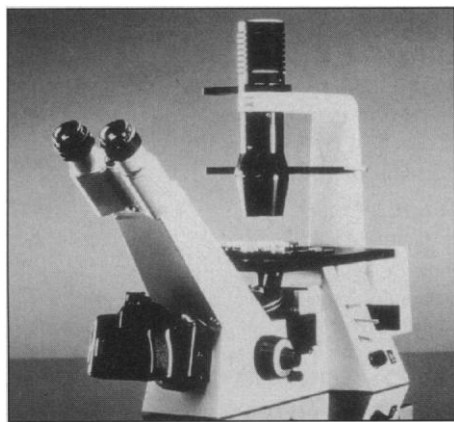


PRODUCTS & MATERIALS

Micromanipulation and Injection System

The Axiovert 25 inverted microscope can be the platform for a low-cost micromanipulation and injection system for cell injection, cellular microsurgery, and in vitro fertilization. Two new stage-mounting adapters, MNZ



13 and MNZ 131, allow the use of the full range of Narishige micromanipulators and positioners with the microscope. **Carl Zeiss.** For information call 800-356-1090 or circle 142 on the reader service card.

Crystallography Software

CaRIne crystallography software is a versatile tool for research in materials science, solid state physics, chemistry, and the earth sciences. It combines software for crystal structure drawing and display with capabilities for calculation and display of powder diffraction patterns, reciprocal lattices, and stereographic projections. Tabular data and graphics can be exported to drawing, presentation, and word-processing packages. It runs on Macintosh and Windows platforms. **ESM Software.** For information call 513-738-4773 or circle 143 on the reader service card.

Antibodies

A monoclonal antibody is available that is specific for Cre-recombinase, a 38-kD DNA recombinase derived from the P1 bacteriophage. **Berkeley Antibody Co. (BAbCO).** For information call 800-922-2226 or circle 145 on the reader service card.

BacTrace affinity-purified antibodies to bacteria enable accurate identification in assays such as microscopic analysis, microwell enzyme-linked immunosorbent assay, and rapid diagnostic systems. Antibodies to *Salmonella* (CSA-1), *Escherichia coli* 0157:H7, *Helicobacter pylori*, *Campylobacter* species, *Listeria* genus specific, *Barrelia burgdorferi*, *Borrelia* species, and *Renibacterium salmoninarum* are offered along with positive controls and complementary reagents for immunoassay development. They are available unlabeled or labeled with peroxidase, phosphatase, or fluorescein. **Kirkegaard & Perry Laboratories.** For information call 800-638-3167 or circle 144 on the reader service card.

Apoptosis Detection Kit

The ApoAlert Annexin V Apoptosis Kit allows earlier detection of apoptosis than conventional assays. It is based on the observations that phosphatidylserine (PS) translocates from the inner to the outer surface of the cell membrane within 2 hours of the onset of apoptosis and that the annexin V protein has a strong affinity for PS. With ApoAlert, apoptotic cells are easily labeled by a simple incubation with an annexin V-fluorescein conjugate. This nonenzymatic assay is performed on living cells, takes less than an hour, and allows apoptotic cells to be visualized by fluorescence microscopy or sorted by a fluorescence-activated cell sorter. **Clontech Laboratories.** For information call 800-662-2566 or circle 146 on the reader service card.

Comigrating DNA Separator

Addition of Resolver Gold to agarose gels allows separation of DNA fragments that normally comigrate but that have different base compositions. Resolver Gold is a DNA intercalating molecule that is covalently bound to a large polymer. Once it has intercalated within the DNA, the attached poly-

mer increases friction of a given molecule and hence slows its migration through an agarose gel. Intercalation occurs preferentially within A+T-rich sequence motifs of DNA. A mixture of DNAs that would normally comigrate can therefore be separated due to their differing sequences. Sequences with as little as 1% difference in A+T content can be resolved using this method. **R&D Systems Europe.** For information call 800-207-0144 or circle 147 on the reader service card.

DNA Sequence Analysis Software

A Windows-based software program enables the analysis of nucleotide, restriction enzyme and amino acid sequences, and open reading frames. The program's functions include editing and manipulation of DNA sequences; a nucleotide, restriction enzyme, and amino acid sequence search facility; identification of restriction sites and enzyme suppliers; and identification of open reading frames. Search options can use both forward and reverse complementary directions and can be based on the entire sequence or a selected protein. **Amersham International.** For information call 800-323-9750 or circle 148 on the reader service card.

Literature

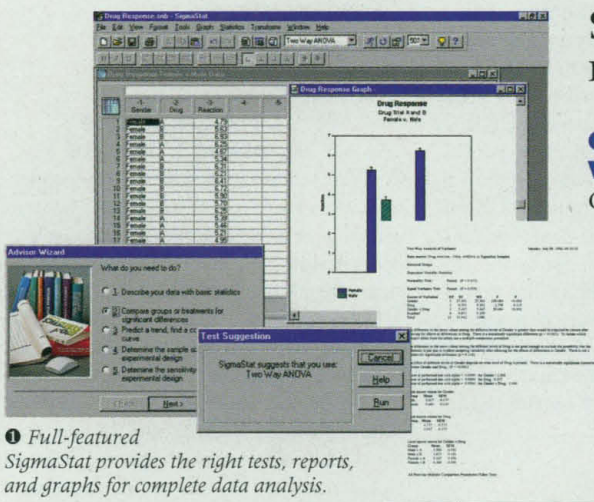
Diffraction Grating Handbook covers such topics as the history of grating development, the physics of diffraction gratings, ruled gratings and ruling engines, interference (holographic) gratings, the imaging properties of grating systems, efficiency characteristics of gratings, plane- and concave-grating mounts, and the selection of dispersive systems. **Richardson Grating Laboratory.** For information call 716-262-1331 or circle 149 on the reader service card.

Micro Cryo-Trap Adds Cryo-Cooling Capabilities to Your GC describes a device that mounts inside the gas chromatograph (GC) oven just under the GC injection port of any model. It can be used to trap volatiles from large gas volumes injected into the GC via purge and trap, thermal desorption, headspace, or direct gas injection techniques. **Scientific Instrument Services.** For information call 908-788-5550 or circle 150 on the reader service card.

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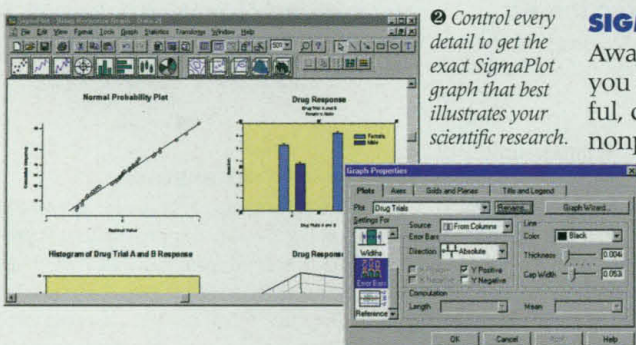
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– Barry Simon, Ph.D. **Desktop Engineering Magazine**, Sept. '96
Comparative review of 11 scientific graphics packages.

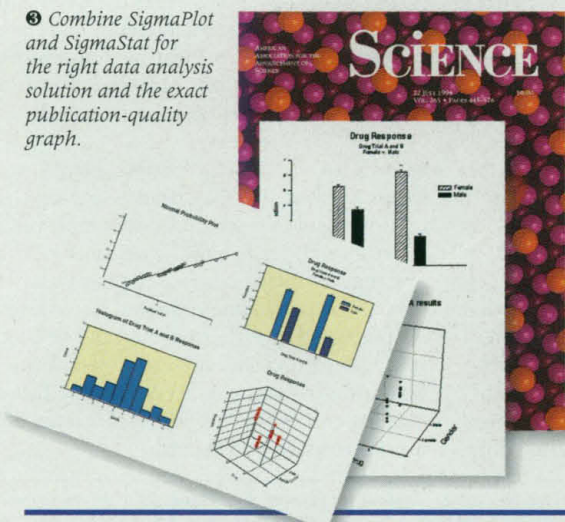


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SCIENTIFIC SOFTWARE



“Nowadays, most researchers don’t come to see statisticians for basic science, because the statistical software has gotten to a level where it’s not very difficult for a bench chemist or researcher to run a standard analysis and get results.”

“A scientist should look for breadth in a statistical program in terms of range of procedures, tests and analyses,” explains John Barnard, Assistant Professor in the Statistics Department at Harvard University. “A statistician would be interested in how easy it is to extend a program, to write new or novel, non-standard applications. If someone publishes a new statistical methodology in a journal, researchers may want to implement that methodology in their package, but if they can’t add functions to do that, they may be stuck.”

Bench scientists should look for accuracy of results and interpretability of the output. “How is the output formatted?” Barnard would ask. “Does it give you useful graphs? Does it try to help you interpret the output? How easy is it to control the output—to write it to a file, to format it in a particular way, or perhaps to tell the software not to give you some aspects of the output?”

Other considerations would be: “How good are the graphics? What are the range of plots the program offers? How easy is it to add data to a plot? Are the plots labeled well? Can the software handle interactive graphics—can I look at a plot and select points and manipulate them?”

At the same time, bench scientists need data analysis programs that can be used with relative ease, adds Barnard. These pro-

grams should interface well with the kinds of data entry packages statisticians and scientists use, and they should offer the ability to produce high-quality presentation output.

In many cases, researchers will need to turn to expert statisticians to conduct sophisticated analyses of their data. However, today, an extensive array of statistical software tools exist to help researchers and scientists perform analyses of data. The increase in the speed of desktop computing has made a great deal of statistical methodology—for example, simulation-based methodology—readily accessible to most researchers.

Scientists can do such things as recreate an entire experiment many times over using simulation methods, both for design and analysis of the study. Instead of having one study of 100 patients, a researcher can randomly draw hundreds of different trials of 100 patients out of that sample, which can be used to gain insight on the distribution of the variables of interest. This allows one to look at things in many different ways very quickly. That was impossible or impractical when desktop computers were slow.

Standard statistical packages cover data acquisition all the way to data presentation, and all the points in between. Typically, after a scientist collects data in the lab from an experiment, the initial analysis involves getting the numbers in a form where they can be analyzed by one or several statistical tests or measures. That may mean doing basic data transformations, such as rotations, rankings, standardizations, or distribution fittings.

The next step often involves exploratory data analysis. This is where the researcher may make use of a variety of techniques, often data visualization or graphing techniques, to discover hidden relationships, such as patterns or clusters, in the

The companies in this article were selected at random from a wide range of software developers. Inclusion in this article is not based on any rating system and does not imply that a company’s products or services are superior to other software developers.

STATISTICAL SOFTWARE

data set. The researcher will determine which variables are most important in the analysis, what interaction effects may be present, and whether the data set meets the assumptions inherent in a particular statistical analysis. Once the scientist has a feel for what is there, he or she will usually want to apply deeper statistics to ascertain values for R-squared, correlation coefficients, and confidence intervals. Finally, the results must be packaged and put into a form appropriate for a presentation or publication in a scientific journal.

Often what a researcher will do in order to get a study published is write a simple program in a language like C or Fortran — something very rudimentary to analyze the one example they used in the paper they're trying to get published. But as statistical packages get more sophisticated and robust — with many hundreds of procedures — the chances that an existing software package may be able to accommodate the methodology a researcher needs are getting better all the time.

Some of the companies producing statistical software packages for the scientific community include StatSoft, Abacus Concepts, SPSS, Jandel Scientific Software, Graph Pad, Stat-Ease, NCSS, and Domain Solutions.

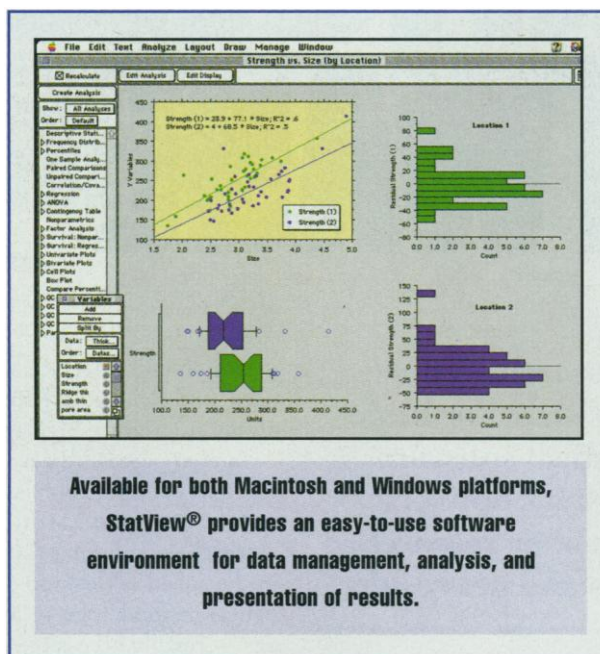


STATISTICA, A DATA ANALYSIS AND GRAPHING SYSTEM DEVELOPED BY STATSOFT, offers a breadth of functionality, including comprehensive implementations of data exploratory techniques with brushing, multi-way tables with banners, nonparametrics, distribution fitting, multiple regression, general nonlinear estimation, stepwise-discriminant analysis, log-linear analysis, confirmatory and explanatory factor analysis, and many other statistical functions as well as an extensive array of graphing and drawing tools.

Dean Westervelt, a technician and marketing representative at StatSoft, explains that Statistica's dynamic linking is an

important feature that makes it easy for researchers to work interactively — to move seamlessly from data to graphical output and back again.

"When you're running basic statistics," explains Westervelt, "you plot some cases on two variables to get a scatter plot on



the screen. Then, you may want to check out just a subset of those cases. With Statistica you can select a subset or delete anything from the analysis and have it automatically update in the scatter plot. All graphs are automatically updated when you change you the data."

Rather than having to return to the data set and re-create the graph, the system "will ask you if you want to automatically update the graph right there," adds Westervelt. "When I was in graduate school, you'd have to respecify everything and then rerun the entire analysis to get the modified graph. With Statistica, you can even use the resulting scroll sheet and save it as a data file."

Statistica has traditionally been used by academic researchers, but recently StatSoft has begun focusing more on industrial applications of its software. It has added a statistical process control package called Statisti-

ca/QC (for quality control), which features quality control charts compatible with real-time data acquisition systems, process capability analysis, sampling plans, and a selection of experimental design methods.



STATVIEW, WHICH ABACUS CONCEPTS BEGAN IN 1985, was the first statistical software package to be designed from the ground up with a graphical interface. Dan Feldman, a mathematician and co-founder, along with Jim Gagnon, of Abacus Concepts, explains that because the package was never command-line driven, "its distinguishing feature is ease of use — but we really mean it." The package is designed for researchers who need to do statistical analysis as a portion of their work but whose main goal is a presentation or getting published. StatView combines spreadsheets, comprehensive statistics, survival analysis, quality control, presentation graphing, data management, and powerful drawing tools.

StatView also features "dynamically linked" data. Changes to parameters are directly recalculated. "If you're looking at the relationship between two variables, using a histogram and a regression," explains Feldman, "and if you want to go back and eliminate some outlying data — ie, exclude a couple of patients from the study — the software will automatically recalculate your histogram and regression without having to restart the process."

The ability to retrace your steps is crucial, he adds. "Imagine using a word processor that forces you to print everything out each time because once you quit your program, your document will be lost. That's how old-time statistical analysis software used to work."

With StatView, when you save a particular data analysis, all the statistics, graphs, and annotations associated with that

STATISTICA

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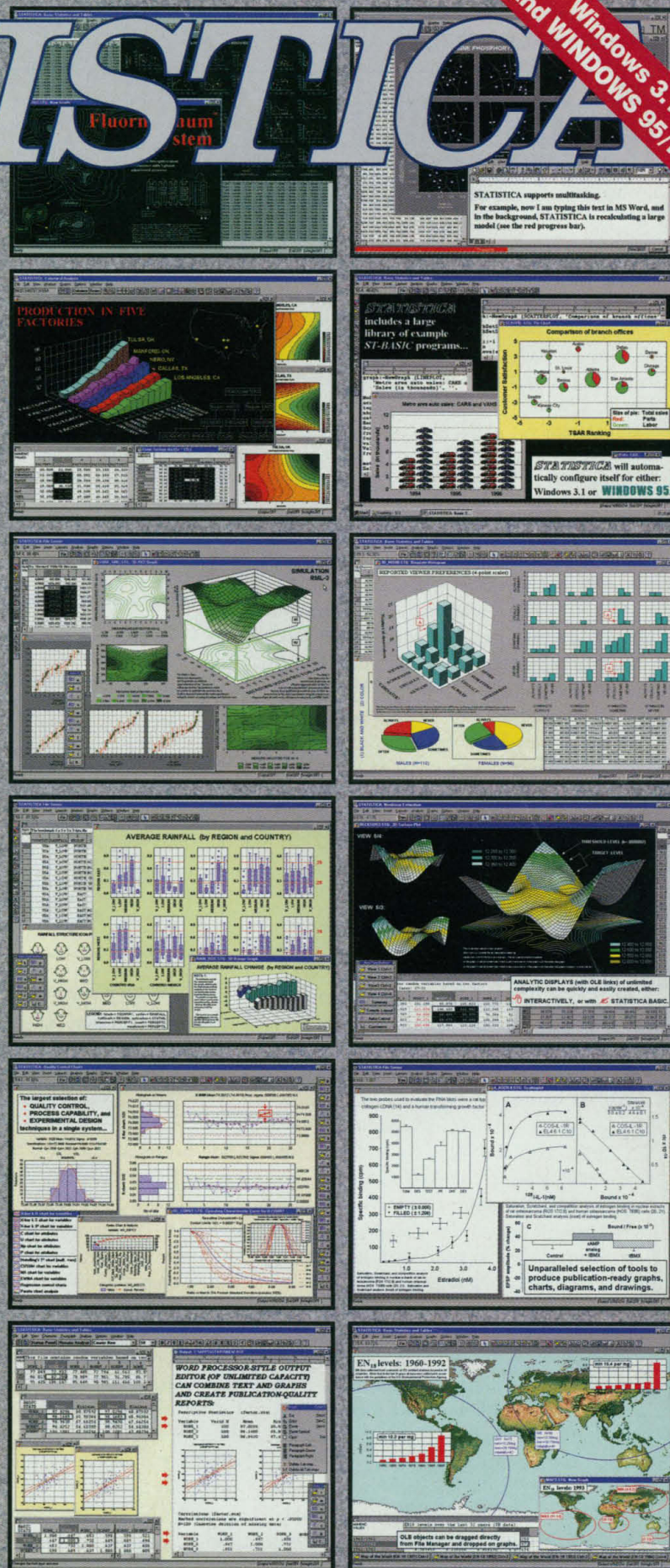


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analysis are also saved and can be reopened and modified at any time. Users can also save results as a template file for further analysis.

"Suppose you have a poster presentation," explains Feldman, "and you get that done a week beforehand because you want to have your charts, tables and everything set up right. Two days before the conference a new set of data comes in. At one time you would have had no choice but to present old data. If you knew you had a hot thing to present, you could talk about it, but you didn't have enough time to do your full presentation on it. But with StatView you can just update your data, and everything you did for your poster presentation — all your analysis and graphical output and enhancements — will be updated automatically, using the new data. Think of it as a 'style sheet' in a word processor."

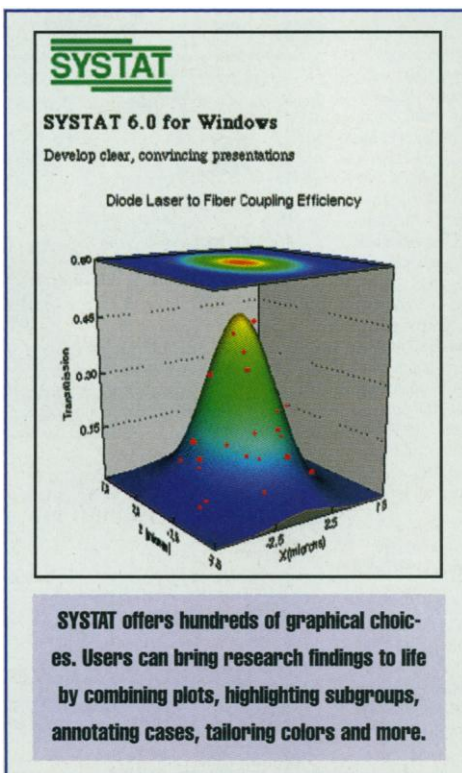


JOEL YORK, DIRECTOR OF MARKETING FOR SCIENCE PRODUCTS AT SPSS, explains that the three major statistical packages SPSS offers — SPSS, SYSTAT, and SPSS Diamond — cover a wide range of applications, ranging from pure science to business marketing. The main program for the scientific community is SYSTAT, a package that integrates statistics, graphics, and data management. "With SYSTAT," explains York, "you can handle basic analyses such as ANOVA or regression within the general linear model, but you can also take it three steps further to very deep statistical stuff, such as working with covariates, hypothesis testing, Gauss-Newton exact derivatives, maximum likelihood methods, and robust estimators."

The package offers an extensive selection of analytic statistical graphics, adds York, with a high level of interactivity for doing exploratory data analysis. Users can rotate graphs in real time, interactively handle log and power transformations, change confidence intervals, and immediately see how the confidence

bands change interactively on the regression line. Additionally, SYSTAT offers many different types of graphs that are specific to various applications, along with a variety of smoothing techniques.

"The graphics help you to explore your data and allow you to produce publication and presentation quality graphics in full color. If you're doing a



slide presentation for a seminar, you can cut and paste directly into programs like Powerpoint," says York.

SPSS Diamond is a specialized graphics and visualization tool that helps researchers gain greater insight into complex data. "It takes the interactivity of exploratory data analysis to the next level," explains York. SPSS Diamond features sophisticated techniques for brushing graphs and highlighting data with color. For example, working with a parallel coordinate plot, a user can grab a node off the plot and "lasso" it with the mouse. The user can then highlight that node with a particular

color that will flow through the rest of the plot, possibly revealing how variables are related. "Some of the best applications for Diamond involve time series or multi-variables that you expect to be correlated," explains York. "What you're looking for are underlying patterns or threads that tie your data together."



SIGMASTAT AND SIGMAPLOT, TWO STATISTICAL SOFTWARE PACKAGES FROM JANDEL SCIENTIFIC SOFTWARE, work well in tandem, explains John Foster, a product line manager at Jandel. SigmaStat advisory statistical software handles many statistical procedures, including analysis of variance, regression, nonparametric analyses, rates and proportion, and correlation analyses. SigmaPlot has an extensive range of graphing options in 2D and 3D, including grouped bar, polar, contour, and multiple 3D graphs.

Foster says that SigmaStat was designed to "provide researchers with a package that had a complete set of statistical tests and that would take care of the underlying principles of statistics." The program automatically handles missing data, checks the assumptions that underlie tests, handles 'messy' data, and recommends the appropriate test to run.

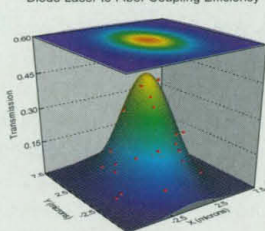
"It has an advisor — like a wizard — that takes the scientist through a series of questions to help select the best test for the data," adds Foster. "When it runs this test, it checks for violations — things like whether it should be parametric vs. nonparametric, or whether the distribution of data is correct. For example, if a researcher wanted to run a one-way repeated measures ANOVA comparing several replicates of a test and looking for a significant difference in subsequent trials, the program would automatically check that the data was normally distributed — one of the underlying assumptions."

At the end, the program generates an appropriate graph for the particular test that was run. And, finally, it produces an

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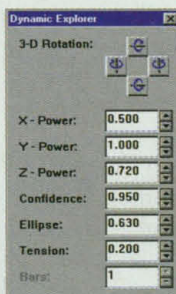
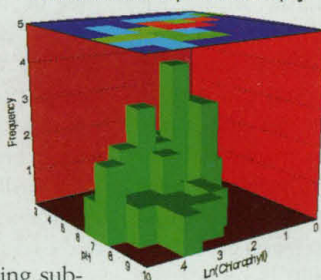
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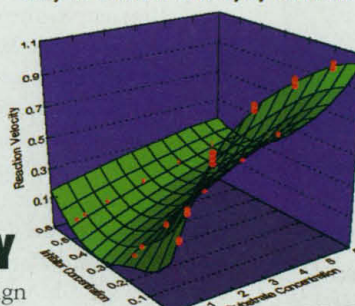
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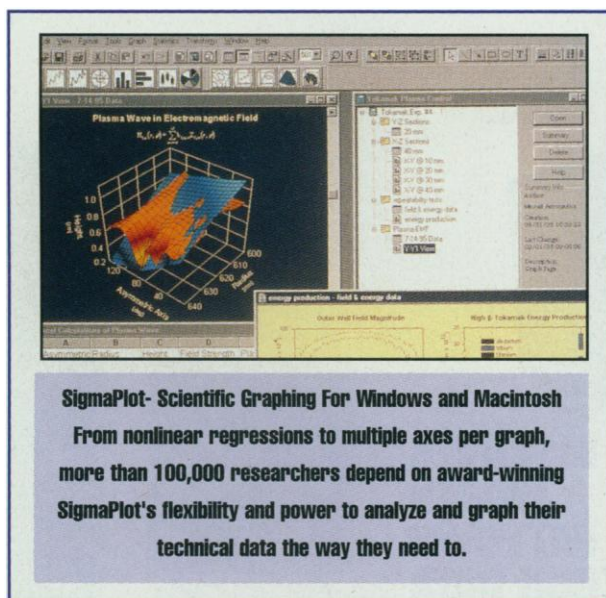
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explanation of results in English: a text document that contains tables, graphs, results, a description of the test that ran, and whether the results were statistically significant."

