on cardiovascular disease and tumor angiogenesis. The MRI is a brand-new, spacious building with state-of-the-art mouse facilities. Please send curriculum vitae and addresses for three references to: **Dr. Douglas Coffin, McLaughlin Research Institute, 1520 23rd Street South, Great Falls, MT 59405. Email: mrijdc@cscns.com; FAX: 406-454-6013.**

An Equal Opportunity/Affirmative Action Employer.

Senior Research Associate

NeoRx Corporation develops targeted biopharmaceuticals that detect and treat human diseases with an initial focus on cancer.

We currently have an opening for an experienced research associate who will provide technical expertise in the area of radiopharmaceuticals. This individual will also be responsible for radiolabeling and analysis of patient specimens.

The selected candidate will have:

—A university degree in biological science, chemistry, or biochemistry
—A minimum of five years focused training in biochemistry immunochemical evaluation of monoclonal antibodies.
—Demonstrated skills in chromatography, HPLC/FPLC, and handling of high level radioactivity.
—Experience in the handling of radiopharmaceuticals with good clinical technique is essential.

Special consideration will be given to those candidates with experience in oncology research, especially using monoclonal antibodies to target drugs to tumors.

For consideration, forward resume and a one page cover letter to:

Human Resources
NeoRx Corporation
410 West Harrison Street
Seattle, Washington 98119-4007

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香 港 大 學
THE UNIVERSITY OF HONG KONG

Lectureship in Educational/School Psychology

(Ref: 93/94-96)

Applications are invited for the post of Lecturer in Educational/School Psychology in the Department of Psychology. The appointment will be made on a fixed term contract of three years, tenable from January 1, 1995 and with a possibility of renewal.

Applicants should be scholar-practitioners, preferably with a PhD and be licensed school psychologists or chartered educational psychologists, or be eligible for such registration. They should be able to teach postgraduate courses primarily on statistics and research methods, and also assessment and intervention of children with special needs, and related subjects. Some teaching at the undergraduate level is also required.

Annual salary (under review) [non-superannuable but attracting 15% (taxable) terminal gratuity] is on an 11-point scale with starting salary depending on qualifications and experience: HK$377,220 - HK$630,180 (approx. US$48,990 - US$81,842; US Dollar equivalents as at 26 July 1994). At current rates salaries tax will not exceed 15% of gross income. Children's education allowances, leave, and medical benefits are provided; housing or tenancy allowances are also provided in most cases at a charge of 7.5% of salary.

Further particulars and application forms may be obtained from the Appointments Unit, Registry, The University of Hong Kong, Hong Kong (fax: (852) 559 2058; E-mail: APPTUNIT@HKUVM1.HKU.HK). Particulars are also available on the University's listserv accessed by E-mail as "listserv@hkuvm1.hku.hk" (specify "get apptment filelist" for list of vacant posts, and "help" for details of listserv commands). Closes **14 October 1994.**

HARVARD SCHOOL OF PUBLIC HEALTH

Announces Two Positions for Assistant/Associate Professors

Position 1:
Applicants are being accepted from persons with graduate training, postdoctoral experience and proven accomplishment in nutrition or the following sciences related to nutrition: biochemistry, or cell or molecular biology. Applicants must demonstrate the ability to develop an independent research program and to participate in the teaching of a course on the biochemical bases of human nutrition. Preference will be given to candidates whose research has a biochemical, cellular or molecular orientation. It is hoped to make an appointment as early as the first half of 1995.

Position 2:
Applicants are being accepted from persons with graduate training, postdoctoral experience and proven accomplishment in nutrition or the following sciences related to nutrition: biochemistry, or cell or molecular biology. Applicants must demonstrate the ability to develop an independent research program and to participate in the teaching activities of a nutrition department. Preference will be given to candidates whose research has a potential for interaction with the other ongoing research in our department, which includes work in cell and molecular biology, lipid metabolism, and nutritional epidemiology. It is hoped to make an appointment as early as the first half of 1995.

Expression of interest is particularly invited from qualified women and minority candidates.

Send curriculum vitae, a summary of past accomplishments, a statement of future interests in research and teaching, and the names and addresses of three references to:

Dr. Donald Harn, Chair
Search Committee for
Assistant/Associate Professor of Nutrition
c/o Department of Nutrition
Harvard School of Public Health
Building II, Room 313
665 Huntington Avenue
Boston, MA 02115

NRC·CNRC

NRC, Canada's top R&D organization, helps its industry partners become stronger global competitors. Currently, NRC's ***Biotechnology Research Institute (BRI)*** *is looking for those rare people who can help further our record of excellence.*

Research Officer

Montreal, Quebec

Your Challenge

You will be responsible for the scientific direction of the Enzyme Engineering Group of the Pharmaceutical Biotechnology Sector. The Group is currently involved in several multidisciplinary projects that focus on the understanding of the molecular basis of enzyme activity and specificity and on the application of this knowledge in the pharmaceutical field.

Your Credentials

A PhD in Biochemistry or a related field, with many years of experience and a significant publication accord in enzymology with emphasis on applications in the pharmaceutical field. You must also have supervisory experience. Knowledge of English and French is essential, and a security screening will be required.

Salary range: Commensurate with qualifications. Relocation expenses may be negotiable.

To explore this opportunity, send your resume before September 16, 1994, indicating reference number RB-94-18-SC, to: **The Recruitment and Staffing Group, National Research Council Canada, Ottawa, Ontario K1A 0R6.**

NRC is an equal opportunity employer. We thank all those who apply and advise that only those selected for further consideration will be contacted.

Vous pouvez obtenir ces renseignements en français.

National Research Council Canada | Conseil national de recherches Canada

Canada

UNIVERSITY OF ILLINOIS AT CHICAGO
COLLEGE OF MEDICINE

DIRECTOR AND HEAD

Transplantation Biology Initiative/Program

Applications are invited for the position of Director and Head of a new program in Transplantation Biology within the College of Medicine of the University of Illinois at Chicago. Candidates for this position should possess the Ph.D. and/or MD degree, a distinguished record of scholarly activity, a nationally recognized research program with an emphasis on tolerance induction, antigen presentation and xenografts, as well as the ability to administer and foster an interdisciplinary research program. The University and College of Medicine will commit considerable resources to this initiative as part of its strategic planning process. The incumbent will have the opportunity to plan and develop the program inclusive of the remodelling of new space, equipment acquisition and the recruitment of additional faculty and key personnel. The nationally respected animal Biological Resources Facility as well as a newly constructed 150,000 sq. ft. Molecular Biology Facility will be integral components of the research program. The Director and Head will be appointed at an appropriate faculty rank.

Interested individuals should submit a letter of application and curriculum vitae which includes a summary of their research program and accomplishments to:

Raymond Pollak, M.D., Chair
Transplant Biology Program Search Committee
Associate Professor and Chief
Division of Transplantation
University of Illinois at Chicago
801 S. Paulina, Room 411 (M/C 960)
Chicago, Illinois 60612

University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer. Women and Minorities are encouraged to apply.

The University of Texas Southwestern Medical School
announces
Program of Excellence in Post Graduate Research (PEPR)
Independent Research Fellowships for Physician-Scientists

The University of Texas Southwestern Medical School has established a program that is designed to replace or supplement the usual postdoctoral fellowship. This program will provide three years of support for independent research carried out by Physician/Scientists in any aspect of biomedical science including the fields of Biochemistry, Genetics, Pharmacology, Molecular and Structural Biology, Immunology, Pathology and Physiology.

Fellowship Terms
Three years of support will be provided for a fundamental research project that will be carried out in laboratories at Southwestern Medical School.

- $50,000-$60,000 annual stipend, depending on qualifications.
- $60,000-$70,000 research support, which includes salary for a Research Assistant.
- $120,000 for laboratory start-up.
- Access to core facilities for tissue culture, large equipment, etc.
- 800 sq. ft. lab adjacent to other PEPR fellows in new facility (1993).

Junior Faculty Appointment.
Independent laboratory space.

Eligibility
People holding both M.D. and Ph.D. degrees required with the first of these degrees awarded no earlier than four years prior to application.

Application
Please submit a one-page abstract of the research proposal, together with a curriculum vitae and the names, addresses and telephone numbers of three references. Based on review of these materials, finalists will be invited to submit a more detailed research proposal, not more than eight pages in length.

Applications and inquiries should be addressed to:

PEPR Fellowship Selection Committee
R. Sanders Williams, MD, Michael S. Brown, MD, Alfred Gilman, MD, PhD, and Joseph Goldstein, MD
The University of Texas Southwestern Medical Center
5323 Harry Hines Blvd., Dallas, TX 75235-8573
Telephone (214) 648-1400 FAX (214)648-1450

The University of Texas Southwestern Medical Center is an Affirmative Action/ Equal Opportunity Employer

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RADIATION ONCOLOGY
RESEARCH SCIENTIST IN MEDICAL PHYSICS

The Division of Radiation Oncology is pleased to offer a position in Medical Physics at the level of Research Scientist in the Arthur G. James Cancer Hospital and Research Institute at the Ohio State University Medical Center.

Applicants should have a minimum qualification of a Ph.D. - ABD, with a Medical Physics specialization in Radiation Therapy. A minimum of 2 years of experience in Medical Physics at a Clinical Radiation Oncology department through at least a clinical internship is required. This must include experience with quality assurance, calibration, and treatment planning for external beam treatments, brachytherapy, radiosurgery, patient dose compensators, and intraoperative radiotherapy; and use of the Therplan Treatment Planning system at the level of system adminsistration. Previous experience of accepting at least one set of the following radiotherapy equipment is also required: linear accelerator (with electrons and photons), Radiosurgery equipment, Simulator; along with fitting the measured electron and photon beam data into 2D and 3D treatment planning systems. At least 2 years experience with administration of UNIX workstations is required.

The applicant should also have at least 10 publications in refereed journals and peer-reviewed conference proceedings, of which at leat 3 should be in archival journals. The Ohio State University has a multidisciplinary group involved with research in Boron Neutron Capture Therapy and applicants are required to have at least 3 years of previous research involvement in this area: specifically with design and fabrication of moderator assemblies for accelerator neutron sources, neutron spectroscopy, dosimetry, treatment planning, normal tissue tolerance, mixed field dosimetry, and the MCNP Monte Carlo code. The successful candidate would be expected to also initiate research projects in different areas of conventional radiotherapy.

All of the above experience could be obtained before, during, or after obtaining a degree. This is a full time position requiring 40 hrs/week, 8 AM to 5 PM, Monday-Friday. Salary range $50,000-56,000 per year.

Applicants for this position should direct inquiries to:

Reinhard A. Gahbauer, M.D.
Professor & Director
Division of Radiation Oncology
Arthur G. James Cancer Hospital and Research Institue
The Ohio State University Medical Center
300 West Tenth Avenue
Columbus, OH 43210
(614) 293-8415

Wayne State University

CELL AND DEVELOPMENT BIOLOGY

The Department of Biological Sciences invites applications for four tenure track positions at the assistant, associate and full professor level. We are seeking individuals with their primary research interest in molecular analyses of signal transduction pathways, molecular genetic analysis of development, and developmental neurobiology, although all areas of cell and developmental biology will be considered. We are particularly interested in candidates who bring a broad interdisciplinary approach to their research. The department is undergoing a significant expansion and expects to be recruiting in other areas of biology in the near future.

