

Education books from AAAS

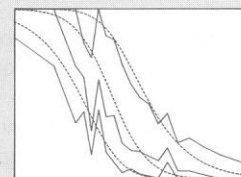
Assessing Higher Order Thinking in Mathematics

Edited by Gerald Kulm

Teaching higher order thinking is essential in today's world. And what is taught must be tested. Unfortunately, most mathematics tests focus primarily on rote computational skills and memorized facts rather than on higher order thinking. This book addresses such concerns. The authors explore new approaches to mathematics assessment, provide directions for reforming mathematics testing, and give examples of innovative test items. It is especially valuable for teachers, test publishers, researchers, and federal and state educational policy makers.

Topics include: A new world view of assessment in mathematics; power items and the alignment of curriculum and assessment; assessing student growth in mathematical problem-solving; computer-based mathematics assessment; calculators and mathematics assessment; students' theories about mathematics and their mathematical knowledge; assessing schema knowledge for arithmetic story problems; critical evaluation of quantitative arguments; investigation of structured problem-solving items; and new directions for mathematics assessment.

Assessing Higher Order Thinking in Mathematics



Edited by Gerald Kulm

1990; 216 pp.; indexed
#89-27S - softcover; \$24.95
(AAAS members \$19.95)

The Liberal Art of Science *Agenda for Action*

This report presents the conclusions and recommendations of the AAAS Project on Liberal Education and the Sciences. It discusses the level of scientific understanding necessary for optimal participation in 21st century life and the type of undergraduate science education required to achieve such a level of understanding. In addition, this volume supports the idea that science is a liberal art and should be taught as such. It recommends goals for liberal education in the sciences, outlining the multidisciplinary curriculum and teaching strategies necessary to achieve them.

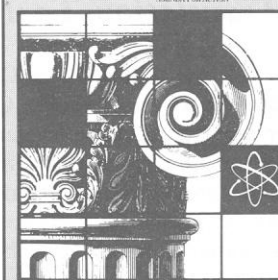
An appendix includes descriptions of existing courses and programs, offered at institutions nationwide, that are consistent

with the project's recommendations. This report is of particular interest to undergraduate science educators as well as to all people committed to quality science education.

Topics include: Agenda for action; faculty responsibility; resource commitment; teaching materials and technologies; assessment instruments; the nature of scientific explanation; historical context; pedagogical techniques; integrating multidisciplinary content; programmatic approaches to liberal education in science; and liberal education for special groups such as future science teachers, the underrepresented in science, people with disabilities, and science and engineering majors.

The Liberal Art of Science

AGENDA FOR ACTION



American Association for the Advancement of Science

1990; 142 pp.
#90-13S - softcover; \$12.95
(AAAS members \$10.30)

To order: By mail, individuals must prepay with check or charge card. Send check to AAAS Books, Dept. A4, PO Box 753, Waldorf, MD 20604. By phone, (use VISA/Mastercard only) call 301-645-5643 (9am-4pm ET) and ask for AAAS. By fax, 301-843-0159. Add \$4.00 postage/handling per order. Please specify publication number(s). For shipments to California, add applicable sales tax.

American Association for the Advancement of Science

Programmable Fraction Collector

The Foxy 200 fraction collector can be used in virtually any preparatory liquid chromatography application. It features built-in peak detection, repetitive collection cycles for automated preparatory high-performance liquid chromatography, and easy menu-based input of collection parameters. Fractions can be sized by time, drop counting, or volumetric signals from a pump. The Foxy collects peaks selectively by monitoring the slope and/or level of a detector signal as well as by expected retention time. Peak fractions can be collected in small-volume tubes, with nonpeak material diverted to larger vessels or a waste station to minimize glassware handling. An optional accessory controller allows the unit to regulate pumps, valves, and other devices to automate a complete liquid chromatography system. Isco. Circle 510.

Data Translation Tool

Convert will take almost any ASCII data file and convert it to LOTUS, Quattro dBASE, or other popular file formats. The user selects the data to be transferred, its format, and the arrangement of the new file. A conversion template can be created easily by pointing with the cursor and can be saved for repeated use. Once set up, file conversion can be carried out by a single DOS command. Labtronics. Circle 511.

Microorganism Database

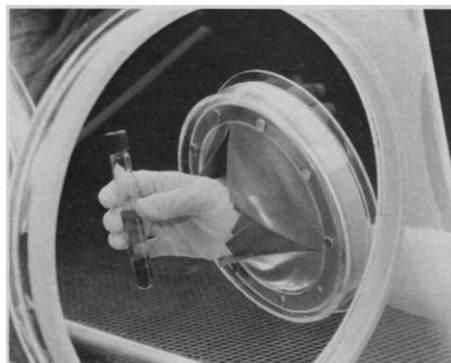
CD-STRAINS is a CD-ROM database that incorporates information from three major microorganism culture collections: the American Type Culture Collection; the Institute for Fermentation, Osaka; and the Japanese Collection of Microorganisms. The CD-STRAINS software allows users to retrieve microorganism information within

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card and placing it in a mailbox. Postage is free.

seconds by culture designation, growth temperature, or designated characteristics. It runs on IBM-compatible computers with a color monitor and Hitachi CD-ROM drive. It is available on a subscription basis with data updated at least once a year. Hitachi America. Circle 512.

Hand Entry in Glove Box

Manostat's Iris Port accessory for its glove box allows entry into the box with latex gloves or bare hands to facilitate work in a controlled environment. The opening fea-



tures 30 points of soft latex that conform around the wrist to prevent atmosphere exchange during use. Manostat Corp. Circle 513.

Fraction Collector

A new fraction collector collects any size fractions in specialty containers, offers automated individual peak collection, and is easy to program. It can collect up to 120 fractions of microliter to liter volumes. It uses practically any size container or test tube including preparative racks, eliminating the need to transfer fractions to specialty containers for further processing. The fraction collector arm can accommodate collection vessels measuring 90 to 180 mm in height and the test tube rack self-adjusts to the size of any test tube from 12 to 18 mm in diameter. It provides for collection by time, number of drops, fraction volume, or external signal. Waters Chromatography Division of Millipore. Circle 514.

Serum-Free Cell Culture Medium

CG-Medium for the cultivation of mammalian cells is sufficient for the stimulation and propagation of most cells as the only source of nutrients without the need for additional serum. CG-Medium contains no

growth factors or hormones and the components of the medium are clearly defined, so the user can enrich it to any specification required. The cultivation of primary and established lines of various somatic cells, tumor cells, and virus-transformed or hybrid cells is usually possible without adding supplement. The medium is well-suited for production of B cells and antibodies. Serotec. Circle 515.

Translation System

The Retic Lysate IVT in vitro translation system offers improvements in nuclease-treated reticulocyte lysate translation. Two of the improvements are a new buffer system called "Master Mix" that allows efficient translation of uncapped in vitro transcripts and a production procedure that results in a significantly more active lysate. The uncapped RNA Master Mix allows the investigator to avoid the nuisance and expense of synthesizing capped messenger RNAs. Many reticulocyte lysates suffer from premature termination of initiation, which results in termination of protein synthesis after about an hour. This lysate continues to synthesize proteins for at least 2 hours, which can be important in experiments where a large amount of translation product is advantageous or when a protein of high molecular weight is being synthesized. Ambion. Circle 516.

Literature

Cosmosil 5C¹⁸-AR Packed Column is a brochure describing a new series of high-performance liquid chromatography columns that feature a silylation treatment that results in the sharp separation of both acidic and basic compounds, strong acid resistance, and near perfect end-capping. JM Science. Circle 517.

Uninterruptible Power Systems (catalog #740), power supplies (catalog #741), and power conditioning (catalog #742) list products to protect microprocessor-based equipment from electrical surges, spikes, sags, brownouts, blackouts, and noise. Sola, a Unit of General Signal. Circle 518.

Building Immunological Excellence for the World's Researchers is a 1991 product guide to a comprehensive line of immunological reagents, including a custom conjugation service. Serotec. Circle 519.

Blood Products from Serotec features a new line of products, including blood cells and sera from sheep, chicken, guinea pig, rat, mouse, and other species. Serotec. Circle 520.

Personnel Placement

LINE CLASSIFIED ADVERTISEMENTS

DEADLINES: Ads are due by Thursday, 10 a.m., 2 weeks prior to the issue date. *Science* publishes each Friday, except the last Friday of the year. Advertisements must be submitted in writing.