At this point, explains Foster, the user may want to run SigmaPlot to customize the graphs produced by SigmaStat. SigmaPlot handles non-linear curve-fitting, multiple 3D intersecting graphs and mathematical transforms. "The combination of the two gives you an easy-to-use and intuitive statistical software package with powerful graphics ability," Foster adds.



IN THE EARLY 1980S, HARVEY MOTULSKY, M.D., THE FOUNDER OF GRAPHPAD Software, Inc. was pursuing post-doc work as a pharmacologist researching receptor binding. "I have horrible handwriting, and I hate drawing things by hand," explained Motulsky. In receptor analysis the right way to analyze the data is by curve-fitting, not linear regression. "But curve-fitting was hard to get to then," Motulsky added. "So I wrote a program to make it easier and also to do plain old graphing." At the time, he recalled, there were only a few graphics programs

around, mostly for business applications. But scientists need things like error bars, log axes, and Greek letters, as well as curve-fitting. So working with an advisory committee of practicing biomedical scientists from academia and industry, Motulsky developed a series of statistical programs. GraphPad's newest package, GraphPad Prism, combines graphing, curve-fitting and statistics.

"Most scientists don't know much about statistics," explains Motulsky. "So Prism does a lot of teaching. When choosing an analysis, you can press a button and get information about the choices such as why you might want to do a paired vs. unpaired or parametric vs. nonparametric test. Once you get the answers, you can press an "interpret" button, and it will tell you what R-squared or a P value means and what assumptions are underlying the analysis. With Prism, a basic scientist can review basic statistics and analyze her own data, without having to defer to an expert."

Motulsky stresses the importance of having data, analysis, and output "hot linked." In a spreadsheet program such as Excel, if you put in a formula and then change a number, Excel recalculates the formula instantly. Similarly, in a scientific graphics program, when you do an analysis — say you do a transformation or a curve-fit or make a graph — if you then change the data, it is helpful if the graph, as well as the analysis that produced that graph, is updated immediately.

Researchers often repeat the same experiment under slightly different conditions. Say you first did a log transform, then normalized, then did a fit. With Prism, explains Motulsky, "you just go to your data table, cut out the old data, paste in the new data, click once, and

you're done. Every file becomes a template for repeated experiments, so you don't have to write a macro or batch file."

Finally, after the scientist is finished with the experiment, he or she describes the results in a notebook, and sends it off for publication. Six months later the editor asks how something was calculated. "You bring up the original file," explains Motulsky, "and because all the steps are linked, you can retrace them. All the choices you made are recorded. Without that information, the graph would still be there. But you wouldn't know where the curve came from and wouldn't be able to change the analysis options and rerun the fit."

Another feature, adds Motulsky, is Prism's ability to handle many different sets of data simultaneously. "Scientists want to compare several treatment groups," he explains. "Rather than do the analysis first for group A, then B, then C, Prism lets you enter the data side-by-side and, in one set of commands, analyze all of it: control vs. the various treatments without having to repeat the procedure over and over. If you're doing the kind of work where you're comparing several treatment groups — as many scientists do — Prism makes data analysis much more efficient."



STAT-EASE CORPORATION'S DESIGN OF EXPERIMENT SOFTWARE, Design-Ease and Design-Expert, are tools created to help scientists, engineers, and researchers develop good mathematical models of their processes, to predict what will happen as a function of the factors they can manipulate, explains Mark Anderson, a process engineer and vice president of Stat-Ease. "Design-Expert has become quite sophisticated for drawing what's called a 'response surface mapping' of what you want to manipulate and measure," explains Anderson. "These maps will help you find where the peak of performance lies."

A common example would be a chemical reaction where a researcher is looking at time, temperature, and pressure. "What Design-Expert will do is help you lay out

STATISTICAL SOFTWARE

a test plan where you systematically change each of the factors to different levels, perform the experiment according to plan, then using least-square regression techniques (ideally in randomized order to make it a good statistical test) fit various types of models, and pick the equation that works the best."

From that equation the software allows you to draw maps or contour plots that show what the predicted values will be and how they will behave as you vary the values from low to high. "The contour graphs can be manipulated using your mouse to pull contours around and to display what the predicted response will be, what the prediction interval is, and what the actual coordinates are for that point." Then you can make a 3D representation — which can be rotated — to visualize the surface, with predictions below that of the 2D contours. "You can click on any spot on the 2D contour map, and at that location you can display what the predicted response is," explains Anderson. "Design-Expert is used primarily by industrial researchers who are under a strong mandate to improve the quality and efficiencies of their products and processes."

"But we're seeing more and more use in academic applications," he adds, "particularly where people are trying to get a bet-

ter understanding and develop more of a profound knowledge of how various factors interact with each other to create the response they're trying to measure."

Bob Krahnke, a research chemist in the sealants' science and technology group at Dow Corning, uses Stat-Ease software to improve formulations of compounds. "We're trying to improve the properties of our sealants and reduce the cost," he explains. The software helps Krahnke to "define the components in a formulation that are having the greatest effect on specific properties" he's interested in. "We're able to compare the properties of the formulation and discover and optimize the relationship with cost and other factors."



WHEN USERS OF NCSS STATISTICAL SOFTWARE PLACE A TECHNICAL SUPPORT CALL to the software company, the voice that comes on the line belongs to Jerry Hintze, the founder and full-time developer of NCSS. "Most people are astonished to be able to call up and get an answer from the person who wrote the program, someone who fully understands it and has a Ph.D in statistics," says Hintze. "I have a lot of customers who really appreciate the ability to call and get a direct answer, even if the answer is no."

Hintze, who began development on his program in 1981, has been adding new features and enhancements for the past 15 years. Most of that time, he has worked alone. He initially chose the name "Number Cruncher;" but it was taken, so he appended "Statistical System" to it. Hence, the acronym NCSS.

Today, NCSS software handles over 200 procedures and graphics, including analysis of variance, survival analysis, regression and correlation analysis, quality control, forecasting and time-

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StatView runs under Windows '95, Windows 3.1, Windows NT and is available for Macintosh and Power Macs. We have translated and student versions of StatView and license, academic and quantity discounts.

STATISTICAL SOFTWARE

series analysis, multivariate analysis, curve-fitting, and plotting and graphing. The typical users of this software are academic researchers and bench chemists, as opposed to expert statisticians. "Typically, they have some numbers they want to analyze," explains Hintze. "They want to get the data in the system, tell it what to analyze, get their output, and move on. They're not going to fuss with a lot of specialty functions."

"The software is also being used in a lot of introductory statistics courses," he adds. "It works well in a setting where the professor wants to spend his time talking about the interpretation of data rather than calculation formulas."

Hintze says the major strength of his package is simplicity.

"It's very straightforward," he explains. "You input your data in a straight Excel spreadsheet format, and your output comes in a word processor format — it's all tab delimited. The graphics are embedded within the text. You can import and export to about 30 different database and spreadsheet data formats."

Working alone, it's particularly important for Hintze to make sure his program and documentation manuals are easy to understand. With over ten thousand NCSS users, Hintze would have little time to get much programming done if the software needed to be heavily supported. "I try to design the documentation to minimize phone calls," he says. "If I notice that I'm getting a lot of phone calls on a certain task, then in the next edition of the manual I take extra effort to make it clear. Most people don't call until they're frustrated, so if I have to spend an hour with them, I spend an hour." Currently, Hintze is working on a new 32-bit version to take full advantage of Windows 95 and Windows NT platforms.



FOR RESEARCHERS AND ENGINEERS WORKING IN DEVELOPMENT AND MANUFACTURING, one company that offers a wide range of software tools for process optimization is Domain Solutions (formerly BBN Domain Solutions). Two packages, the RS/Series family and Cornerstone, provide integrated statistical and quality-analysis tools for manufacturing, engineering, and research applications. The software includes an array of tools for data management, modeling, statistics, curve-fitting, graphics, and report-generation. Cornerstone, a newer program that features exploratory data analysis capability is designed for a desktop environment; it integrates data access, analysis, and visualization.

"With the Cornerstone package, we wanted to start with a clean sheet of paper," explains Charlie Berger, senior product manager for Domain Solutions. "We assumed memory was cheap on the desktop. We assumed that the engineers wanted to take advantage of all the features of the analysis and that they're going to store their data in other databases." Beginning from there, Domain Solutions interviewed dozens of clients to develop a 'wish list' for the new program. The survey revealed that engineers and technical professionals involved in data analysis spent more than half their time accessing and organizing data. "They'd want to do an analysis," explained Berger, "and it would be, 'Where's the data, I've got to go find it.'"

"We created the Data Navigator to set up your data sources to point to data tables — be they in Oracle, Sybase, Excel, or wherever. We save the path to that data, and when you go to do your analysis, you go to a pick list and double-click on the data you want. It brings in an in-memory copy. Then you can do preprocessing or structured queries to format it further."

Cornerstone modules give engineers

analysis tools including regression, control charting, distribution fitting, and process capability. Cornerstone also provides graphs to view and analyze the data including box plots, contourplots, xyz scatterplots, bar graphs, and more. All views of the data are dynamically linked. Users can highlight data points in a graph and the data is automatically highlighted in all other views where it is referenced. "It makes your data analysis much less statistical feeling and much more visual and intuitive," explains Berger.



NOT LONG AGO, MANY STATISTICAL PROGRAMS SAT ON MAINFRAME COMPUTERS where they remained the exclusive purvey of statisticians. Now, researchers have access to a wide array of extremely complex statistical calculation and manipulation techniques. On any given day a scientist may need only 1% of the functionality of a statistical package, just as any given person may use only 1% of the features in a word processing program such as Microsoft Word or Word Perfect. But when a researcher needs a specific test — and some statistical tests are quite arcane — it saves a lot of time if it's already there in the program and he or she doesn't have to go out and write code from scratch.

In the near future, statistical software programs will probably have to become more integrated with databases. Database "mining" will become more important as scientific databanks continue to grow at unprecedented rates, particularly in areas such as molecular structure and protein and DNA sequence information. Institutions and pharmaceutical companies with extensive resources of molecular structural information will be investigating the activity of many compounds and drugs. Better statistical techniques and new methodologies will prove essential to this process. They will help manage the enormous amount of structural information available as well as help create a bridge capable of spanning the diverse worlds of the chemical and biological

STATISTICAL SOFTWARE

researchers, who are concerned with drug efficacy and activity, and the researchers in development, who are concerned with clinical trials and patient histories.

Today, perhaps the most pronounced change that computing has brought to the field of statistics is widespread access to software that can handle innovative statistical methodologies as they're being developed. These new methodologies are able to handle data that cannot be correctly analyzed using current techniques. For example, statisticians are using heavily computational algorithms to improve the methodology for dealing with small data sets (exact tests). Another important area of research is the development of methods to handle such things as missing observations in a study.



Missing data are not common in laboratory studies, but in clinical trials it's common for people to miss scheduled visits to the clinic. There may be an appropriate methodology to handle this data as long as the statistician is sure that the people who are missing their clinic visit and their lab measures are doing it for reasons unrelated to the outcome of interest.

But, if somebody doesn't come to the clinic, it may very well be because he doesn't feel well, or perhaps because he feels so good he doesn't want to bother with his doctor visit. If researchers don't know that, they could have completely biased results. To simply act as if these participants were like everyone else can flaw the whole study. What is required is a statistical

methodology that can appropriately handle a such a case.

Another development, adds John Barnard, will be toward statistical packages with greater interactivity. "There is a trend toward more user assistance—toward programs which can guide the user through an analysis," he explains. "The computer will try to play the role of statistician—because most researchers don't want to have to come to a statistician and wait for us to do a regression or basic analysis every time they need it done." The real goal of the software, ultimately, is to help researchers make sure that what they are concluding is valid and correct and will stand the test of time when other experiments of the same type are done.

—David Bornstein

DAVID BORNSTEIN IS A JOURNALIST WHO SPECIALIZES IN TECHNOLOGY, FINANCE, AND ECONOMIC DEVELOPMENT REPORTING.

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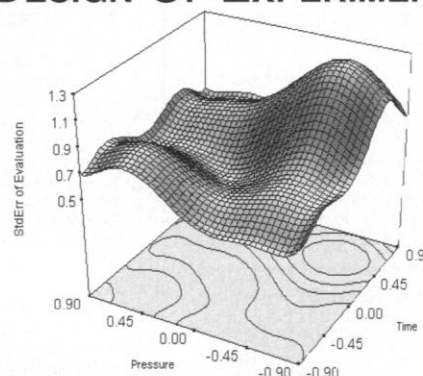
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Interested candidates should send a résumé by January 15, 1997 to: **Prof. Wei-Shou Hu, Department of Chemical Engineering and Materials Science, University of Minnesota, 421 Washington Avenue SE, Minneapolis, MN 55455.**

Please contact Dr. Hu with questions or nominations, or visit the Biomedical Engineering Institute home page at <http://www.med.umn.edu/bmei/>.

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CELL BIOLOGIST

Biology Department, The College of Staten Island, City University of New York (CUNY), anticipates a tenure-track appointment as **ASSISTANT PROFESSOR** for September 1997. Ph.D., college instruction, curriculum development, and record sufficient for appointment to CUNY graduate faculty required. Post-doctoral experience and grant activity preferred. Send curriculum vitae, research plans, and names and addresses of three references to: **Prof. J. LeBlanc, Search Committee Chair, Biology Department, College of Staten Island/CUNY, 2800 Victory Boulevard, Staten Island, NY 10314.** *Equal Employment Opportunity/Affirmative Action/ADA Employer.*

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All applicants who wish to be considered for the position at the level of Associate Professor should have an established, funded research program.

Interested applicants should send a current curriculum vitae, a statement describing research achievement and future research plans, and names and addresses of three references to:

Dr. Martin Flajnik
Chairman, Hematopoiesis Search Committee
Department of Microbiology and Immunology
University of Miami School of Medicine
P.O. Box 016960 (R-138)
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UNIVERSITY OF SAN DIEGO Tenure-Track Assistant Professorship

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CELL BIOLOGIST DEVELOPMENTAL BIOLOGIST

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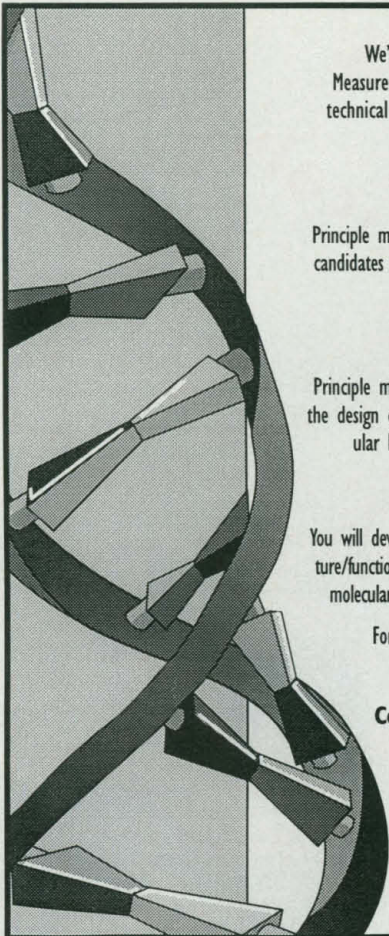
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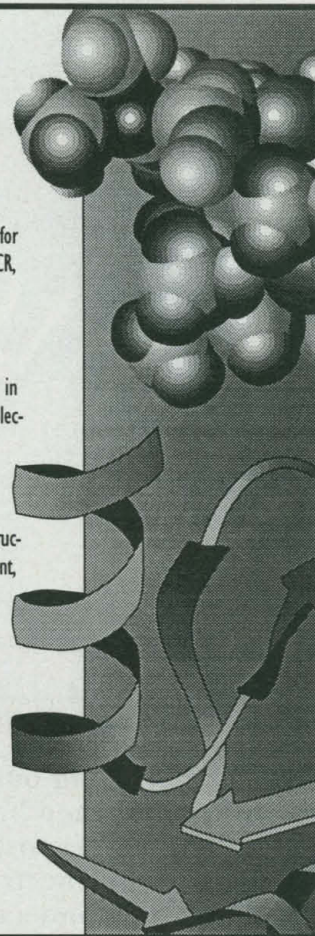
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As we continue improving existing products and developing new ones, we have opportunities in the following areas:

BIOINFORMATICS -CAMBRIDGE

Researchers at Genetics Institute are developing several technologies at the forefront of the genomic revolution. Our Signal Sequence Trap system is leading the rapid discovery of large numbers of novel genes encoding proteins that are secreted from cells. As this and other genome projects proceed, gene expression studies will become increasingly important for determining protein function and therapeutic potential. In collaboration with Affymetric, Inc., we are using GeneChip™ technology to assess the expression of a large number of genes in parallel. As a result of rapid developments in these information-intensive technologies, we have the following positions available in Bioinformatics. Full-time permanent as well as 1 year temporary positions are now available.

LAB INFORMATICS EXPERT

Scientists at Genetics Institute are using GeneChip™ technology to generate large quantities of gene expression information in a high throughput, massively parallel manner. The outstanding challenge is to use this data effectively to better understand biological processes and to identify exciting therapeutic candidate factors and targets.

We are seeking a highly motivated individual with experience in intensive high-volume relational data management and analysis to join the project. This individual would be responsible for maintaining the database and managing user-support issues, including the formulation and execution of basic queries to support biological research activities at GI. This person would also be responsible for the development of additional analytical tools useful for applying gene expression data (alone and in combination with other information) to the solution of biological problems.

The ideal candidate will be able to take responsibility for user-oriented software development projects. Technical flexibility, persistence and initiative, and the ability to communicate effectively with biologists, programmers and data management experts are all critical skills. Skills in the areas of systems administration, relational DBMS development, user interface design (especially WWW/HTTP), and programming in C/C++ and Perl in a UNIX environment are pluses. **Job Code SC-LIS**

ASSOCIATE SCIENTIST

A position exists for a scientist to organize and analyze data generated by a high throughput cDNA cloning and sequencing project. An MS degree in a biological science plus two years' experience or equivalent is required. Experience with sequence analysis software, sequence database, and Internet-based tools is essential. Good communication skills, organizational skills, and attention to detail are also important. **Job Code SC-111**

SCIENTIFIC SOFTWARE SPECIALIST

A position exists for a software specialist to develop sequence analysis programs and to integrate commercial and public domain sequence analysis software into a unified environment for a high throughput cDNA sequencing project. This position requires a Master's degree in Computer Science and experience implementing software tools for analysis of molecular sequence data. **Job Code SC-49**

STAFF SCIENTIST

A position exists for a Computational Biologist with a PhD in Genetics, Biochemistry, or Cell Biology. The incumbent's goal will be to identify leads for therapeutically useful molecules. Responsibilities include reviewing sequence data from an internal cDNA sequencing effort, a gene expression survey, and publicly available data. Experience using comprehensive nucleic acid and protein sequence analysis software, sequence database, and Internet-based tools is essential. **Job Code SC-16**

ANDOVER OPPORTUNITIES

SCIENTIFIC STAFF

PURIFICATION PROCESS DEVELOPMENT

In this position, you will be responsible for the scientific oversight of purification steps in a commercial-stage protein therapeutic product. You will also perform lab and pilot scale protein purification experiments, monitor and review Manufacturing data, and work with lab members to optimize and troubleshoot the Manufacturing process. In addition, you will participate in developing new technologies for protein purification. To qualify, you must have a Ph.D. (with 2+ years' experience), MS (with 4+ years' experience), or BS (with 6+ years' experience) in Biochemistry, biological sciences, or Chemical Engineering and previous industrial protein purification experience. A sound background in the optimization, troubleshooting and scale-up of protein purification processes, and experience with routine protein analytical techniques such as SDS-PAGE, HPLC, and protein assays are a must. Experience with novel protein purification techniques and technology development is desirable as well. The ability to work with various departments in a fast-paced environment is essential. **Job Code: SC-386**

NOVEL GENE EVALUATION

STAFF SCIENTIST / DVM AND/OR PH.D.

Working in our pre-clinical research facility, you will use *in vivo* models to elucidate the therapeutic potential of newly discovered proteins. This will involve the use of viral gene therapy in normal animals and animal models of disease. Responsibilities will include the design and implementation of experiments *in vivo*, data collation, and data analysis. Requires a DVM and/or PhD, or equivalent experience with animal modeling or physiology. Familiarity with computers, databases, and spreadsheets is required. Knowledge of immunology, cell biology, and molecular biology is desirable. **Job Code SC-178**

For consideration, please send or fax resume, suitable for scanning (see below), indicating job code, to: Human Resources Department, Genetics Institute, Inc., 87 CambridgePark Drive, Cambridge, MA 02140. Fax: (617) 876-8847.

Scannable resumes should be forwarded on plain white bond paper using standard types and fonts, and no bold or italic print. When faxing a resume, please also mail an original copy.

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



Harnessing the Body's Power to Heal™



CAREER OPPORTUNITIES IN BIOINFORMATICS

The Technology Career of Tomorrow

Genomics is revolutionizing drug development, gene therapy, and our entire approach to health care and human medicine. Translating genomics discoveries into practical biomedical results through bioinformatics applications presents the challenge of the decade. *Bioinformatics* offers the career path of the future for the ambitious data professional.

Digital Gene Technologies, Inc., the La Jolla, California-based leader in total gene expression technology, seeks highly motivated and creative professionals to join the company's leading-edge bioinformatics group in developing and expanding the genomics database of tomorrow in a wide range of profitable and significant medical, industrial, and academic applications.

Vice President/Director of Bioinformatics

As the head of our bioinformatics team, you will be a key player in the organization at DGT, responsible for ensuring that the bioinformatics team functions as an integrative and cross-disciplinary unit with a strong understanding of the science of bioinformatics. The selected candidate will advise bioinformatics researchers, coordinate/prioritize the use of bioinformatics in the identification and validation of molecular targets for drug discovery, and function as a primary interface between DGT and its external corporate partners. Additionally, you will establish and maintain the service relationship with our molecular biology, automation technology, and cell biology departments, and ensure that the information and results are meeting the established needs of DGT and its partners. Requirements include a doctorate degree in the life sciences, preferably in molecular biology or genetics, and a minimum of 6-8 years of postdoctoral research experience in computer science, informatics, database management, and genomics technologies. Previous management experience (4-6 years) is also required, as well as multiple project and laboratory management skills.

Lead Database Developer

You will lead the planning and implementation of a database with a user interface designed to integrate in-house proprietary databases with public-domain genomics databases. This critical position requires an individual with a background in biology and computer science. Expertise with UNIX, Sybase, and/or Oracle databases is required. Graphic user interface development experience would be a plus.

Postdoctoral Fellows (Bioinformatics)

Requires a Ph.D. in molecular biology or a related field and experience programming in C language in a UNIX environment. As a member of the DGT team, you will develop specialized tools designed to mine data critical in the drug discovery process.

Compensation will meet your qualifications and include equity participation in an exciting growth company. For consideration, please send or fax your resume/CV, letters of reference, and salary history to: **DIGITAL GENE TECHNOLOGIES, INC.**, 11149 North Torrey Pines Road, Suite 110, La Jolla, California 92037, fax: (619) 552-8625, email: tom@dgt.com, EOE.

POSTDOCTORAL POSITIONS AVAILABLE

Laboratory of Cellular and Molecular Biology

National Institute on Aging

Several postdoctoral positions are available immediately for individuals interested in joining an expanding research program devoted to the study of **cellular and molecular responses to stress**. Principal investigators and their general areas of interest include:

Nikki J. Holbrook - Mechanisms regulating gene activation during cellular stress in normal cells and aging model systems, and influence of induced gene products on cell growth and survival.