Substantial space and start-up funds will be made available to the successful candidates. The department occupies a new seven story research building with animal rooms, greenhouses, microscopy facilities and Drosophila support facilities.

Applicants must have demonstrated excellence in research and the potential for the highest quality teaching. Candidates will be expected to establish and maintain an extramurally funded research program and participate in both undergraduate and graduate 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.
Wayne State University - People working together to provide quality service.

POSITIONS OPEN

POSTDOCTORAL POSITION

On the molecular pathogenesis of adenovirus. Research on the molecular mechanisms by which adenovirus proteins affect cell killing (apoptosis) induced by oncogenes, TNF, and CTL. Studies include signal transduction by TNF, EGF, and work with adenovirus vectors. Experience in molecular and cellular biology and/or immunology desirable. Send curriculum vitae and names of three references to:

William Wold,
Department of Molecular Microbiology and Immunology
St. Louis University Medical School
1402 South Grand
St. Louis, MO 63104
Equal Opportunity Employer

POSTDOCTORAL POSITIONS available. NIH- and VA-funded positions in skin disease and cancer research available for Ph.D.s or M.D.-Ph.D.s with prior training in molecular and cellular biology or molecular genetics. Projects include: (i) linkage analysis of familial psoriasis (*Arch Derm*, **130**:216–224, 1994); (ii) identification of epidermal differentiation genes by positional cloning (*Genomics*, **21**:359–363, 1994); and (iii) cellular function of CaN19, a Type II tumor suppressor gene (*PNAS*, **89**:2504, 1992). Send curriculum vitae and references to: **James T. Elder, M.D., Ph.D., C560A MSRB II Box 0672, University of Michigan, Ann Arbor, MI 48109-0672. FAX: 313-763-4575.** *The University of Michigan is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION

Applications are invited for a **POSTDOCTORAL POSITION** in the field of molecular virology. The research focus will involve characterization of the structural feaures in viral envelope proteins important for virus entry into host cells and assembly of progeny virions. Candidates will also receive state-of-the-art training in molecular biological and gene therapy techniques. Interested candidates should send a curriculum vitae and the names of three references to: **Randall J. Owens, Ph.D., Department of Virology and Molecular Biology, St. Jude Children's Hospital, Danny Thomas, *Founder*, P.O. Box 318, Memphis, TN 38101-0318. Telephone: 901-523-2379; FAX: 901-523-2622.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION in Molecular Biology available immediately for a talented scientist with a strong molecular biology background to characterize flavonol-stimulated pollen development. High probability of rapid publications. Flavonols are essential for pollen germination (*PNAS*, **89**:7213, 1992) and can be manipulated to increase plant fecundity (*Plant Cell*, **6**:11, 1994). Requirements include a Ph.D and experience in cDNA cloning, sequencing, and gene expression analysis as evidenced by publication in refereed journals. Plant experience not required. Good verbal and writing skills plus familiarity with computers and sequencing software required. Salary competitive. A strong plant science program in small town atmosphere. U.S. citizens or current visa for working in the United States. Contact: **Dr. Loverine Taylor, Washington State University, Pullman, WA 99164-6414. Telephone: 509-335-3612; FAX: 509-335-8690; Email: TAYLORL@wsuvm1.csc.wsu.edu.** *Washington State University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION, PROTEIN CHEMISTRY available to study protein domains, DNA-protein interactions, and GTP binding of P element transposase protein (see *Cell*, **62**:27, 1992). Experience in HPLC, peptide mapping and purification essential. Send curriculum vitae and names of three references to: **Dr. Donald Rio, Department of Molecular and Cell Biology, 401 Barker Hall, University of California, Berkeley, CA 94720-3204.**

POSTDOCTORAL or **RESEARCH ASSOCIATE** positions are available in a laboratory which has been a leader in the study of proliferative signal transduction. Investigators with M.D. or Ph.D. degrees who are interested in proliferative signal transduction, or in applying current knowledge of proliferative signalling to novel chemotherapeutic protocols are encouraged to respond. Salary ranges are flexible. Contact: **Dennis Stacey, NC2-151, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195.**

POSTDOCTORAL POSITIONS available to study genes that determine the yeast replicative life span, their human homologs and age-responsive promoter elements (*Genetica* [1993], **91**:35; *J. Biol. Chem.* [1994], **269**:15451; *J. Biol. Chem.* [1994], **269**:18638). Experience in molecular techniques essential and in yeast genetics helpful. Send curriculum vitae with bibliography and names, telephone numbers, and FAX numbers of three references to: **Dr. S. M. Jazwinski, Department of Biochemistry and Molecular Biology, LSU Medical Center, 1901 Perdido Street, New Orleans, LA 70112.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL position available immediately to study mechanisms of lymphoid interstitial pneumonia in lentivirus infected sheep. Qualifications include Ph.D. and expertise in retrovirology, immunology, molecular biology, and/or pulmonary pathogenesis studies. Send curriculum vitae, summary of research experience and interests, and names/addresses of three references to: **Dr. James C. DeMartini, Department of Pathology, Colorado State University, Fort Collins, CO 80523. Telephone: 303-221-1364; FAX: 303-491-0603.**

BIOCHEMISTRY AND MOLECULAR BIOLOGY OF CYTOCHROME P450

University of California, Irvine

Two **POSTDOCTORAL POSITIONS** and an **ACADEMIC ASSISTANT RESEARCHER POSITION** are available in the UCI Department of Pathology for studies on cytochrome P450 system of lungs, liver and CNS supported by NIH grants.

This ongoing research program seeks to characterize the molecular and genetic basis of P450 inducibility, free radical generation from P450 and their contribution to the development of bronchopulmonary dysplasia of the young. Another project involves elucidation of neuronal changes secondary to neonatal hyperoxic insults and induced changes of steroid metabolism in adults.

Send curriculum vitae, research experience and interests, and names of three references to: **Yutaka Kikkawa, M.D., Professor & Chair, Department of Pathology, College of Medicine, University of California, Irvine, CA 92717.** *The University of California, Irvine is rooted in education and enriched by diversity.*

BRIGHAM AND WOMEN'S HOSPITAL HARVARD MEDICAL SCHOOL

POSTDOCTORAL RESEARCH POSITIONS IN CARDIOVASCULAR RESEARCH

Program Director: Thomas W. Smith, M.D.

POSTDOCTORAL POSITIONS are available in basic and clinical research for U.S. citizens and permanent residents. The primary purpose of the research fellowship is to develop expertise in a specific area of basic or clinical investigation. This work may be pursued with an emphasis on molecular biology, cell biology, physiology, or clinical research. We are particularly interested in applications from qualified minority candidates. Fellows will be under the direct supervision of a program faculty member who shares their interests.

Application deadline: December 1, 1994. Direct inquiries to: **Carol Stuart, Cardiovascular Division, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.** *Brigham and Women's Hospital maintains a drug/alcohol-free workplace. Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH ASSOCIATES

POSTDOCTORAL FELLOWS (Ph.D., M.D.) are sought for a new initiative in Neurogenetics within the Department of C.N.S. Research. This group, headed by Dr. Richard Smeyne, will conduct a collaborative research program with Drs. James Morgan and Tom Curran of the Roche Institute of Molecular Biology aimed at elucidating the basic molecular, biochemical and cellular mechanisms underlying neuronal degeneration and regeneration. The objective of the initiative is to develop genetic models and novel therapeutic targets for human neuropathological disorders. Applicants should have a strong background in one or more of the following areas: neuroscience, molecular biology, cell and developmental biology, and/or biochemistry. Familiarity with transgenic or embryonic stem cell technology will be an asset but is not essential. Please send curriculum vitae and letters of recommendation to: **Dr. Richard Smeyne, Neurogenetics Group, Hoffmann-La Roche, Inc., Nutley, N.J. 07110-1199.** *We are an Equal Opportunity Employer.*

POSTDOCTORAL POSITION, available immediately, to study an adhesive multicomponent system expressed by an enterobacterial pathogen. Requires experience in molecular genetics (bacterial genetics, recombinant DNA, mutagenesis, PCR). Experience in protein purification and use of antibody probes is desirable. Send curriculum vitae, description of previous experience and references to: **Dr. Dieter M. Schifferli, University of Pennsylvania, Department of Pathobiology, 3800 Spruce Street, Philadelphia, PA 19104-6049. FAX: 215-898-7887.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION

This position will investigate viral hepatitis and liver cancer. Experience in molecular biology or cellular immunology is preferred.

Qualified applicants should submit curriculum vitae and three professional letters of reference to: **University of Texas Medical Branch, Department of Pathology, Attention: Dr. Chiaho Shih, Galveston, TX 77555-0605.**

The University of Texas Medical Branch (UTMB) is an Equal Opportunity/Affirmative Action Employer. Male/Female/Disabled/Veteran. UTMB is a smoke-free/drug-free workplace. UTMB hires only individuals authorized to work in the United States.

POSTDOCTORAL POSITION IN BACTERIAL PATHOGENESIS

Immediate opening for a Ph.D. and/or M.D. with research experience in molecular biology for a postdoctoral fellowship at Harvard Medical School and the Brigham and Women's Hospital studying molecular mechanisms of bacterial pathogenesis. Research involves recombinant DNA techniques for studying gram-positive pathogens, in particular, group B *Streptococcus*, and developing genetic techniques for studying potential virulence determinants. Please send curriculum vitae and names, addresses, and telephone numbers of three references to: **James L. Michel, M.D., Ph.D., Channing Laboratory, 180 Longwood Avenue, Boston, MA 02115. Telephone: 617-432-2683; FAX: 617-731-1541.** *Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSTDOCTORAL POSITIONS UNIVERSITY OF MINNESOTA AQUATIC SCIENCES

Two opportunities are available immediately at the Gray Freshwater Biological Institute (GFBI), which is located on the shores of Lake Minnetonka, 35 minutes west of the Minneapolis campus in the Minneapolis/St. Paul metropolitan region. The mission of the GFBI is to study chemical-biological interactions in freshwaters. All individuals with research interests consistent with this mission are encouraged to apply. Current faculty research includes organic biogeochemistry, microbial ecology, and biological limnology. Send curriculum vitae, three letters of recommendation, and reprints to: **Robert W. Sterner, Gray Freshwater Biological Institute, Box 100, County Roads 15 and 19, Navarre, MN 55392.**

POSTDOCTORAL RESEARCH position available immediately at Shriners Hospital, Portland Unit to study regulation of chondrocyte-specific gene expression. Experienced molecular biologist preferred. Send curriculum vitae and names of three references to: **Dr. Kurt Doege, Shriners Hospital for Crippled Children, 3101 S.W. Sam Jackson Park Road, Portland, OR 97201; or FAX: 503-221-3451**. No phone calls please. *Shriners Hospital is an Equal Opportunity Employer and maintains a drug/alcohol-free workplace.*

POSTDOCTORAL POSITION available immediately to apply *Accel*® particle-mediated gene delivery technology toward applications in cancer gene therapy. Candidates should have expertise in molecular biology, including mammalian gene expression and recombinant DNA technology. Previous experience in cellular immunology and cancer immunotherapy is highly desirable. Agracetus has a state-of-the-art facility located near the University of Wisconsin, Madison. We offer an excellent compensation and benefits package. Send résumé with three references to: **Human Resources, Agracetus, Inc., 8520 University Green, Middleton, WI 53562. FAX: 608-836-9710.** *Equal Opportunity Employer.*

CHANGING THE PRACTICE OF MEDICINE THROUGH MOLECULAR BIOLOGY.