HOW TO SUBMIT A CLASSIFIED AD: Prepare double-spaced typewritten ad copy on a separate sheet. Do not include any abbreviations. *Science* will edit and typeset ads according to *Science* guidelines. Deadline for applications stated in ad must be at least 2 weeks after date of publication. Also include a cover sheet which gives name and phone number of contact person, desired date of publication, and billing information, including any special invoicing requests. Mail or FAX materials to:

SCIENCE Classified Advertising
1333 H Street, N.W., Room 940
Washington, DC 20005
Telephone: 202-326-6555
FAX: 202-682-0816

CLASSIFICATIONS: *Science* publishes line classified ads under the following headings: **Positions Open, Employment Agencies, Situations Wanted, Courses and Training, Meetings, Announcements, and Marketplace.** Advertisers should specify classification desired.

HOW TO CALCULATE RATE FOR CLASSIFIED AD: Ads are \$41 per line with a \$410 minimum. One line equals 52 characters and spaces; centered headings equal 32 characters and spaces.

To ESTIMATE ad cost, count total number of 52 character lines and multiply by \$41 to find approximate cost of ad per week. Each line of centered heading counts as one line. Also count one line for white space between headline and first line of text; all partial lines are also counted as full lines (including all centered reply information).

Remember, this is a rough estimate only. Allow for variation between estimated typewritten lines and ads when actually typeset for magazine. Therefore, purchase orders must allow additional funds for flexibility and/or adjustment. *Science* cannot provide proofs of typeset ads.

PREPAYMENT DISCOUNT: A 3% cash discount is granted to all prepaid line ads. Prepayment made in U.S. dollars by checks drawn on U.S. banks is required on all foreign ads.

CREDIT CARDS: *Science* accepts MasterCard and VISA. Both personal and corporate cards may be used. Prepayment does not apply to credit cards.

BOXES AND LOGOS: Any line classified ad can be boxed and/or published with logo to increase its visibility on page. Since the box takes up additional space, one line now equals 48 characters and spaces; two additional lines will be added to allow for top and bottom rules. Logos are billed according to the number of lines needed to fit logo in space.

CANCELLATIONS: Deadline for cancellation is 10 a.m., Tuesday, 10 days prior to issue date.

DISPLAY PERSONNEL ADVERTISEMENTS

For rates, deadlines, and information about fractional display ads (all ads 1/6 page and larger) and all Marketplace listings of available products and services, contact:

Scherago Associates
1515 Broadway
New York, NY 10036
Telephone: 212-730-1050
FAX: 212-382-3725

CONDITIONS: Personnel advertising is accepted only with the understanding that the advertisers do not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference. *Science* reserves the right, at its discretion, to decline to publish advertisements submitted to it and to decline classifications which it considers misleading.

POSITIONS OPEN

ANATOMIST. The Department of Anatomy, University of South Dakota School of Medicine invites applications for a tenure-track position at **ASSISTANT PROFESSOR** level, available July 1991. Applicants should have a Ph.D. and postdoctoral experience. Candidates are expected to develop a competitive research program involving cell and/or molecular biological techniques. Participation in team-taught courses for medical and graduate students is required. Closing date is 1 June 1991 or until a suitable candidate is identified. Please submit curriculum vitae, statement of research interests, and three references to: **Dr. Wesley W. Parke, Chairperson, Department of Anatomy, University of South Dakota School of Medicine, 414 East Clark Street, Vermillion, SD 57069.** Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR OF NUTRITION

Applications for a tenure-track, 12-month appointment at the University of Missouri-Columbia will be accepted until 1 August 1991, or until the position is filled. Applicants should have a Ph.D. in nutritional science, biochemistry or related area, and postdoctoral experience is preferred. The successful candidate will be expected to develop a competitive, innovative research program utilizing modern biochemical and/or molecular techniques to study problems of nutritional importance; the position includes some teaching responsibilities. Competitive salary, start-up funds and technical help are included in this position, which is part of the interdisciplinary Food for the 21st Century Program. Applicants should send a curriculum vitae, representative publications, a summary of past research and teaching accomplishments, plans for future research and arrange for three letters of reference to be sent to: **Dr. G. M. Hill, Search Committee Chair, 122 Eccles Hall, University of Missouri, Columbia, MO 65211.** The University of Missouri is an Affirmative Action/Equal Opportunity Employer.

Two tenure-track positions at the **ASSISTANT PROFESSOR** level in molecular biology are available in the Department of Biology at the University of Victoria. These positions are part of a new program in environmental health sciences and successful candidates will be associated with a planned Centre for Environmental Health. Current research efforts in this area are in DNA repair, mechanisms of mutagenesis, and monitoring mutations in humans. Successful candidates are expected to develop independent research programs and to participate in undergraduate and graduate teaching in the Department of Biology. Each applicant should submit curriculum vitae and the names of three referees to:

Dr. Louis A. Hobson, Chair
Department of Biology
University of Victoria

Victoria, British Columbia, V8W 2Y2 Canada

The deadline for receipt of applications is 31 July 1991.

In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents. The University of Victoria is committed to an Employment Equity program. Women are particularly encouraged to apply.

VIROLOGIST UNIVERSITY OF MARYLAND AT BALTIMORE

A tenure-track molecular virologist position is available in the Department of Microbiology and Immunology at the University of Maryland School of Medicine in Baltimore. The position can be filled at the **ASSISTANT OR ASSOCIATE PROFESSOR** level, commensurate with the experience of the successful candidate. Applications are encouraged from individuals with molecular expertise in any area of animal virology. The successful applicant will be expected to establish a vigorous independent research program, participate both in graduate and medical school teaching, and interact with other faculty members with virological interests. The position carries attractive start-up funds as well as a competitive salary and benefit package. Interested parties should send recent curriculum vitae plus relevant reprints, the names of three references, and a short statement of their proposed research program to: **George K. Lewis, Ph.D., Virology Search Committee, Department of Microbiology and Immunology, University of Maryland, 655 West Baltimore Street, Baltimore, MD 21201.**

The University of Maryland at Baltimore is an Equal Opportunity Employer, M/F/H/V.

POSITIONS OPEN

ASSISTANT PROFESSOR RESEARCH TRACK

Nontenured faculty position available to develop and coordinate research projects involving molecular and physiological effects of insulin on nutrient and ion transport by human fibroblasts. The candidate must have previous research training in molecular biology and in transmembrane nutrient and ion transport. Position requires an M.D. or research doctorate (Ph.D.) degree and at least 1 year of relevant postdoctoral experience. Salary: \$40,000; 40 hours per week. Send curriculum vitae to: **Georgia Department of Labor, 1275 Clarendon Avenue, Avondale Estates, GA 30002**, or to the nearest Georgia Job Placement Center. Job Order Number: GA 5481748.

PEDIATRIC OTOLARYNGOLOGY RESEARCH

Position available for scientist with interests and abilities applicable to audition and other areas relevant to pediatric otolaryngology. Expertise in molecular biology is preferred, but other specialties will be considered. Appointment as **RESEARCH ASSISTANT PROFESSOR** in the University of Pennsylvania School of Medicine is anticipated. Telephone inquiries are welcome: **Roger R. Marsh, Ph.D., Department of Pediatric Otolaryngology, Children's Hospital of Philadelphia, 1 Children's Center, Philadelphia, PA 19104.** Telephone: 215-590-1140. An Equal Opportunity Employer.

LIMNOLOGY UNIVERSITY OF LUND, SWEDEN FULL PROFESSOR

Applications are invited for a tenured appointment as full professor in limnology at the Department of Ecology (job reference # 5847). Applicants should be highly qualified limnologists with an exceptional research record. Broad interest in aquatic ecology, including marine ecology, is desirable. The successful applicant will be expected to establish an active research program, demonstrate good teaching ability, and participate in developing interdisciplinary programs in teaching and research. Moreover, he/she will provide research leadership to the whole institute. The appointee is expected to teach and supervise in Swedish within 18 months of arrival. The applicant is required to submit, in English, one copy of his/her curriculum vitae, a list of scientific publications, and a statement of past and future research activities and teaching experience, all to be signed and duly witnessed, as well as four copies of all reprints. Application materials except for reprints must be received by 5 June 1991 and reprints within 3 weeks thereafter. Applications should be submitted to: **University of Lund, Registrar's Office, P.O. Box 117, S-221 00 Lund, Sweden.** FAX: 46-46-104610. For more information, contact: **Dr. Lars Leonardson, Limnology, Box 65, S-221 00 Lund, Sweden.** Telephone: 46-46-108433. FAX: 46-46-104536.