Yusen Liu - Stress-activated MAP kinase signaling cascades, with emphasis on the identification of novel mediators and cloning of new substrates for these kinases.

Ronald L. Wange - Molecular basis for differential signaling through the T cell antigen receptor in normal T cells, as compared to anergic, aged or oxidatively stressed T cells.

Applicants must have less than five years of postdoctoral experience. Submit a letter indicating area of interest, C.V., bibliography, and names of three references to:

Nikki J. Holbrook, Box 31, NIA, GRC
4940 Eastern Avenue, Baltimore, MD 21224
Fax (410) 558-8446
e-mail: nikki-holbrook@nih.gov
 NIH is an Equal Opportunity Employer

BIOINFORMATICS



BIOS Laboratories, Inc., a growing biotech company focused on the development of new genomic technologies with applications in pharmaceutical qualification and prognostics of disease, is seeking candidates to fill postdoctoral and senior-level research positions at its New Haven, CT, facility.

Genome Expression and Variation. We are seeking innovative, highly motivated and team-oriented Ph.D. molecular biologists. The technology programs seek to develop integrated systems for profiling gene expression, for expression of large-insert genomic clones and for comparative genome variability studies. Prior experience in gene expression and regulation, or in discovery of DNA polymorphisms, is required.

Bioinformatics. We are seeking an M.S./Ph.D. candidate in computer science, specializing in pattern recognition and classification, with experience in the application of a wide range of methods. Experience in database design and implementation, and some familiarity with molecular biology or genomics, would be desirable.

Compensation packages are commensurate with qualifications. Interested candidates should send their curriculum vitae and the names and phone numbers of three references to: **Laboratory Director, BIOS Laboratories, Inc.**, 5 Science Park, New Haven, CT 06511.

BIOS is an Equal Opportunity Employer.

BIOINFORMATICS OPPORTUNITIES

Genome Therapeutics Corp. is a proven leader in the field of genomics and a major contributor in the Human Genome Project. GTC is a fast-growing and financially successful biotechnology company - in the past year we have initiated a \$22 million and \$43 million alliance to develop genome-based drugs and vaccines. Challenging and rewarding opportunities exist for:

Systems Administrator

Administer and implement rapidly growing UNIX computing environment. Requires a minimum of 2 years' experience with NFS, NIS, TCP/IP, X-Windows and related utilities. Experience with Macintosh and network support is desirable. **Job Code: 197.**

Senior Systems Software Specialist

Design and implement coherent system management approach for a rapidly growing multi-platform network of UNIX servers and workstations. Requires facile knowledge of UNIX, TCP/IP, NFS, NIS, X-Windows, and related protocols. Specific experience with Digital UNIX or Solaris would be helpful, but demonstrated interest and ability in achieving reliable and scaleable systems configurations is essential. Experience in a scientific research setting a plus, as is some familiarity with VMS. **Job Code: 268.**

Senior Database Designer

Design corporate and scientific data repository for molecular biologists in pathogen genetics group. Lead the engineering design effort for support of data warehousing as well as supervise database development team. A PhD or MS with solid, direct experience is required. Experience working in a scientific research environment is strongly preferred. **Job Code: 228.**

Database Programmers and Administrators

Develop database applications to support DNA sequencing and disease mapping projects. Requires experience in relational databases, UNIX, C++, and web interfaces. Experience with molecular biology, Macintosh, Sybase, or Perl is desirable. **Job Code: 262.**

Software Engineers

Provide flexible software support to research and production groups in molecular biology. Projects may have GUI, mathematical, or specialized data content. Must be able to work independently or as part of a team on small and large applications. Requires a BS in CS/EE or equivalent, at least 2 years' professional programming experience, solid knowledge of C, and some experience with UNIX. Experience with any of the following is desirable: C++, Perl, Java, GUI, databases, client/server, Macintosh, robotics, instrument interfaces, and molecular biology. **Job Code: 229.**

Human Genome Analysts/Programmers

Develop software tools for cDNA Sequence Analysis, Differential Gene Expression Studies, and Sequence Annotation projects. Requires experience in C/C++, Perl, web interfaces and programs to access sequence databases. Experience with molecular biology or genomics and broad knowledge of protein function is desirable. **Job Code: 264.**

Statistical Geneticist

Scientist with expertise in mapping genes for complex disorders to contribute to identification of genes for important human diseases. Requires experience in developing appropriate study designs for analysis of complex traits and experience with non-parametric methods, linkage analyses, and related analytical techniques. The ideal candidate will be actively involved in developing new strategies for mapping complex disorders. The individual will be expected to assume a leadership position in the human genetics group. PhD with at least 1 years' postdoctoral experience required. **Job Code: TK.**

Linkage Analysis Programmer/Analyst

Provide computational support for Human Linkage Analysis projects. Work closely with scientists to analyze data and develop tools for pedigree data management, error checking, and data exchange. Requires experience with data management, UNIX, C, and Perl. Experience with Linkage Analysis, Macintosh, Pascal, or Fortran is desirable. **Job Code: KF.**

Senior Sequence Analyst

Scientist with broad knowledge of microbial physiology and significant experience with computational sequence analysis methods to do sequence analysis. Work as the interface between computing and molecular biology in the search for useful gene targets for developing novel anti-microbials. PhD with at least 1 year of postdoctoral experience required. **Job Code: SS.**

GTC offers an excellent compensation and benefits package. Please send or fax your resume to: **Human Resources, Genome Therapeutics Corporation, 100 Beaver Street, Waltham, MA 02154; fax (617) 893-9535.** An Equal Opportunity Employer M/F/H/V.



Inventing Biotechnology was just the beginning. . .



Genentech is a pacesetter biotechnology company that discovers, develops, manufactures and markets human pharmaceuticals for significant unmet medical needs. Our product pipeline is the richest in the industry and we are the only biotech company with five marketed products. We currently have several openings for Scientists, including the following opportunities.

Scientist-Manufacturing Sciences

As a Scientist in Manufacturing Sciences, you will monitor and troubleshoot existing commercial, large scale purification processes. You will collaborate with other Scientists and Process Engineers on process improvements, plant improvements and implementing large scale processes in new facilities. Requirements include a PhD or equivalent in Biochemistry, Bioanalytical Chemistry or a related area. You will also provide the scientific expertise essential to the Quality and Regulatory groups for these processes. A conceptual understanding of chromatography and protein characterization is essential. Must have initiative, a sense of perspective, effective interpersonal skills and the ability to adapt quickly to change and short term projects. Job Code DSBB

Scientist-Endocrinology/Metabolism

We are seeking a scientist to join our Endocrinology/Metabolism group. The successful candidate will develop an independent research program investigating the molecular mechanisms that control food intake, fuel homeostasis and adipocyte differentiation and development. The research program is expected to lead to the development of drugs that will be useful for the treatment of obesity and type II diabetes. Requirements include a PhD and postdoctoral experience in Endocrinology or Metabolism or relevant areas of Biology. In addition, we require significant understanding and experience in molecular and cellular biology. Job Code JOTS

Join us and enjoy our exciting success and progressive benefit package that includes fully paid medical/dental/vision coverage, 3 weeks paid vacation, 6 weeks sabbatical after every 6 years, stock purchase opportunities for full time employees, and free health club membership. For consideration, send your resume, indicating Job Code, to Genentech, Inc., Human Resources, 460 Pt. San Bruno Blvd., South San Francisco, CA 94080. Please avoid bold, underline or italic type faces. You may also e-mail your resume indicating Job Code to jobs@gene.com (ASCII files only with a maximum line width of 76 characters). For more information, see us at <http://www.gene.com>. Genentech is an Equal Opportunity Employer. We value the contributions of our diverse workforce.

Genentech, Inc.

GENOVO, INC.

GENOVO, Inc. is a newly established gene therapy company located in Philadelphia, PA that is pioneering the future of drug discovery by applying its innovative expertise in viral-based vectors. GENOVO has strategically teamed with a well-known biotech corporate partner committed to the future of genetic medicine.

GENOVO offers a career with high-growth potential and is currently seeking motivated and talented individuals with an interest in viral-based drug discovery and manufacturing to join its growing team of scientists.

Vice President, Development – will establish gene therapy viral vector manufacturing program. Primary responsibilities will be to direct manufacturing research and produce clinical grade viral vectors in pilot manufacturing facility. Candidates should have a strong background in virology/cell biology with proven experience in regulatory affairs, biologics development, and manufacturing. A Ph.D. with five to ten years of relevant biopharmaceutical and team management experience is required.

Research Scientists – will participate in the vector discovery and development programs. Ph.D. with three to five years of postdoctoral experience and a strong background in virology and molecular biology required. Experience with retrovirus, adenovirus, or AAV vectors helpful, but not necessary.

GENOVO's R&D programs are expanding. We will also be considering applications for the following positions: **Lab Manager, QA/QC Manager, and Research Associates/Technicians.**

For confidential consideration for any of the above-mentioned positions, please mail your CV with cover letter to:

Dept. 9FMAG, GENOVO, Inc.

P.O. Box 42884

Philadelphia, PA 19101

GENOVO is an equal opportunity employer



ASSOCIATE DEAN FOR RESEARCH AND GRADUATE EDUCATION

The Ohio State University College of Dentistry is seeking a full-time faculty member to serve as Associate Dean for Research and Graduate Education. Position responsibilities include providing leadership and administrative oversight of intramural and extramural research programs within the College of Dentistry and promoting faculty research. This position also provides leadership to a Masters of Science Program available to students in eleven dental residency programs and a Ph.D. program in Oral Biology. The applicant should be an established scientist with a record of scholarly achievement and publication in dental, medical, or biomedical research, who has an active research program and history of sustained extramural funding as a principal investigator. Leadership qualities and organizational skills for development and implementation of research programs is essential. Previous experience with a variety of funding sources is preferred. Administrative experience is desirable. Individual would probably hold D.D.S., M.D., and/or Ph.D. degree(s) and be appointed at the associate professor or professor rank in tenure track.

It is the policy of The Ohio State University to limit access to communications and to letters of reference to those directly involved with the selection process. However, the status of this policy under the Ohio Open Records Act is unclear. Those seeking confidentiality should indicate that fact in all communications and the University will make every reasonable effort to honor that request within the limits of Ohio law.

Salary and rank are determined commensurate with the candidate's qualifications and experience. *The Ohio State University is an Equal Opportunity/Affirmative Action Employer. Qualified women, minorities, Vietnam-era veterans, disabled veterans, and individuals with disabilities are encouraged to apply.* Review of applications will begin January 31, 1997, and continue until the position is filled. Inquiries, a current curriculum vitae, and the names of five references should be sent to: **Dr. Joseph Travers, Search Committee Chair, The Ohio State University, College of Dentistry, 305 W. 12th Avenue, Columbus, OH 43210; Phone: 614/292-6365; Email: travers.1@osu.edu; Fax: 614/292-6087.**



U.S. ENVIRONMENTAL PROTECTION AGENCY

National Exposure Research Laboratory

The U.S. Environmental Protection Agency (EPA) is seeking candidates for a variety of new multidisciplinary research and technical support positions in the National Exposure Research Laboratory (NERL). The NERL, with divisions located in the Research Triangle Park (RTP), North Carolina; Cincinnati, Ohio; Athens, Georgia; and Las Vegas, Nevada; conducts research to reduce and quantify the uncertainty in the Agency's exposure assessments for all environmental stressors such as chemicals, microbes, radiation, and changes in climate, land and water use. The NERL characterizes the sources of environmental stressors and the compartments of the environment in which they reside or move; studies the pathways that lead to stressor exposure of receptors; investigates stressor transfers and transformations; and characterizes receptors and their activities as required to predict, diagnose or measure exposure.

We are seeking outstanding individuals to fill a variety of mid- to senior-level scientific positions within the Laboratory. NERL is recruiting for the following positions in these areas:

Science Management

The Division Directors will serve as the principal experts and authorities in their fields to direct national research programs. These individuals conduct or direct research as internationally recognized scientists as well as supervise and manage subordinate administrative staff and branch chiefs with line responsibility over a large group of scientists researching diverse topics.

- **Director, Air Exposure Research Division (AERD), RTP.** The AERD (30 employees) designs, conducts and interprets research in exposure and exposure assessment techniques to measure and model human and environmental exposure to contaminants in atmospheric and multi-media pathways and environments.
- **Director, Characterization Research Division (CRD), Las Vegas.** The CRD (90 employees) develops and applies approaches to identify and characterize exposure to humans and ecosystems to chemical pollutants, physical stresses, and other risk factors in the environment.

Ecological Exposure Research

This research area provides scientific understanding, information and assessment tools to assist the EPA in reducing and quantifying uncertainty in exposure and risk assessments for environmental stressors on ecological communities and the natural environment. More than one mid- to senior-level position may be filled.

- **Physical or Environmental Scientist.** Applicants should have at least a B.S. in the physical sciences and experience in spatial data analysis.
- **Environmental Scientist/Engineer or Ecologist.** Applicants should have an advanced degree in the physical sciences, environmental engineering, or ecology, and experience in the concepts, principles, and practices of predictive and landscaping/habitat ecological exposure modeling.
- **Mathematical Statistician.** Applicants should have an advanced degree in mathematical statistics and experience in the statistical analysis of biological data or applying statistical approaches to complex research problems.

Human Exposure Research

This research area provides scientific understanding, information and assessment tools to assist the EPA in reducing and quantifying the uncertainty in exposure and risk assessment for all environmental stressors on human health. More than one mid- to senior-level position may be filled.

- **Environmental Scientist or Chemical Engineer.** Applicants should have an advanced degree in the physical sciences or chemical engineering with experience in human exposure modeling or measurement.
- **Environmental/Chemical Engineer or Environmental Scientist.** Applicants should have an advanced degree in environmental/chemical engineering or the physical sciences with knowledge of the principles and practices of exposure and dose modeling.
- **Environmental/Physical Scientist.** Applicants should have an advanced degree in the physical sciences with experience in human exposure studies.

These research positions will be located at either RTP, Cincinnati, Athens, or Las Vegas. Research and management positions are permanent, full-time, with salaries commensurate with qualifications. U.S. citizenship is required.

If you are interested in learning more about these positions, contact us at the following address no later than January 13, 1997, for an application package:

U.S. Environmental Protection Agency
Attn: NERL RECRUITMENT
Human Resources Management Division (MD-29)
Research Triangle Park, NC 27711
(919) 541-3014

EPA IS AN EQUAL OPPORTUNITY EMPLOYER.

Dean and Director Marine Sciences Research Center

The University at Stony Brook seeks nominations and applicants for the position of Dean and Director of the Marine Sciences Research Center (MSRC). The MSRC is the SUNY wide (State University Of New York) unit charged with research and education in the marine sciences, is presently one of the top ranked marine centers in the U.S. and has a very strong program in atmospheric sciences. The mission of MSRC is to increase the fundamental understanding of the oceans and atmosphere and their interaction and to apply this understanding to the resolution of societal problems as they relate to the environment on local, regional, national, and international levels. Particular attention is given to problems of the coastal zone. MSRC currently has 37 tenure-track faculty having expertise in physical, chemical, geological, and biological oceanography, as well as atmospheric science, fisheries, and waste management. 139 graduate students are in residence working toward M.S. and Ph.D degrees in marine and atmospheric sciences. The Center administers an undergraduate major in the Atmospheric Sciences, a minor in Marine Sciences and is currently developing a multidisciplinary environmental studies major. The successful applicant will have a Ph.D. in Marine or Atmospheric Sciences or a related field and a record of accomplishments commensurate with appointment at the rank of Professor. We seek an individual of national and international reputation, with administrative experience and with the demonstrated ability to organize groups of researchers in multidisciplinary research projects, to develop educational programs at the graduate and undergraduate levels, and to lead the Center's public outreach and fund-raising efforts.

Letters of nomination or application, including a statement of interest, curriculum vitae and a list of four references should be sent to: Chair, Dean and Director Search Committee, Marine Sciences Research Center, The University at Stony Brook, Stony Brook, New York, 11794-5000. Review of applications will begin January 15, 1997. For more information access our web site at <http://www.msrc.sunysb.edu/>

The University at Stony Brook is an Equal Opportunity/Affirmative Action Employer.



PROTEIN CRYSTALLOGRAPHY

We have an immediate opening for a Postdoctoral Fellow in Protein Crystallography. Our laboratory is engaged in studies of retroviral proteins such as protease and integrase, cytokines and cytokine receptors, asparaginase, onconase, and other proteins important to problems of cancer and AIDS. We have excellent facilities for biochemistry, crystallization, data collection, and computing. The laboratory, operated by ABL for the National Cancer Institute, is located close to both Washington and Baltimore in a beautiful small-town setting.

A suitable candidate will be less than three years after his/her Ph.D. and have both the interest and practical experience in solving structures of proteins by multiple isomorphous replacement and/or molecular replacement, as well as in structure refinement. Starting salary range from \$27,000 - \$31,000, based on degree date, with excellent employee benefits. Please send CV and three letters of recommendation to:

Dr. Alexander Wlodawer
c/o Personnel Department
ABL-Basic Research Program
NCI-FCRDC
P.O. Box B, Building 428
Frederick, MD 21702-1201



An Equal Opportunity/
Affirmative Action Employer



Wayne State University

VICE PRESIDENT FOR RESEARCH AND DEAN OF THE GRADUATE SCHOOL

Wayne State University invites applications and nominations for the position of Vice President for Research and Dean of the Graduate School. Wayne State University is a comprehensive state-supported, non-profit research university with 14 schools and colleges offering approximately 350 undergraduate, graduate and professional degrees, including business, medicine, pharmacy, law, and engineering to more than 32,000 students. An urban university located in Detroit, Michigan, Wayne State is a Carnegie Research University I Institution, and attracts the largest public graduate and professional school enrollment in the country, with over 14,000 students currently enrolled.

The University seeks an innovative and dynamic leader with demonstrated leadership and administrative skills, a strong research and teaching/training background, and the ability to attract human and financial resources to a comprehensive and diverse research program.

The Vice President for Research and Dean of the Graduate School reports to the Vice President for Academic Affairs, and is responsible for all administrative, fiscal and policy making activities in the Division of Research and the Graduate School. He/she will represent the University's research interests to federal and state governments and to private industry. The successful candidate will have:

- an accomplished record of research and scholarly achievement appropriate for appointment as a tenured professor;
- the ability to promote research, training and fund-raising activities within the public and private sectors;
- successful administrative and fiscal management experience;
- an understanding of and commitment to the University's multiple missions, including serving a diverse urban environment and facilitating interdisciplinary research; and
- demonstrated emphasis on academic excellence, and implementing and facilitating minority programs.

Screening of applications and nominations will begin on January 3, 1997, and continue until the position is filled. Candidates should submit a letter of application, curriculum vitae and complete contact information for four references. Information about Wayne State University and its programs can be accessed at www.wayne.edu. Applications and nominations, or requests for additional information (dwyer@log.wayne.edu), should be sent to:

Dr. Jeffrey W. Dwyer, Chair, Vice President for Research and Dean of the Graduate School Search Committee, Institute of Gerontology, Wayne State University, 87 East Ferry, Detroit, MI 48202

Wayne State University is an equal opportunity/affirmative action employer. Wayne State University - People working together to provide quality service. All buildings, structures and vehicles at WSU are smoke-free.

SCIENCE

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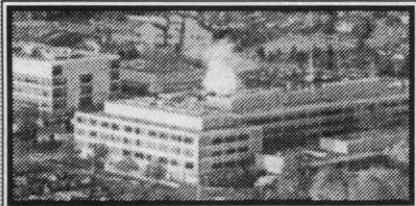
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SCIENCE

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The Road to Discovery Runs Through Parke-Davis.



At Parke-Davis Pharmaceutical Research Division of Warner-Lambert Company, inspired science and a strategy of innovation has made us a leader in the pharmaceutical industry. The Department of Pathology and Experimental Toxicology and Neurological and Neurodegenerative Diseases currently has the following positions available at our headquarters in Ann Arbor, Michigan.

CELLULAR AND MOLECULAR BIOCHEMIST

The Clinical and Molecular Pathology section has an immediate opening for a Cellular and Molecular Biochemist. This individual will research, develop and validate assays to support Toxicology safety and investigative studies and Phase I clinical trials. Primary emphasis for this position will be the application of cellular biochemistry and molecular biology techniques to predict and characterize toxicologic mechanisms, and to identify surrogate markers of drug toxicity. The selected individual will maintain an active basic research program and act as a GLP study director.

A Ph.D. in Biochemistry, Molecular Biology,

Toxicology or a related field and 3-10 years' relevant postdoctoral research training are required. Experience in developing multiple or combinatorial biochemical and molecular biology assays to address clinically relevant issues and demonstrated expertise in both *in vivo* and *in vitro* systems are required. A proven record of scientific publications is desirable. **JOB CODE: RB96202**

GENETIC TOXICOLOGIST

The Molecular Toxicology section has an immediate opening for a Genetic Toxicologist. This individual will investigate the cellular mechanisms of genotoxicity and carcinogenicity as well as direct genetic toxicology safety studies.

A Ph.D. in Toxicology, Pharmacology, Biochemistry or a related field, 2-6 years of relevant postdoctoral training and experience in the assessment of chemical-DNA interactions and chemically-induced DNA damage and repair are required. Working knowledge of molecular biology techniques as applied to the assessment of genotoxic and carcinogenic mechanisms is also required. Candidates should have the demonstrated ability to work independently in the design, conduct and interpretation of experiments in a highly collaborative team environment. Excellent verbal and written communication skills and a publication record are a must. **JOB CODE: CJM96159**

POSTDOCTORAL FELLOW

The Molecular Toxicology section has an immediate opening for a Postdoctoral Fellow to investigate both genotoxic and cellular mechanisms of carcinogenicity. A Ph.D. in Toxicology, Molecular Biology or related discipline and up to 2 years of postdoctoral experience are required. Familiarity with cell culture, biochemical and molecular techniques as applied to assessing mechanisms of carcinogenicity and/or cellular injury is essential. **JOB CODE: CJM963025**

ASSOCIATE SCIENTIST

The Neurological and Neurodegenerative Diseases section has an immediate opening for an Associate Scientist. The selected individual will focus on discovery of therapeutic agents for Alzheimer's disease and amyloidosis. A sound foundation in basic biochemical assays, molecular analysis by capillary electrophoresis and other high resolution analytical techniques is essential. Skills in molecular biological techniques are highly desirable. The applicant should be able to independently carry out experimental protocols, maintain accurate records, analyze data as well as communicate oral and written formats and work in a team setting.

A B.S./M.S. in Biochemistry, Cell Biology, Molecular Biology or Pharmacology with 1-5 years' post-degree laboratory experience are required. **JOB CODE: KW96198**

Members of our world-class pharmaceutical team enjoy competitive salaries, benefits and career growth potential. For consideration please send, fax or e-mail a resume, indicating the JOB CODE of interest, to: **Parke-Davis Pharmaceutical Research, Warner-Lambert Company, Human Resources Department, 2800 Plymouth Road, Ann Arbor, MI 48105. Fax: (313)998-3394. E-mail: resume@aa.wl.com. Visit our website at: http://www.warner-lambert.com**

All resumes are electronically scanned. Please submit on plain white paper using standard formats and fonts.



Equal Opportunity in action. Smoke-free work environment.

Invitrogen Corporation is a leader in the development of innovative products for gene expression and analysis. We currently have several Senior/Staff and Postdoctoral Scientist positions available in our research and development department. The senior/staff scientist positions require supervisory experience and a demonstrated history of productivity and creativity. Cutting-edge researchers and independent thinkers from industry or academia are encouraged to apply.

SENIOR/STAFF SCIENTIST POSITIONS

Yeast Molecular Geneticist

The qualified yeast molecular biologist will join a team developing novel and proprietary expression and display systems in *Pichia* and *Saccharomyces*. Candidates should possess a PhD and have extensive yeast molecular genetics experience with an emphasis on gene cloning, plasmid construction, meiotic recombination, and modification of plasmid and genomic sequences in yeast. Experience with fermentation formulation is highly desirable.

Molecular Biologist-Macromolecular Interactions

This position requires a motivated PhD level scientist with extensive experience developing assays for the analysis of protein-protein and protein-DNA/RNA interactions. The ideal candidate will be motivated, innovative, and technique oriented. Experience with multiple genetic systems is advantageous.

Bacterial Molecular Geneticist

We are seeking an innovative bacterial geneticist to assist ongoing efforts to simplify and optimize bacterial display and recombinant protein expression systems. Our research is also focused on developing assays for investigating molecular interactions in bacteria and bacteriophages. This PhD level position requires extensive experience with strain development and manipulation as well as in-depth knowledge of microbial biological systems.