INCYTE PHARMACEUTICALS is an energetic, entrepreneurial biotech company focused on using high throughput cDNA sequencing technologies and bioinformatics for development of the next generation of pharmaceuticals and diagnostics. The following positions present a unique opportunity for talented professionals to join a strong group of molecular biologists developing methods that will alter how medicine will be practiced in the very near future!

SCIENTISTS

Two positions are currently available for candidates with a Ph.D. in biology or biochemistry and several years of post-doc training. Excellent communications skills are essential. A background in immunology or neuroscience would be helpful.

The first position will be responsible for generation of RNA from limited numbers/amounts of cells or tissues to be used in cDNA library construction. Candidates will need proven skill in basic molecular biology techniques with training in electrophysiology, anatomy and *in situ* transcription/hybridization. *Reference GMS*

The second position will initially focus on production of normalized/subtracted cDNA libraries. A strong hands-on background in RNA methodology and library construction is required. *Reference PMB*

RESEARCH ASSOCIATE/ASSISTANT

To qualify for this B.S./M.S.-level position, you must have a minimum of one year of laboratory experience following receipt of your degree. Experience in basic molecular biology techniques, including RNA methods and transcription assays, is essential. Excellent communication abilities are a must. *Reference AMS*

Incyte offers a premier work location in the foothills of Palo Alto, California, along with competitive salaries, an excellent benefits package and equity participation. Please forward your *c.v.* in confidence, indicating reference code for the position of your interest, to Human Resources, Incyte Pharmaceuticals, Inc., 3330 Hillview Ave., Palo Alto, CA 94304. Incyte is an equal opportunity employer.

INCYTE
PHARMACEUTICALS, INC.

DNA PROBE DIAGNOSTICS

Digene Diagnostics, Inc. is a rapidly growing company dedicated to the development and marketing of DNA probe-based diagnostics. As a result of recent scientific breakthroughs, Digene is expanding its research and development programs. We are seeking creative, energetic and motivated individuals who thrive in a fast-paced team environment to participate in our growth. We currently have the following opportunities.

Senior Scientist - Human Genetics
Successful candidates will design and develop probe-based diagnostic products for the human genetics marketplace. Responsibilities include cloning and characterization of probes for targeted applications, optimization of assay performance characteristics and the transfer of new products into manufacturing. The position requires hands-on benchwork and creative, critical scientific abilities. Applicants must have a Ph.D. in biochemistry, molecular biology or microbiology with 2-4 years relevant industrial or academic experience.

Mid-Level Scientist - Molecular Biology
Responsibilities include design of specimen processing methods, identification of new DNA probes and creation of new infectious disease assays. Applicants must have a Ph.D. or M.S. degree in Molecular Biology with 2 years experience in molecular virology or clinical microbiology.

Manager - Technical Transfer
Responsibilities include technical and managerial support for the transfer of Digene's DNA probe products from R&D to manufacturing. Expertise in clinical immunoassay scale-up and production is required. Applicants must have a Ph.D. or M.S. in microbiology, molecular biology or immunology and 2-4 years of relevant industrial experience.

Please forward your resume to: Digene Diagnostics, Inc., Attn: Maurine Mazzeo, 2301-B Broadbirch Drive, Silver Spring, MD 20904. An Equal Opportunity Employer.

DIGENE
DIAGNOSTICS, INC

PH.D. PROTEIN BIOCHEMIST

DowElanco, a leading company in the development of innovative products for crop protection and production, has an immediate opening for a Ph.D. Protein Biochemist in the Biotechnology and Plant Genetics Department. The Department is part of DowElanco's Discovery Research effort which is located in a new state-of-the-art research center in Indianapolis, Indiana.

As part of an interdisciplinary team, this individual will perform research on the identification, isolation and characterization of proteins and enzymes from diverse sources, for use in a program designed to produce unique maize varieties with value added traits, particularly in the area of oil biosynthesis. The successful candidate will have a strong background in protein biochemistry and enzymology and an excellent understanding of plant metabolic biochemistry and regulation. Post-doctoral research experience in the area of plant lipids is highly desirable, and the ability to interact productively with an energetic research group in the production and characterization of large numbers of transgenic maize plants is essential.

To learn how to advance your career while enhancing the Agricultural environment, send a resume by October 1, 1994 to: Kathy McIntyre, Dept. DBB-1, DowElanco, 9330 Zionsville Road, Indianapolis, IN 46268-1054. An Equal Opportunity Employer.

DowElanco

Our graduate programs offer comprehensive training in emerging as well as traditional disciplines in **Plant Biology**. As one of the most highly ranked botany departments in the US, our faculty provide exceptional educational and research opportunities in the biochemical, cellular, developmental, ecological, evolutionary and systematic, genetic, molecular and physiological aspects of plants and fungi. We invite applications from persons interested in studies leading to M.S and/or Ph.D. degrees in these fields. Students are admitted to the program with full financial support from a number of sources including Graduate School Assistantships. Funds for research and scholarship are also from:

The Frank U. Palfrey Endowment Fund
Mechanisms of Plant Evolution Training Grant
Mycology Training Grant
Research Grants from DOE, NIH, NSF, USDA, Rockefeller Foundation and Agrochemical Companies.

More information and application materials can be obtained via gopher, world-wide web, e-mail (admit@dogwood.botany.uga.edu) or by contacting: Graduate Admissions Committee, Department of Botany, University of Georgia, Athens, GA 30602-7271. Telephone: 706-542-3732; Fax: 706-542-1805.

POSITIONS OPEN

POSTDOCTORAL FELLOW/ RESEARCH ASSOCIATE NUCLEAR HORMONE RECEPTORS

A **POSTDOCTORAL POSITION** is available immediately to study the molecular mechanism of action of $1,25(OH)_2D_3$. One area of particular interest is the use of genetic systems in yeast to identify target genes induced in bone cells in response to vitamin D. Applicants should have expertise in recombinant DNA technology. Tissue culture experience is desirable. Send curriculum vitae and the names and addresses of three references to: **Dr. Donald P. McDonnell, Department of Pharmacology, Duke University Medical Center, Box 3813, Durham, NC 27710.** *Duke University is an Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGY

Two **POSTDOCTORAL FELLOW POSITIONS** are available to study signal transduction process in the immune system. Research focuses on *in vivo* animal models, and takes a multidisciplinary modern biological approach, including conditional gene targeting. Applicants should have a strong background in molecular biology and/or biochemistry. Experience in gene targeting is not required. Please send curriculum vitae and three letters of reference to: **Dr. Hua Gu, Laboratory of Immunology, NIAID, Room 139, 12441 Parklawn Drive, Rockville, MD 20852. FAX: 301-480-2618.** *NIH is an Equal Opportunity Employer.*

POSTDOCTORAL/RESEARCH ASSOCIATES. Two positions: 1) Patch-clamp recording from retinal slices; 2) Physiology of cultured epithelial cells using patch-clamp recording and fura-2 Ca2+ measurements. Available immediately. Previous experience either with retina or with single-cell electrophysiology, $27,000 plus health. Curriculum vitae and three references to: **Prof. Gordon L. Fain, Departments Ophthalmology and Physiological Science, Life Sciences 3836, UCLA, Los Angeles, CA 90024-1527. FAX: 310-825-4667.**

SENIOR SCIENTIST/MOLECULAR GENETICS ANIMAL & PLANT ANALYSIS

DataGenetics is a DNA laboratory which contracts with plant and animal breeding companies and undertakes human/biomedical projects. Applicants need a Ph.D. or equivalent with expertise in plant and animal molecular genetics, practical breeding issues, and population genetics. Emphasis on RFLP linkage mapping. This position involves direction of data production and interpretation, client liaison, project design. Send résumé to: **DataGenetics Corporation, Human Resources, 1933 Davis Street, No. 207, San Leandro, CA 94577** (Principals only).

POSTDOCTORAL POSITION IN NEUROSCIENCE

Projects related to receptor localization and circadian biology. Emphases include *in situ* hybridization, immunocytochemistry, receptor autoradiography, and neuroanatomy. Send curriculum vitae and names of references to: **Dr. Scott Rivkees, Riley Hospital, Room 5984, Indiana University School of Medicine, 702 Barnhill Drive, Indianapolis, IN 46202. FAX: 317-274-3882.** *Equal Opportunity Employer.*

CHEMICAL/BIOMEDICAL ENGINEER is sought to direct research efforts for the intravenous membrane oxygenator development program at the University of Pittsburgh. M.S. or Ph.D., minimum of three years of experience working in biomedical product development required; expertise in oxygenator technology or respiratory physiology desired. Send letter of application with salary requirements, curriculum vitae, and list of references to: **Patricia Sawzik, Suite C-700, Presbyterian University Hospital, 200 Lothrop Street, Pittsburgh, PA 15213.**

RESEARCH ASSOCIATE POSITION. Heineman Medical Research Laboratory is seeking an individual with a doctorate degree in engineering and experience in fluid mechanics of prosthetic, bioprosthetic, or natural heart valve. Individuals who have studied flow patterns in the heart valves are particularly suitable. The appointment is for one to two years with a possibility of extension. Heineman Laboratory offers an excellent environment for scientific and clinical studies. Interested individuals should send curriculum vitae and references to: **Dr. Mano J. Thubrikar, Heineman Medical Research Laboratory, Carolinas Medical Center, 1000 Blythe Boulevard, Charlotte, N.C. 28203. Telephone: 704-355-2668; FAX: 704-355-7164.**

POSITIONS OPEN

PREDOCTORAL TRAINING IN NEUROSCIENCE
INTERDISCIPLINARY Ph.D. PROGRAM IN NEUROSCIENCE

Louisiana State University Medical Center
School of Medicine
New Orleans

Established in 1992, this program offers intensive training in neuroscience. Research conducted at the Louisiana State University Neuroscience Center of Excellence spans fields from behavioral neuroscience to molecular neurobiology, and includes the study of genes, cells, and human behavior. Stipend support is available on a competitive basis. Applicants should have a strong GPA in undergraduate science courses, and a combined (verbal and quantitative) GRE score of at least 1200. Students should have taken courses in Biology, Chemistry (including Organic), Physics, Computer Science, and Mathematics (Calculus). Send inquiries along with a brief statement (one to two pages) that should include GPA and GRE scores to: **Nicolas G. Bazan, M.D., Ph.D., or R. Ranney Mize, Ph.D. Co-Directors of the Interdisciplinary Ph.D. Program, c/o LSU Neuroscience Center of Excellence, 2020 Gravier Street, Suite B, New Orleans, LA 70112. Telephone: 504-568-6700; FAX: 504-568-5801.** *Affirmative Action/Equal Opportunity Employer.*

ONTOGENY, INC.

Ontogeny is a well-financed new biotech company specializing in developmental biology. The company will make use of molecular, cellular and tissue biology to identify signals that induce cell differentiation and tissue development. We seek highly motivated individuals, at the B.S., M.S., or Ph.D. level, to join our team of researchers in a stimulating and challenging environment.