EXECUTIVE DIRECTOR LEADING SCIENTIFIC SOCIETY (7000 MEMBERS)

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 - Provide liaison and support to seven active committees
 - Publications
 - Public affairs
 - Represent society at national/international organizations

Note: Successful candidate need not be a scientist but experience working within an academic or industrial organization administering a scientific organization will be favorably considered.

Send detailed curriculum vitae and salary requirements to:

Search Committee
The American Society for Cell Biology
9650 Rockville Pike
Bethesda, MD 20814

Deadline for applications: 15 June 1991.

POSITIONS OPEN

DEAN, University of South Florida (USF) College of Medicine. The University of South Florida College of Medicine is seeking applicants for the position of dean. The dean is responsible for the education, research, and clinical programs conducted at the University of South Florida College of Medicine. The college is one of three in the state of Florida. USF opened in 1960 and the College of Medicine began in 1971. USF is the 35th largest university in the nation with more than 30,000 students and is located in an expanding metropolitan area of more than 2 million people. The Health Sciences Center also includes a College of Public Health and a College of Nursing. It has approximately 475 faculty and 96 students in each class. Applicants should have an M.D. degree or equivalent; should have considerable academic, administrative, and leadership skills; and should meet standards for appointment at the full professor level. Applicants should send their curriculum vitae and the names of five references by 31 May 1991 to: **Allan L. Goldman, M.D., Chairman, Dean Search Committee, University of South Florida College of Medicine, Box 19, 12901 Bruce B. Downs Boulevard, Tampa, FL 33612.** USF is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF DETROIT MERCY DEAN OF THE COLLEGE OF ENGINEERING AND SCIENCE

The University of Detroit Mercy seeks candidates for the position of dean of the College of Engineering and Science. The college has the following departments: biology, chemistry, chemical engineering, civil engineering, electrical engineering and physics, mathematics, and mechanical engineering offering bachelor's and master's programs; doctoral programs in chemistry and engineering and a master of engineering management.

The university has eight colleges and schools and a student body of 7500 undergraduate and graduate students. It is located on campuses in residential northwest Detroit.

Candidates should possess an earned doctorate in a discipline within the college; teaching experience with demonstrated excellence in the classroom, research, and scholarly publications; grantsmanship; demonstrated administrative leadership; and the ability to interact productively both internally and externally.

The responsibilities of the dean include: faculty, staff, and student relations; program and resources management; external relations; and strategic planning and leadership.

Screening of candidates began on 13 May 1991 and will continue until the position is filled. Send current résumé and references to: **Gregory W. Ulferts, Chair, Search Committee, University of Detroit Mercy, 4001 West McNichols Road, Detroit, MI 48221.**

An Equal Opportunity/Affirmative Action Employer.

DIRECTOR: FIELD RESEARCH CENTER

Position open November 1991 for Director of Kari-oke Research Center. Studies of mountain gorilla and African montane ecology in Rwanda, Africa. Ph.D. first aid, and French preferred. One-year contract.

Send résumé, letter of application, and three letters of reference to: **The Digit Fund, 45 Inverness Drive East, Englewood, CO 80112.** All materials must be received by 3 June 1991.

A PROGRAM COORDINATOR is sought to help develop and maintain a research program in aquatic radioecology. The research involves studies on the transport and distribution of radionuclides in large reservoirs and development of ancillary information on hydrology, limnology, and aquatic biology. The individual is expected to coordinate research among several organizations, supervise technical and clerical staff, and assist graduate students and visiting scientists. The coordinator is responsible for operation of a radiochemistry and gamma spectroscopy laboratory, a limnological laboratory, and assurance that requirements for laboratory safety and QA/QC are met. Applicants must have at least an M.S. degree in aquatic biology or closely related field; experience in radionuclide measurements, chemistry, limnology and research facility development; experience with program coordination; and U.S. citizenship and eligibility for a government clearance. Send résumé and three letters of reference by 14 June 1991 to: **Dr. F. Ward Whicker, Savannah River Ecology Laboratory, Drawer E, Aiken, SC 29802.** Equal Opportunity/Affirmative Action Institution.

POSITIONS OPEN

TRANSPLANTATION IMMUNOLOGIST DIRECTOR OF RESEARCH

We are seeking a Ph.D. immunologist with postdoctoral experience in transplantation biology to direct research activities in the Section of Transplantation in the Department of Surgery with a joint appointment in the Department of Microbiology. This individual would collaborate with surgeons in the Section of Transplantation and members of the Department of Microbiology and Immunology. This is a full-time academic position at the rank of **ASSISTANT PROFESSOR** or as is commensurate with qualifications. Send curriculum vitae and three professional references to:

Stephen T. Bartlett, M.D.
Associate Professor and Chief
Section of Transplantation Surgery
Division of General Surgery
University of Maryland Hospital
c/o Lois Reisig
405 West Redwood Street, 5th Floor
Baltimore, MD 21201

*Equal Opportunity Employer, M/F/H/V.
Minorities and females are encouraged to apply.*

PROGRAM ANALYST

The National Biological Impact Assessment Program (NBIAP) of the Cooperative State Research Service, U.S. Department of Agriculture (USDA), seeks a qualified professional to serve as program analyst for an international database on biological monitoring results from field tests with genetically modified plants, animals, and microbes. Candidates must have 1 year of specialized experience or three full academic years of graduate level education or Ph.D. equivalent. To qualify for the GS-12 level, candidates must have at least 1 year of specialized experience at the GS-11 level.

Closing date is 17 June 1991. For information on the position, contact: **Dr. David R. MacKenzie, NBIAP/USDA, Suite 330 Aerospace Building, Washington, DC 20250-2200.** Telephone: 202-401-4892. For information on application procedures/forms, contact **Ms. Kathy Asmussen**, personnel staff specialist, 202-475-4811. USDA is an Equal Opportunity Employer.

SCIENTIFIC CONSULTANT, full time. Consulting firm seeks M.D. or Ph.D. with top writing and speaking skills for high visibility position in commercial drug development and scientific investment research. Knowledge of pharmacology, biochemistry, molecular biology desirable. Clinical experience helpful. Clients are pharmaceutical and investment management companies. Submit curriculum vitae, cover letter, and references to: **Scheer and Company, Inc., 250 West Main Street, Branford, CT 06405.**

FACULTY POSITION BAYLOR COLLEGE OF MEDICINE HOUSTON

The Department of Pharmacology is inviting applications for a faculty position at the **ASSISTANT PROFESSOR OR ASSOCIATE PROFESSOR** (tenure track) level depending upon qualifications. We are seeking individuals who have already developed a strong track record of outstanding research accomplishments that would lead to a successful research program with continuing extramural support. Preference will be given to candidates using cutting edge techniques in any area of pharmacology. This position also involves participation in the department's medical and graduate education programs. Baylor College of Medicine is located in Houston within a campus setting at the Texas Medical Center near Rice University and a large city park. Houston offers all the cultural advantages of a large city, but is readily accessible and affordable. Interested parties should submit by 31 July 1991 curriculum vitae, statement of research interest, and the names of three references to: **Dr. Michael G. Brattain, Chairman, Faculty Search Committee, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030.** Equal Opportunity/Affirmative Action Employer.

COMING NEXT WEEK:

Science's
first ever issue on
Careers in Science

POSITIONS OPEN

FACULTY POSITION

The Department of Biochemistry and Molecular Biology at the University of Texas M. D. Anderson Cancer Center invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level. Applicants should have a Ph.D. or M.D. and a proven record of accomplishments as a postdoctoral fellow or faculty member and have research interests in the area of regulatory processes associated with the differentiation of eukaryotic cells. Applicants should send a letter outlining their research interests, their curriculum vitae, and three letters of reference to: **Search Committee, Department of Biochemistry and Molecular Biology (Box 117), The University of Texas M. D. Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030.** The University of Texas M. D. Anderson Cancer Center is a smoke-free institution. An Affirmative Action/Equal Opportunity Employer.

THE UNIVERSITY OF CALGARY VIROLOGIST

The University of Calgary Department of Microbiology and Infectious Diseases invites applications for a full-time academic **FACULTY POSITION**. Candidates should have a Ph.D. and/or M.D., a minimum of 2 years of postdoctoral experience, and demonstrated strong research achievement in the general area of molecular virology; experience with retroviruses preferred but not absolutely essential. This position offers an excellent opportunity to develop vigorous independent research programs and collaborative interactions within a multidisciplinary research environment. Duties will include teaching and graduate student supervision.