Postdoctoral Scientist Positions

Three postdoctoral scientist positions are currently available for qualified individuals. Qualified candidates will be motivated and have a history of productivity and distinction. Prior experience in any of the above described areas is advantageous.

Interested candidates should fax or mail their resume to Invitrogen's Human Resources Department.

Invitrogen Corporation
3985 B Sorrento Valley Blvd.
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Starter Grants
for use of
Nanofabrication Facilities
for applications in
Biological Sciences

The National Nanofabrication Users Network (NNUN), a NSF funded consortium of nanofabrication user facilities at Cornell University, Howard University, The Pennsylvania State University, Stanford University, and the University of California at Santa Barbara, is making available starter grants to permit the use of network facilities for first-time biology users.

Current biology projects within NNUN span work in electrode arrays, microfluid handling, devices for cell growth and manipulation, sensors, and microanalytical instrumentation. Both basic work in biomaterial interfaces and applied device development can be supported.

The grants will typically defray the cost of several weeks intensive use of the facilities -- sufficient time to fabricate useful nano- and micro- scale devices.

For further information, please contact:

Dr. Lynn Rathbun
Cornell Nanofabrication Facility
Knight Laboratory
Cornell University
Ithaca NY 14853
Email: Rathbun@cnf.cornell.edu
(607) 255-2329 ext. 110
FAX: (607) 255-8601

or

Dr. John Shott
Stanford Nanofabrication Facility
CIS 211
Stanford University
Stanford CA 94305
Email: Shott@cascade.stanford.edu
(415) 725-3715
FAX: (415) 725-6278

or visit the Network Web Site: <http://snf.stanford.edu/NNUN/>

NNUN National
Nanofabrication
Users Network



ASSISTANT PROFESSOR
Aquatic & Environmental
Chemistry

Duke University's Nicholas School of the Environment invites applications for a tenure-track position, at the level of assistant professor, in aquatic and environmental chemistry. The successful applicant is expected to develop a nationally recognized, externally funded research program and contribute to the School's graduate-level teaching programs for research and professional students. Specific areas of expertise may include biogeochemical controls of chemical composition of natural waters; transformation or speciation of metals, organic chemicals, and/or nutrients; and mechanisms of pollutant transport and bioavailability. Send curriculum vitae, a one to two page summary of research and teaching plans, and three letters of reference by March 1, 1997 to: **Aquatic and Environmental Chemistry Search Committee, Dr. Kenneth Reckhow, Chair, Nicholas School of the Environment, PO Box 90328, Duke University, Durham, NC 27708-0328, USA.**

Duke University

Duke University is An Equal Opportunity/Affirmative Action Employer



The Pennsylvania State University's
Life Sciences Consortium

The Pennsylvania State University has embarked on a substantial enhancement in the life sciences through its new intercollege Life Sciences Consortium (LSC), dedicated to building excellence and supporting interdisciplinarity. Faculty searches are presently underway in four of the LSC member colleges. These **tenure-track** positions will be co-funded by the college and the LSC. The subject areas, levels, and home colleges are listed below.

EBERLY COLLEGE OF SCIENCE

Yeast Cell Biology	Assistant Professor
Neurochemistry	Assistant Professor
Plant Developmental Biology	Associate or Full Professor

SCHOOL OF MEDICINE, HERSHEY MEDICAL COLLEGE

Human Genetics	Associate Professor
Protein Structure/Function	Assistant Professor
Oncogenes/Growth Factors	Assistant Professor

COLLEGE OF AGRICULTURAL SCIENCES

Molecular Immunology	Assistant Professor
Tree Molecular Biology/Genetics	Associate Professor

COLLEGE OF HEALTH AND HUMAN DEVELOPMENT

Kinesiology/Locomotion	Associate Professor
Nutritional Immunology	Assistant Professor
Genetics of Complex Traits	Associate Professor

A more complete description of each position and the home department, as well as the new LSC Integrative Biosciences Graduate Degree Program, can be found at the LSC website: <http://www.lsc.psu.edu>. Applicants should send their curriculum vitae, research program summaries, and the names of three professional references to: **Ms. Judith Burns, The Life Sciences Consortium, 519 Wartik Laboratory, The Pennsylvania State University, University Park, PA 16802.** The application materials will be conveyed to the chairs of the respective search committees.

*Penn State is an Affirmative Action/Equal Opportunity Employer.
Women and minorities are encouraged to apply.*

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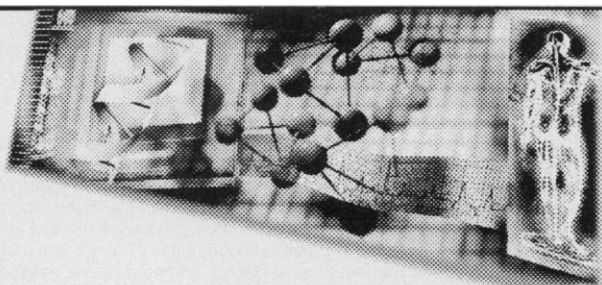
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POSTDOCTORAL FELLOW Immunology

A fully funded postdoctoral position is available immediately for a researcher with a strong background in molecular biology/molecular immunology to study chemokine biology using transgenic and knock-out approaches. Areas of concentration include: development of conditional genetic systems to study chemokines and their receptors, discovery of new chemokine genes and development of new genetic models of inflammation.

To qualify, you need a PhD in Molecular Biology, Immunology or a related field and 1-2 years of postdoctoral experience.

We offer an excellent compensation package including a competitive salary and comprehensive benefits. For prompt, confidential consideration, we invite you to forward a resume with salary requirements to: Human Resources-BG, Dept. PDF/SL, Schering-Plough Research Institute, 2015 Galloping Hill Road, Kenilworth, NJ 07033-0539. Or e-mail your resume to: spri@spcorp.com. We are an equal opportunity employer. We regret we are unable to respond to each resume. Only those selected for an interview will be contacted.



Schering-Plough
Research Institute

Using Science for Human Advantage

POSTDOCTORAL FELLOWSHIPS IN MOLECULAR AND CELL BIOLOGY AT THE NIH

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

- The targeting of proteins to the secretory pathway in both eukaryotes and prokaryotes is being studied using a combination of biochemical and genetic approaches. Current projects focus on the mechanisms of signal sequence recognition, the regulation of protein targeting GTPases, and the function of a prokaryotic homolog of the signal recognition particle (SRP). (Harris Bernstein)
- Biochemistry and molecular biology of homologous recombination in eukaryotes and prokaryotes, the structure and function of novel triplex DNAs, new methods for gene mapping and cloning (e.g., RARE) and gene targeting in mammalian cells, gene rearrangements in eukaryotes and novel approaches to gene therapy (including the use of small molecules that promote gene targeting, such as miniRecAs). (Dan Camerini-Otero)
- Identification of DNA rearrangements in malignant and pre-malignant conditions involving the gastrointestinal tract. Technical emphasis is placed on using novel RecA-assisted sequence-specific mapping and cloning reactions developed in this laboratory, as well as using automated sequencing and robotic equipment and the emerging data base from the Human Genome Project. (Lance Ferrin)
- Our lab focuses on DNA repair and recombination. We are interested in a mechanistic understanding of how MutS and MutL mismatch repair enzymes contribute to maintenance of genome stability. We are using molecular biology and biochemical approaches to identify structural elements involved in protein-DNA and protein-protein interactions. We are also characterizing branch migration of DNA Holliday junctions, a key intermediate in genetic recombination. (Peggy Hsieh)
- Molecular basis of mechanisms involved in hormonal and developmental control of gene expression. The immediate focus is on the transacting factors of the steroid/thyroid hormone receptor gene superfamily. Present work involves homologous recombination to target genes of regulatory nuclear proteins. (Vera Nikodem)
- The role(s) of small nucleolar ribonucleoprotein particles (snoRNPs) in pre-rRNA processing in vertebrate and invertebrate model systems is being examined using molecular and biochemical approaches. Current work focuses on the interactions between pre-rRNA and both the RNA and protein components of the snoRNPs to learn more about the mechanisms by which the snoRNPs affect pre-rRNA processing and ribosome assembly. (Brenda Peculis)
- Current projects involve gene targeting to generate mouse models of human diseases, development of gene and protein-based therapies for treatment of neurodegenerative disorders, and the study of ganglioside function in the nervous system and during development. (Rick Proia)
- The functional role of a family of neural-specific transcription factors, class III POU domain genes, is being investigated using a combination of molecular and embryological approaches in vertebrate embryos. The regulation of these POU domain genes by growth factors during gastrulation and neurulation is also under investigation. (Sheryl Sato)

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

**GENETICS AND BIOCHEMISTRY BRANCH
NATIONAL INSTITUTES OF HEALTH
Building 10, Room 9D-20, 10 CENTER DR MSC 1810
BETHESDA, MD 20892-1810
Telephone: 301-496-2710**

Graduate Fellowships
Center for the Study of Evolution and the Origin of Life
UCLA

Origin of the Universe...
Formation of the Earth...
Beginnings of Life...
Evolution of the Biosphere...
Advent of *Homo Sapiens*...

CSEOL invites applications for five graduate fellowships for 1997-98. In addition to support provided to Fellows by UCLA departments, CSEOL will grant each Fellow a stipend of \$5,000 per year, for each of the first two years of graduate study, with no teaching or other duties. Stipends may be used for any purpose the Fellow deems appropriate — travel, lodging, attendance at scientific meetings, purchase of books, computers, research equipment — for any purpose, without restriction. Fellows are included in a select group of graduate students invited to interact with Center faculty in a weekly dinner/seminar/discussion series. Applicants should be planning to carry out doctoral research under the direction of a CSEOL faculty member in a subject area relating to **virtually any aspect of evolution — of the cosmos, of the solar system, of Earth, of the environment, of life, of humans.** Areas of particular interest for 1997-98 include (1) planetary evolution and exobiology; (2) origin and early evolution of life; and (3) biochemical evolution and molecular phylogeny. Faculty are members of the **UCLA Departments of Anthropology, Astronomy, Atmospheric Sciences, Biology, Chemistry & Biochemistry, Computer Science, Earth & Space Sciences, Economics, Geography, History, Microbiology, Philosophy, Psychology, and Sociology; the School of Medicine; the School of Public Health; the Institute of Geophysics and Planetary Physics; and the Molecular Biology Institute.** Fellowship applicants must apply (preferably, by 17 February 1997) both to an appropriate academic department and to CSEOL. For application forms and a list of CSEOL members, contact:

CSEOL Fellows Committee
Geology Building, Room 5687
University of California, Los Angeles
Los Angeles, CA 90095-1567
Telephone: (310) 825-1170
FAX: (310) 825-0097
e-mail: mantonya@ess.ucla.edu

DIRECTOR
Center for Imaging Science

Applications and nominations are sought for the position of Director of the Chester F. Carlson Center for Imaging Science at the Rochester Institute of Technology (RIT). The Center is an academic department that offers programs leading to the B.S., M.S., and Ph.D. degrees in imaging science and the M.S. degree in color science. The Center has active research over a wide range of applied research topics sponsored by both competitive federal grants and industry. As the Chief Academic and Administrative Officer of the Center, the Director reports to the Dean of Science and has responsibilities for student recruitment, development of major research funding initiatives, and the fostering of strong industrial interactions as already evidenced by the existing internationally recognized Industrial Associates program. The Center seeks to take a prominent role nationally in both research and teaching in the emerging field of imaging science and the Director will assume a major role in this growth.

The ideal appointee will be a nationally or internationally recognized authority and leader in the field of imaging science. This person will have demonstrated leadership skills in university environments; a record of achievement commensurate with a senior faculty appointment; an aptitude for fostering collaborations with industry, other universities, government agencies, and funding institutions; and the ability to work collegially with faculty in an academic setting.

Further information regarding the Center for Imaging Science and a full position description can be obtained at www.cis.rit.edu, or by writing to the Chair of the search committee at the mail address below or at director-search@cis.rit.edu. Review of candidates will begin after February 3, 1997. An application must contain a letter of interest; a curriculum vitae; and names, Email addresses, and postal addresses of five referees, who will be contacted at the appropriate time. *RIT is an affirmative action, equal opportunity employer and strongly encourages applications from women and minority candidates.*

Applications must be submitted in hard copy form only to:

Chair, Director Search Committee
Chester F. Carlson Center for Imaging Science
College of Science
84 Lomb Memorial Drive
Rochester Institute of Technology
Rochester, NY 14623-5604

SEARCH RE-OPENED
VICE PRESIDENT FOR RESEARCH AND DEVELOPMENT

The University of Montana—Missoula invites applications and nominations for the position of Vice President for Research and Development. The Vice President will provide leadership and direction for all research programs at the University in Missoula and will coordinate research and creative activities at the University's three other campuses. The Vice President reports directly to the President of the University; acts on the President's behalf for research activities; and is responsible for research planning, program development, and development of new opportunities for research. The Vice President develops relationships with government agencies and the private sector, strengthens research infrastructure, and nurtures ideas and research initiatives. The University of Montana includes campuses in Missoula, Butte, Dillon, and Helena. The University of Montana—Missoula is a comprehensive, doctoral-granting institution committed to excellence in teaching, research, and service. The University maintains nine doctoral and 43 masters programs, having a combined graduate enrollment of over 1,700 students, and has rapidly growing research and creative activities.

Candidates must have an earned doctorate and a strong record of research and other achievements, a clear understanding of the role of research and creative activities and their relationship to graduate education, demonstrated experience in research administration, the developed ability to communicate effectively, and the capacity to provide the leadership that is essential to the continued development of research and creative activity at the University.

Salary will be commensurate with experience and qualifications. The position is available 1 July 1997. Nominations must be received no later than 1 January 1997 and applications, including a curriculum vitae and the names of five references, by 15 January 1997.

Address all inquiries, applications, and nominations to:

President's Office

Dr. Perry Brown, Chair

Vice Presidential Search Committee

The University of Montana

Missoula, MT 59812-1291

Telephone: (406) 243-5522; FAX: (406) 243-4845

Email: pbrown@forestry.umd.edu

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The University of
Montana

GLOBAL CAREER OPPORTUNITIES



Professor in Experimental Human Pain Research (Aalborg, Denmark)

The International Research Center for Sensory-Motor Interaction, Laboratory for Experimental Pain Research, invites applications for a professorship in pain research. The Center provides unique facilities for human experimental pain research within the areas of induction/assessment of cutaneous/muscle/visceral pain, neuroplasticity, pharmacological modulation, electrophysiology and psychophysiology. Facilities for animal research are available.

Clinical research activities related to neurogenic pain, musculo-skeletal disorders and pain management are performed within an international and clinical research network. The applicant is expected to initiate new research activities (e.g., microneurography) and to facilitate research within the ongoing activities. The teaching obligations will be to supervise Ph.D. students and to give Ph.D. courses. The Center provides the new professor with 1-2 Ph.D. stipends, an initial research budget up to US\$ 100,000 and an annual amount up to US\$ 40,000. Candidates must have a doctoral degree, internationally recognized research programme and experience in supervision of Ph.D. students. Selected candidates will be invited for an interview.

Applicants should send CV, suggestion for research programme(s), reprints of recent publications, and names of at least three references to **Prof., Dr. Lars Arendt-Nielsen, Center for Sensory-Motor Interaction, Aalborg University, Fredrik Bajers Vej 7D-3, 9220 Aalborg, Denmark (Fax: +4598154008, E-mail: LAN@miba.auc.dk).**

MOLECULAR BIOLOGY OF HUMAN CYTOCHROME P450's

The Laboratory of Pharmacology and Chemistry, National Institute of Environmental Health Sciences, National Institutes of Health, has an immediate opening for postdoctoral fellowships in the area of molecular biology of the human cytochrome P450 enzymes. Position requires a Ph.D. in biochemistry, molecular genetics, or related field and no more than five years postdoctoral experience.

Current research is investigating human CYP drug-metabolizing enzymes, the mechanism of polymorphisms, and site-directed mutagenesis is being used to investigate structure-activity requirements for substrate specificity of the CYP2C enzymes using cDNA expression systems. Technical experience in molecular genetics including several of the following areas is needed: site-directed mutagenesis and construction of chimeras, use of cDNA expression systems such as bacteria, baculovirus, or yeast, cloning techniques, genomic analysis, library construction, DNA sequencing, SSCP. Experience with CYP enzymes, 3-dimensional modeling helpful.

Send curriculum vitae and three letters of reference as soon as possible to:

Dr. Joyce Goldstein, NIEHS
Laboratory of Pharmacology
and Chemistry
PO Box 12233 (MD A3-02)
Research Triangle Park, NC 27709
Email: goldstein@niehs.nih.gov
Fax: 919-541-3647
Tel: 919-541-4495

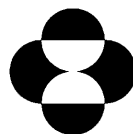
BIOLOGIST/BIOCHEMIST Laboratory Automation and Robotics

Merck Research Laboratories in Rahway, New Jersey, a world leader in biological and pharmaceutical research, has an immediate opening for a Biologist/Biochemist in the Department of Robotics and Automation.

The successful candidate will be responsible for all aspects of high-throughput biological assays to help identify novel drugs and drug leads. The responsibilities include assay development, assay configuration to high throughput forms, programming and application of robotics, and utilization of a sophisticated database system.

The position requires a BS or MS in the Biological Sciences and 1-2 years of biological research experience in a drug discovery environment. Your background should include some or all of the following: tissue culture, proliferation assays, enzymatic assays, and immunoassays. Previous computer programming experience is required (Visual Basic or Visual C++ is preferred) and you should feel comfortable with both Macintosh and Windows operating systems. You must have good analytical, interpersonal, and strong communication skills, and knowledge of good laboratory techniques. You should have the ability to operate specialized laboratory equipment; experience with Beckman, CRS, Hamilton, Packard, Sagian, Tecan, and/or Zymark robots would be beneficial. You should be strongly motivated and able to work independently as well as in a team environment.

Merck offers a competitive salary, an excellent benefits package, opportunities for professional growth and pleasant working conditions at our Rahway, NJ facility. If you fulfill the listed requirements, please send curriculum vitae with cover letter to **Susan R. Jenkins, AD #15, Merck & Co., Inc., P.O. Box 2000, Rahway, NJ 07065.** EEO/AA/VH/Employer.



MERCK

Research Laboratories

COURSES & TRAINING

1997 State-of-the-art TRAINING OPPORTUNITIES Marine Biological Laboratory Woods Hole, Massachusetts

Analytical and Quantitative Light Microscopy, May 8 - 16, 1997
In-depth laboratory exercises, demonstrations, lectures, and discussions in the theory of the microscope and application of video for exploring subtle interactions between light and the specimen. Intended for researchers in biology, medicine, and materials sciences.

Directors: Greenfield Sluder and David Wolf, Worcester Foundation for Biomedical Research.

Applications Due: March 11.

Microinjection Techniques in Cell Biology, May 20 - 27, 1997

Intensive hands-on training in state-of-the-art methods for introducing materials into living cells, organelles, and sub-cellular compartments. Light microscopy training and applications of video technology also included. Intended for grad students, postdocs and senior investigators.

Director: Robert B. Silver, Marine Biological Laboratory.

Applications Due: March 11

Optical Microscopy and Imaging in the Biomedical Sciences, October 8-16, 1997

Comprehensive hands-on introduction to microscopy and video imaging for research scientists, physicians, postdocs, and advanced grad students, in animal, plant, medical and materials sciences, as well as non-biologists.

Director: Colin S. Izzard, State University of New York, Albany.

Applications Due: August 5

Women and minorities are encouraged to apply. For application forms & information, contact: **Carol Hamel, Admissions Coordinator, Marine Biological Laboratory, 7 MBL Street, Woods Hole, MA 02543-1015; Phone: (508) 289-7401; E-mail: <admissions@mbledu> or download forms & information from the Internet/Web: <http://www.mbledu>.**



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- Applicants must have demonstrated skills in the following areas:
- Writing ability, creation of clear, concise and precise reports.
 - Solid PC skills, preferably MS Office, Word, Excel, PowerPoint and graphics programs.
 - Effective oral communication skills.

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POSITIONS OPEN

YALE UNIVERSITY SCHOOL OF MEDICINE BBS Administrative Director

Yale University School of Medicine is seeking a dynamic individual interested in serving as administrative **DIRECTOR** of a new, University-wide graduate program in the biological and biomedical sciences (BBS). The position will involve working with faculty to establish procedures governing the administration of the BBS program, student applications, innovative career development opportunities including interfacing with industry, and minority recruitment programs. The successful candidate should have a Ph.D. degree or equivalent experience in any biological science and an interest in exploring a career path in scientific education and academic administration. Administrative experience helpful but not required. Salary from \$31,000 commensurate with education and experience.

Send or fax résumé to: **Ms. C. Palcso, Yale University School of Medicine, Department of Human Resources, P.O. Box 9168, New Haven, CT 06532-0168. FAX: 203-785-3165.**

Yale University is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and members of minority groups.

INTERDISCIPLINARY SCIENCE/ EDUCATION POSITION

Applications are invited for a tenure-track position at the **ASSISTANT PROFESSOR** level beginning September 1997. We seek an interdisciplinary scientist with research and teaching interests in innovative undergraduate science education at an ethnically and culturally diverse campus. A Ph.D. in biological sciences, chemistry, geological sciences, or physics, or in an interdisciplinary science program, is required. Experience is required in basic research and in science education; postdoctoral experience preferred. The successful applicant will be expected to initiate interdisciplinary science courses, to develop programs and courses to enhance the science education of pre-K-14 teachers, and to stimulate continued development of technology-assisted undergraduate science programs. Send curriculum vitae, statement of teaching and research philosophy, evidence of strengths in innovative undergraduate science education, transcripts, and three letters of recommendation to: **Chair of Interdisciplinary Science/Education Search Committee, School of Science, California State University, Hayward, Hayward, CA 94542.** Application review begins February 15, 1997. Internet: **scied@csuhayward.edu.** *California State University, Hayward is an Equal Opportunity Employer and does not discriminate on the basis of age, race, color, national origin, sex, sexual orientation, or disability.*

PLANT SYSTEMATIST

The University of Wisconsin, Department of Botany, seeks a distinguished Plant Systematist to assume a tenured professorial position, preferably at the **ASSOCIATE PROFESSOR** level. Duties include teaching, research, and directorship of the Wisconsin State Herbarium. The Department and Herbarium seek candidates whose training and/or abilities will expand the University's and Department's breadth in biosystematics including, but not limited to, tropical systematics, plant-animal interactions, paleobotany, morphological evolution, or fern systematics. The successful candidate will be expected to contribute to the development of systematic biology on the campus, provide leadership in the Herbarium, and develop an active program of research and instruction.

Applicants should send a curriculum vitae, a statement of research and teaching interests, current and long-term goals, and three letters of recommendation. The deadline for receiving applications is January 15, 1997, and the earliest start date is August 25, 1997. Send applications to: **Professor Kenneth J. Sytsma, Chair of Search Committee, Botany Department, University of Wisconsin, Madison, WI 53706.**

Unless confidentiality is requested in writing, information regarding the applicants must be released upon request. Finalists cannot be guaranteed confidentiality. *Affirmative Action/Equal Opportunity Employer.*

Biomedical Engineering-Tulane University invites applications for a **TENURE-TRACK FACULTY** position that will be open as of July 1, 1997. Rank and salary are open, dependent on the candidate's qualifications. Applications must be received by January 15, 1997. More information about the position and Tulane's Department of Biomedical Engineering can be found at: **http://www.bmen.tulane.edu.** *Tulane University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN



STANFORD UNIVERSITY Department of Molecular Pharmacology

The Department of Molecular Pharmacology at Stanford University School of Medicine invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. Candidates should have a Ph.D. and/or M.D. degree and postdoctoral research experience. The appointee will interact with other faculty members who have research interests in signal transduction, gene expression, and gene therapy. The appointee will be expected to develop an independent research program that utilizes biochemical, genetic, chemical, computational, and/or molecular and cell biological approaches to analyze problems of pharmacological interest. The appointee should be committed to teaching M.D. and Ph.D. students in a stimulating academic environment.

Candidates should send curriculum vitae, a description of future research plans, and the names and addresses of three references to: **James P. Whitlock, Jr., M.D., Department of Molecular Pharmacology, Stanford University School of Medicine, Stanford, CA 94305-5332.** *Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.*

DIRECTOR University of Florida Florida Museum of Natural History

Applications are invited for the **DIRECTORSHIP** of one of the largest and most active university museums of natural history. The Florida Museum of Natural History (FLMNH) emphasizes education, conservation, research, and exhibits on the natural and cultural history of Florida and Latin America.