CELL BIOLOGISTS. Applicants should have experience in cell culture. Experience with skin, nerve or pancreatic cells and tissues would be an advantage.

MOLECULAR BIOLOGISTS. Applicants should have experience in library screening, expression systems and protein production.

BIOCHEMISTS. Applicants should have experience in protein chemistry and protein purification.

Ontogeny is located at the center of Cambridge and offers excellent salary, benefits and incentive stock plans. Please forward your résumé by FAX to 617-225-0096. Alternatively, write to: **Ontogeny, 1 Kendall Square, Building 600, Cambridge, MA 02139.** *An Equal Opportunity Employer.*

SYSTEMATIC ENTOMOLOGIST

The Center for Biodiversity, Illinois Natural History Survey, has an opening available January 1995 for an **ASSISTANT** or **ASSOCIATE PROFESSIONAL SCIENTIST.** Candidates should be well versed in modern systematics methodology and phylogenetic theory, maintain an active externally funded research program in systematic entomology, and have expertise in one or more of the following: a) developing and enhancing collections, such as through faunistic surveys; b) revisionary, monographic, or evolutionary studies; and c) population biology. Affiliate appointment with the University of Illinois possible. Ph.D. in an appropriate discipline required; postdoctoral experience preferred. Send letter of application, curriculum vitae, statement of research interests, reprints of three representative publications, and the names, addresses, and telephone numbers of three references by October 14, 1994, to: **Ms. Jacqueline Sanders, Personnel Officer, Illinois Natural History Survey, 607 East Peabody Drive, Champaign, IL 61820. Telephone: 217-244-7790.** *The Illinois Natural History Survey is an Equal Opportunity Employer and an Americans with Disabilities Employer.*

RESEARCH ASSOCIATE IN OCULAR IMMUNOLOGY

Position available immediately at the **POSTDOCTORAL** or **INSTRUCTOR** level to participate in established research program in (a) cytokine regulation of ocular immunity and inflammation and (b) immune-based therapy for AIDS-related cytomegalovirus retinitis. Ph.D. or equivalent required with a strong background in molecular biology. Salary range commensurate with experience. Send curriculum vitae, brief statement of research interests, and names of three references to: **Dr. Scott Cousins and Dr. Richard Dix, P.O. Box 016880, Bascom Palmer Eye Institute, Miami, FL 33101.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

RESEARCH ENGINEER

Responsible for creating mathematical models of the human body using the Kane's Method of Dynamics which predict joint reaction and muscle forces. Creates computer programs for purposes of testing orthopedic devices and assists in the design and functioning of devices. Performs scientific experiments including cadaveric and flouroscopic testing for application of orthopedic devices including implants using computer-generated simulations. Assists in developing performance standards for orthopedic products; prepares and presents research reports and technical literature; transfers research to applicable groups; serves as a liaison between in-house and outside research groups and suppliers; serves as a liaison with sales and marketing personnel; and serves as support to sales and marketing departments. Applicant must possess a background in physiology and/or orthopedics; working knowledge of Kane's Method of Dynamics along with two years of experience in and ability to apply same to the human body (experience may be acquired either in school or in the workplace); experience in and ability to mathematically model soft tissues and rigid bodies; experience in and ability to utilize FORTRAN software; publication and preparation of technical research papers is required as is ability to work with cadavers; must be able to travel. Ph.D. in Mechanical or Biomedical Engineering is required. Job location: Arlington, TN. Salary $50,000 per year. Send résumés to: **Mike Daniel, Job Serv. Prog. & Tech. Supp., Tennessee Department of Employment Sec., Nashville, TN 37245-1200.** Job Order No. TN 1477072.

RESEARCH NEUROLOGIST/ NEUROBIOLOGIST IN AGING & DEMENTIA

The University of Massachusetts Medical Center, Department of Neurology, is seeking an **INVESTIGATOR** capable of independent work, with a background and interest in studying mechanisms of neuronal degeneration, death and selective vulnerability in aging and dementing disorders. Candidates with an M.D., M.D.-Ph.D., or Ph.D. will be considered. Initial appointment will be made at the assistant or associate professor level. Start-up funds are available; the applicant will be expected to generate further support from competitive external sources. Applications should include curriculum vitae, relevant reprints, a statement of research and clinical interests, and names of at least three references. Salary will be commensurate with experience. Applications should be sent to:

David A. Drachman, M.D.
Department of Neurology
University of Massachusetts Medical Center
55 Lake Avenue North
Worcester, MA 01655

An Affirmative Action/Equal Opportunity Employer.

PHYCOLOGIST POSITION

Florida International University, the State University of Florida at Miami, seeks one position for an **ASSISTANT SCHOLAR SCIENTIST** in the field of Applied and Research Phycology. A Ph.D. and experience in freshwater and/or marine periphyton research is required. Preference will be given to applicants with experience in: algal responses to nutrient loading, filamentous algae and diatom taxonomy, general physiology/ecology, and demonstrated ability in research. Responsibilities include: quantifying periphyton responses to nutrient loading in the Everglades ecosystem and establishing an externally funded program focusing on South Florida ecosystems. To apply, send curriculum vitae, outline of long-term research plans, and names of three references to: **Dr. Ronald Jones, Director, Southeast Environmental Research Program (SERP), Florida International University, University Park, Miami, FL 33199.** Applications must be postmarked on or before September 22, 1994. *Florida International University is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH FELLOW needed to work on projects related to role of PI 3-kinase activation in insulin regulation of lipid metabolism in adipocytes; or, regulation of brain ins. 1,3,4,5-Tetrakis phosphate formation. Applicants must have Ph.D. degree and be U.S. citizens or have permanent residency to qualify for funding. Contact: **Dr. John N. Fain, Department of Biochemistry, University of Tennessee, Memphis, TN 38163. FAX: 901-448-7360.** *The University of Tennessee is an Equal Opportunity/Affirmative Action/Titles VII and IX/Section 504/ADA Employer.*

NORTHERN ARIZONA UNIVERSITY

DEPARTMENT OF BIOLOGICAL SCIENCES

DEPARTMENT CHAIR

The Department of Biological Sciences at Northern Arizona University is initiating a search for a Chair. Applications are invited and nominations are solicited for this position. Candidates are sought who have superior records of teaching, research and grant support, and have demonstrated leadership and administrative experience and ability. The successful candidate will be expected to maintain a research program and contribute to the teaching program of the department. Candidates must hold a doctoral degree and qualify for the academic rank of Full Professor with tenure. Research specialty is open and should be complementary with the goals of the department. Salary, rank, and support will be competitive.

Northern Arizona University has approximately 18,500 students. The department consists of 38 faculty members with a strong commitment to excellence in education and scholarship. Undergraduate programs include biology, botany, microbiology, and zoology. Graduate offerings include the M.S., M.A.T., and Ph.D. in biology. Review of applications will begin 1 Oct. 1994 and will continue until the position is filled. Starting date is negotiable.

Applications should include current resume, concise statement of professional goals and philosophy, and names, addresses and phone numbers of three referees. Send to:

BIOLOGY CHAIR SEARCH
Office of the Dean
College of Arts and Sciences
Box 5621
Northern Arizona University
Flagstaff AZ 86011

Northern Arizona University is an Equal Opportunity/Affirmative Action Employer.

AMERICAN SOCIETY FOR MICROBIOLOGY FELLOWSHIP PROGRAMS

The American Society for Microbiology offers predoctoral and postdoctoral fellowships in the following areas:

Biology
Infectious Diseases
Biomedical Science
Microbiology

Application deadlines range from December 1, 1994 to May 1, 1995.

For more information contact:
Office of Education and Training,
American Society for Microbiology,
1325 Massachusetts Avenue, N.W.,
Washington, D.C. 20005.

BIOTECHNICAL / PHARMACEUTICAL JOB FAIRS

La Jolla, California	*Cambridge, Massachusetts*
Friday, September 23, 1994	**Friday, September 30, 1994**
Saturday, September 24, 1994	**Saturday, October 1, 1994**

Interviewing Companies to date—

◆ *Depotech* ◆ *Genzyme* ◆ *Gen-Probe* ◆ *Serono Laboratories*
◆ *Systemix* ◆ *Sugen* ◆ *AMVAX (North American Vaccine)*
◆ *FDA—Center For Drug Evaluation & Research*
◆ *FDA—Center For Biologics Evaluation & Research*

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

CAREER CONNECTION
Dept. SC-994, P.O. BOX 7451, Thousand Oaks, CA. 91359
(805) 374-8777 or (800) 967-0020 FAX (805) 494-1870

KUWAIT UNIVERSITY
HEALTH SCIENCES CENTER
Faculty of Medicine

Pre-clinical and Clinical Appointments:

Applications are invited for the following appointments in the Faculty of Medicine:

ANATOMY:
(8 posts)
Professor/Associate Professor/Assistant Professor
- Human Gross Anatomy
- Neuro-anatomy
- Microscopic or Developmental Anatomy

BIOCHEMISTRY:
(7 posts)
Professor/Associate Professor/Assistant Professor
- Nucleic Acid Specialist(s)
- Protein Biochemist(s)
- Membranes biochemist(s)
- Endocrinology oriented biochemist

COMMUNITY MEDICINE AND BEHAVIORAL SCIENCES:
(5 posts)
Professor/Associate Professor/Assistant Professor
- Social Psychologist (1)
- Environmental and Occupational Health (1)
- Community Medicine and Epidemiology (1)
- Occupational Epidemiology (1)
- Biostatistics (1)

MICROBIOLOGY:
(4 posts)
Professor/Associate Professor/Assistant Professor
- Clinical Microbiology (Medically qualified) (1)
- Clinical Immunology (1)

Associate Professor/Assistant Professor
- Parasitology (1)
- Clinical Virology (1) - preferably MRCPath

PATHOLOGY:
(7 posts)
Associate Professor/Assistant Professor
- Histopathology (1)
- Hematology (2)
- Cytopathology (2)

Assistant Professor
- Clinical Chemistry (1)

Associate Professor
- Cell Biology (1)

PHARMACOLOGY:
(2 posts)
Associate/Assistant Professor
- **Neuropharmacology** (Established research interest in CNS pharmacology)
- **Clinical Toxicologist** (Experienced in therapeutic drug monitoring analytical methodology in clinical pharmacology and toxicology)

PHYSIOLOGY:
(5 posts)
Associate/Assistant Professor
- Endocrine Physiology (1)
- Renal Physiology (1)
- Respiratory Physiology (1)
- Neurophysiology (1)
- General Physiology (1)

MEDICINE:
(8 posts)
Professor/Associate/Assistant Professor
- Therapeutic
- Clinical Hematology
- Infectious Diseases
- Respiratory Medicine

NUCLEAR MEDICINE:
(8 posts)
Professor/Associate/Assistant Professor
- Clinical Nuclear Medicine Physicians (1)
- Nuclear Medicine Physicists (2)
- Radio Immunoassay Scientist (1)

OBSTETRICS AND GYNECOLOGY:
(8 posts)
Professor and Chairman Reproductive Medicine (1)
Professor
Gynecological Oncology (1)
Associate Professor
Perinatal Medicine & Gynecological Urology (2)
Assistant Professor
Obstetrics & Gynecology (4)

PEDIATRICS:
(9 posts)
Professor/Associate/Assistant Professors
- Pediatric Neurology
- Clinical Genetics
- Pediatric Nephrology
- Pediatric Allergy & Clinical Immunology
- Pulmonary Medicine
- Pediatric Critical Care Medicine
- Neonatologist
- Emergency Medicine
- Pediatric Cardiology

PRIMARY CARE:
Professor/Associate/Assistant Professor
- Family Practice
- General Practitioner

(**MRCGP** or equivalent, knowledge of Arabic language will be an advantage)

(continued on next page)

RADIOLOGY:
(2 posts)
Assistant Professor
Clinical Radiologist
(Interest in Color Flow Doppler Ultrasound Scanning and/or interest in stereotactic techniques in relation to breast cancer)

SURGERY:
(12 posts)

Professor (1) Vascular Surgery
Professor (1) Transplant
Professor (1) /Associate Professor (1) /Assistant Professor (2)
General Surgery
Professor (1) /Associate Professor (1)
Orthopedics
Professor (1) /Assistant Professor (1)
Urology
Professor (1) /Assistant Professor (1)
Anesthesia

REQUIREMENTS FOR APPOINTMENT:

Qualifications: Applicants should possess a Ph.D. or an equivalent high professional qualification, i.e. **FRCS/MRCP/MRCOG/ MRCPath/MD/American Board** in their respective specialty and have conducted and published research in their field. Professors should have at least 14 years experience, 4 as an Associate Professor, or its equivalent. Associate Professor should have at least 9 years experience, 4 as an assistant professor or its equivalent.