The selected candidate must compete successfully for salary support and establishment funding from the Alberta Heritage Foundation for Medical Research and/or the Medical Research Council of Canada, and will have 75% of time protected for research. Rank and salary will be commensurate with qualifications and experience.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Calgary has an Employment Equity Program and encourages applications from all qualified candidates, including women, aboriginal people, visible minorities, and people with disabilities.

Interested candidates should forward curriculum vitae, a statement of research interests, and the names and addresses of three referees by 30 August 1991 to:

Dr. D. E. Woods
Acting Head, Department of
Microbiology and Infectious Diseases
The University of Calgary
3330 Hospital Drive N.W.
Calgary, Alberta, Canada T2N 4N1

TROPOSPHERIC STUDIES FACULTY POSITION UNIVERSITY OF MICHIGAN DEPARTMENT OF ATMOSPHERIC, OCEANIC, AND SPACE SCIENCES

Tropospheric studies. The University of Michigan Department of Atmospheric, Oceanic, and Space Sciences invites applications for three tenure-track faculty positions. Areas of specialization include, but are not limited to, climate dynamics, synoptic and mesoscale meteorology, atmospheric chemistry, radiative transfer, boundary-layer studies, and dynamics. Candidates in both experimental and theoretical areas are sought. The successful candidate will be expected to teach undergraduate and graduate courses, develop a strong research program, and interact with the university's expanding Global Change Program.

The available position may be filled at any rank, commensurate with the qualifications of the applicant. Applicants should submit a complete résumé, statement of future research and teaching interests, and names of at least three references to:

Perry J. Samson
Department of Atmospheric, Oceanic, and
Space Sciences
2126 Space Research Building
University of Michigan
Ann Arbor, MI 48109-2143
Telephone: 313-763-6213
E-Mail: samson@madlab.sprl.umich.edu

Applications received by 15 June 1991 will receive full consideration.

The University of Michigan is an Equal Opportunity/Affirmative Action Employer and Educational Institution.

POSITIONS OPEN

IMMUNOLOGY FACULTY POSITION. The Department of Veterinary Microbiology and Parasitology invites applications for an **ASSISTANT/ASSOCIATE PROFESSOR** position. The successful candidate will participate in teaching veterinary and graduate immunology, in the guidance of graduate students, and will develop a strong research program. Applicants must have a Ph.D. or D.V.M./Ph.D. degree in immunology. Postdoctoral experience with significant research accomplishments in contemporary aspects of immunology and immune responses to infectious or parasitic agents would be beneficial. Send a letter of interest with curriculum vitae and three references to: **Dr. T. R. Klei**, Search Committee Chair, Department of Veterinary Microbiology and Parasitology, School of Veterinary Medicine, Louisiana State University (LSU), Baton Rouge, LA 70803. Application deadline is 15 June 1991 or until a suitable applicant is identified. *LSU is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ENVIRONMENTAL EDUCATION SPECIALIST. Master's degree in science/environmental education, or relevant experience, required. Must have excellent oral and written communication skills. Will develop and implement the garden's expanded environmental education programs about the New York Botanical Garden Forest and urban natural areas for school-aged children and assist with research work. Duties include curriculum development, instruction, acting as liaison for schools, coordination of adjunct instructors, and logistics management for all project activities. Salary: high \$20,000's plus excellent fringe benefits. Submit résumé to: **Personnel Administrator-EES**, The New York Botanical Garden, 200th Street and Southern Boulevard, Bronx, NY 10458-5126. *Affirmative Action/Equal Opportunity Employer.*

HYPERTENSION RESEARCH CENTER THE UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY FACULTY POSITION IN MOLECULAR BIOLOGY

The Hypertension Research Center of the University of Medicine and Dentistry of New Jersey invites applications for an academic position at the **ASSISTANT PROFESSOR** or **ASSOCIATE PROFESSOR** rank (tenured track) for research in molecular biology with an emphasis in molecular genetics. Candidates must have training and experience in molecular biology, an interest in cardiovascular physiology or pathophysiology, and hold Ph.D. or M.D. degree. For application, submit curriculum vitae and three letters of reference to:

Ms. Patricia A. Peluso
University of Medicine and Dentistry of New Jersey
Hypertension Research Center
185 South Orange Avenue, MSB F-464
Newark, NJ 07103-2714

FACULTY POSITIONS IN TUMOR BIOLOGY UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER

The Department of Experimental Pediatrics of the University of Texas M. D. Anderson Cancer Center invites applications for a tenure-track position at the **ASSISTANT OR ASSOCIATE PROFESSOR** level. The successful candidate will be expected to develop a strong and independent research program in the biology of tumors relevant to childhood and young adulthood. Minimum qualifications include a Ph.D. or M.D. with at least 3 to 5 years of postdoctoral research experience in basic cancer research, particularly in the areas of molecular cellular biology and/or molecular genetics. Candidates for assistant professor should have a demonstrated ability to develop an active, viable research program based on extramural support. Candidates for associate professor must have a significant publication record, an established research program, and demonstrated ability to attract extramural funding.

Excellent new, well-equipped laboratories are available and excellent opportunities to collaborate with both clinical and basic research groups exist. The successful candidate will receive a generous start-up package, competitive salary, and excellent retirement benefits. Send curriculum vitae, a statement of research interests/plans, selected reprints, and names and addresses of four references to: **Dr. Francis Ali-Osman**, Chairman, Department of Experimental Pediatrics, Box 87, University of Texas M. D. Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030.

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As you blend the properties of two powerful entities, the ongoing process is exciting, challenging and full of promise. The Du Pont Merck Pharmaceutical Company is a partnership of Du Pont and Merck & Co. Inc. We are driven by creative and innovative science to help meet society's healthcare needs through the discovery and development of novel pharmaceuticals. Consider our two-year Postdoctoral Fellowship Program.

MOLECULAR BIOLOGY—To investigate structure/function relationships of cloned receptors and their biology at the molecular and cellular levels. Experience in expression and subtraction cloning, *Xenopus* oocyte translation systems and multiple expression systems including yeast and mammalian, would be a plus.

STRUCTURAL BIOLOGY—To determine 3D structures of proteins, peptides and drug and inhibitor conformations by NMR. Facilities include two modern 600 MHz spectrometers, one 500 MHz spectrometer and a UNIX-based distributed computing network. Applicant should be skilled in pulse sequence development, mathematics of NMR data processing and computer programming.

NUCLEIC ACIDS—To explore applications of human genetic analysis to problems of drug discovery and development. Experience in human genetic mapping and physical mapping of large DNAs would be advantageous.

TRANSGENIC TECHNOLOGY—To create novel animal models for pharmaceutical research and development. Position requires expertise in transgenic methodology (embryo microinjection/ES cell approach), animal surgery, recombinant DNA procedures and methods of gene detection at DNA, RNA and protein levels.

You will find a highly stimulating scientific environment, excellent technical challenges and opportunities with a company combining the benefits of two great organizations: Du Pont and Merck. Our location, near Wilmington, DE offers an attractive lifestyle with easy access to all the cultural, academic and recreational activities of the Eastern Seaboard.

Qualified applicants should send a letter/resume with salary

history/requirements, in confidence to:
Dr. Lynn Enquist, Program Coordinator,
The Du Pont Merck Pharmaceutical
Company, Dept. SCI-18, P.O. Box 80328,
Wilmington, DE 19880-0328. An Equal
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POSTDOCTORAL SCIENTIST

X-RAY CRYSTALLOGRAPHER

SmithKline Beecham, a world leader in pharmaceutical research, has an opportunity for a Postdoctoral Scientist to work in our X-ray crystallography laboratory. We are seeking a candidate with experience in modern single crystal X-ray diffraction techniques to undertake research projects involving crystallization, structure determination and refinement of AIDS-related proteins and/or of small molecules designed to inhibit one or more of these proteins. The successful candidate will form part of a multidisciplinary NIH-funded project team engaged in the expression, purification and structure determination of HIV-related targets. Publication of research results will be encouraged.

Candidates with backgrounds in either small molecule or protein crystallography, macromolecular structure and crystal growth are encouraged to apply. Candidates must possess a Ph.D. in a chemical or biochemical discipline and have appropriate training and experience in the field of X-ray crystallography.