The Museum serves dual functions as an exhibit center, with permanent and traveling exhibits and a membership program, and as a University Museum, with strong research and educational missions. Physically the Museum consists of two structures: one central on campus, which houses research curators and collections, and the other an exhibit building with public exhibits and education programs located in the University cultural center. The museum also maintains satellite facilities. The FLMNH faculty consists of 24 salaried curators who also hold titular appointments in related teaching departments.

The Directorship is equivalent to the rank of Dean within the University of Florida. Applicants should have appropriate experience and vision to plan the Museum's long-range growth in terms of its research, teaching, and public education programs; to develop a statewide constituency and fundraising campaign; and to maintain liaison with officers in federal, state, and University administrations.

The position opens July 1, 1997. The salary is commensurate with qualifications and experience and competitive with that of other major museums. Applications naming three references should be postmarked no later than February 15, 1997 and sent to: **Dr. J. F. Eisenberg, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611, U.S.A.** *The search will be conducted under Florida's "Government in the Sunshine" Law. The University of Florida is an Equal Employment Opportunity/Affirmative Action Employer.*

CYTOLOGY/HISTOLOGY

Applicants sought for **TENURE-TRACK** position in cell biology, for August 1997. Ph.D. required. The successful applicant must demonstrate significant evidence of teaching potential (in introductory biology, histology, and cytology) and will be expected to develop a competitive research program involving both undergraduate and Master's students. Send curriculum vitae, statements of research interest and teaching philosophy, and complete transcripts, and have three letters of recommendation sent by February 15, 1997 to: **Dr. Andrew Dewees, Chair, Department of Biological Sciences, Sam Houston State University, Huntsville, TX 77341-2116.**

A Member of The Texas State University System. An Equal Opportunity/Affirmative Action Institution.

POSITIONS OPEN

CHAIRPERSON Department of Neurobiology

The Northeastern Ohio Universities College of Medicine (NEOUCOM) invites applications for the position of **PROFESSOR** and **CHAIRPERSON**, Department of Neurobiology, one of seven basic science departments at NEOUCOM. Faculty in the department are responsible for the first year medical neurobiology course and graduate training as members of the graduate faculty in programs leading to the Ph.D. through the School of Biomedical Sciences at Kent State University. While the area of research interest is open, special consideration will be given to individuals with active research programs in sensory neurophysiology or developmental neurobiology. The new chair is expected to develop a research focus in the department building on the strengths of current faculty, potential future faculty, and scientists and clinicians in the NEOUCOM consortium. The ideal candidate will have excellent interpersonal and communication skills and leadership qualities necessary to promote collaborative interactions in education and research with other basic science, clinical, and graduate faculty. Interested candidates should send their curriculum vitae, statement of research interests, and the names of at least three references to: **Dr. Steve Ward, Chair, Neurobiology Search Committee, Department of Anatomy, Northeastern Ohio Universities College of Medicine, 4209 State Route 44, P.O. Box 95, Rootstown, OH 44272-0095. Telephone: 330-325-2511; FAX: 330-325-2524; Email: scw@neoucom.edu.** The deadline for receipt of applications is March 1, 1997. Starting date of appointment is negotiable, but can be as soon as July 1, 1997.

NEOUCOM is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.

HEAD DEPARTMENT OF VETERINARY SCIENCE PENN STATE

The Pennsylvania State University seeks applications and nominations for the position of Head, Department of Veterinary Science in the College of Agricultural Sciences. The department head is responsible for directing the research, teaching, extension, and diagnostic programs of an academic department that consists of 15 tenure-track faculty members, 12 faculty with fixed-term appointments, 43 staff, and 31 graduate students. We seek an energetic leader in the broadly defined area of pathobiology with effective interpersonal skills and administrative ability. The successful candidate must have a Ph.D. in the biological sciences or a Ph.D./veterinary medical degree with a distinguished record of research, teaching, and/or extension sufficient to be tenurable as a full **PROFESSOR**. An attractive start-up package and laboratory space for continued scholarly activities will be provided. Inquiries, nominations, and complete applications including a curriculum vitae and names of five references should be directed to: **Dr. L. M. Sordillo, Chairperson, Search Committee, The Pennsylvania State University, 115 Henning Building, Box A, University Park, PA 16802.** Evaluation of applications will begin February 1, 1997, and will continue until the position is filled. *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

ASSISTANT PROFESSOR Biochemistry/Molecular Biology University of Minnesota, Duluth

The Department of Chemistry is seeking applications for a nine-month **TENURE-TRACK** Assistant Professor position in the area of biochemistry/molecular biology effective September 1, 1997. The successful candidate will 1) contribute effectively to the teaching responsibilities in biochemistry/molecular biology including undergraduate, graduate, and medical school courses as interest and expertise allow; 2) apply molecular biology techniques to problems in biochemistry, chemistry, or molecular biology; 3) develop an externally funded research program involving undergraduate and graduate students; and 4) fulfill normal service obligations. Applications must be postmarked by January 20, 1997. Ph.D. in chemistry, biochemistry, molecular biology, or related field; postdoctoral experience; and a commitment to quality teaching are required. Research training in biochemistry and postdoctoral experience at a research institution are desired. Send an application letter, curriculum vitae, and research proposal, and have three letters of recommendation sent to: **Dr. Paul Siders, Department of Chemistry, University of Minnesota, Duluth, 10 University Drive, Duluth, MN 55812.** *The University of Minnesota is an Equal Opportunity Educator and Employer.*

CDR Therapeutics

CDR Therapeutics is a new biotechnology company that is focused on developing small molecule analogs of proteins for therapeutic applications. The company is currently developing several peptidomimetics for the treatment of cancer and immunological diseases, and is seeking qualified individuals for the following position:

Vice President, Research. A proven leader with an outstanding track record in drug discovery and preclinical development is being sought to lead an integrated research team of chemists and biologists working to create new drugs that exploit novel receptor targets in immunology and oncology. This individual will set overall strategy and formulate programs to carry out the company's research goals. Responsibilities include developing, implementing, and directing a chemistry program focused on the optimization of current peptide-based drug candidates as well as the design of future non-peptide compounds. In addition, this individual will also oversee biological research programs involved in the *in vitro* and *in vivo* testing of lead compounds. As a senior member of the company's management team, the successful candidate will contribute to formulating the company's overall corporate strategy. Qualified candidates will hold a Ph.D. in a chemistry-related discipline, have at least ten years of experience in the development of pharmaceutical drugs, and have a proven track record of developing and leading highly focused research groups. Direct responsibility for developing drugs that have reached advanced clinical testing is required. Interested applicants are encouraged to send a CV to: **Human Resources, CDR Therapeutics, Inc., 720 Broadway, Suite 612, Seattle, WA 98122**

Postdoctoral Research at The Wistar Institute

The Wistar Institute, an independent research organization located on the campus of the University of Pennsylvania, currently seeks postdoctoral applicants.

Postdoctoral Researcher 1 — Studies of immunological mechanism of p53 based vaccines for cancer therapy. **Reply to Dr. Hildegund Ertl.**

Postdoctoral Researcher 2 — Conduct molecular virology studies of herpes simplex virus latency utilizing a mouse model system. We are also studying the use of HSV in gene therapy and cancer therapy. **Reply to Dr. Nigel Fraser.**

Postdoctoral Researcher 3 — Two positions are available: 1) Individual with strong background in molecular biology and some knowledge in immunology to characterize vaccinated cancer patients' humoral immune responses using antibody phage display; 2) Individual with expertise in cellular immunology to characterize vaccinated cancer patients' T cell responses. **Reply to Dr. Dorothee Herlyn.**

Postdoctoral Researcher 4 — Conduct cellular immunology and virology studies on HIV-1 and cytokines. Research areas include AIDS immunopathogenesis, pre-clinical development of immunotherapy (viz., IL-12, IL-13) and macrophage infection. **Reply to Dr. Luis J. Montaner.**

Postdoctoral Researcher 5 — Projects include characterization of a novel co-repressor for the KRAB domain; engineering repressors which revert the neoplastic phenotype; and characterization of BRCA-1 interacting proteins. Highly motivated individuals with molecular biology/biochemistry background are preferred. **Reply to Dr. Frank J. Rauscher, III.**

Postdoctoral Researcher 6 — Study T cell development in mice. The position requires a Ph.D. and experience in molecular and/or cellular biology. **Reply to Dr. Lisa M. Spain.**

Postdoctoral Researcher 7 — Studies of glycosyltransferases and carbohydrate based inhibitors of metastasis. **Reply to Dr. Magdalena Thurin.**

Interested applicants are requested to send a C.V. and three references to the appropriate faculty member's attention:
The Wistar Institute, 3601 Spruce Street, Philadelphia, PA 19104.

Equal Opportunity Employer.
Minority candidates are strongly encouraged to apply.



Tenure-Track Faculty Position

Developmental Biology and Anatomy

The Department of Developmental Biology and Anatomy at the School of Medicine anticipates that a full-time tenure-track faculty position will be available 1 July 1997, subject to budgetary approval. The appointment will be at the Assistant or Associate Professor level depending on qualifications. Applicants at the Assistant Professor level should be capable of establishing an independent research program. While the specific area of research is open, individuals utilizing cell and/or molecular biological approaches in the study of the cardiovascular system or developmental biology are encouraged to apply. The successful candidate will participate in the teaching of medical embryology and gross anatomy to medical students and in interdisciplinary graduate courses to graduate students. Preference will be given to individuals who have experience teaching gross anatomy, but we are willing to train. Information on the Department is available on the Web at http://www.med.sc.edu/DBA_HOME.HTM. Curriculum vitae, three representative publications, and the names of three references should be sent to: **Dr. Marcia Welsh, Department of Developmental Biology and Anatomy, University of South Carolina, School of Medicine, Columbia, SC 29208.** *The University of South Carolina is an Equal Opportunity/Affirmative Action Employer. Women and minorities are strongly encouraged to apply.*

EDUCATION/RESEARCH

FACULTY POSITIONS, AGRICULTURAL BIOTECHNOLOGY CENTER UNIVERSITY OF DELAWARE

The Departments of Animal & Food Sciences and Plant and Soil Sciences in conjunction with the newly established Agricultural Biotechnology Center have openings for three 12 month, tenure-track/tenured faculty appointments, two in plant molecular biology and one in genome science. These positions are approximately 80% research and 20% teaching/advising. Successful candidates will be expected to develop strong, contemporary, extramurally funded research programs. The Agricultural Biotechnology Center is an excellent academic research opportunity and individuals selected for these positions will have the opportunity to interface with a world-class effort in high throughput gene expression analysis undertaken as a major initiative of the new Center. Opportunities for joint appointments in other departments at the University of Delaware are available.

PLANT MOLECULAR BIOLOGY

Applications in all areas of plant molecular biology will be considered. Individuals with interests in development, transformation, gene expression, and plant-microbe interactions are encouraged to apply. For the **FULL/ASSOCIATE PROFESSOR** position, we seek an established investigator with a distinguished research record. The individual selected for this position will play a key role in the development of plant molecular biology programs at the University of Delaware. Review of applications will begin on January 31, 1997. For the **ASSISTANT PROFESSOR** position a Ph.D. in plant biology with post-doctoral or equivalent experience is required. Qualified applicants must have a comprehensive understanding of and demonstrated

research creativity and productivity in plant molecular biology/genetics. Review of applications will begin March 31, 1997. To apply for either position, send letter of application, curriculum vitae, a list of three to five references, copies of key publications and a brief description of current research interests to: **Dr. Jim Hawk, Search Committee Chair, Department of Plant and Soil Sciences, College of Agricultural Sciences, University of Delaware, Newark, DE 19717-1303.**

GENOME SCIENCE

Applicants must have a Ph.D. in an appropriate discipline, post-doctoral experience, and a record of research productivity. We seek an **ASSISTANT PROFESSOR** capable of directing an innovative research program in the applications of genome science to understanding the molecular mechanisms of poultry disease and the evolution of pathogens. Review of applications will begin January 31, 1997. Send a letter of application, curriculum vitae, a list of three to five references, and a brief description of current research interests to: **Dr. Robin W. Morgan, Search Committee, Department of Animal and Food Sciences, University of Delaware, Newark, DE 19717-1303.**

The UNIVERSITY OF DELAWARE is an Equal Opportunity Employer which encourages applications from Minority Group Members and Women.



POSITIONS OPEN

MOLECULAR EVOLUTIONARY POPULATION BIOLOGIST

The Department of Biological Sciences invites applications for a tenure-track faculty position at the rank of **ASSISTANT PROFESSOR**, contingent upon final approval of funding. The successful candidate will be expected to establish an externally funded research program using molecular genetics to study basic evolutionary problems, preferably at the population level, and to participate in graduate and undergraduate teaching in evolution and population genetics. The candidate will be able to interact with a large group of biologists working on exciting problems in ecology; animal behavior; molecular evolution; neurobiology; and molecular, cellular, and developmental biology. Excellent core research facilities are available. Salary and set-up package will be competitive. Start date preferably fall of 1997. Please submit materials before January 21, 1997; however, applications will be accepted until the position is filled.

Applicants should send a letter of intent, curriculum vitae, and statement of research plans, and arrange for at least three reference letters to be sent to: **Dr. Kenneth P. Able, Chairperson, Search Committee, Department of Biological Sciences, University at Albany, State University of New York, Albany, NY 12222.**

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

FROSTBURG STATE UNIVERSITY Assistant Professor

Frostburg State University (FSU) seeks full-time tenure-track **ASSISTANT PROFESSORS** in Plant Taxonomy and Wildlife Ecology, to begin August 1997, pending budget approval. Salary commensurate with experience. Assistant Professor Plant Taxonomy 97-536-SCI—Teach courses in area and establish research program. Requires Ph.D. in plant systematics or related field, a strong knowledge of eastern North American flora, and demonstrated potential for excellence in teaching and research. Assistant Professor in Wildlife Ecology 97-537-SCI—Half-time teaching. Establish research program; teach various courses in area. Requires a Ph.D. in wildlife biology or related field. College-level teaching preferred. Direct position inquiries to **Dr. David Morton, Telephone: 301-687-4355/4166** and employment inquiries to **Human Resources, Telephone: 301-687-4105 (Voice/TDD)**. Send letter of interest; curriculum vitae; copy of transcripts; and names, addresses, and telephone numbers of three references by January 31, 1997 to: **Frostburg State University, Office of Human Resources, ATTN: (Specify Position and Number), Frostburg, MD 21532.**

FSU is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply. Appropriate auxiliary aids and services for qualified individuals will be provided upon request. Please notify in advance.

ASSISTANT OR ASSOCIATE PROFESSOR

The Ohio State University is seeking two or three **FACULTY** in the area of Molecular Structural Biology as part of the multi-year interdisciplinary Molecular Life Sciences Initiative. Scientists with a strong background and research experience in the areas of macromolecular structure, intermolecular interactions, x-ray crystallography, NMR spectrometry, and/or mass spectrometry will be given high priority. Department affiliation is negotiable for these tenure-track positions at the Assistant and Associate Professor rank. Salary: negotiable. Applications, including curriculum vitae, three letters of reference, and a statement of research interests, should be sent to: **Charles L. Brooks, Ph.D., 1925 Coffee Road, Columbus, OH 43210.** Review of applications will begin on January 20, 1997. *The Ohio State University is an Equal Opportunity/Affirmative Action Employer. Women, minorities, Vietnam-era veterans, and individuals with disabilities are encouraged to apply.*

RESEARCH ASSISTANT PROFESSOR position in Atherosclerosis Research Unit (ARU) of the Department of Medicine. To be filled only after receipt of a funding award notification from the NIH/NHLBI. Earliest start is July 1997. Requires M.D. or M.D./Ph.D. degree with experience in molecular biology techniques, protein expression, purification, lipoproteins, gene targeting techniques, purification of antibodies, receptor binding studies, development of ELISA, animal handling, and transgenic animal technology. Apply to: **Jere P. Segrest, M.D., Ph.D., ARU Director, 630 BDB, University of Alabama at Birmingham, Birmingham, AL 35294-0012.**

POSITIONS OPEN

CHAIR

Department of Biochemistry and Biophysics

The School of Medicine of the University of North Carolina at Chapel Hill has reopened its search for a **CHAIR** of Biochemistry and Biophysics. The institution seeks an individual to provide scholarly, academic, and administrative leadership for the research and teaching programs of the Department. There are excellent facilities and strong collaborative relationships with other departments, research centers, and programs within the University. Other academic and industrial institutions in the Research Triangle enhance the scientific environment. Minimum qualifications include a Ph.D. and/or M.D. degree, a distinguished record of creative scientific productivity, and a commitment to graduate and medical education. Review of applications will begin immediately and continue until the position is filled. Reply with a letter of interest; curriculum vitae; and the names, addresses, and telephone numbers of four or more references to: **R. L. Juliano, Ph.D., Chair of Biochemistry and Biophysics Search Committee, c/o Office of the Dean, School of Medicine, CB 7000 MacNider Hall, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7000. (Attention: Anne Hennessy).** *Affirmative Action/Equal Opportunity Employer. Women and members of minority groups are encouraged to apply.*

ASSISTANT RESEARCH SCIENTIST

College of Medicine Department of Internal Medicine Infectious Diseases Division The University of Iowa

The Department of Internal Medicine, Infectious Diseases Division, is seeking an **ASSISTANT RESEARCH SCIENTIST** to perform research related to the mechanisms whereby phagocyte cells (i.e., white blood cells) damage invading microorganisms as well as host cells through the production of oxygen-centered free radicals.

Requires the academic knowledge of a discipline that is generally associated with a doctoral degree, or an equivalent combination of education and experience in the biological sciences or chemistry. In addition, the person will have demonstrated the ability to plan and execute a research project through some progressively responsible independent research work (five years minimum is required). Experience in cell culture, cellular ion metabolism, oxygen free radical chemistry, and use of an EPR spectrometer is desirable.

Please send résumé with the names of three references and cover letter indicating Number 39033 to: **Michele Pugh, Human Resources, Internal Medicine, E400 GH, 200 Hawkins Drive, Iowa City, IA 52242-1081.**

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

ASSISTANT PROFESSOR DEPARTMENT OF FOOD SCIENCE PENN STATE

The Department of Food Science seeks applicants for the position of Assistant Professor of Food Science with an emphasis on the physical chemistry of foods. This **TENURE-TRACK** position is divided 40% teaching and 60% research. The individual will be expected to maintain a research program focused on the physical chemistry of food lipids. The teaching component includes one undergraduate course in food chemistry, one graduate-level course, and advising of undergraduate and graduate students. Applicants must have an earned doctorate in food science, chemistry, physical chemistry, or biochemistry, with a strong interest in lipids. Postdoctoral or industrial experience is highly desirable. A competitive salary, commensurate with qualifications and experience, with an attractive benefits package, is available. The closing date for applications is March 1, 1997, or until a suitable candidate is found. Anticipated starting date is July 1, 1997. Applicants should submit a letter of application, résumé, academic transcripts, and the names and addresses of three professional references to: **Dr. Gregory R. Ziegler, 111 D, Borland Lab, The Pennsylvania State University, University Park, PA 16802.** *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

POSITIONS OPEN

CURATOR/PLANT SYSTEMATIST University of Oklahoma

Twelve-month joint **TENURE-TRACK** position starting August 1997 in Oklahoma Biological Survey and Department of Botany and Microbiology for Curator of Bebb Herbarium and Assistant/Associate Professor of Botany. Curatorial responsibilities include administration of 230,000-specimen herbarium, oversight of collection development, and research. Departmental faculty responsibilities include teaching (one course per year), participation in graduate program, and research. Individual expected to develop research/teaching programs using plants to examine significant questions in systematic and evolutionary biology. Preference given to those using modern systematic techniques and having familiarity with Great Plains flora. Ph.D. required. Must demonstrate: research productivity in systematics; collection care and management skills; and teaching ability. Provide résumé, written summary of how requirements are met, reprints, and three confidential recommendation letters to: **John J. Skvarla, Search Committee Chair, Department of Botany and Microbiology, University of Oklahoma, Norman, OK 73019. Telephone: 405-325-5823; FAX: 405-325-7619; Email: jskvarla@ou.edu.** Screening begins February 3, 1997, continuing until position filled. *Equal Opportunity/Affirmative Action Employer. Women and minorities encouraged to apply. University has policy of being responsive to needs of dual-career couples.*

BIOLOGICAL OCEANOGRAPHER Department of Organismic and Evolutionary Biology Harvard University

The Department seeks a biological oceanographer whose work addresses the ecology or physiology of plankton and who has a demonstrated interest and ability in teaching at the undergraduate and graduate levels. The appointment will be to a **TENURED PROFESSOR-SHIP**. Applicants should submit by January 13, 1997, a curriculum vitae, a statement of research and teaching interests, and the names and addresses of three references to:

**Professor Robert M. Woollacott
Department of Organismic and Evolutionary Biology
Harvard University
26 Oxford Street
Cambridge, MA 02138
FAX: 617-495-0506**

Harvard University is an Affirmative Action/Equal Opportunity Employer; we encourage applications from women and minority candidates.

EVOLUTIONARY BIOLOGIST

St. Mary's College of Maryland invites applications for a term appointment at the **ASSISTANT PROFESSOR** level, to begin August 1997. The appointment will be for two years with the possibility of renewal for two more years. We seek a biologist who studies evolution using molecular tools and who is committed to teaching and research involving undergraduate students at a small public liberal arts college. Teaching responsibilities include second-year courses in genetics plus ecology and evolution, participation in the first-year introductory sequence for majors, and developing an advanced course in the individual's area of expertise. Applicants should have or expect a Ph.D. before the starting date. Please submit a curriculum vitae (including Email address) and a statement of teaching philosophy and research interests, and arrange to have three letters of recommendation sent to: **Chair, Molecular Evolution Search Committee, St. Mary's College of Maryland, St. Mary's City, MD 20686.** Review of applications will begin on January 13, 1997 and continue until the position is filled. *St. Mary's College is an Equal Opportunity/Affirmative Action Employer.*

ENVIRONMENTAL BIOLOGY

Saint Anselm College, a Catholic liberal arts college in the Benedictine tradition, invites applicants for a non-tenure-track position at **ASSISTANT PROFESSOR** rank with commitment to teaching and an undergraduate research program in environmental biology. Ph.D. required. Preference given to applicant experienced in teaching and research in freshwater aquatic systems with emphasis on plants. Teaching duties include conservation biology, introductory biology/microbiology. The successful candidate will support the College's mission. Send curriculum vitae, statement on teaching and research plans, and three letters of recommendation to: **Dr. Daniel J. Lavoie, Chairperson, Biology Department, Saint Anselm College, 100 Saint Anselm Drive, Manchester, NH 03102-1310.**



Vanderbilt University
DEAN
College of Arts and Science

The College of Arts and Science of Vanderbilt University invites nominations and applications for its Deanship. With approximately 4000 students, the College is the largest of the University's ten schools, and enjoys a long history of academic excellence and fiscal stability.

Candidates for the Deanship must be accomplished scholars with outstanding abilities in leadership and administration, capable of fostering teaching and research of the highest order. They must qualify for appointment to the rank of Professor with tenure in a department of the College.

The Search Committee will begin reviewing applications immediately and continue until the position is filled. Nominations and applications, including resumes and the names of references, should be sent to:

Professor Paul Elledge
Arts and Science Dean Search Committee
221 Kirkland Hall
Vanderbilt University
Nashville, Tennessee 37240
FAX: (615) 322-7629

Vanderbilt University is an Affirmative Action, Equal Opportunity Employer, and strongly encourages nominations of, and applications by, minority and female candidates.

Associate Director/Director Immunology

ZymoGenetics, a Seattle-based biotechnology company located in the historic Lake Union Steam Plant, is looking for an Associate Director/Director — Immunology.

We are presently embarking on an intense bioinformatics search for novel protein therapeutics and have identified immunology as a key therapeutic area in which such proteins have a high likelihood of utility. To spearhead our effort in immunology, we are seeking an experienced research immunologist with proven scientific and managerial credentials. The position will report directly to the Vice President of Discovery Biology and will initially be at the Associate Director/Director level, depending upon the qualifications and experience of the candidate. Present staff consists of three experienced Ph.D. scientists plus four non-Ph.D. research assistants, and is growing.

As a subsidiary of Novo Nordisk A/S, the world's largest producer of industrial enzymes, ZymoGenetics offers an exciting environment characteristic of a small research and development company, along with the scope and stability of a large pharmaceutical corporation. We also offer intellectual challenge, state-of-the-art facilities and a generous benefits package. Please apply by sending your resume or CV, noting reference # 15N796, to: *ZymoGenetics, Inc., Human Resources, 1201 Eastlake Avenue East, Seattle, WA 98102.* ZymoGenetics is committed to Equal Opportunity and Diversity.