CONDITIONS OF APPOINTMENT:

Salaries: Total monthly salaries will be within the following scales according to qualifications and experience (1 KD = 2.1 St. pounds, US$ 3.4 approximately). Increment per year KD 20/-.

Professors:
With clinical appointments = KD 1210-1370 (8 increments)
Medically qualified with a
Ph.D. in Medical Science = KD 1140-1300 (8 increments)
Non-Medically Qualified = KD1070-1230 (8 increments)

Associate Professors:
With clinical appointments - KD 989-1149 (8 increments)
Medically qualified with a
Ph.D. in Medical Science = KD 932-1092 (8 increments)
Non-Medically qualified = KD 875-1035 (8 increments)

Assistant Professors:
With clinical appointments = KD 768-928 (8 increments)
Medically qualified with a
Ph.D. in Medical Science = KD 724-884 (8 increments)
Non-Medically qualified = KD 680-840 (8 increments)

OTHER ALLOWANCES: Social allowance will be paid in addition to the monthly salary as per the University regulations. Clinical allowances from the Ministry of public Health for **10 months** a year (i.e., the University academic year from **September** to the end of **June**) for clinical service commitments are as follows:

Professor and Chairman: KD 450/-
Professor: KD 400/-
Associate Professor: KD 300/-
Assistant Professor: KD 200/-

OTHER BENEFITS: Conference attendance. Gratuity. Furnished Accommodation (electricity and water free of charge). Free medical treatment in Kuwait. Free annual round-trip airtickets from country of citizenship or permanent residence for self and family up to three dependent children. Baggage and freight allowance. Education fees for maximum of three children in Kuwait from elementary through high school. No taxation. Currency is transferable without restriction. 60 days paid annual leave.

METHOD OF APPLICATION: Curriculum vitae in duplicate which should include the names of three referees; personal particulars; copy of the relevant pages of passport; qualifications with dates; career history, teaching experience, research accomplishments and clinical experience, where appropriate, should be sent to:

The Vice-Dean of Administration
(Recruitment Office)
Faculty of Medicine
University of Kuwait
P.O. Box 24923
Safat, 13110, Safat KUWAIT
or
Fax: 5318454

Pharmacology/ Toxicology Scientist

Somatogen, a biopharmaceutical company located in Boulder, Colorado, currently engaged in the clinical trials of a recombinant human hemoglobin as a human substitute, has an exciting opportunity available for a Scientist in our Pharmacology/Toxicology Department.

Responsibilities include designing and managing preclinical studies pertaining to pharmacology, pharmacokinetics, drug metabolism and toxicology. Requires a Ph.D. in a related field plus a minimum of 2 years of relevant experience in industry.

A competitive salary, relocation and benefits package complement this offer. Interested candidates may submit their resume to :

SOMATOGEN
Dept. 708
2545 Central Avenue
Boulder, CO 80301

Somatogen is an equal opportunity employer

SOMATOGEN

PROGRAM TEAM LEADER

G-Protein Coupled Receptor

COR Therapeutics, Inc. is a publicly-held biopharmaceutical company located in the San Francisco Bay Area. We specialize in the discovery and development of novel pharmaceutical products for the treatment and prevention of severe cardiovascular disease. We currently have an exceptional opportunity for an experienced Senior Scientist to lead our G-Protein Receptor Coupled research team.

This individual will be responsible for directing the efforts of existing groups of biochemists, molecular, and cell biologists involved in research programs in the G-protein coupled receptor area. The Program Team Leader will also be responsible for coordinating and evaluating outside collaborations and interacting with individuals involved in pharmacology, drug screening and medicinal chemistry efforts directed at these G-protein coupled receptors.

The successful candidate will have a Ph.D. in Molecular or Cell Biology or a related field. The position also requires 7-10 years of experience focused on the biology of G-protein coupled receptors. Previous experience in these areas related to cardiovascular disease would be a plus. The candidate should also have recent experience in state of the art technology in molecular biology and biochemistry and their applications to drug discovery. Additionally, the candidate should have demonstrated superior management skills and be able to successfully function in a highly collaborative atmosphere.

COR Therapeutics, Inc. offers competitive salaries, benefits and attractive equity positions to its employees combined with the challenge and opportunity to make significant research contributions. To apply, please send curriculum vitae to: COR Therapeutics, Inc., Human Resources (Job Code #R36-94-S), 256 East Grand Avenue, South San Francisco, CA 94080. COR is an equal opportunity employer.

COR THERAPEUTICS, INC.

Value Through Innovation

Together with all the Boehringer Ingelheim companies world wide, we are committed to Value Through Innovation as our driving ambition.

As a major international pharmaceutical company, we have made a commitment to innovation through world class R&D facilities, programs and scientific staff. The following opportunity exists in our drug discovery group:

PULMONARY PHARMACOLOGIST

We require a Ph.D. with post-doctoral experience in pulmonary pharmacology and/or physiology to help design and implement models of inflammation-based pulmonary disease. The ideal candidate will have experience with methodologies appropriate to assess respiratory function in both small and large animal models with primate experience highly preferred. Two or more years relevant experience in the pharmaceutical industry is desired.

Located on a campus-like setting in a beautiful area of Western Connecticut, we offer an excellent compensation and benefits package, the opportunity to be involved in interesting and challenging work, and a chance to contribute to our innovative discovery program. For confidential consideration, send your resume to: Dept. JC-1S-PC, Boehringer Ingelheim Pharmaceuticals, Inc., 900 Ridgebury Road, P.O. Box 368, Ridgefield, Connecticut 06877-0368. We are an equal opportunity employer. As a progressive healthcare company, we have a non-smoking environment.

BOEHRINGER INGELHEIM

Boehringer Ingelheim

Research Associate

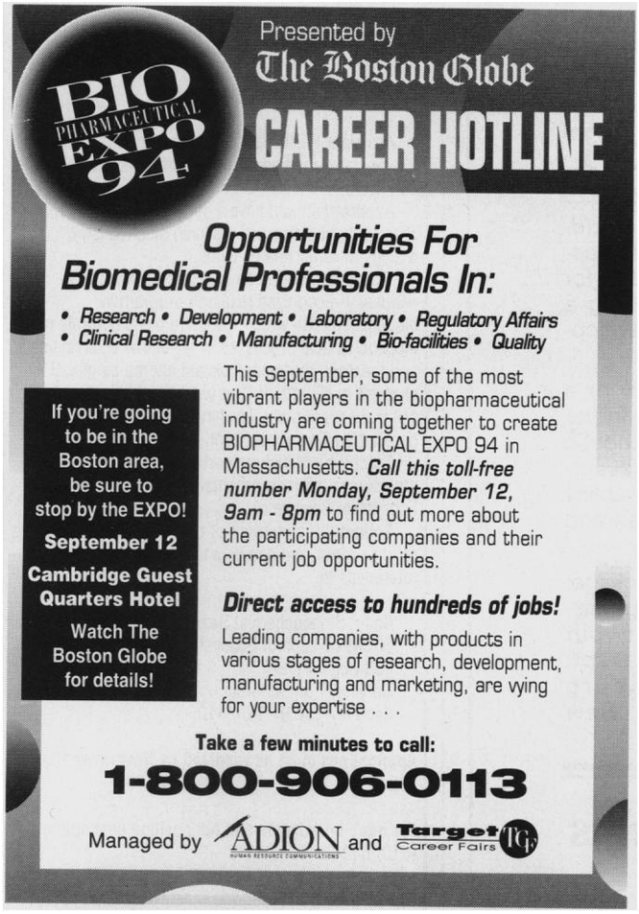
At Amgen, you'll discover a research environment that emphasizes collaboration, intellectual honesty, scientific integrity, and a supportive culture. This unique approach has helped us grow into a global biotechnology leader in just thirteen years.

INFLAMMATION

We seek a Molecular Biologist to study mechanisms of endothelial cell and monocyte activation. BS/MS in Biology or related discipline with 5+ years' experience in PCR, cDNA library construction and screening. Experience in cell biology is desirable.

At Amgen, you'll find our approach to scientific research as rewarding as it is effective. We offer a highly competitive compensation and benefits package that includes a retirement and savings plan, an on-site fitness center, and three weeks' vacation. Please FAX/mail your resume/c.v. to: FAX: (805) 447-1985, Amgen Inc., Staffing, Job Code OA-SC-HL-001, Amgen Center, Thousand Oaks, CA 91320-1789. For additional information regarding Amgen's recruitment process, please call (805) 447-4150. Principals only, please. EEO-Affirmative Action Employer M/F/D/V. We recognize that diverse perspectives are a key factor in the process of discovery.

AMGEN®
Discover a unique approach.



WORLD HEALTH ORGANIZATION (WHO)
INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC)

IARC has an opening in its laboratories in Lyons, France, for a molecular geneticist with a strong internationally competitive research programme in

Genetic Cancer Susceptibility

The successful applicant should have a Ph.D. or in biochemistry or in molecular biology as well as an extensive experience in the field of human genetics. He/she would have a considerable experience in molecular and genetic studies of carcinogenesis including international experience in the planning/development and coordination of collaborative projects and good experience in training/supervising staff. Technical expertise should include genetic mapping of disease susceptibility loci and identification of genetic alterations at the molecular level. Experience in the development of experimental models such as transgenic mice will be appreciated.

The incumbent is expected to head a research unit focusing on genetic susceptibility to environmentally induced cancer. The incumbent is responsible to develop direct and oversee original projects aimed at evaluating though a molecular approach the role of inherited genetic factors in cancer development. He/she interacts and collaborates with other IARC experimental scientists and epidemiologists and outside collaborators in the implementation of molecular epidemiological studies and their executions and represents the Agency in his/her capacity of expert at scientific meetings. The incumbent has to keep abreast with the methodological development in this field.

The initial appointment will be for two years, the first being probationary, and is renewable.