SmithKline Beecham's state-of-the-art research facility is equipped with diffractometers, area detectors and rotating anodes for small molecule and protein data collection, an extensive array of dedicated VAX computers, and modern graphic systems. We are located in suburban Philadelphia, near Valley Forge, PA. We offer a competitive compensation, benefits and relocation package. For confidential consideration, please send your C.V. and the names of three references to: Nancy Hasson, Employment Administrator, #H0170, SmithKline Beecham Pharmaceuticals, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.



SmithKline Beecham
Pharmaceuticals

Molecular Neurobiologist Cell and Developmental Biologist Assistant Professor Meharry Medical College

Applications are invited for two tenure track positions at the Assistant Professor level beginning September, 1991 in the Division of Biomedical Sciences here at Meharry Medical College. Appointments are for candidates with an interest in molecular neurobiology and cell and developmental biology. Signal transduction is of special interest. The individuals will have teaching responsibilities for medical and graduate students and will be expected to maintain a funded research program. Active interdepartmental neuroscience, cell and molecular biology, and tropical diseases research programs exist and the individual will be expected to develop appropriate collaborations. Applicants should have a Ph.D. or M.D. and relevant postdoctoral experience and should provide *curriculum vitae*, summary of research plans, reprints of three representative publications, and the names of three references to:

Dr. George C. Hill
Professor and Director
Meharry Medical College
Division of Biomedical Sciences
1005 D. B. Todd, Jr., Blvd.
Nashville, TN 37208
(615) 327-6193

Applications will be accepted until position is filled. Initial review began May 1, 1991. Meharry Medical College is an Affirmative Action/Equal Opportunity Employer.

Post-Doctoral Position

National Institute of Diabetes and Digestive and Kidney Diseases Phoenix, Arizona

A post-doctoral fellowship is available immediately for a recent Ph.D. or equivalent experience in biochemistry or related discipline to participate in studies of the mechanism by which insulin regulates Protein Tyrosine Phosphatase activity. Results of studies conducted in our laboratory suggest that abnormal regulation of skeletal muscle PTPase activity by insulin may be the primary defect responsible for insulin resistance and subsequent development of non-insulin dependent diabetes mellitus in humans. Available projects include: expression of new PTPase cDNAs from human muscle, purification and characterization of the expressed proteins, and mechanisms of regulation of these PTPases by covalent modification.

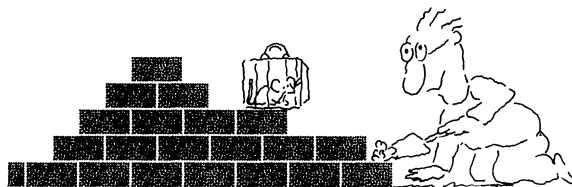
This position is funded through the NIH Intramural Research Training Award Program and has a starting annual stipend of \$25,000 - \$28,000, depending on length of previous post-doctoral experience.

Send curriculum vitae and letter of application to:

James Sommercorn, Ph.D.
Clinical Diabetes and Nutrition Section
National Institutes of Health
4212 North 16th Street
Room 541
Phoenix, Arizona 85016

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STAFF SCIENTIST MOLECULAR/CELLULAR BIOLOGY

The Biology Division of the Oak Ridge National Laboratory is seeking an investigator to establish a research program involving targeted mutagenesis in transgenic mice. A PhD (molecular biology, biochemistry, or cell biology) with postdoctoral experience and demonstrated potential to attract extramural support is required. Core funding will be provided at a level commensurate with the candidate's qualifications. Prior experience with embryonic stem cells and/or transgenic mice is preferred but not essential. The Biology Division of 30 senior staff members is engaged in diverse research related to health effects of energy production and utilization for the Office of Health and Environmental Research within the Department of Energy. The newly-created staff position reflects increased emphasis in functional genomic mapping and gene regulation *in vivo* and complements established programs in molecular biology that include insertional mutagenesis in mice.

Qualified applicant should forward resume, publication list, and names of three references to Dr. Fred C. Hartman, Director, Biology Division, Dept. SC-0503, P.O. Box 2009, Oak Ridge National Laboratory, Oak Ridge, TN 37831-8077. ORNL which is managed by Martin Marietta Energy Systems, Inc. for the USDOE, is an equal opportunity employer.



IMMUNEX®

SCIENTIST IMMUNOLOGY

Immunex Corporation, a Seattle pharmaceutical company focused on the research, development, marketing and manufacturing of immunological therapeutic products is currently recruiting for a Scientist to join our Immunology group.

The successful candidate will have experience in rodent models in inflammation or autoimmunity. This individual will join a multi-disciplined group of scientists studying cytokines and their antagonists *in vivo*.

Scientists with a Ph.D in Immunology, or related discipline with relevant post doctoral/industry experience are encouraged to apply. Good communication skills and the ability to work effectively in a collaborative environment are essential.

Immunex Corporation offers a fast paced, stimulating environment, competitive salaries and an excellent benefits package. For consideration, please submit C.V., names of three references, and a list of publications to:

Immunex Corporation, Attn: Human Resources Dept, 51 University Street, Seattle, WA 98101. Fax: (206) 587-0606.

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All applications will be treated with complete confidentiality. Please apply in writing, including a curriculum vitae and a list of publications, to:

Sandoz Pharma Ltd.
Personnel Department, Ref. 1430
P.O. Box
CH-4002 Basle, Switzerland



SANDOZ

POSITIONS OPEN

ACADEMIC NEUROSCIENTIST UNIVERSITY OF NORTH CAROLINA (UNC) CHAPEL HILL

The Division of Neurosurgery, University of North Carolina-Chapel Hill, is seeking two full-time Ph.D. faculty members. Faculty rank dependent upon the individual's qualifications. Special expertise in CNS injury is required.

Interested applicants should forward their inquiries and curriculum vitae to: Steven K. Gudeman, M.D., Division of Neurosurgery, CB #7060, 148 Burnett Womack Building, UNC School of Medicine, Chapel Hill, NC 27599-7060. Telephone: 919-966-1374. FAX: 919-966-6627.

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

RESEARCH FACULTY

A full-time faculty research position is available at the University of Georgia's Savannah River Ecology Laboratory located on the U.S. Department of Energy's Savannah River Site in Aiken, South Carolina. Rank and salary are negotiable.

The person in this position will conduct research directed at understanding the processes and mechanisms that determine the behavior, transport and fate of radionuclides and other contaminants in soils, sediments, and water. Excellent research facilities and opportunities to teach and advise students and postdoctoral fellows are available. Qualifications must include a Ph.D. in an appropriate field, experience with radioisotopes, and U.S. citizenship.

Send a résumé, reprints of several relevant publications, and names of four references by 30 June 1991 to:

Dr. Carl L. Strojan
Chair, Biogeochemistry Search Committee
Savannah River Ecology Laboratory
Drawer E
Aiken, SC 29802

An Equal Opportunity/Affirmative Action Institution.

POSTDOCTORAL POSITION IN NEUROSCIENCE. At Harvard Medical School and Children's Hospital to study biochemical or molecular biological aspects of neuronal-glial interactions in the mammalian brain. Please send curriculum vitae, research interests, and three letters of reference to: Dr. Evan Dreyer, Department of Neurology, Enders 3, Children's Hospital, 300 Longwood Avenue, Boston, MA 02115. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN TRANSPLANTATION IMMUNOLOGY

Applications are invited for a postdoctoral scientist to join research into molecular mechanisms involved in transplantation immunology. Knowledge and experience with Southern and Northern blotting techniques, in vitro translation and polymerase chain reaction are essential. Familiarity with transplantation immunology is preferred. Excellent laboratory facilities and collaborative opportunities will be made available. The position is initially funded for 3 years. Inquiries should include curriculum vitae and three references.

James R. Baker, Jr., M.D.
c/o Theresa Wagner
University of Michigan Medical Center
Immunogenetics Research Laboratory
1150 West Medical Center Drive
MSRB I, Room 1520
Ann Arbor, MI 48109-0666

POSTDOCTORAL POSITION IN MOLECULAR AND CELLULAR VASCULAR BIOLOGY. Starting 1 July 1991, available for 2 years. Areas of study include molecular and cellular mechanisms of vascular cell migration and adhesion with emphasis on regulation of extracellular matrix synthesis and proteolysis, integrin regulation and assembly, and proto-oncogene regulation of vascular cell behavior. Applicants should have a strong background in molecular and/or cell biology. Send curriculum vitae, a brief description of research interests, and three letters of reference to: Drs. Joseph A. Madri/Leonard Bell, Yale University School of Medicine, Program in Vascular Biology, 108 Lauder Hall, 310 Cedar Street, New Haven, CT 06510. Telephone: 203-785-2763/6843. FAX: 203-785-7303. *We are strongly committed to active recruitment of minorities and women.*

POSITIONS OPEN

POSTDOCTORAL POSITION

A postdoctoral position is available to study the role and regulation of growth factors and their receptors in normal human melanocytes and malignant melanoma. Expertise in the area of molecular biology and/or cell biology is preferred. Interested candidates should send curriculum vitae and names of three references to: Dorothea Becker, Ph.D., University of Pittsburgh, Department of Medicine, Pittsburgh Cancer Institute, Biomedical Science Tower, E1057, Pittsburgh, PA 15261.