ZYMOGENETICS 

TENURE-TRACK FACULTY POSITIONS

ANY LEVEL / ALL AREAS
WPI

WPI welcomes applications from minority candidates for tenure-track faculty positions at any level in all areas of engineering, science, business, social sciences, and humanities and arts.

WPI is an innovative technological university of engineering, science, management, humanities and arts and social sciences with an enrollment of 2600 undergraduate and 1000 part- and full-time graduate students and 200 faculty. WPI is the nation's third oldest college of engineering and science and prides itself on its innovative, project-based undergraduate program, the WPI Plan, which offers students a flexible academic alternative to traditional technological curricula. Located in Worcester, MA, New England's second largest city, WPI faculty, staff and students can enjoy theater, opera, and symphonic and popular concerts both locally and in nearby Boston which is only 40 miles away. Many faculty members live in nearby suburban or rural communities and enjoy the beautiful outdoors locally or at the nearby mountains or seashore. With many institutions of higher education in the area (10 in Worcester alone), Fortune 500 companies, and health care, biotechnology, and research facilities, Worcester offers many opportunities for dual career families. For additional information about WPI, see our web site at <http://www.wpi.edu/>

Applicants should hold an earned doctorate by August 15, 1997 in one of the above or related areas. Positions are available beginning late August, 1997; applications will be accepted through February 28, 1997. Interested parties should submit a letter of application describing teaching interests and research plans in some detail, a current curriculum vitae, and make arrangements for us to receive three professional letters of reference, one or more addressing teaching as well as research credentials, to: **Faculty Search Committee, WPI, Human Resources, Dept. 5M, 100 Institute Road, Worcester, MA 01609-2280.**



WPI offers a smoke-free environment. To enrich education through diversity, WPI is an affirmative action, equal opportunity employer.

Penn State College of Medicine

Graduate Studies and Postdoctoral Training

Pharmacology

Areas of research interest include: Ion pump structure and function; Drug development and resistance; Drug effects in aging; Neurotransmitters; Neuroendocrine modulation; TGF- β signal transduction; Oncogenes and transcription; G protein-mediated receptors and intracellular signaling; Transgenic mouse models for neurotoxicity and DNA repair

College of Medicine Programs

Anatomy
 Biochemistry and Molecular Biology
 Cell and Molecular Biology
 Microbiology and Immunology

Neuroscience
 Pharmacology
 MD/PhD Program
 PhD/MBA Program

Inter-College Programs

Bioengineering
 Genetics
 Nutrition

Physiology
 Integrative Biosciences

For more detailed information and to apply visit our WWW site at <http://www.hmc.psu.edu> or contact

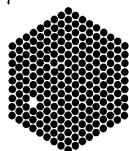
Assistant Dean for Graduate Education, Penn State College of Medicine, Hershey, PA 17033-0850. Telephone: (717) 531-8892
 Fax: (717) 531-4582; E-mail: grad-hmc@psu.edu

PENNSTATE



College of Medicine
 University Hospital · Children's Hospital
 The Milton S. Hershey Medical Center

Penn State is an affirmative action, equal opportunity university.



EMBL

The European Molecular Biology Laboratory, an international research organisation with a Headquarters Laboratory in Heidelberg (Germany), Outstations situated in Grenoble (France), Hamburg (Germany) and Hinxton (UK) and a Research Programme at Monterotondo (Italy) has the following vacancy in Heidelberg:

GROUP LEADER

BIOLOGICAL HIGH-RESOLUTION ELECTRON MICROSCOPY

The European Molecular Biology Laboratory in Heidelberg, Germany, has a wide research programme in the areas of structural, cell and developmental biology, cell regulation, gene expression, cell biophysics and biochemical instrumentation. The Structural Biology (incl. Biocomputing) Programme maintains a multidisciplinary approach to study the structural basis of biological problems. The research groups within the Programme are currently using biocomputing methods, X-ray crystallography, NMR spectroscopy and high-resolution electron microscopy, supported by broad expertise in biochemistry and molecular biology, to study membrane, cytoskeletal and signalling proteins, viruses and macromolecular assemblages, protein/nucleic acid interactions, and protein folding.

The EM facility is equipped with six transmission electron microscopes (including a Phillips CM200 FEG), facilities for cryo-electron microscopy, a scanning transmission electron microscope, and scanning microdensitometers. The new group leader is expected to pursue a strong research programme in biological cryo-electron microscopy. Suitable areas include high-resolution structural analysis of membrane proteins, structure and function of cytoskeletal proteins, and analysis of single particles.

Candidates should have a PhD and relevant post-doctoral training, with significant research accomplishments, and should demonstrate the ability to establish and run an independent research group.

The contract will be for five years in the first-instance. This can be renewed depending on the circumstances at the time of review.

Closing date: 28 February 1997

Further information can be obtained from: Matti Saraste, tel: +49 6221 387365 Fax: +49 6221 387306, e-mail: saraste@embl-heidelberg.de

EMBL is an inclusive, equal opportunity organisation.

Applicants should submit a curriculum vitae, including a description of current and planned research activities and arrange for three letters of recommendation to be sent, quoting ref. no. 96/67, to:

Head of Human Resources, EMBL, Postfach 10.2209, D-69012 Heidelberg, Germany.

(Fax: +49 6221 387555 email: jobs@embl-heidelberg.de)

Assistant Professors Drexel University

The Department of Bioscience and Biotechnology is continuing its expansion with three **tenure track** positions, to begin September, 1997. We seek colleagues who have a genuine interest in participating in an innovative, nationally recognized undergraduate educational program, in teaching advanced courses in their area of specialty and whose fundable research complements our existing strengths in molecular biology, ecology, molecular ecology, and nutrition and food science. The new positions are in **Eukaryotic Molecular Genetics/Development, Plant Community Ecology, and Plant Molecular Physiology**. Additional details, including information on an initiative in urban forestry, are available on our WWW page: <http://www.sciences.drexel.edu/biology/biology.html>. A Ph.D. and postdoctoral experience are required, and teaching experience is highly desirable. Interested individuals should submit a curriculum vitae, statements of teaching and research interests, and the names of three people who can be contacted for references, by Jan. 3, 1997, to: **Faculty Search Committee, Department of Bioscience and Biotechnology, Drexel University, Philadelphia, PA 19104. Phone: (215) 895-2624; FAX: (215) 895-1273. Equal Opportunity/Affirmative Action Employer.**



FACULTY POSITION HUMAN GENETICIST/GENETIC EPIDEMIOLOGIST

The Karmanos Cancer Institute, in the School of Medicine at Wayne State University, invites applications for the tenure/tenure-track position of human geneticist/genetic epidemiologist at the level of Assistant/Associate or Full Professor. The primary appointment for this position will be in the Cancer Control: Epidemiology and Environmental Carcinogenesis Program within the Karmanos Cancer Institute. Applicants must have an M.D. and/or a Ph.D. degree or equivalent. Primary criteria for appointment will include an active research program in human genetics and epidemiology, a strong history of publications in peer-reviewed journals, demonstrated management leadership and initiative in successful grant applications, and evidence of successful teaching at the graduate level.

The candidate will be expected to collaborate with other investigators in the expansion of the Cancer Control: Epidemiology and Environmental Carcinogenesis Program. The Karmanos Cancer Institute, an NCI Comprehensive Cancer Center, provides outstanding collaborative opportunities with clinical, basic, and public health scientists. In addition, the Karmanos Cancer Institute houses an NCI SEER registry. The academic and community environment of southeast Michigan is one of cultural diversity, and we encourage applications from all qualified female and minority faculty. Letters of application accompanied by a curriculum vitae, statement of research interests, and the names of three references should be sent to: **Dr. Raymond F. Novak, Cancer Control: Epidemiology and Environmental Carcinogenesis, Karmanos Cancer Institute, 110 E. Warren Ave., Detroit, MI 48201.**

Wayne State School of Medicine, the country's largest single campus medical school, is an equal opportunity/affirmative action employer.

SENIOR MEDICAL MICROBIOLOGIST

The Department of Antibiotic Discovery and Development at Merck Research Laboratories has a challenging opportunity for a microbiologist committed to the identification and development of new antibacterial agents for the treatment of serious infections in man. The successful candidate should have a PhD or MD and postdoctoral experience in microbiology. An interest in mechanisms of antimicrobial resistance of potential clinical importance, as well as in essential microbial mechanisms suitable for chemotherapeutic manipulation would be helpful, as would experience in models of infection. Evidence of independent scientific accomplishment and supervisory experience are advantageous.

Merck offers a competitive salary, an excellent benefits package, opportunities for professional growth and pleasant working conditions at our Rahway, NJ facility. If you fulfill the listed requirements, please send curriculum vitae with cover letter to **Merck Research Laboratories, Human Resources, AD #16, P.O. Box 2000, RY80-A3, Rahway, NJ 07065.** EEO/AA/VH/Employer.



SKIN BIOLOGIST

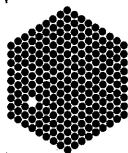
The National Institute for Occupational Safety and Health (NIOSH) has established a new state-of-the-art research facility and research division in Morgantown, West Virginia, to conduct multifaceted laboratory-based research into the diagnosis, mechanisms, and prevention of adverse health effects due to workplace exposure to hazardous substances or agents.

The Toxicology and Molecular Biology Branch currently has an opening for a Team Leader with responsibility to recruit and supervise staff, and to develop a research program in skin biology.

Preference will be given to studies of molecular and cellular events responsible for irritant contact dermatitis (e.g., adhesion molecules, skin/nervous system interactions, dermal metabolism) associated with agents with potential occupational exposure.

Interested applicants should forward a résumé with cover letter to: **NIOSH, Toxicology and Molecular Biology Branch, 1095 Willowdale Road, Mailstop 3014, Morgantown, WV 26505.**

NIOSH is an Equal Opportunity Employer.



EMBL

The European Molecular Biology Laboratory, an international research organisation with a Headquarters Laboratory in Heidelberg (Germany), Outstations situated in Grenoble (France), Hamburg (Germany) and Hinxton (UK) and a Research Programme at Monterotondo (Italy), has the following vacancy in Heidelberg:

GROUP LEADER

DEVELOPMENTAL BIOLOGY PROGRAMME

The person appointed will head an independent research group within the **newly established Developmental Biology Programme at EMBL.**

The Programme's research interests will focus on pattern formation and morphogenesis in vertebrate and invertebrate systems. The Programme presently consists of three groups studying aspects of pattern formation involving cell communication, signal transduction and cell polarity in *Drosophila* (Cohen, Ephrussi, Mlodzik). For this appointment we are particularly interested in candidates who work on vertebrate development using molecular genetic, biochemical and/or cell biological methods, though applications will be considered from highly qualified candidates working in any area of Developmental Biology.

The Programme benefits from close interactions with research groups in the other Programmes at EMBL, including Cell Biology, Gene Expression, Cell Regulation, and Structural Biology (including Biocomputing) Programmes. We will be housed in new lab space adjacent to the Cell Regulation Programme. We expect the new labs to be ready for occupancy in Spring 1997, and the new appointment to begin in September 1997. Two additional group leader appointments will follow in 1998.

The contract will be for five years in the first instance. This can be renewed depending on the circumstances at the time of review.

Closing date: 31 January 1997.

Further information can be obtained from Stephen Cohen
Fax +49 6221 387 516, email: scohen@embl-heidelberg.de;

EMBL is an inclusive, equal opportunity organisation.

Applicants should submit a curriculum vitae, including a description of current and planned research activities and arrange for three letters of recommendation to be sent, quoting ref. no. 96/68, to:

Head of Human Resources, EMBL, Postfach 10.2209, D-69012 Heidelberg, Germany.

(Fax: +49 6221 387555 email: jobs@embl-heidelberg.de)

POSITIONS OPEN

PLANT BIOLOGIST

The University of Southern Indiana invites applications from plant biologists for a **TENURE-TRACK** position of Assistant Professor of Biology beginning August 1997 to teach introductory botany and courses in candidate's areas of expertise and assist with student advising, service activities, and research involving students. Ph.D. in related area; expertise in one or more of the following areas: environmental science, ecology, or entomology; and undergraduate teaching and research experience required. The University is committed to excellence in teaching, scholarship and professional activity, and service to the University and the community. Application deadline is February 1, 1997, but will be accepted until position filled. Submit letter of application including statements of teaching philosophy and research goals; curriculum vitae; and names, addresses, and telephone numbers of three professional references to: **Dr. Jackson L. Marr, Biology Department Chair, University of Southern Indiana, 8600 University Boulevard, Evansville, IN 47712.** *Affirmative Action/Equal Opportunity Employer.*

PHARMACOLOGY FACULTY POSITION

The Division of Pharmacology, University of Missouri-Kansas City (UMKC) School of Pharmacy, invites applications for a tenure-track position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Candidates should have a Ph.D. degree, preferably in pharmacology or toxicology, and at least two years of postdoctoral experience. The successful candidate should demonstrate the ability to establish or continue an independent research program. Participation in assigned teaching to both professional and graduate students is expected. Applications should be received by January 10, 1997, although the search will continue until the position is filled. The position is available beginning January 1997. Faculty rank and salary will be commensurate with prior experience. Send applications along with a curriculum vitae, a statement of research and teaching objectives, and the names and addresses of three references to: **Dr. Yuen-Sum Lau, Chairman, Division of Pharmacology, UMKC School of Pharmacy, 2411 Holmes, Kansas City, MO 64108. Telephone: 816-235-1798.** *UMKC is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS

The University of Cincinnati College of Medicine offers a modern interdepartmental training program in environmental, molecular, and cellular carcinogenesis and mutagenesis supported by the NIEHS. Experimental approaches include the role of growth factors and oncogenes in cellular transformation, signal transduction, transgenic and knockout mice, and ecogenetics. Participating faculty include: **Dr. Kathleen Dixon** (molecular mechanisms of mutagenesis); **Dr. Thomas Doetschman** (gene targeting, TGF β , P53, carcinogenesis); **Dr. Michael Lieberman** (growth factors and differentiation); **Dr. John Loper** (P450 systems in yeast); **Dr. Daniel Nebert** (Ah receptor, environmental genetics); **Dr. Steven Potter** (insertional mutagenesis and dysmorphogenesis in transgenic and knockout mice); **Dr. Alvaro Puga** (dioxin and Ah receptor, signal transduction); **Dr. Peter Stambrook** (mutagenesis in genetically modified mice; genomic instability); **Dr. James Stringer** (recombination and mutagenesis *in vivo*); **Dr. David Warshawsky** (mechanisms of chemical carcinogenesis).

Applicants must have U.S. citizenship or permanent residency and have completed a Ph.D. degree or equivalent. Candidates should send curriculum vitae and three letters of recommendation to: Dr. Peter Stambrook, Chairman, Department of Cell Biology, Neurobiology and Anatomy, University of Cincinnati, College of Medicine, P.O. Box 670521, Cincinnati, OH 45267-0521.

RESEARCH FELLOWSHIP

Genetic Disorders of Bone and Gene Therapy

The molecular biology of genetic disorders of bone matrix is being studied. There is a major emphasis on molecular approaches to gene therapy of dominant disorders using antisense suppression. Project involves use of ribozymes to specifically suppress expression of mutant collagen allele in severe osteogenesis imperfecta. Prior experience in molecular biology strongly preferred. Candidates should have Ph.D. and/or M.D./Ph.D. degree and less than five years of postdoctoral experience. *U.S. citizenship not required.* Send curriculum vitae and three references to: **Joan C. Marini, M.D., Ph.D., Chief, Heritable Disorders Branch, NICHD, NIH, Building 10, Room 9s241, 10 Center Drive, MSC-1830, Bethesda, MD 20892-1830. Telephone: 301-496-6683; FAX: 301-402-0234.**

POSITIONS OPEN



LA JOLLA INSTITUTE FOR
ALLERGY AND IMMUNOLOGY

FACULTY RESEARCH POSITION Virology and Immunology

Applications from individuals with outstanding backgrounds in virology/infectious disease are invited to apply for a position at the **ASSISTANT MEMBER** level. We especially encourage virologists interested in molecular mechanisms of viral immunopathology to apply. The successful candidate will develop an independent research program in a highly collaborative environment. The position includes start-up funds and continuing institutional support, including salary, in spacious new laboratory facilities. Interested candidates should send a letter of research interests and curriculum vitae (including names of references) to: **Virologist Search Committee, Carl F. Ware, Ph.D., Division of Molecular Immunology, La Jolla Institute for Allergy and Immunology, 10355 Science Center Drive, San Diego, CA 92121.** *La Jolla Institute for Allergy and Immunology is an Equal Opportunity/Affirmative Action Employer.*

ORGANIC CHEMIST DARTMOUTH COLLEGE

Faculty position starting September 1997 for an individual who will maintain a vigorous, productive research program in organic chemistry and excel at teaching this subject in both undergraduate and Ph.D. programs. Applicants at the **ASSISTANT PROFESSOR** level are encouraged to apply, and exceptionally well-qualified candidates at a more advanced level can be considered. They should submit a curriculum vitae, description of research projects that would be pursued, list of start-up requirements, and brief statement of teaching experience and interests. They should arrange to have three letters of recommendation sent on their behalf, and applicants at the Assistant Professor level should include copies of graduate and undergraduate transcripts as well. All inquiries and applications will be kept confidential and should be addressed to the **Organic Search Committee, Dartmouth College Chemistry Department Box C, 6128 Burke Laboratory, Hanover, NH 03755-3564.** Review of applications will begin January 1, 1997 and continue until the position is filled. *Dartmouth College is an Equal Opportunity/Affirmative Action Employer.*

CYTOGENETIC TECHNOLOGIST II: Includes development of cell cultures, preparation of slides, and scanning for chromosome analysis. B.S. in molecular biology or equivalent required. Employer considers two years of university studies in molecular biology or medical technology plus six years of experience as a cytogenetic technologist to be the equivalent of a Bachelor's degree in molecular biology. Must have two years of experience as a cytogenetic technologist and be certified by the National Certification Agency in Cytogenetics. \$36,920 per year for 40 hours per week and \$26.62 per hour overtime. *Must have proof of legal authority to work in the United States.* Applicants send résumé to: **New Mexico Department of Labor, 301 West DeVargas, Santa Fe, NM 87501.** Job order number 426568.

POSTDOCTORAL POSITION Available Immediately

The NIH-RCMI Program and the Department of Biochemistry at the University of Puerto Rico Medical Sciences Campus wish to recruit a candidate for an NIH-sponsored **POSTDOCTORAL POSITION**. Applicants should have a Ph.D. degree or equivalent in biochemistry, molecular biology, or a related field with training in protein biochemistry, molecular biology, and computer-aided molecular modeling. The successful candidate will collaborate with selected faculty members in the department on projects in these areas and may simultaneously develop his or her own project. Salary is \$24,000 per year plus fringe benefits. Send cover letter, curriculum vitae, and names and addresses of three references to:

José R. Rodríguez-Medina, Ph.D.
Chair, Department of Biochemistry
University of Puerto Rico
Medical Sciences Campus
P.O. Box 365067
San Juan, PR 00936-5067
Email: jo_rodriguez@rcmac.upr.clu.edu
FAX: 787-758-5206

UPR is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

HUMAN OR MAMMALIAN PHYSIOLOGIST

Entry-level **ASSISTANT PROFESSOR** tenure-track position in the Department of Biological Sciences. Major job responsibilities are: teach human physiology, cardiovascular physiology, and other organ-system physiology courses as determined by Biology Department needs; engage in research involving undergraduate and/or graduate (M.S.) students; and participate on department committees. Ph.D. degree in human or mammalian physiology with a strong emphasis in organ-system physiology, ability to teach undergraduate and graduate students, and ability to do research are required. Preferred qualifications are postdoctoral training, teaching experience, and experience in obtaining research and/or teaching grants. Application deadline is January 15, 1997 or until filled. Send a letter of application, résumé, academic transcripts, statement of teaching and research interests, and names and telephone numbers of three professional references to: **Dr. Bill Bessler, Chair, Department of Biological Sciences, P.O. Box 8400, MSU 34, Mankato State University, Mankato, MN 56002-8400.** *Mankato State University is an Affirmative Action/Equal Opportunity University.*

MOLECULAR MICROBIOLOGIST Assistant Professor of Biological Sciences University of Wisconsin-Parkside

TENURE-TRACK position (fall 1997) for a person with Ph.D. and postdoctoral experience seeking a balance of research and teaching in a department designated as a University of Wisconsin System Center of Excellence. In addition to a strong undergraduate program, the department offers a thesis-based M.S. in Applied Molecular Biology. Teaching duties involve microbiology courses for upper-division majors, pre-nursing students, and graduate students. Contact: **Eugene Goodman, Department of Biological Sciences.** Additional information and instructions to applicants can be found on our home page: <http://www.uwp.edu/academic/biology/>. *The University of Wisconsin-Parkside is an Affirmative Action/Equal Opportunity Employer. Women, minorities, Vietnam-era veterans, disabled veterans, and persons with disabilities are encouraged to apply.*

OCEANOGRAPHER, GS-1360-14 (\$62,650 to \$81,447 per annum, includes locality pay adjustment). The Environmental Technology Laboratory (ETL) of the National Oceanic and Atmospheric Administration (NOAA), Department of Commerce, has a research staff position opening for an Oceanographer who will serve as the sole researcher or team leader for critical research in the area of remote sensing of the ocean. Research to be performed will require knowledge in acoustic wave propagation in the atmosphere and ocean; nonlinear ocean wave dynamics, interactions between different surface waves; numerical simulation techniques of acoustic field modes; skill in conducting oceanographic investigations centering on acoustic wave propagation; and ability to use small-slope approximation, treatment of multiple scattering and shadowing, and numerical calculations of backscatter cross sections and Doppler spectra for acoustic and electromagnetic scattering from the sea surface. Candidates must possess one year of specialized experience equivalent to the GS-13 level in the Federal service. Announcement Number MASC/NOAA#96-159. Closing date: Applications must be postmarked by January 22, 1997 in order to receive consideration. Send applications to: **Human Resources Division, Mail Code MC21C, U.S. Department of Commerce, 325 Broadway, Boulder, CO 80303.** Interested applicants should call 303-497-6586 or 3928 for a copy of the vacancy announcement, which contains the detailed requirements of the position, or obtain the announcement from the Internet at <http://www.rdc.noaa.gov/-webvas/index.html>. *The U.S. Department of Commerce is an Equal Opportunity Employer.*

RESEARCH ASSISTANT position, Wayne State University, School of Medicine, Pulmonary/Critical Care Division. B.S. in biological sciences or other related area required. One to two years of experience preferred in sleep research. Will require preparation of human subjects for participation in studies of ventilation control during sleep and performance of sleep and breathing studies. Data analysis by computer and hand measurements and graph and table preparation will be required. Contact: **Dr. M. Safwan Badr, Pulmonary/Critical Care Division, Harper Hospital, 3 Hudson, 3990 John R. Street, Detroit, MI 48201.** *Wayne State University is an Equal Opportunity/Affirmative Action Employer. All buildings, vehicles and structures at Wayne State University are smoke-free. Wayne State University—People working together to provide quality service.*

MRC

MEDICAL RESEARCH COUNCIL LABORATORY OF MOLECULAR BIOLOGY CAMBRIDGE MOLECULAR BIOLOGY OF HIV

A postdoctoral position funded by the MRC AIDS Directed Programme is available in the group headed by Dr. J. Karn at the Laboratory of Molecular Biology, Cambridge. The work of the group focuses on the HIV regulatory proteins Tat and Rev. Ongoing projects range from structural studies of the complexes formed between Tat and Rev and their RNA-recognition sites to biochemical and genetic studies of the mechanisms of actions of Tat and Rev (for recent papers see Keen et al., (1996) *Proc. Natl. Acad. Sci. USA*, 93, 2505-2510; Mikaélian et al., (1996) *J. Mol. Biol.* 257, 246-264; Churcher et al., (1995) *Proc. Natl. Acad. Sci. USA*, 92, 2408-2412; Rittner et al., (1995) *J. Mol. Biol.*, 248, 562-580). Experience will be preferred in the biochemistry of transcription, molecular virology, and/or gene expression in mammalian cells.

The post is available for three years. Starting salary will be between £17,127 per annum and £23,045 per annum depending on experience. Further information can be obtained from **Dr. J. Karn**, Tel (01223) 402376, Fax (01223) 412282, email: **karn@mrc-lmb.cam.ac.uk**

Applications including two copies of a full CV, a list of publications, reprints of no more than three papers, and the names and addresses of three professional referees should be sent by 30 January 1997 quoting reference PNAC/ADP to: **Mr. B. Tillson, Personnel Manager, MRC Centre, Hills Road, Cambridge, CB2 2QH U.K.**

Applications from overseas are welcome.