The annual salary level is US $51,466 p.a. at single rate and US $55,530 for a staff member with dependants plus a cost of living element which is currently 45% of the above figures. Salaries are tax free.

Those interested should write, enclosing a curriculum vitae, to:

Personnel Office
I.A.R.C.
150, Cours Albert Thomas
F-69372 Lyons Cedex 08 FRANCE
Fax no: (33) 72 73 85 75

Applications from women are encouraged.

Fermentation Specialist

Anheuser-Busch, a Fortune 50 company and America's #1 brewer, currently has an opportunity available for a Fermentation Specialist to join us at our Corporate Headquarters in St. Louis, Missouri.

The ideal candidate will have at least a B.S. in microbiology, biochemistry, or fermentation science, and at least 3 years' industrial experience. Experience in the brewing industry and with yeast fermentations is highly desirable. Must be proficient in statistics, and possess confidence and excellent communication skills. In addition, you must have the proven ability to manage projects and work in a team environment.

If you possess the strong work ethic, ambition and work history that this challenging role calls for, the rewards can be outstanding. To apply, please send your resume and salary history to: **ANHEUSER-BUSCH, INC.; Corporate Employment; Dept: A-62-RK-134; One Busch Place; St. Louis, MO 63118.** Equal Opportunity Employer.

Anheuser-Busch, Inc.
ONE OF THE ANHEUSER-BUSCH COMPANIES

The Health and Environmental Review Division (HERD) of the Office of Pollution Prevention and Toxics of the USEPA is seeking health and environmental scientists with a Ph.D. or equivalent education and experience in one or more of the following areas:

1. Developmental/Reproductive Toxicology
2. General Toxicology
3. Inhalation Toxicology
4. Immunotoxicology
5. Ecotoxicology
6. Environmental Science/Chemistry/Structure-Activity Relationships

HERD provides scientific expertise to evaluate data from studies on the effects of chemicals which could result in adverse effects to human health or the environment.

HERD is responsible for formulating, reviewing, and updating procedures and protocols used by industry in performing required testing of chemicals for effects on human health and the environment. The positions involve evaluating data assembled from various sources including literature searches and research projects concerning the effects of selected chemicals and classes of chemicals on human health and the environment. The positions also involve working on interdisciplinary teams in areas pertaining to toxic chemical control, pollution prevention, and the effects of specific industries and specific chemicals. These are non-laboratory positions at the GS 11-13 level. Salary range is from $35,045 to $64,928.

For further information, please submit a completed government form SF-171 or a detailed resume with the names of 3 references and expected salary to:

Ms. Jackie Donaldson
USEPA
Health and Environmental Review Division (7403)
401 M Street, SW
Washington, DC 20460

NO PHONE CALLS PLEASE

"The U.S. EPA is an Equal Opportunity/Affirmative Action Employer."

U.S. Citizens Only

Roche

IN-VITRO DIAGNOSTICS

SENIOR SCIENTIST

Roche Diagnostic Systems, Inc., a subsidiary of world-renowned Hoffmann-La Roche, Inc., is a leader in the development, manufacture, and marketing of in-vitro diagnostics for hospitals, laboratories, and physicians. We are seeking a Senior Scientist to be involved with the research and development of immunologically-based diagnostic assays.

The ideal candidate will have a Ph.D. in Chemistry or a Biological Science and zero to three years experience in the development of immunologically-based, in-vitro diagnostic assays. Experience in Hapten Conjugate chemistry and supervisory experience in an industrial setting preferred. The ability to function independently is a must, as are good written and oral communication skills.

We offer a competitive salary, generous benefits package, and a state-of-the-art environment that is conducive to professional success. For consideration, please forward your resume and salary requirements to: **Mr. John Mucci, Dept. MCN2, Roche Diagnostic Systems, Branchburg Township, 1080 U.S. Highway 202, Somerville, New Jersey 08876.** We are an equal opportunity employer.

Roche **Roche Diagnostic Systems**

A Member of the Roche Group

BIOGEOCHEMIST

Assistant Professor of Biogeochemistry, 9-month, tenure-track position at Univ. Calif. Berkeley, available July 1, 1995.

Applicant should have a strong background in chemistry, geology, soil science, biochemistry, biology or other related fields.

The appointee will be expected to develop a nationally-recognized research program in biogeochemistry which relates to basic controls over biogeochemical processes in terrestrial ecosystems and the ways these controls are altered by global changes in climate or land use. Emphasis may be primarily experimental or have a strong process-based modeling component.

Teaching will include participation in undergraduate courses in Environmental Problem Solving and Ecosystem Science.

Submit CV, statement or research interests, copies of transcripts, and names and addresses of four references to:

Chair, Biogeochemist Search Committee
ESPM-Division of Ecosystem Sciences
108 Hilgard Hall
University of California
Berkeley, CA 94720-3110

Applications must be received by November 15, 1994.

For more information and full position description call (510) 642-2210.

The University of California is an Equal Opportunity, Affirmative Action Employer

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CONSERVATION BIOLOGIST

Assistant Professor of Conservation Biology, 9-month, tenure-track position, Univ. Calif., Berkeley, available July 1, 1995.

Ph.D. in biology, wildlife biology, ecology, zoology, or other related fields.

Expertise to include terrestrial vertebrate wildlife biology, with preference given to avian ecology. Research emphasis may include the design of nature reserves, minimum viable population analysis, or other areas of importance in conservation biology.

Teaching will include participation in undergraduate courses in Conservation Biology and Wildlife Management.

Submit CV, statement of research interests, copies of transcripts, and names and addresses of four references to:

Chair, Conservation Biologist Search Committee
ESPM-Division of Ecosystem Sciences
108 Hilgard Hall
University of California
Berkeley, CA 94720-3110

Applications must be received by November 15, 1994.

For more information and full position description call (510)642-2210.

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

ASSISTANT PROFESSOR
MOLECULAR BIOLOGIST

The Department of Physiology at the University of Kentucky College of Medicine invites applications for a tenure track position at the Assistant Professor level. We seek individuals who will establish a strong research program investigating physiological functions at the molecular level and participate the department's teaching programs. To complement existing strengths, candidates studying the nervous, endocrine, renal, respiratory or cardiovascular systems will be given special consideration, although outstanding candidates in other areas will also be considered. Applicants must have a Ph.D. or M.D. and at least three years of postdoctoral experience. Interactions with other faculty within the College of Medicine, School of Biological Sciences, College of Agriculture, Sanders Brown Center on Aging, the Markey Cancer Center and the Tobacco and Health Research Institute provide a stimulating research environment and ample opportunity to collaborate with other researchers.

Applicants should send curriculum vitae, a detailed statement of past experience, future research plans and have letters from three references sent to: Dr. Phyllis M. Wise, Chair, Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY 40536-0084. Review of applications will begin on November 1, 1994.

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

ASSISTANT PROFESSOR

MGH Cancer Center

The Massachusetts General Hospital Cancer Center and Harvard Medical School have an opening for a tenure track appointment at the level of Assistant Professor. The position will be a joint appointment between the Department of Pathology at Harvard Medical School, the Department of Pathology at MGH, and the MGH Cancer Center. The successful candidate will become a member of the Biology and Biomedical Sciences Program, the recently re-organized graduate training program at Harvard Medical School. The MGH Cancer Center continues to expand its interactive basic research program, and applicants with research experience in all areas of modern biology that relate to cancer research will be considered. Candidates interested in using the genetics of Drosophila, C. elegans, or yeast to study key regulatory pathways are strongly encouraged to apply.

Applicants should hold the degree of Ph.D., M.D./Ph.D., or M.D. and should have sufficient research experience to demonstrate a strong promise of continued success. Resources are available to develop a strong program in contemporary cellular and molecular biology. Applications should include a curriculum vitae, bibliography, and brief statement of research activities. Deadline is November 1, 1994. Send completed applications and three letters of recommendation to:

Search Committee
MGH Cancer Center
Mailcode 149-7330
Building 149, 13th Street
Charlestown, MA 02129

Harvard University/Massachusetts General Hospital are Equal Opportunity/Affirmative Action Employers. Qualified women and minority group members are encouraged to apply.

Columbia University
Department of Biological Sciences
Faculty Positions

The Department of Biological Sciences of Columbia University announces the first phase of a major expansion of its faculty. Over the next two years we will appoint four new members of the faculty; positions will be at both the junior and the senior levels. If a suitable candidate applies, one senior appointment will be a Chairperson; the successful applicant will be expected to develop and implement an additional expansion. The Department currently is strong in molecular and developmental biology and in neurobiology. We wish to augment and extend these strengths through appointments in these and related fields. Substantial start up packages and well appointed and extensive laboratory space will be made available to successful candidates.

Chairperson: Applications and nominations are invited for the position of Chair. The candidate must be a recognized leader in biological research. Search Committee Chair: Martin Chalfie
Molecular Genetics, Biochemistry, Cell and Developmental Biology: Three or four positions are available; the level of appointment may be either junior or senior. Search Committee Co-Chairs: Carol Prives and Mu-ming Poo.

The deadline for applications and nominations is **November 1, 1994. Materials should be addressed to Ms. Elsa Yohannes, Department of Biological Sciences, 600 Fairchild, Columbia University, New York, NY 10027 and not to the Chair directly.** 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 as no application will be considered until the file is complete. *Columbia University is an affirmative action/equal opportunity employer.*

HARVARD MEDICAL SCHOOL
Department of Neurobiology

The Department of Neurobiology invites applications for positions at the level of Assistant Professor. Candidates must hold the degree of Ph.D. or M.D. and have a minimum of two years of postdoctoral research experience. The department's goal is to create a diverse and interactive research environment that includes individuals with expertise in molecular, cellular, physiological, and systems neuroscience. We thus encourage applications from individuals who will develop strong, independent research programs in any area of neuroscience, but who are also interested in an exchange of ideas and information among scientists taking diverse approaches to the study of nervous system development and function. We are especially interested in women and minority candidates.

Applicants should send a curriculum vitae, a brief statement of research accomplishments and plans, and the names of three individuals who might write on their behalf, before December 15, 1994 to:

Gerald D. Fischbach
Chairman
Department of Neurobiology
Harvard Medical School
220 Longwood Avenue
Boston, MA 02115

Harvard Medical School is an Equal Opportunity/Affirmative Action Employer.

The Gladstone Institute of Cardiovascular Disease, University of California, San Francisco.

Postdoctoral positions available in the labs of:

Israel F. Charo, M.D., Ph.D.: Research on the role of monocyte/macrophages in early atherosclerosis. Current projects are focused on the recently cloned receptor for monocyte chemoattractant protein 1 (MCP-1) and related receptors in the rapidly emerging family of cytokines known as the chemokines. Methodology includes expression of receptors in Xenopus oocytes and mammalian cells to examine signaling pathways and ligand binding domains, as well as the development of transgenic mice. Experience in molecular biology, signal transduction, or transgenic mice is desirable.

David A. Dichek, M.D.: Research on genetic models and gene therapy approaches to vascular disease. Projects are focused on: 1) somatic transgenic models of vascular disease; 2) the adaptation of gene transfer techniques to the prevention and treatment of arterial pathology; 3) gene regulation in vascular cells in vitro and in vivo. Methodology includes animal models, retroviral and adnoviral vector-mediated gene transfer, histopathology, analysis of recombinant and endogenous gene expression. Experience with animal models of vascular disease and/or analysis of gene expression is desirable.