POSTDOCTORAL POSITION, SYNTHESIS OF NATURAL PRODUCTS. Available immediately. Project: synthesis of insect pheromones and other bioactive natural products, some isolation/identification. Background: Organic chemistry or related field, experience in all aspects of synthesis. Curriculum vitae and names of three references to: Dr. Jocelyn G. Millar, Department of Entomology, University of California, Riverside CA 92521. FAX: 714-787-3086. *Equal Opportunity/Affirmative Action Employer.*

MEMORIAL SLOAN-KETTERING CANCER CENTER

POSTDOCTORAL POSITION. Available immediately, to investigate the role of growth factors in radiation-induced damage. Emphasis will be on the autocrine effects of fibroblast growth factor (FGF) in repair of radiation damage in endothelial cells. Studies will include biochemical, cell biology, and radiobiology studies in order to decipher the chain events in the radiation-induced signal pathway that turns on growth factor gene expression.

Send curriculum vitae and three letters of reference to: Dr. Haimovitz-Friedman, Department of Radiation Oncology, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021.

POSTDOCTORAL POSITION. At Oak Ridge National Laboratory to do research in Compensatory Mechanisms (COMPMECH) in fish populations program. COMPMECH is aimed at synthesizing the quantitative understanding of critical stages and processes involved in fish population regulation. Position involves adapting existing models under development for additional species/populations. Experience in developing and applying mathematical and simulation models of populations and some FORTRAN experience helpful. For position information: Webb Van Winkle, Environmental Sciences Division, ORNL, P.O. Box 2008, Oak Ridge, TN 37831-6038, telephone: 615-574-7398; for application material: Postgraduate Research Program/PG-VW, Science/Engineering Education Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117. Telephone: 615-576-3456.

POSTDOCTORAL POSITION. Available immediately in laboratory that is developing new models of gene therapy. See *Science* 247, 1465 (1990) and *The New Biologist* 3 (no. 1), 71-81 (1991). Ph.D. or M.D. with training in molecular and cellular biology. Salary range \$18,600 to \$32,300. Send curriculum vitae and three letters of recommendation to: Jon A. Wolff, M.D., Departments of Pediatrics and Genetics, University of Wisconsin, Waisman Center, 1500 Highland Avenue, Madison, WI 53705. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION MOLECULAR MECHANISMS OF ANTITUMOR DRUG CYTOTOXICITY AND RESISTANCE

A postdoctoral position is available immediately to study the molecular bases of antitumor drug cytotoxicity and multidrug resistance. Projects involve examination of the regulation of DNA topoisomerases and P-glycoprotein in human tumors and the interaction of anticancer drugs with these proteins. Experience in molecular biology or protein chemistry is required. Annual stipends are competitive. Please send curriculum vitae, names of three references, and a brief cover letter outlining qualifications and research goals to: William T. Beck, Ph.D., Department of Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101. Telephone: 901-522-0440. FAX: 901-521-1668. Application materials should be received by 14 June 1991. *St. Jude Children's Research Hospital is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION G PROTEIN STRUCTURE AND FUNCTION

Positions are available to study G proteins and their related ras p21 oncogene proteins using biochemical, biophysical, and molecular biology techniques. Applicants should have a strong background in biochemistry or molecular biology. Send curriculum vitae, a statement of research experience and career goals, and the names, addresses, and telephone numbers of three references to: Dr. John Hildebrandt, Department of Pharmacology and Experimental Therapeutics, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.

POSTDOCTORAL POSITION MOLECULAR BIOLOGIST BLOOD-BRAIN BARRIER UNIVERSITY OF CALIFORNIA LOS ANGELES (UCLA)

Molecular biologist sought to investigate cerebral microvessels/endothelium. Projects available for cloning of brain capillary-specific genes, as well as antisense oligonucleotide drug delivery. Positions available in both 1991 and 1992. Candidate must have demonstrated proficiency in biochemical and recombinant DNA techniques: Competitive salary plus medical insurance. Send curriculum vitae to:

Dr. William M. Pardridge
Brain Research Institute
UCLA School of Medicine
Los Angeles, CA 90024-1682

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MOLECULAR NEUROBIOLOGY POSTDOCTORAL POSITIONS

To investigate myelin gene regulation and the role of the axon in affecting Schwann cell transcriptional, translational, and posttranslational (intracellular molecular targeting) control of myelin genes and their products using in vivo and in vitro experimental paradigms. See *J.B.C.* 265, 3719 (1990) and *J. Neurosci. Res.* 26, 135 (1990); 26, 317 (1990).

Send curriculum vitae and names of three references to: Dr. Joseph F. Poduslo, Molecular Neurobiology Laboratory, Departments of Neurology and Biochemistry/Molecular Biology, Mayo Clinic and Foundation, Rochester, MN 55905.

POSTDOCTORAL RESEARCH POSITION. The successful applicant (Ph.D. or M.D.) will study the regulation, synthesis, and kinetic properties of receptor-activated mammalian phospholipases (PLA₂). The investigations involve protein isolation, cloning, and development of antisera which will be used to study function. Please send curriculum vitae and the names and addresses of three references to: Drs. Aubrey Morrison or Philip Needleman, Department of Molecular Biology and Pharmacology—Box 8103, Washington University School of Medicine (WUMS), 660 South Euclid Avenue, St. Louis, MO 63110. *WUMS is an Affirmative Action/Equal Opportunity Employer.*

THOMPSON-MAYO FELLOWSHIP FOR BASIC RESEARCH ON ALCOHOL AND DRUGS OF ADDICTION: Two fellowships available in 1991 at Mayo Foundation, Rochester, Minnesota, for studies of the biological effects of either alcohol or other drugs of addiction. The research may be conducted in any of the research laboratories of the Mayo Foundation. Applicants must have appropriate academic credentials (M.D., Ph.D. or equivalent degree, with or without postdoctoral training). Selection will be predicated on the qualifications of the applicant and will be made on a purely competitive basis by the Mayo Research Committee. Tenure of each fellowship will be 2 years. Salary and benefits will be determined by the successful candidate's experience but will be competitive with the salaries offered by the best fellowships available nationally at the postdoctoral/research associate level. Applications should be submitted to: Dr. Steve Brimijoin, Chair, Personnel Committee of Research Committee, Mayo Foundation, Rochester, MN 55905 by 1 June 1991. *Mayo Foundation is an Affirmative Action and Equal Opportunity Educator and Employer.*

SCIENCE recruitment ads reach thousands of scientists in all disciplines, worldwide. Classified Advertising telephone: 202-326-6555. FAX: 202-682-0816.

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE.

Position is immediately available to work on gestational trophoblastic neoplasms. Experience in culturing cancer cells, regulation of their biochemical and morphological properties by using variety of techniques including molecular biology is desirable. If interested, contact: Dr. Ch. V. Rao, Department of Obstetrics/Gynecology, 438 MDR Building, University of Louisville, Louisville, KY 40292. FAX: 502-588-0881.

ASSISTANT MEMBER (MOLECULAR VIROLOGIST).