The Medical Research Council is an Equal Opportunity Employer.



Nestlé

The Nestlé Research Center at Lausanne in Switzerland is seeking an

NMR Spectroscopist

in the field of Carbohydrate and Polysaccharide Analysis to strengthen the research on the structural determination of biological macromolecules of plant origin, food materials and fermented products using solids and liquids NMR spectroscopy. The NMR spectroscopist will be in charge of developing analytical projects on polysaccharides, complex carbohydrates and other polymers. The person appointed will be responsible for choosing the necessary equipment in collaboration with a team of specialists and will be committed to work with the existing research groups at the Nestlé Research Center.

Candidates should have a Ph.D., substantial research accomplishments and a high level of expertise in the fields of solids and/or liquids NMR spectroscopy.

Should you be interested, please send your application, including curriculum vitae and references, to the following address:

Nestlé Research Centre

Human Resources

Attn. Mr. M. Jullierat

P.O. Box 44

CH-1000 Lausanne 26 SWITZERLAND

UNIVERSITY OF KUWAIT Health Sciences Centre Faculty of Medicine

POST OF CHAIRMAN IN MEDICAL BIOCHEMISTRY

The Faculty of Medicine is seeking applications for the post of Chairman for the Department of Biochemistry. Applications are sought from individuals with strong academic, research, and administrative backgrounds. The post will be at the rank of Professor. Candidates with extensive experience in teaching and administrative background in a medical school are preferred. Specialization may be in any of the following areas: molecular biology, endocrinology, enzymology, nutrition, and clinical chemistry.

Applicants must have 15-20 years of experience after completing their Ph.D.

The Department is currently involved in an undergraduate programme and is planning to reactivate its M.Sc. programme.

A generous package is offered, including annual round trip air tickets for appointee and family, as well as allowances for accommodation and furniture, 60 days (2 months) paid summer leave, two weeks mid-year break, end-of-service gratuity, children's education allowance, and free medical care in Kuwait government hospitals.

Monthly (tax free) salary according to the University's Academic Staff Salary Scale. A clinical allowance is paid by the Ministry of Health for 10 months a year to staff involved in the Ministry programme.

Applications should be sent along with curriculum vitae and names of three referees to:

**The Dean
Faculty of Medicine
Kuwait University
P.O. Box 24923
13110 Safat, Kuwait**



Max-Planck-Institute of Chemical Ecology in Jena, Germany

The new Max-Planck-Institute of Chemical Ecology in Jena, Germany will focus on interdisciplinary studies of chemical interactions among plants and their herbivores and pathogens, emphasizing the functional basis of evolutionary forces shaping chemical ecology. Four departments (Organic Chemistry, Biochemistry, Molecular Ecology, and Molecular Evolution) will hire fifty

Scientists and Postdoctoral Researchers

in the next few years. The Institute will have state-of-the-art facilities and a stimulating environment for research in the emerging discipline of chemical ecology. It will be international in character, with English being the official language. Jena is an old university town of 100,000 people in the federal state of Thuringia, a culturally rich region with extensive forest located midway between Berlin and Munich. It is the site of Friedrich Schiller University and several scientific institutes that maintain active research programs in biology, molecular biology, and chemistry.

Applications are invited from both German and non-German nationals. Several postdoctoral positions are available immediately, with remaining positions to be filled beginning in the summer of 1997. Salary levels are in accord with German Federal Law. Successful applicants will have the opportunity to make important empirical and conceptual contributions to the founding of the new research institute. Please send curriculum vitae, list of publications, names of three references, and a brief description of research interests to the director of the department you would prefer to affiliate with.

Organic Chemistry: Prof. Wilhelm Boland, Institut für Organische Chemie-und Biochemie der Universität Bonn, Gerhard-Domagk-Str. 1, D-53121 Bonn, Germany.

Biochemistry: Prof. Jonathan Gershenzon, Institute of Biological Chemistry, Washington State University, Pullman, WA 99164-6340, USA.

Molecular Ecology: Prof. Ian Baldwin, Department of Biological Sciences, State University of New York at Buffalo, Buffalo, NY 14260-1300, USA.

Molecular Genetics and Evolution: Prof. Thomas Mitchell-Olds, Division of Biological Sciences, University of Montana, Missoula, MT 59812, USA.



FOUNDATION FOR RESEARCH, SCIENCE AND TECHNOLOGY

Tūāpapa Toha Pūtea, Whakatakoto Kaupapa Rangahau, Pūtaiao

POST-DOCTORAL FELLOWSHIPS

The NZ Science & Technology Post-Doctoral Fellowships Scheme provides early career support for New Zealand scientists, engineers and social scientists of outstanding talent, for post-doctoral research either locally or overseas. Applicants must be New Zealand citizens or permanent residents of New Zealand.

Fellowships will normally have a maximum value of NZ\$70,000 (incl. GST) per year; the stipend will on average be NZ\$44,444 (NZ\$50,000 incl. GST) with the balance available to cover the direct costs of the research. Fellowships tenable in overseas countries will have an overall value that reflects costs of working in the particular country.

Applications must be received by 14 March 1997, on the application form available from the Foundation. Please contact:

Foundation for Research, Science and Technology
PO Box 12-240, Wellington, New Zealand.

Tel: 64-4- 499 2559, Fax: 64-4- 499 2568

Email: pdfs@frst.govt.nz

MARINE BIOLOGICAL LABORATORY 1997 Summer Research Fellowships

Full Fellowship This fellowship covers costs of conducting summer research, plus living and travel expenses:

Nikon Fellowship - Any area of biological sciences requiring the use of advanced microscopy.

Partial Fellowships These fellowship funds may be available individually or in concert to cover many of the costs of conducting summer research, including living and travel expenses, in the following areas:

Robert Day Allen Fellowship - cell motility and cytoarchitecture

Frederik B. Bang Fellowship Fund - for research using marine models in molecular biology or biomedicine

Frank A. Brown, Jr. Memorial Readership - covers fees for desk rental & full privileges in MBL/WHOI Library

Charles R. Crane Fellowship Fund - independent research in any area

John O. Crane Fellowship Fund - independent research in any area

Jean and Katsuma Dan Fellowship Fund - supports scientific visits to Japan by Junior American Investigators

Bernard Davis Fund - microbiology studies in the laboratory of N. Wainwright

Erik B. Fries Fellowship - covers laboratory or library expenses

M.G.F. Fuortes Fellowship - neuroscience

Daniel S. Grosch Fellowship and Scholarship Fund - environmental toxicology

Ann E. Kammer Fellowship Fund - for women researchers, with a preference for neuroscience

Stephen W. Kuffler Fellowship - neurobiology

Lucy B. Lemann Fellowship - research in any area

Frank R. Lillie Fellowship - provides a research laboratory and funds for travel and supplies

MBL Associates Fellowships - research in any area

James A. and Faith Miller Memorial Fund - any area, with developmental biology preferred

NASA Life Sciences Program Fellowships - research related to the mission of the NASA Life Sciences Program

William Townsend Porter Fellowship for Minority Investigators - research in any area of physiology

Herbert W. Rand Fellowship - research in any area (Director's discretion)

The Evelyn and Melvin Spiegel Fellowship Fund - any area, developmental biology preferred

H. B. Steinbach Fellowship - cell biology and physiology

Application Deadline for fellowships and laboratory space rental is January 15, 1997

Applications are reviewed by the MBL Fellowship Committee. Notification of decisions will be mailed by March 15.

For application forms and additional information, please contact:

Fellowship Coordinator, Office of Research Administration, Marine Biological Laboratory,

7 MBL Street, Woods Hole, MA 02543-1015, Tel: (508)

289-7441, Fax: (508) 457-1924, E-mail: <skaufman@mbi.edu>

Internet/Web: <http://www.mbl.edu>

MBL is an EEO/Affirmative Action Institution



MARINE
BIOLOGICAL
LABORATORY

GLOBAL CAREER OPPORTUNITIES

KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH

Kuwait Institute for Scientific Research (KISR) is a nonprofit organization actively engaged in applied research in the fields of environmental and earth sciences; food resources; engineering; petroleum, petrochemicals, and materials; and techno-economics.

KISR has vacancies for the following fields:

FOOD MICROBIOLOGY

Major Duties: Carrying out research studies on food spoilage, food processing and catering sanitation, food quality control, and food poisoning and intoxication.

Qualifications: Applicants should have a Ph.D. in food microbiology with a minimum of five years of relevant experience. Applicants must be capable of initiating project ideas and of developing and implementing their projects. Knowledge of the state-of-the-art microbiology analytical tools is highly desirable and industrial experience is an asset.

FOOD SCIENCE/TECHNOLOGY

Major Duties: Conducting applied research studies in the general area of food processing with demonstrated evidence of research skills in more than one area such as dairy, meat, prepared meals, and/or cereal technology.

Qualifications: Applicants should have a Ph.D. in food science/technology with a minimum of five years of relevant experience. The candidate should be well-rounded with wide experience in food processing/quality control. Applicants must be creative and self-motivated and should also have demonstrated ability to carry out independent research and to develop and implement their own projects. Industrial experience is an asset.

KISR offers attractive tax-free salaries commensurate with qualifications and experience, and generous benefits that include: gratuity, free furnished air-conditioned accommodation, school tuition fees for children, six weeks annual paid vacation, air tickets, free medical care, and life insurance.

Interested applicants are requested to send their curriculum vitae with supporting information not later than one month from the date of this publication to:

Personnel Manager
Kuwait Institute for Scientific Research
P.O. Box 24885
13109 Safat - KUWAIT

RACV CHAIR OF ROAD SAFETY (Readvertised)

This new position provides an opportunity for an outstanding scholar of international standing to make a major contribution to road safety research and teaching. The professor will join a dynamic multi-disciplinary team at the Accident Research Centre and will also have a part-time appointment in the department of the university most closely allied with his/her discipline.

The Accident Research Centre was established in 1987 as a multi-disciplinary research centre not part of any faculty. It now has a staff of 50 academics and 4 support staff engaged in a wide range of externally funded research projects, about two-thirds of which relate to road safety. Valuable working relationships have been developed with several university departments and the appointment of the professor will enable teaching and supervision of postgraduate research in road safety to be expanded. Good links have also been established with government and other agencies with responsibilities for road safety, which facilitate acquisition of data for evaluation research and adoption of the centre's research findings.

The salary of the professor and secretarial support is being funded by the Royal Automobile Club of Victoria (RACV) Ltd, initially for five years, and hence the appointment will be initially for five years.

Salary: \$A81,780 per annum. Superannuation, travel and removal allowances are available.

Specific enquiries about the position may be directed to Professor Peter Vulcan, Director, Accident Research Centre, telephone +61 3 9905 4372, facsimile +61 3 9905 4363.

Information on application procedures and further particulars may be obtained from Ms Bronwen Meredith, Personnel Manager (Senior Appointments), Monash University, Clayton, Victoria 3168, Australia, telephone +61 3 9905 6028, facsimile +61 3 9905 6857, email: bronwen.meredith@adm.monash.edu.au

Selection documentation may be accessed electronically on the world wide web: <http://www.monash.edu.au/personnel/recruit/snrapps/>. Applications should reach the Director of Personnel Services, Monash University not later than Friday 1 February 1997.



MONASH

AUSTRALIA'S INTERNATIONAL UNIVERSITY

PER0064

The mission of Human Genome Sciences is to identify and develop drugs and diagnostic products based on its leadership position in the discovery and expression of novel genes from human, animal, plant and microbial origin.

SCIENTIST, PhD/MD

This Scientist position is available for PhD/MD applicants with at least 5 years laboratory experience in Pharmacology to conduct studies in small animals with novel therapeutic proteins. The candidate should have expertise in wound healing/tissue repair and small animal models of disease (dermal, connective tissue, inflammation). Histopathology and in vitro experience is desirable, but not necessary.

HGS encourages the pursuit of academic excellence and offers a competitive benefits package including educational reimbursement, subsidized health club membership and a 401(k) with employer match. Look for us on the Internet at www.hgsi.com for additional information. For immediate consideration please send/fax your resume to Human

Resources Department, Human Genome Sciences, Inc., Job Code #MA12/13, 9410 Key West Avenue, Rockville, MD 20850, FAX: (301) 309-1845. EOE, M/F/D/V.

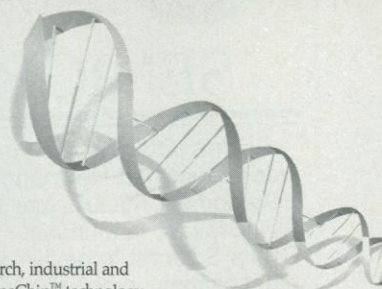


Human Genome Sciences, Inc.

Dedicated To Discovery For Health

BIOINFORMATICS

THE FUTURE IS HERE!



You are looking at the future. The future in biomedical research, industrial and clinical diagnostics, and genomics. We are the creators of GeneChip™ technology — a new revolutionary system that is transforming how we acquire, analyze and manage genetic information. It's what we are working on at Affymetrix and it could just launch your career in a whole new exciting direction!

HEAD OF BIOINFORMATICS

The ideal candidate we select to help establish our new Bioinformatics Group will possess a PhD in a physical science, computer science or mathematics and a minimum of 5 years' experience in large scale systems development. Technical expertise in data analysis, programming, and database development, plus experience with bioinformatics development and/or management of an informatics group required. Familiarity with principles of molecular biology and chemistry is highly desirable; excellent communication skills are crucial.

BIOINFORMATICS GROUP

We are currently building a Bioinformatics Group to support the application of our GeneChip technology in gene expression, mapping, polymorphism screening, gene discovery and diagnostic algorithm development. We have opportunities at several levels — exciting opportunities for you to grow with the Group and reenergize your career. We are accepting resumes from candidates with pertinent experience, excellent communication skills and a strong desire to succeed as part of an upstart team.

Offering a small company atmosphere with big scientific potential, Affymetrix provides attractive salaries, comprehensive benefits, and the exhilarating synergy of our world-class multidisciplinary team. For consideration, please send or fax your resume to Affymetrix, Human Resources, 3380 Central Expressway, Santa Clara, CA 95051; Fax (408) 481-0422. We are an equal opportunity employer.



RALSTON PURINA MISSOURI PROFESSORSHIP OF SMALL ANIMAL NUTRITION.

The College of Veterinary Medicine, University of Missouri, announces the Ralston Purina Missouri Professorship of Small Animal Nutrition. This newly-endowed Professorship offers a unique opportunity for a highly-motivated individual to develop a focused research effort to contribute substantially to established programs in nutrition at the University, including the nationally-recognized Food for the 21st Century Program. The successful candidate will be expected to develop a sustained, extramurally-funded research program in nutrition and to provide consultation on nutritional aspects of disease management in the Veterinary Medical Teaching Hospital.

The Ralston Purina Professor should be a program builder who will collaborate with other nutritionists on Campus. The Food for the 21st Century Program offers particular opportunities for collaboration. This is a multidisciplinary effort that includes faculty from the Colleges of Agriculture, Food and Natural Resources, Arts and Sciences (Biological Sciences), Human Environmental Sciences, Engineering, and Veterinary Medicine, and the School of Medicine, plus the Research Reactor. Current research efforts of faculty in the nutrition cluster of this program are focused particularly in two areas: 1) nutritional biochemistry of minerals, and 2) lipids, membranes, and signal transduction. Candidates with expertise in one of these areas or nutritional aspects of one of the College of Veterinary Medicine's established niches in cardiovascular sciences, ophthalmology, and reproductive biology are particularly encouraged to apply. However, scientists with established programs in other areas will also be considered. An excellent salary and start-up package are available. Substantial discretionary funds will be provided yearly through the endowment.

Candidates should have a DVM and/or PhD and an established research program in nutrition, or an area that has direct implications regarding nutrition, and be qualified at the academic level of Professor. Applicants should send a letter of intent, curriculum vitae, and the names of three references by March 1, 1997, to Dr. Mark P. Nasisse, Kraeuchi Professor of Veterinary Ophthalmology and Chairman of the Search Committee, A373 Clydesdale Hall, 379 E. Campus Drive, University of Missouri, Columbia, MO 65211. Telephone: (573) 882-7821.

The University of Missouri-Columbia is an equal opportunity institution and complies with the guidelines of the Americans with Disabilities Act of 1990. If you have special needs as addressed by the ADA and need assistance with this or any portion of the application process, notify us at the above address or telephone number as soon as possible. Reasonable efforts will be made to accommodate your special needs.

Seaver College, the undergraduate liberal arts college of Pepperdine University, seeks to fill the following positions

Biology (Two positions)

Two broadly trained biologists with competencies between them to include genetics, microbiology, cell biology, and developmental biology (plant or animal systems). Ideally, one position will cover genetics and microbiology and the other cell and developmental biology, although other combinations of these specialties will be considered. These are tenure-track positions to begin in fall 1997. The successful applicants will be expected to teach specialty courses for upper division biology majors, participate in the introductory cell biology course for freshman biology majors, and may also be assigned a non-majors biology course as needed. Promise of/or excellence in teaching at the undergraduate level is essential and an active research program with undergraduates is expected. The candidate will be expected to pursue external funding.

Chemistry (Two positions)

One tenure-track position in Chemistry beginning in August, 1997. Responsibilities will include teaching in the General Chemistry program and in a specialty area. Ideally, this position will be filled by an individual with strong interests and commitment to chemical education. Specialty areas include, but are not limited to, biochemistry, bioorganic chemistry, or materials science. Promise of/or excellence in teaching at the undergraduate level is essential and an active research program with undergraduates is expected. The candidate will be expected to pursue external funding.

A one-year Visiting Lecturer Sabbatical Replacement with teaching responsibilities in both General and either Physical or Organic Chemistry.

Pepperdine University is an independent Christian university, administered by a self-perpetuating Board of Regents, and maintains a relationship to the Churches of Christ. Active members of the congregations of the Church of Christ are especially encouraged to apply. Applicants are encouraged to include in their cover letter a statement addressing their support of the mission of the university. The mission statement of the university and information about the program may be examined on the internet at <http://www.pepperdine.edu/mission.htm>.

Send a letter of application, to be received by February 1, 1997, including a statement of teaching and research goals, vita, and names of three references to Dr. Norman Hughes, Biology Search Committee; or Dr. Ben Hutchinson, Chemistry Search Committee, Natural Science Division, Pepperdine University, 24255 Pacific Coast Highway, Malibu, CA. The university is an equal opportunity employer; women and minorities are encouraged to apply. Positions will be filled pending funding.

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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.

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POSTDOCTORAL INVESTIGATOR

Physical Oceanography Department seeks individual to participate in scientific analyses of data collected during the Coupled Ocean-Atmosphere Response Experiment (COARE). Goals include synthesize diverse types of air-sea flux data, including that available from atmospheric numerical models and produce maps of surface fluxes in center of Intensive Flux Array (IFA) on fine space and time scales; produce coarser resolution maps over entire IFA; use forcing fields and oceanographic data to investigate response to various types of atmospheric forcing. Ph.D. in physical oceanography, meteorology or related area or equivalent required. Experience with data assimilation, mapping and numerical models desired. Appointment will start on or about January 1, 1997. Send resume to: Human Resources Office, BOX 54PSFC12, Woods Hole Oceanographic Institution, Woods Hole, MA 02543.

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This position calls for an individual who is able to work with considerable independence in designing and managing toxicology and PK/PD studies to support pharmaceutical product registration. You will prepare and edit scientific and regulatory documents and actively contribute to pharmaceutical product development teams.

Candidates must have demonstrated expertise in experimental and regulatory toxicology techniques and documentation. The position calls for significant expertise in the use of general and scientific computer software. Experience in pathology, immunology and molecular biology is desirable. A MS in Biology or other related relevant scientific area is needed along with 5 years of experience, ideally in a pharmaceutical product development environment with a significant record of accomplishment.

For immediate consideration, please send your CV to: **Human Resources, Alkermes, Inc., 64 Sidney Street, Cambridge, MA 02139-4136; Fax: (508) 494-9263.** We are an equal opportunity employer, relying on the strength of a diverse workforce.

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HISTOLOGIST • The Department of Anatomy at The University of Health Sciences College of Osteopathic Medicine seeks to fill an **ASSISTANT** or **ASSOCIATE PROFESSOR** position in Anatomy. Applicants should have a Ph.D. in anatomy or biology with experience in teaching human histology (lecture and laboratory). The person filling this position must have strong interest and commitment to teaching medical students. Other duties include scholarly work such as research or writing; active participation in departmental activities and professional development; service to the University on committees; and advising medical students. We are looking for a positive team player with exemplary professional characteristics.

GROSS ANATOMIST • The Department of Anatomy at The University of Health Sciences College of Osteopathic Medicine seeks to fill an **ASSISTANT** or **ASSOCIATE PROFESSOR** position in Anatomy. Applicants should have a Ph.D. in anatomy with experience in teaching human gross anatomy (lecture and laboratory dissection) and histology. The person filling this position must have strong interest and commitment to teaching medical students. Other duties include scholarly work such as research or writing; active participation in departmental activities and professional development; service to the University on committees; and advising medical students. We are looking for a positive team player with exemplary professional characteristics.

Salary is dependent on qualifications and experience; excellent benefits. Qualified applicants should send their applications including curriculum vitae, a statement of teaching philosophy and scholarly interests, and the names and telephone numbers of three references to: **Robert E. Stephens, Ph.D., Professor and Chair of Anatomy, The University of Health Sciences-COM, 2105 Independence Boulevard, Kansas City, MO 64124-2395**

Review of applicants will begin December 1. The successful candidate should start in the 1997-98 academic year. Pre-employment drug screen required. *An Affirmative Action/Equal Opportunity Employer.*

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The National Institutes of Health has introduced a new web site. Now, the latest news about clinical and research training opportunities at NIH can be accessed by visiting us at <http://helix.nih.gov:8001/oe/>

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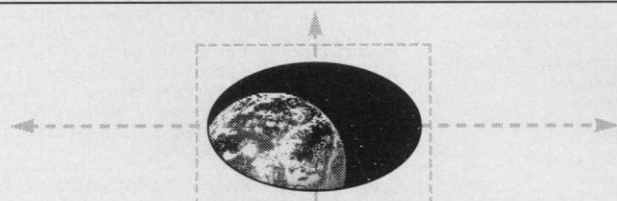


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We seek adaptable, innovative people with experience in recombinant DNA technologies including gene cloning and expression, library construction and screening, and data & project management. Candidates should have strong communication skills and an ability to work well in a team-based research atmosphere. Requires Ph.D. in Molecular Biology or related discipline. At least 2 years of post-doctoral experience is preferred. Experience in expression of genes in plants is desirable. Experience in biochemistry, insect physiology or insect molecular biology is a plus. Monsanto offers a salary commensurate with experience, excellent benefits and opportunities for professional growth.

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POSTDOCTORAL POSITION IN PRIMATE PSYCHOBIOLOGY

A position is available for a postdoc in the Primate Unit of the National Institute on Alcohol Abuse and Alcoholism in Poolesville, MD. Applicant is expected to develop a program of research in primate psychobiology and social behavior. Expertise in primate social behavior and behavior neurobiology, interest in developmental psychopathology, and willingness to integrate concepts with alcohol research is necessary. Interest in investigating interindividual differences and gene-environment interactions preferred. Candidate must be willing to work as a team member while developing an independent program. Research includes both laboratory and field settings.