Thomas L. Innerarity, Ph.D.: Two positions: Study the molecular mechanism and physiology of apoB RNA editing. This would involve the characterization of the recently developed transgenic mice expressing apoB mRNA editing activity. The second position will use transgenic animals to investigate the genetic disorder familial defective apoB100 and the mutations of apoB100 that disrupt LDL binding to the LDL receptor.

Stephen G. Young, M.D.: Research on the structure and function of apolipoprotein B (apo B). Characterization of recently developed transgenic mice expressing large amounts of human apo B, generation of mice with targeted mutations in the apo B gene, and investigation of the molecular mechanism of hypobetalipoproteinemia. Experience with transgenic mice and/or molecular biology techniques is desirable.

Candidates should possess an M.D. or Ph.D. in molecular biology or biochemistry. Competitive salary and benefits. Send C.V. and names of three references to: Postdoctoral Recruitment; Gladstone Institute of Cardiovascular Disease, UCSF; P.O. Box 419100; SF, CA 94141-9100. *AA/EOE.*

MOLECULAR GENETICS AND GENE THERAPY
Postdoctoral Research Opportunities
at the University of Iowa

Postdoctoral research opportunities in molecular medicine are available in the new Eckstein Medical Research Building at the University of Iowa to study the molecular genetics and gene therapy of human diseases. Applicants should have a Ph.D. and a strong background in either molecular biology, cell biology or genetics. For prompt consideration, send letter of application, curriculum vitae, reprints and names of three references.

Kevin Campbell - Molecular studies of dystroglycan and its role in muscular dystrophy; gene therapy for autosomal recessive muscular dystrophy (kevin-campbell@uiowa.edu FAX: 319-335-6957).

Beverly L. Davidson - Gene therapy for metabolic central nervous system diseases including Lesch-Nyhan disease and lysosomal storage disorders (MPS VII). Molecular studies and pathophysiology of Lesch-Nyhan syndrome (beverly-davidson@blue.weeg.uiowa.edu FAX: 319-335-7623).

John Donelson - Molecular mechanisms responsible for immune evasion by parasites that cause various tropical diseases such as sleeping sickness, river blindness and Chagas' disease (jedonels@vaxa.weeg.uiowa.edu FAX: 319-335-6764).

Gary Koretzky - Signal transduction in human lymphocytes, relationship between protein tyrosine phosphatases and protein tyrosine kinases in receptor signaling (gary-koretzky@uiowa.edu FAX: 319-335-6887).

Jeffrey Murray - Positional cloning and molecular genetic epidemiologic approaches to human craniofacial defects and common trait variation (jeff-murray@uiowa.edu FAX: 319-335-6970).

Val Sheffield - Positional cloning and molecular study of human genetic disease loci involved in a variety of disorders including hereditary blindness, obesity and hypertension (val-sheffield@uiowa.edu FAX: 319-335-3347).

Michael Welsh - Structure, cell biology, and mechanisms of disease involving CFTR Cl^- channels and Na^+ channels (ENaC); gene therapy for cystic fibrosis and other lung diseases (mjwelsh@blue.weeg.uiowa.edu FAX: 319-335-7623).

Eckstein Medical Research Building
The University of Iowa College of Medicine
Iowa City, IA 52242

Iowa City is a safe and affordable college community with many cultural amenities, and is within easy driving distance of Chicago, St. Louis, and Minneapolis/St. Paul.

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

Cadus Pharmaceutical Corporation is a rapidly growing biopharmaceutical company pioneering the discovery of drugs which regulate G protein-mediated signalling pathways in the areas of inflammation, cardiovascular and neurological disorders. We presently seek highly motivated scientists with a proven track record at all levels to accelerate the development of our yeast based screening programs.

SCIENTISTS

TARGET DRIVEN TO SUCCESS

Receptor Biochemist:

Ph.D. level scientist with 5-7 years experience in the area of biology and biochemistry of transmembrane receptors. Training in pharmacology and receptor biochemistry is essential; experience in molecular biology is preferred. Strong management and communication skills (verbal and written) required. ***Job code: S-RB***

Receptor cDNA Cloning:

Ph.D. level scientist with minumum 4 years post-graduate experience and proven track record, to participate in efforts to identify and clone novel G-coupled signal transduction components. Specific expertise in cDNA cloning and expression technologies essential. ***Job code: S-RC***

Cell Biologist:

Ph.D. level scientist with minimum 4 years experience in studies on the cellular basis of receptor mediated signal transduction in mammalian systems. Training in molecular biology is essential; experience in assay development is preferred. Strong verbal and written communication skills required. ***Job code: S-CB***

RESEARCH SCIENTIST DNA Sequencing:

BS/MS with minimum 3 years experience with automated and manual DNA sequencing systems. Strong management and communication skills required. Will coordinate and manage DNA sequencing facility. ***Job code: S-DNA***

ASSOCIATE RESEARCH SCIENTISTS

Biochemistry:

BS/MS level scientist with minimum 3 years experience in protein analysis and biochemistry. Experience in Western blot, ligand binding and cellular localization analyses is preferred. ***Job code: S-B***

Yeast Genetics:

BS/MS level scientist with minimum 2 years experience in yeast genetics and/or molecular biology to aid in the development and adaptation of novel yeast strains to high throughput screening format. ***Job code: S-YG***

Molecular Biology:

BS/MS level scientist with minimum 2 years laboratory experience in molecular biology. Expertise in DNA cloning and gene expression (yeast and mammalian) is essential, with expertise in protein analysis preferred. ***Job code: S-MB***

Screening:

BS level scientist with experience in the design or development of high throughput screens, operation of BioMek or other robotic systems and/or management of compound libraries. ***Job code: S-S***

Cadus offers competitive salaries and benefits as well as excellent opportunity for career growth in a stimulating, collaborative environment. ***Send CV and a list of references to: Science Search, Cadus Pharmaceutical Corporation, 180 Varick Street, 9th floor, New York, NY 10014. Please indicate job code on envelope.*** *Cadus is an equal opportunity employer.*

CADUS
PHARMACEUTICAL CORPORATION

POSTDOCTORAL SCIENTIST

Molecular Genetics

SmithKline Beecham Pharmaceuticals, a world leader in pharmaceutical research, has a challenging opportunity for a postdoctoral scientist to join the staff of the Department of Molecular Genetics. As a postdoctoral scientist, the selected candidate will join a research team studying the differential expression of genes in normal and diseased tissues. The research project will involve the identification, cloning and functional characterization of novel genes related to cardiovascular physiology and diseases.

Candidates should have a recent Ph.D. in Molecular Biology or related biological science and have a strong background in recombinant DNA techniques, including gene cloning and gene expression. The candidate should have a proven record of scientific achievement as evidenced by publications in peer-reviewed journals, have good communications skills and a desire to work within a multidisciplinary team.

Our state-of-the-art research facility is located in suburban Philadelphia. We offer a competitive compensation/ benefits package and a stimulating team environment. For confidential consideration, send your resume to: SmithKline Beecham Pharmaceuticals, Employment Administrator, Dept. H0244, P.O. Box401, Conshohocken, PA 19428. We are an Equal Opportunity Employer, M/F/D/V.

SB
SmithKline Beecham
Pharmaceuticals

Challenging the natural limits.

FREEPORT-McMORAN CHAIR IN ENVIRONMENTAL MODELING

The University of New Orleans invites applications for the Freeport-McMoran Chair in Environmental Modeling.

The University of New Orleans is the comprehensive urban university of the LSU System, with 15,500 students in six colleges: Business Administration, Education, Engineering, Liberal Arts, Sciences and Urban Studies. The University offers bachelor degrees in 56 areas, Master's degrees in 43, and Doctorates in 13. A growing emphasis on scholarly research is exemplified by increases in contract and grant funding and the encouragement of the transfer of technology for the benefit of society.

The holder of the Chair of Environmental Modeling is expected to provide innovative and dynamic leadership in the Freeport-McMoRan Environmental Modeling Center and in the University. He or she should have an international reputation in a field of expertise, the ability to organize research teams for multidisciplinary projects and to direct M.S. and Ph.D. students, an international perspective on trends in engineering, science and environmental research, and a proven record of obtaining external funding, with an emphasis on real-world systems.

Candidates must qualify for tenure as a full professor in one or more of the departments of the College of Engineering and/or the College of Sciences. Possible areas of interest include:

Ecosystems (hydrology, watershed processes, multimedia flow and transport, food chain and aquatic biogeochemistry, environmental quality indicators);

Resource and/or Waste Management (watershed management, land use, resources development, waste load allocations, risk assessment, environmental regulations. life-cycle models);

Hydrodynamics (circulation and transport in free surface systems, sea-air interface, river mechanics and sedimentation, coastal zone processes, diagenesis);

Global Climate Change (atmospheric and oceanic circulation, atmospheric chemistry, carbon cycle);

Environmental Monitoring (inverse methods applied to electromagnetic, lidar, seismo-acoustic or satellite data, shallow subsurface geophysics).

Interested persons should write or call the Chair of the Search Committee: Professor Peter Politzer, Chair, FMI Environmental Modelling Search Committee, Department of Chemistry, University of New Orleans, New Orleans, LA 70148. Telephone: (504) 286-6850. FAX: (504) 286-6860.

The application should include curriculum vitae and the names and telephone numbers of five references. Review of applications will begin in November, 1994, but they will be accepted until the position is filled. The appointment will take effect on or after July 1, 1995, with the specific starting date to be negotiated. UNO is an equal opportunity/affirmative action employer.

The Laboratory of Behavioral Biology and Functional Toxicology is situated at the Institute of Toxicology, Swiss Federal Institute of Technology, near Zurich.

The Laboratory is concerned with research into brain mechanisms involved in attentional, learning, and memory processes, the development of animal models for psychiatric and neurological disorders, and mechanisms by which psychotropic drugs affect these behavioral processes/animal models.

The Laboratory has vacancies for three positions:

- A neurobiochemist, with experience in in-vivo microdialysis techniques (preferably in freely moving animals).
- A neuroendorinologist, with interest in hormonal manipulations, measurements of hormonal and receptor changes, associated with behavioral phenomena studied in the Laboratory.
- A neuroanatomist, who is experienced in anterograde and retrograde tracing methods, immunocytohistochemistry and a variety of staining methods, who will take part in the projects concerned with the above-mentioned areas of interest.

The positions are available for two years with a possibility for continuation. The persons applying for these positions should preferably currently be in postdoc positions. The elected person will be expected to collaborate with other members in the Laboratory and take part in teaching responsibilities of the Laboratory (including supervision of Ph.D. students). The salary will depend on age and experience. The starting date is negotiable.

Please send two copies of your CV, including the names and addresses of three references, to: Laboratory of Behavioral Biology, Institute of Toxicology, Schorenstrasse 16, CH-8603 Schwerzenbach.

BRIGHAM YOUNG UNIVERSITY
DEPARTMENT OF ZOOLOGY

The Department of Zoology will have three tenure-track positions beginning 1 September 1995. The ranks of the positions are open but will probably be filled at the Assistant Professor level. Please request an application packet before sending any documents.