Sought by medical research firm in southwestern Ohio. Perform independent research leading to treatment of acquired immunodeficiency syndrome (AIDS); study complex interactions of human immunodeficiency virus (HIV) with human immune system, emphasizing regulation of gene expression of HIV, including HIV regulatory gene products, using recombinant DNA technology; pursue use of antiviral agents, antisense structural and regulatory genes, and cis-elements of regulatory genes to inhibit HIV infection; perform complementary DNA cloning in lambda as well as plasmid vectors, DNA mutagenesis, DNA sequencing, gene expression, and amplification using polymerase chain reaction (PCR); ribonucleic acid mapping and viral biology; manage sequence information using personal computer such as IBM; supervise research technician; use laboratory tools and facilities including Biosafety Lab-3, oligonucleotide synthesizers and sequencers and electroporation for DNA transfection. Experience: 2 years of experience in the job described or 2 years of experience in independent research/analysis of regulation of gene expression of HIV, including HIV regulatory genes, using recombinant DNA technology (including cDNA cloning, mutagenesis, gene expression, PCR amplification, and viral biology), including 1 year utilizing Biosafety Lab-3, oligonucleotide synthesizers and sequencers, and electroporation for DNA transfection. Education: Ph.D. in biochemistry. Salary: \$43,500 per year; 8:30 to 5:00, 40 hours per week, Monday to Friday. *Must have proof of legal authority to work permanently in the United States.* Send résumé in duplicate (no calls) to: C. Bussard, JO#1099767, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus OH 43216.

Insect Control Group

Senior/ Staff Scientist

CIBA-GEIGY Agricultural Division's Biotechnology Research Unit in Research Triangle Park, NC is seeking a PhD Scientist specializing in the molecular genetics of *Bacillus thuringiensis*. As part of an international research effort, you will develop novel strains, utilizing recombinant DNA technology. Strong product orientation is involved, as you will be accountable for bringing Bt products to market within an aggressive timetable.

To qualify, you must have at least 5 years of relevant experience, preferably with an industrial research background. A PhD in microbiology, molecular biology or genetics is required. Proven supervisory and collaborative skills are essential to build and lead the project team.

CIBA-GEIGY offers a competitive salary, generous company-paid benefits and an environment conducive to professional growth. Please forward resume, three letters of professional reference and reprints of any published research, to: **Dr. Mary-Dell Chilton, CIBA-GEIGY Corporation, Agricultural Division, PO Box 12257, Research Triangle Park, NC 27709.** We Are An Equal Opportunity Employer M/F/H/V.

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Clinical Research Pharmacokineticist

San Francisco Bay Area

Genentech, Inc., a leader in the field of biotechnology, has an immediate opening for a scientist in the Pharmacokinetic and Pharmacodynamic Section of our Safety Evaluation Division. This individual will interact with scientific personnel from all departments of the Company and will participate in the development of clinical pharmacokinetic strategies and clinical study activities. Also, the individual will design, analyze and report the results of select PK/PD studies in phases I-IV.

We require a Ph.D. in Pharmaceutical Sciences, Engineering or Toxicology with 2-4 years' preclinical and/or clinical ADME industrial experience or a Pharm.D. with 3-5 years of clinical pharmacokinetic experience and publications. Clinical pharmacokinetic fellowship, macromolecule ADME and pharmacodynamic modeling experience preferred.

Genentech, Inc. offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. For consideration, please send your C.V. to Nancy Symonds, Genentech, Inc., Dept. NS/JM, 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal employment opportunity. Women and minorities are encouraged to apply.

Genentech, Inc.

Director

Chesapeake Laboratory, The Academy of Natural Sciences

The Academy is seeking qualified candidates for Director of its estuarine lab on Chesapeake Bay. The Academy is internationally known for its pioneering research on aquatic ecosystems and this Chesapeake Laboratory, with a staff of 25, is part of a network of 3 labs with a total staff of 100. The stream-river-estuary continuum focuses on watershed processes that link basic and applied research at the Chesapeake Laboratory with programs throughout the Division. The Academy is completing a successful capital campaign to relocate to a new facility on the Chesapeake.

The successful candidate must have a distinguished research career in some aspect of aquatic science. The position of Director offers a unique opportunity to communicate science to a broad spectrum of the public, from policy-makers to corporate executives to interested citizens. The director will maintain continuity of an existing, well-integrated research program, as well as explore new avenues for both team and individual research programs. There is an opportunity to continue a personal research program.

Please send curriculum vitae, a letter stating background and interests in environmental research, policy and public education, and the names and telephone numbers of four relevant references to:

**Dr. Louis E. Sage, VP
Academy of Natural Sciences
1900 Benjamin Franklin Parkway
Philadelphia, PA 19103-11195**

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PROTEIN X-RAY CRYSTALLOGRAPHER

National Institute of Allergy and Infectious Diseases

National Institutes of Health

A protein crystallography laboratory is being established with intramural AIDS funding to conduct an original research program and to interact with other scientists within the NIH intramural program. Applicants for director of the crystallography lab are being sought. Ph.D. or M.D. applicants should have a record of achievement in solving protein structures by X-ray crystallography. Salary and research resources will be commensurate with credentials and research experience.

Applicants should send curriculum vitae and names and addresses of at least three references to:

**John E. Coligan, Ph.D.
Chairman, Search Committee
BRB, NIAID, NIH
Building 4, Room 413
9000 Rockville Pike
Bethesda, MD 20892
Telephone: 301-496-8247
Facsimile: 301-402-0284**

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POSITIONS OPEN

POSTDOCTORAL POSITIONS LIPOPROTEIN MOLECULAR BIOLOGY THE UNIVERSITY OF CHICAGO

Positions are available immediately to join NIH-funded projects examining aspects of hepatic lipoprotein assembly with specific emphasis on the relationship between apo B gene expression and Lp (a) secretion. The work will involve analysis of gene expression in transfected cell lines as well as primary cultures of human hepatocytes. Applicants should have a Ph.D. and experience in cell and/or molecular biology. *Must be U.S. citizen or permanent resident.* Send curriculum vitae together with names and telephone numbers of three references to: **Nicholas O. Davidson, M.D., Department of Medicine, Box 400, The University of Chicago, 5841 South Maryland Avenue, Chicago, IL 60637. FAX: 312-702-2182. The University of Chicago is an Affirmative Action/Equal Opportunity Employer.**

MACROMOLECULAR STRUCTURE

Several POSTDOCTORAL POSITIONS are available in computational and crystallographic studies of macromolecular structure. Computational research projects include the development of algorithms for structure solution in crystallography, analysis of structural data, and the rapid evaluation of intermolecular potentials. Paired with these are several experimental projects including the structures of oligonucleotides, large peptides, and small proteins. This is a new laboratory and will be fully equipped with state-of-the-art x-ray equipment and computational facilities. Ph.D. and experience in macromolecular crystallography or modeling is desirable, but candidates with other relevant experience are encouraged to apply. Please send curriculum vitae and three letters of recommendation: **c/o Mr. Dale Stephenson, Jefferson Medical College, 1025 Walnut Street, Room 100 I, Philadelphia, PA 19107-5083. We are committed to a smoke-free environment. Equal Opportunity Employer.**

POSTDOCTORAL TRAINEESHIPS IN CANCER BIOLOGY

Applications are invited for positions in the NCI-supported "Training Program in Cancer Biology" of the Meyer L. Prentiss Comprehensive Cancer Center of metropolitan Detroit. This center is composed of the two campuses of Wayne State University (the School of Medicine and main campus) and the Michigan Cancer Foundation. Initial appointment will be for a period of 1 year with renewal possible. Program provides for broad training of postdoctoral trainees in areas such as: breast cancer, metastasis, cancer immunology, carcinogenesis, tumor biology, molecular biology, drug synthesis, and experimental therapeutics.

Trainees are selected on their potential for future excellence and achievement in cancer research and are expected to undertake significant research projects within a variety of disciplines. NCI regulations require that the trainee be a *permanent resident or U.S. citizen*. Stipends begin at \$23,600.

Application: Submit curriculum vitae and three references by 15 July 1991 to: **Dr. S. C. Brooks, Department of Biochemistry, Wayne State University School of Medicine, 540 Canfield, Detroit, MI 48201.**

An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL AND GRADUATE TRAINING IN INSECT NEUROBIOLOGY

The Arizona Research Laboratories (ARL) Division of Neurobiology, a research unit (13 tenure-track and research faculty, 50 trainees and staff) devoted to cellular, developmental, and molecular neurobiology and neuroethology of insects, invites inquiries from prospective postdoctoral fellows and predoctoral students. Inquiries, including résumé, statement of interests and plans, and names and addresses of three references, should be sent to: **Dr. John G. Hildebrand, Director, ARL Division of Neurobiology, 611 Gould-Simpson Building, University of Arizona, Tucson, AZ 85721. The University of Arizona is an Equal Opportunity/Affirmative Action Employer.**

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POSITIONS OPEN

POSTDOCTORAL POSITION MOLECULAR IMMUNOLOGY

A position is available immediately to participate in a study of site-directed mutagenesis of anti-carbohydrate antibodies, with a particular interest in the role of variable region glycosylation in antigen binding. Experience in molecular biology required. Send curriculum vitae and names of three references to: **Dr. Donald Marcus, Departments of Medicine, Microbiology, and Immunology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030. Baylor College of Medicine is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL FELLOWSHIP

Position available from 1 June 1991 for an individual with a Ph.D. and experience in molecular biology. Research involves studies on the mechanisms suppressing transcription of the α 1-3 galactosyltransferase gene in human cells, and the possible aberrant activity of this gene in autoimmune and malignant diseases [*J. Biol. Chem.* **263**, 17755 (1988); *Lancet* **ii**, 358 (1989); *J. Natl. Cancer Inst.* **81**, 178 (1989)].