The deadline for submission of applications is January 15, 1997. Applicants must have less than five years of postdoctoral training and should submit a curriculum vitae, a detailed statement of research interest, and three letters of reference to: **Dr. J. Dee Higley, NIH Animal Center, PO Box 529, Building 112, Poolesville, MD 20837.**

POSITIONS OPEN

BIOCHEMISTS AND MASS SPECTROMETRISTS

University-Industry collaboration to develop new diagnostic and research techniques in the area of metabolism (biochemical dynamics). Work is at interface of molecular biochemistry (protein, nucleic acid, and lipid biochemistry; molecular genetics) and state-of-the-art mass spectrometry (electrospray; magnetic sector; improved detector and isotope ratio designs). Experience in either area is an advantage. Excellent opportunity for creative scientist interested in translational research. Applications include AIDS, cancer, diabetes, and other diseases. Positions at **POSTDOCTORAL** or **RESEARCH SCIENTIST** levels available. Send curriculum vitae to: **M. Hellerstein, M.D., Ph.D., Department of Nutritional Sciences, University of California, Berkeley, CA 94720-3104. Email: march@nature.berkeley.edu.** *University of California, Berkeley is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION University of Virginia Department of Pharmacology

A position is available to study the regulation of native T-type Ca channels. Applicants should be proficient in either whole cell or single channel recording techniques. Adenovirus transfections, antisense oligonucleotide injections, and baculovirus expressed proteins will be used to determine the biophysical and second messenger mechanisms responsible for the regulation of T-type Ca channels by G-proteins and Ca/CaM-dependent protein kinase II (*AJP*, 271:C1340, 1996). The functional importance of these channels to hormone secretion will be addressed. Send or fax a cover letter stating career goals, curriculum vitae, and names of references to: **Paula Q. Barrett, Ph.D., Department of Pharmacology, 1300 Jefferson Park Avenue, Charlottesville, VA 22908, U.S.A. FAX: 804-982-3878.**

UNIVERSITY OF CHICAGO Department of Ecology and Evolution Dropkin Postdoctoral Fellowship in Sustainable Agriculture

This newly endowed two-year **FELLOWSHIP** supports innovative research on interactions of plants with their pathogens, herbivores, or mutualists. Interested candidates should identify a faculty sponsor in the department, provide a three-page project description and curriculum vitae, and arrange to have three letters of recommendation sent to: **Dropkin Fellowship Committee, Department of Ecology and Evolution, 1101 East 57th Street, The University of Chicago, Chicago, IL 60637** by 14 February 1997. *We are an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS Musculoskeletal Biology/Biomechanics

The Biomechanics and Biomaterials Research Center at Indiana University is recruiting two **POSTGRADUATE FELLOWS** (Ph.D., M.D., D.D.S.) for careers in musculoskeletal research. Existing strengths are: skeletal biomechanics, bone cell/molecular biology, dental implants, osteoporosis, osteoarthritis, and computational/experimental mechanics. Send curriculum vitae and names of references to: **Dr. David Burr, Department of Orthopedic Surgery, Indiana University School of Medicine, Indianapolis, IN 46202.** *Affirmative Action/Equal Opportunity Employer. Minority and female applicants encouraged. U.S. citizens/permanent residents only.*

POSTDOCTORAL POSITION available to study cellular and molecular mechanisms in immunotherapy of human breast cancer. Research focuses on therapeutic polysaccharides that stimulate remission and immunity against murine mammary carcinoma via leukocyte $\alpha\text{M}\beta_2$ -integrin CR3 (*J. Immunol.*, 98:50, 1996; *J. Clin. Invest.*, 98:50, 1996). Send curriculum vitae and names of three references to: **Dr. Gordon D. Ross, Division of Experimental Immunology and Immunopathology, University of Louisville, Louisville, KY 40292.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOW to study smooth muscle signal transduction with gene transfer technology (adenovirus and transgenic). Applicant needs M.D. or Ph.D. and molecular biology experience, and must be NIH training grant eligible (*U.S. citizen/permanent resident*). Send curriculum vitae and references to: **Chris Rembold, M.D., Box 146 HSC, University of Virginia, Charlottesville, VA 22908. Email: crembold@virginia.edu.** *Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately in biomolecular NMR to study folding, structure, and dynamics of proteins and protein/DNA complexes using multinuclear, multidimensional NMR. Ph.D. in chemistry or biophysical chemistry required and research experience in macromolecular NMR preferred. Submit curriculum vitae and names of three references to: **Jean Baum, Department of Chemistry, Rutgers University, Piscataway, NJ 08855.**

Two **POSTDOCTORAL POSITIONS** are available immediately for the study of molecular mechanisms of 1) adaptive mutation in *E. coli*, including mutation to antibiotic resistance, and 2) genetic recombination in *E. coli* using phage lambda DNAs and genetic methods. Also available for suitably trained person: regulation of recombination in mouse development and in transformation in tissue culture cells. Vibrant, active lab provides excellent opportunity for rigorous training in prokaryotic molecular genetics.

See <http://www.biochem.ualberta.ca/Biochem/Faculty/Rosenberg/Rosenberg.html>. Send curriculum vitae, three reference letters, and undergraduate and graduate academic transcripts to: **S. M. Rosenberg, Department of Biochemistry, 4-74 Medical Sciences Building, University of Alberta, Edmonton, Alberta T6G 2H7 Canada. Email: susan.rosenberg@ualberta.ca.**

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

POSTDOCTORAL FELLOWSHIP Biochemical Genetics and Molecular Biology Carl R. Merrill, M.D., Chief

The Laboratory of Biochemical Genetics is seeking a **POSTDOCTORAL** candidate with experience in biochemical genetics and molecular biology to participate in studies of somatic mutations in the mammalian central nervous system. These studies involve the use of tissue culture and animal model systems. Candidates must have less than five years of postdoctoral experience. Send current curriculum vitae/bibliography and three letters of reference to the **Laboratory of Biochemical Genetics, NIMH, NIH, Building 10, Room 2D54, 10 Center Drive, 9000 Rockville Pike, Bethesda, MD 20892. Email: merrilc@helix.nih.gov.**

NIMH is an Equal Opportunity Employer.

POSTDOCTORAL FELLOW Virginia Mason Research Center Seattle, Washington

Two-year **POSTDOCTORAL POSITIONS** available for recent Ph.D. or M.D. to study genetics and immunopathogenesis of human autoimmunity. Experience in molecular biology, cellular immunology, or transgenic animal systems required. Highly interactive multidisciplinary programs emphasizing studies of IDDM and RA. Send curriculum vitae, brief description of research interests, and names of three references to: **Dr. William Kwok or Dr. Gerald Nepom, Virginia Mason Research Center, 1000 Seneca Street, Seattle, WA 98101.**

POSTDOCTORAL POSITION PROTEIN CHEMIST/ENZYMOLOGIST

A **POSTDOCTORAL POSITION** is available immediately to study the structure and mechanism of catalysis of human and parasitic forms of an enzyme crucial for cellular metabolism. Experience in enzyme purification and enzyme kinetics is required. Experience in molecular biology, including site-directed mutagenesis and gene cloning, is preferred. Please send curriculum vitae and three letters of reference to: **Dr. Ronald T. Borchardt, Department of Pharmaceutical Chemistry, 2095 Constant Avenue, The University of Kansas, Lawrence, KS 66047.** *The University of Kansas is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available to use molecular genetic approaches to study DNA break repair and the influence of chromosomal breaks on genetic rearrangements in mammalian cells. A strong background in molecular biology is essential. Send curriculum vitae, statement of research experience, and the names of three references to: **Dr. Alan S. Waldman, Department of Biological Sciences, University of South Carolina, Columbia, SC 29208.**

POSITIONS OPEN

POSTDOCTORAL TRAINING PROGRAM Burn and Trauma Related Research

We have several funded **POSTDOCTORAL** positions [National Institutes of General Medical Sciences (NIH) Training Grant] designed to provide postgraduate research training for surgeons or other physicians oriented toward understanding biochemical mechanisms of cellular injury in severely injured patients. Faculty research interests include studies of the cell biology and biochemistry of the neutrophil, macrophage, endothelial cell, and platelet. Contact: **Richard J. Ulevitch, Ph.D., Department of Immunology, IMM-12, The Scripps Research Institute, 10550 North Torrey Pines Road, La Jolla, CA 92037. FAX: 619-784-8239; Email: chastain@scripps.edu.**

The Scripps Research Institute is an Equal Opportunity/Affirmative Action Employer. Applicants must be U.S. citizens or permanent residents. Qualified underrepresented minority candidates are encouraged to apply.

POSTDOCTORAL ASSOCIATE

The Division of Cognitive Neuroscience at The University of Iowa, Department of Neurology, College of Medicine, is seeking candidates to fill a **POSTDOCTORAL ASSOCIATE** position with an immediate starting date. Candidates must possess a Ph.D. in psychology, neuroscience, or a related field. One or two years of postdoctoral experience in cognitive neuroscience is highly desirable. Candidates with expertise in cognitive psychology and functional neuroimaging will be given priority.

Please send curriculum vitae and cover letter to: **Daniel Tranel/Antonio Damasio, c/o Susan Foster, Department of Neurology, 2153 RCP, University of Iowa Hospitals and Clinics, 200 Hawkins Drive, Iowa City, IA 52242.** *The University of Iowa is an Affirmative Action/Equal Opportunity Employer. Women and minorities strongly encouraged to apply.*

POSTDOCTORAL POSITION available to study circadian rhythms using molecular biology, electrophysiology, and/or behavioral techniques. Current projects are focussed on the cellular localization of melatonin receptors in avian brain (*Neuron*, 15:1003, 1995; *Brain, Behav. Evol.*, 45:241, 1995) and their regulation by the circadian clock (*Endocrinology*, 131:1297, 1992) and on the regulation of visual processes and perception by melatonin (*J. Comp. Physiol. A*, 177:299, 1995). Experience with molecular biology, cell culture, and/or electrophysiological techniques is desirable. Interest in biological rhythmicity is essential. Please send curriculum vitae and names, addresses, and telephone numbers of three references to: **Vincent M. Cassone, Ph.D., Department of Biology, Texas A&M University, College Station, TX 77843-3258.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIPS in Psychoneuroimmunology at the Institute for Behavioral Medicine Research/The Ohio State University Medical Center. NIH-supported postdoctoral training grant positions for Ph.D., M.D., D.D.S., and D.V.M. applicants to conduct research in an interdisciplinary program of 12 faculty. Trainees will be involved in research concerned with behavioral immunology/endocrinology research involving human subjects or animal models. *U.S. citizens or permanent residents* should send a curriculum vitae, statement of interest, and three letters of recommendation to: **Ronald Glaser, Ph.D., Department of Medical Microbiology and Immunology, 2175 Graves Hall, 333 West 10th Avenue, Columbus, OH 43210.**

A **POSTDOCTORAL POSITION** is open for a scientist interested in gene regulation during development of red blood cells. Applicants must have a Ph.D. or M.D. degree with experience in molecular biology and an interest in hematopoiesis. Research involves erythropoietin signaling during proliferation and apoptosis. Send curriculum vitae, reprints, and names and telephone numbers of three references to: **Dr. Terry R. Bishop, The Johns Hopkins University School of Medicine, Ross Building 1125, 720 Rutland Avenue, Baltimore, MD 21205.**

POSTDOCTORAL or RESEARCH ASSOCIATE. Molecular biology studies of gene and protein regulation in leukemia cell differentiation with a novel differentiation factor. Participation in prostate cancer gene regulation studies. Candidate must have recent Ph.D. degree with a molecular biology background. Send curriculum vitae and names of three references to: **Professor J. W. Chiao, Department of Medicine, New York Medical College, Valhalla, NY 10595.**

POSITIONS OPEN

CARDIOLOGY BRANCH

Toren Finkel, M.D.

A **POSTDOCTORAL POSITION(S)** is available immediately in the Cardiology Branch of the NHLBI to study the role of reactive oxygen species in signal transduction. (See *Science*, 270:296-299, 1995; *PNAS*, 93: 11484-11852, 1996; *MCB*, 12:7115-7121, 1996.) A strong background in molecular biology is essential. Experience with the construction and use of recombinant adenoviruses is preferred. Applicants must have a Ph.D. and/or M.D. and less than five years of postdoctoral experience. Submit curriculum vitae and references to: Toren Finkel, M.D., Ph.D., Cardiology Branch, 10 Center Drive, MSC 1650, Building 10, Room 7B-15, Bethesda, MD 20892-1650.

POSTDOCTORAL POSITION

Available immediately for Ph.D. or M.D. in immunology. Research will include studies on cellular and molecular mechanisms of human B cell differentiation (ref. *J. Immunol.*, 157:1006, 1996). Send curriculum vitae to:

Dr. Y. S. Choi

Laboratory of Cellular Immunology
Alton Ochsner Medical Foundation
1516 Jefferson Highway
New Orleans, LA 70121

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Immediate **POSTDOCTORAL** training positions available in an NIH-supported advanced research program for dentists. Areas of research include cell and molecular biology, immunology, endocrinology, microbiology, and biochemistry. Term of appointment is two to three years. Candidates must have a degree in dentistry or a doctorate in a field of biological science. Preference will be given to candidates with a dental degree. *U.S. citizenship or permanent residency required.* Contact: Program Coordinator, School of Dentistry, Room 301, 501 South Preston Street, University of Louisville, Louisville, KY 40292. Telephone: 502-852-7507.

POSTDOCTORAL POSITION available to study cellular aspects of mucosal immunity. Experience in one or more of the following areas required: protein isolation and characterization, receptor-ligand interactions, adhesion molecule biochemistry, or lymphocyte trafficking. Send curriculum vitae, brief statement of research background, and names of three references to: Dr. Paul C. Montgomery, Professor and Chair, Department of Immunology and Microbiology, Wayne State University Medical School, 540 East Canfield Avenue, Detroit, MI 48201. Wayne State University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE—University of Colorado Health Sciences Center (UCHSC). Positions are available to study the induction of differentiation by GM-CSF, examine the control of c-jun activity by the SAPK pathway, and investigate the modulation of the cell cycle by WAF-1. Experience in molecular and/or cell biology is essential. Send curriculum vitae and names of three references to: Andrew S. Kraft, M.D., Chief, Medical Oncology, UCHSC, 4200 East 9th Avenue, Denver, CO 80262. FAX: 303-315-8825. UCHSC is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION, full-time. Immediately available to study novel gene/protein in macrophages and other cells (see *JBC*, 271:25515, 1996). Should have Ph.D./M.D.; strong background in molecular and cell biology; and experience with gene expression, cell cycle regulation, and/or transcription factors. Send curriculum vitae/résumé, three references, and statement of interest to: George W. Cox, Ph.D., Pharmacology Department, Room C2007, Uniformed Services University of The Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814. Equal Employment Opportunity/Affirmative Action.

POSTDOCTORAL POSITIONS

Extracellular Matrix Biology

RESEARCH POSITIONS are available for molecular studies on collagen structure, function, and degradation, with an emphasis on cartilage biology and heritable disorders of skeletal tissues. Experience in protein chemistry/molecular biology preferred. Write with curriculum vitae and references to: Dr. David R. Eyre, Orthopaedic Research Labs., University of Washington, Box 356500, Seattle, WA 98195-6500. FAX: 206-685-4700.

POSITIONS OPEN

POSTDOCTORAL POSITION for MAS NMR studies of atherosclerotic plaques. Experience in NMR and U.S. citizenship or permanent residency required. Send curriculum vitae and three letters of recommendation to: Dr. James A. Hamilton, Department of Biophysics, Boston University School of Medicine, 80 East Concord Street, W302, Boston, MA 02118. Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION

Molecular Neurobiology

Applications are invited for a **POSTDOCTORAL FELLOWSHIP** to study the molecular basis for the serotonergic or dopaminergic neuronal phenotype using serotonergic, dopamine, or vesicular monoamine transporters as target genes. Approaches include promoter characterization, transcriptional regulation, and cell type-specific expression of mutant transporters using primary cell culture and transgenic mouse model systems. Candidates must have a strong background in molecular biology and must have obtained the Ph.D. and/or M.D. within the last five years. Send curriculum vitae and the names, addresses, and telephone numbers of three references to: Dr. Beth J. Hoffman, Unit on Molecular Pharmacology, Laboratory of Cellular and Molecular Regulation, NIMH, NIH, Building 36, Room 3A17, Bethesda, MD 20892-4090. FAX: 301-402-1748; Email: beth@codon.nih.gov. An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION

DROSOPHILA NEUROBIOLOGY

Use genetics and molecular biology to 1) develop and study models of human neurodegenerative disease in the fruit fly *Drosophila melanogaster*, or 2) study the signal transduction mechanisms used in a growth cone during axon guidance (e.g., *Neuron*, 14:43-56, 1995). Candidates should send curriculum vitae and three letters of reference to: Dr. Mark VanBerkum, Ph.D., Department of Biological Sciences, Wayne State University, 5047 Gullen Mall, Detroit, MI 48202. Email: mvanberk@biology.biosci.wayne.edu. Wayne State University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL ASSOCIATE

Yale Medical School

Position available immediately to study transcriptional regulation of kidney development and kidney-specific gene expression. Experience in cell and molecular biology required. Send résumé and names of three references to: Dr. Peter Igarashi, Department of Internal Medicine, Yale University School of Medicine, P.O. Box 208029, New Haven, CT 06520. FAX: 203-785-7068; Email: peter.igarashi@yale.edu. Women and members of minority groups are encouraged to apply.

Applications requested for a **POSTDOCTORAL** position to study the localization and contribution of prostaglandin E receptors to asthmatic airways. Training in immunocytochemistry, *in situ* hybridization, and cell culture techniques essential. Send curriculum vitae and names of three references to: Barbara Meyrick, Ph.D., Center for Lung Research, Vanderbilt University Medical Center, MCN T-1217, Nashville, TN 37232-2650. FAX: 615-343-7448; Email: barbara.meyrick@mcmail.vanderbilt.edu. Vanderbilt University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available immediately to study trophic regulation of oligodendrocyte development. Candidates experienced in cellular or molecular neurobiology and cell culture or protein chemistry are preferred. Send curriculum vitae and names of three references to: Dr. Tony Gard, Department of Structural and Cellular Biology, University of South Alabama College of Medicine, Mobile, AL 36688-0002. Telephone: 334-460-6770; FAX: 334-460-6771; Email: agard@jaguar1.usouthal.edu.

POSTDOCTORAL positions available immediately to work on phytoalexin biosynthesis in brassicas. One position requires strong background in bioorganic chemistry, HPLC, NMR, and organic synthesis. The other position requires extensive experience in molecular genetics, preferably in plants. Curriculum vitae and three recommendation letters should be forwarded to: Dr. S. Pedras, Department of Chemistry, University of Saskatchewan, Saskatoon, Saskatchewan S7N 5C9 Canada. Internet: pedras@sask.usask.ca.

POSITIONS OPEN

POSTDOCTORAL FELLOW: Position available January 1997 to investigate high performance affinity chromatography of transcription factors on DNA-silica columns. Experience in HPLC, including column packing and silica coupling, is essential. Submit curriculum vitae and names of three references to: Harry W. Jarrett, Department of Biochemistry, 858 Madison Avenue, University of Tennessee, Memphis, Memphis, TN 38163. The University of Tennessee is an Equal Employment Opportunity/Affirmative Action/Title VI/Title IX/Section 504/ADA/ADEA Employer.

BIOINFORMATICS

SENIOR RESEARCH SCIENTIST position in bioinformatics (statistical identification of DNA and protein sequence functional features). Send curriculum vitae and names (with Email addresses) of three references to: Professor Mark Borodovsky, School of Biology, Georgia Institute of Technology, Atlanta, GA 30332-0230. FAX: 404-894-0519.

ANNOUNCEMENTS

The Environmental Defense Fund (EDF), a national nonprofit environmental organization, requests **PROPOSALS** up to \$15,000 for research projects related to topics of substantive interest to EDF. This minigrant program is part of EDF's Environmental Science Project that aims to enhance scientific input to public interest environmental organizations. Research topics may be related to climate change, toxic chemicals, wetlands, marine ecosystems, environmental economics, etc. We are particularly interested in topics that bear on issues of concern to communities. Principal investigator must hold the equivalent of a faculty position at a public or private college or university. See the EDF website (www.edf.org) for the RFP and information on EDF programs. EDF is an Equal Opportunity Employer.

THE LOUIS AND ARTUR LUCIAN AWARD

For Research in Circulatory Diseases

Each year a Committee of the McGill University Faculty of Medicine confers the **Louis and Artur Lucian Award** (\$40,000 Can.) for outstanding research in the field of diseases of the circulation. The purpose of this Award is to honor a scientific investigator or group of investigators whose contribution to knowledge in this field is deemed worthy of special recognition. The successful applicant is invited to spend a short period of time at McGill University to give a formal Lucian Lecture and to have interchanges with the members of the McGill community. Submissions should be received on or before April 1, 1997.

For information and requests for nomination forms, please contact: Dr. Yves Clermont, McGill University, Department of Anatomy and Cell Biology, 3640 University Street, Montreal, H3A 2B2 Canada. Telephone: 514-398-6349; FAX: 514-398-5047.

COURSES AND TRAINING


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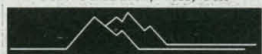
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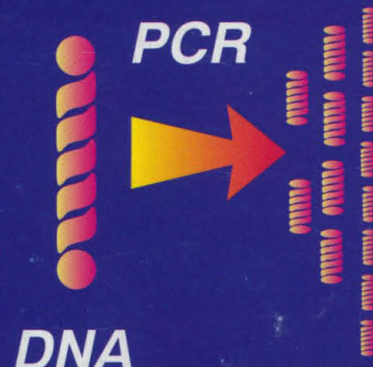
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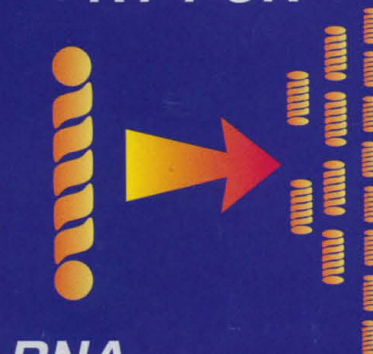


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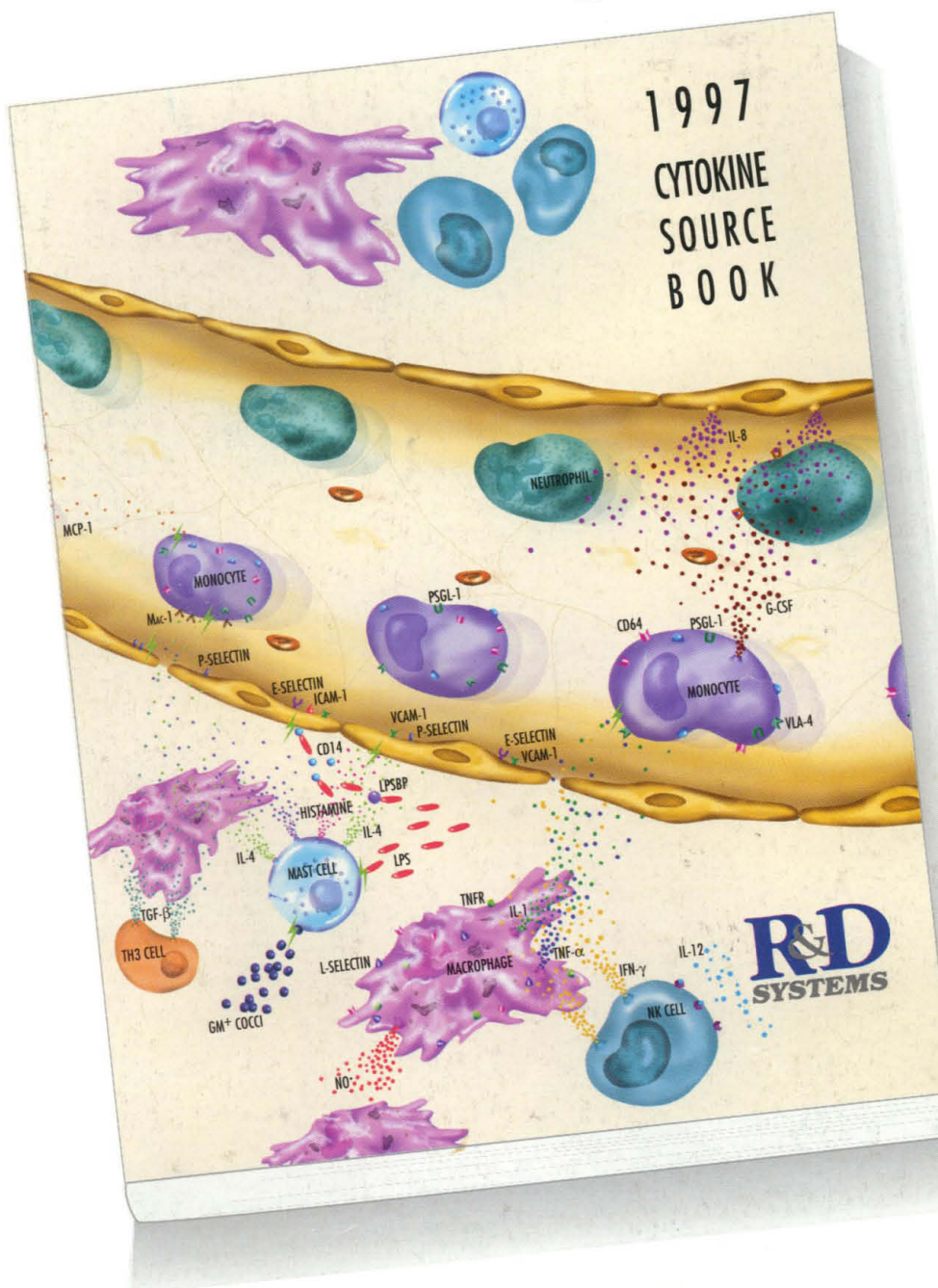
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