ANATOMIST/PHYSIOLOGIST - The successful candidate will maintain a fundable research program; emphasis in endocrinology and/or neurophysiology at the cellular or molecular level is preferred. Teaching will include courses in anatomy and physiology. *Final date for receipt of completed application and all supporting documents: 12 October 1994.* Chair of search committee: Dr. Allan Judd, 537 WIDB, Brigham Young University, Provo, Utah 84602; voice (801) 378-3179; FAX (801) 378-7499; JUDDA@ACD1.BYU.EDU.

MOLECULAR BIOLOGIST - The successful candidate must maintain a research program which focuses on current questions in genetics, cellular biology, or developmental biology of animals or other eukaryotes with clear relevance to animals. Teaching will include participation in an undergraduate course in genetics and/or cellular biology, and development of a graduate course in molecular biology. *Final date for receipt of completed application and all supporting documents: 12 October 1994.* Chair of search committee: Dr. James Farmer, 571 WIDB, Brigham Young University, Provo, Utah 84602; voice (801) 378-2153, FAX (801) 378-7499; FARMER@YVAX.BYU.EDU.

POPULATION GENETICS - The successful candidate must maintain a research program in population or conservation genetics of natural populations of animals, and have expertise in any combination of the following: theoretical population genetics, quantitative genetics, and the use of molecular markers in population biology. Teaching will include participation in undergraduate courses in evolution, conservation biology, or environmental biology, and development of a graduate course in population genetics. *Final date for receipt of completed application and all supporting documents: 1 November 1994.* Chair of search committee: Dr. Jack W. Sites, Jr., 151 WIDB, Brigham Young University, Provo, Utah 84602; voice (801) 378-2279; FAX (801) 378-7499; SITESJ@ACD1.BYU.EDU.

BYU is owned and operated by the Church of Jesus Christ of Latter-day Saints (Mormon, or LDS), and all university employees must maintain standards of behavior consistent with the values of the sponsoring institution. BYU is an Equal Opportunity Employer under the provisions of that act which apply to religious organizations, and preference is given to qualified candidates who are members of the sponsoring church.

ASSOCIATE BIOCHEMIST

DowElanco, a leading company in the development of innovative products for crop protection, has an immediate opening for an insect biochemist/pharmacologist. The successful candidate will participate in multidisciplinary teams for evaluating biochemical modes of action of novel chemistries. The position will involve the use of skills in biochemistry, cell biology, neuroscience and pharmacology to study various insect receptor-based systems. The individual will also be responsible for maintaining laboratory facilities as well as conducting mechanism-based screens.

We seek an individual with a B.S. or M.S. degree and a minimum of two years of laboratory experience. Laboratory experience in receptor binding techniques preferred. Computer experience is required.

Send a resume by October 1, 1994 to: Kathy McIntyre, Dept. DIM-1, DowElanco, 9330 Zionsville Road, Indianapolis, IN 46268-1054. An Equal Opportunity Employer.

DowElanco

SCIENCE ADMINISTRATOR

Regeneron Pharmaceuticals, Inc. is at the forefront of research in the use of neuronal growth proteins for the treatment of degenerative and traumatic neurological disorders. Currently, we are seeking a highly effective Administrator to assume a central role in this major project.

Working closely with members of our senior scientific staff and legal team, this newly created position is responsible for coordinating collaborations with Investigators at key Universities, Government Laboratories and Corporations. Duties include directing the flow of information and materials, as well as maintaining follow-up records. Protecting the company's intellectual property is a top priority.

Qualified candidates will have a Master's degree, or a Bachelor's degree with laboratory experience in science with a background in molecular or cellular biology and/or neurobiology. Excellent interpersonal and communication skills, and the ability to perform with a sense of urgency, are essential.

Our modern facility, located 20 miles north of Manhattan on a multi-acre wooded campus in Westchester county provides a supportive, highly collegial setting for decisive career development. As a visible member of our staff you will receive a competitive salary and attractive benefits. For consideration send resume and salary history in confidence to: Human Resources, SA, Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, NY 10591-6706.

PROFESSOR OF BIOCHEMISTRY The Department of Biochemistry at the University of Minnesota Medical School is seeking applicants for a senior level NMR scientist specializing in the study of the structure of proteins and/or nucleic acids. Instrumentation for the use of multidimensional NMR methods will be available. Opportunities include interaction with faculty working in molecular biology, bio-inorganic chemistry, physical biochemistry and structural biology. There is an existing macromolecular crystallography laboratory with state of the art data collection, and computational and networking facilities. The University of Minnesota has onsite supercomputer systems available for research projects. A joint and well established graduate training program exists between the biochemistry departments of the Medical School and the College of Biological Sciences.

The candidate should have a well established research program in the area of NMR as applied to biological research problems, must demonstrate the ability to collaborate with other scientists in the area of structural biology and be able to maintain a high level of research activity, including organizing and seeking funds for expanding programs and instrumentation. She/he will be expected to contribute to the graduate teaching program by participating in core courses on spectroscopy and tutorials with advanced students.

The minimum requirements for the position should be a Ph.D. in a biologically related field, evidence of leadership in the field of NMR, a significant record of publication of NMR research in biology, and be nationally recognized by his/her peers as a leader in the field of NMR spectroscopy.

Employment will be at the full professor level with tenure. The start date for this position will be January 1, 1995. Please send a letter of application, curriculum vitae, three letters of recommendation and a few representative publications by October 15, 1994. The material should be sent to the following address: Dr. Leonard Banaszak, Chair Search Committee, Department of Biochemistry, 4-225 Millard Hall, 435 Delaware St. SE, Mpls., MN 55455.

The University of Minnesota is an equal opportunity educator and employer.

POSITIONS OPEN

MARINE BIOGEOCHEMISTRY POSITION

Florida International University, the State University of Florida at Miami, seeks one position for an **ASSISTANT SCHOLAR SCIENTIST** in the field of Marine Biogeochemistry. A Ph.D. and experience in marine inorganic chemistry and/or nutrient cycling is required. Preference will be given to applicants with experience in: surface water nutrient chemistry, sample collection, interpretation of long-term database information, database management and demonstrated ability in research. Responsibilities include: coordination of sampling and data collection for a large marine and estuarine water quality monitoring network in the Florida Keys and adjacent waters. Applicants will be expected to establish an externally funded research program focusing on South Florida ecosystems. To apply, send curriculum vitae, outline of long-term research plans, and names of three references to: **Dr. Ronald Jones, Director, Southeast Environmental Research Program (SERP), Florida International University, University Park, Miami, FL 33199.** Applications must be postmarked on or before September 22, 1994. *Florida International University is an Affirmative Action/Equal Access/Equal Opportunity Employer.*

DEMI Vehicle Systems, Inc., a newly formed, start-up company, has licensed an exciting and very promising battery technology which is ideally suited as a power source for electric vehicles. A car powered with this battery has gone 250 miles on a single charge. The company has one or more financially rewarding positions open for **SCIENTISTS** to conduct research and development with a goal of further improving battery performance. Applicants must have working knowledge of the fundamental electrochemistry of batteries. A Ph.D. is required. Send curriculum vitae, a brief description of research accomplishments with reprints of publications, and names of three references to: **Vice President, Human Resources, DEMI Vehicle Systems, Inc., 34157 Autry, Livonia, MI 48150.**

RESEARCH ASSOCIATE/POSTDOCTORAL POSITION available to study the biochemical-molecular basis of DNA repair and mutation in mammalian cells using various repair deficient mutants. Applicants should have a strong background in biochemistry and molecular biology. 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 names of three references to: **Thomas D. Stamato, Ph.D., The Lankenau Medical Research Center, 100 Lancaster Avenue, Wynnewood, PA 19096,** or call **610-645-2888.** *Equal Opportunity Employer/Male/Female/Disabled/Veterans.*

FISHERIES BIOLOGIST

Manomet Observatory, an environmental research institute, seeks a **FISHERIES BIOLOGIST** to serve as the Principal Investigator conducting research on fishing effort and by-catch in commercial fisheries in the northeastern United States. Using an extensive observer database, research will investigate the effects of exploitation and/or various fishing technologies on single and multi-species fisheries. To apply, contact: **Marine Program, Manomet Observatory, P.O. Box 1770, Manomet, MA 02345. FAX: 508-224-9220.** *Manomet Observatory is an Equal Opportunity/Affirmative Action Employer.*

CLINICAL INVESTIGATOR
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If you would like more information about this exciting opportunity, please send your curriculum vitae to: **Jules S. Ehrenberg, Consultant, E.J. Michaels, Ltd., 1865 Palmer Avenue, Larchmont, NY 10538 or call 914-833-1700 or toll free outside the New York Metropolitan area at 1-800-333-2999 or FAX: 914-833-1711.**

A **POSTDOCTORAL POSITION** in the Department of Pediatrics is available for research into the molecular genetic basis of psoriasis and psoriatic arthritis. Send curriculum vitae with names and phone numbers of three references to: **Dr. Anne Bowcock, Department of Pediatrics, University of Texas Southwestern Medical Center at Dallas, 6000 Harry Hines Boulevard, Dallas, TX 75235-8591.**

University of Texas Southwestern is an Equal Opportunity Employer.

POSITIONS OPEN

UNIVERSITY OF MICHIGAN
Retinal Dystrophy Center

POSTDOCTORAL POSITION available immediately in human ocular genetics with an NIH-funded group cloning and studying X-chromosome retinal dystrophy genes. Project involves isolating novel genes as disease candidates, using physical mapping, YAC cloning, and exon trapping. Applicants with strong background in some of these techniques are invited to send a curriculum vitae, names of references (with telephone/FAX number) and a brief statement of research experience to: **Paul Sieving, M.D., Ph.D., Director, Retinal Dystrophy Center, Kellogg Eye Center, 1000 Wall Street, Ann Arbor, MI 48105, USA. FAX: 313-936-7231.** (*A nondiscriminatory, Equal Opportunity Employer.*)

POSTDOCTORAL FELLOW/
RESEARCH ASSOCIATE

Two **POSITIONS** are available for studies of signal transduction and transcription regulation in a laboratory applying cutting edge biochemical and biophysical techniques. Current studies focus on transcription factor interactions, protein-induced changes in DNA structure and the regulation of transcription factor activity (see articles in *Cell,* **66**: 317; *Science,* **254**: 1210; *MCB,* **13**: 3782; *PNAS,* **91**: 7360). Applicants should have a strong background in biochemistry, molecular biology or biophysics.

Please send curriculum vitae, a summary of research interests and three letters of reference to: **Dr. Tom Kerppola, Department of Biological Chemistry, University of Michigan, MSRB II Room 4544, 1150 West Medical Center Drive, Ann Arbor, MI 48109-0659. Email: kerppola@beavis.im.med.umich.edu.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION Plant molecular biology. Characterize the role of a putative transcription factor in salt tolerance. Ph.D. with molecular biology experience required; expertise in transgenic methodology desirable. Send résumé and three reference letters by September 15, 1994, to: **Dr. Ilga Winicov, Biochemistry (330), University of Nevada, Reno, NV 89557-0014.** *Equal Opportunity/Affirmative Action Employer.*

MARKETPLACE

MARKETPLACE

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1. Daniel Cohen et al., *Cell*, 70:1059-1068.
2. Raul Cano, *Genetic Engineering News*, June 1, 1993
3. Peter Small, et.al., *New England Journal of Medicine*, 330: 1703-1709

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