To apply send curriculum vitae, copies of publications, and references to: **Uri Galili, Ph.D., Department of Microbiology and Immunology, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, PA 19129.**

POSTDOCTORAL FELLOW (CELLULAR IMMUNOLOGIST). Division of Cell Biology, John Curtin School of Medical Research, Australian National University. An externally funded position at postdoctoral level is available immediately in the Division of Cell Biology. The position is available for an individual with a Ph.D. and experience in cellular immunology. The successful applicant will work with Drs. Mullbacher and Waring on aspects of immunomodulation with special reference to immunosuppression by certain drugs and their effects on transplantation in the murine system and on cells of human origin. Appointment will be for 2 years initially, with extension, following review, possibly into a third year, but no later than 31 December 1993. Enquiries to: **Dr. A. Mullbacher, telephone: 61-6-249-4392; FAX: 61-6-249-2595. Closing date: 31 May 1991. Ref: JC 23.4.3. Salary: A\$28,792 to A\$32,762 per annum.** Applications should be submitted in duplicate to: **The Registrar, The Australian National University, GPO Box 4, Canberra ACT 2601, Australia**, quoting reference number and including curriculum vitae, list of publications, and names of at least three referees. The university reserves the right not to make an appointment or to appoint by invitation at any time. Further information is available from the registrar.

The university is an Equal Opportunity Employer.

KENDALL-MAYO FELLOWSHIP IN BIOCHEMISTRY. Mayo Foundation is now considering applications from highly qualified candidates for appointment as the Kendall Fellow in Biochemistry. This nationally competitive award, in recognition of outstanding promise for a research career, will support up to 2 years of training with any of more than two dozen internationally recognized staff investigators working in modern facilities with state-of-the-art instrumentation. A partial list of research opportunities include the cell biology of cytoskeletal proteins, molecular biology of schizophrenia, receptors for steroid hormones and other endocrine hormones, cellular peptide growth factors, plasma membrane calcium pumps, computer modeling of protein structure and dynamics, optical NMR spectroscopic studies of biological molecular, macromolecules, biochemistry of vitamin D, molecular genetics of clotting disorders and coagulation factors, regulation of protooncogenes, and mechanisms involved in specific gene transcription. Salary and benefits will be determined by the successful candidate's experience but will be competitive with the salaries offered by the best fellowships available nationally at the postdoctoral/research associate level. There is also an attractive package of benefits and an institutional allowance to support travel to scientific meetings. Applicants should hold a doctoral degree in one of the life sciences or medicine with some research experience either in a formal graduate program or as a postdoctoral trainee. Applications for this program should be submitted to: **Dr. Steve Brimjoin, Chair, Personnel Subcommittee of the Research Committee, Mayo Foundation, Rochester, MN 55905, by 1 June 1991. Mayo Foundation is an Affirmative Action and Equal Opportunity Educator and Employer.**

POSITIONS OPEN

POSTDOCTORAL FELLOW. To work in the area of molecular immunology of autoimmune disease. Concentration on control of MHC class II transcription. *Must be U.S. citizen or permanent resident.* Molecular background essential. Send curriculum vitae to: **Dr. Terry Davies, Director, Division of Endocrinology, Box 1055, The Mount Sinai Medical Center of New York, One Gustave L. Levy Place, New York, NY 10029-6574. An Equal Opportunity Employer.**

POSTDOCTORAL FELLOW. Position open for postdoctoral fellow to study systemic and renal hemodynamics and changes in vasoactive humoral substances before and after altered divalent ion nutrition. Ph.D. in physiology or pharmacology required. This position is for 2 years of support. Salary is negotiable. Closing date: 1 June 1991. Submit curriculum vitae to: **Edward T. Zawada, Jr., M.D., Professor and Chairman, University of South Dakota School of Medicine, P.O. Box 5046, Sioux Falls, SD 57117-5046. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL FELLOWSHIP. Available 1 July 1991 for 1 year to participate in design and implementation of experiments to establish cell lines and optimize culture conditions for production of bioactive natural products from cultured marine invertebrate cells. Requirements: Ph.D. in cell or molecular biology with laboratory experience in cell culture, eukaryotic expression systems, and gene cloning. Scuba diving certification desirable. Send statement of research experience, curriculum vitae with list of publications, and three letters of recommendation: **Katherine Morton, Personnel Director, Harbor Branch Oceanographic Institution, Inc., 5600 Old Dixie Highway, Ft. Pierce, FL 34946.**

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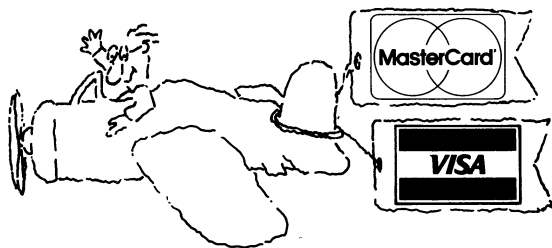
Present research interests of faculty members in this program include: molecular and cellular basis of cytokine action, host/retrovirus interactions, antibody genes in agammaglobulinemia, organization and expression of rDNA genes, tumor immunology, initiation and regulation of cell growth, cytoskeleton in neural development neoplasia and degeneration, renal and transplant pathology, biomembranes, and pathobiology of oxygen radicals.

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For further information regarding either September 1991 or 1992 admission, call **Ms. Del Malatesta at 215-448-3760** or write: **Graduate Program in Experimental Pathology, Hahnemann University, Department of Pathology and Laboratory Medicine, M.S. 435, Broad and Vine, Philadelphia, PA 19102.**

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RESEARCH ASSISTANT. For northeastern Ohio medical research hospital to perform study of immune mechanisms of glomerular injury; employ molecular biological techniques in studying the pathogenesis of renal disease and inflammation; utilize *in situ* hybridization, bacterial plasmid extraction, and RNA-RNA solution hybridization; culture and maintain various cell lines using tissue and cell culture techniques; process and interpret data utilizing biostatistical techniques; experiment with animal models with various inflammatory processes and study the mechanisms of inflammation. No experience required in above duties but applicants will qualify with 1 year of experience as an intern (experience must be in a clinical setting, with at least 6 months of this experience using surgical techniques) and an M.D. degree. Monday to Friday, 8 a.m. to 6 p.m. Salary: \$19,000 per year. *Must have proof of legal authority to work permanently in the United States.* Send résumé in duplicate (no calls) to: **S. Holton, JO# 1255700, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216.**



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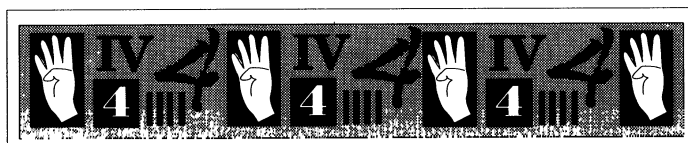
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Chief, Surgery Branch
National Cancer Institute
National Institutes of Health
Public Health Service
Building 10, Room 2B42
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ENDOCRINOLOGY POSTDOCTORAL TRAINEES

The Division of Endocrinology at Cedars-Sinai Medical Center, a University of California, Los Angeles, teaching and research hospital is seeking postdoctoral trainees. Candidates should have a molecular/cell biology background and will be working on genetic mechanisms of pituitary hormone and growth factor action and pituitary adenomas. The Endocrine Research Laboratories are currently training Ph.D. and M.D. fellows and funding is now available for two more trainees.

Interested individuals should send their curriculum vitae and three letters of reference to:

Shlomo Melmed, M.D.
Director, Division of Endocrinology and Metabolism
Cedars-Sinai Medical Center
8700 Beverly Boulevard
Los Angeles, CA 90048
Telephone 213-855-4691

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Expansion of our Biosimulation Research Program at the Toxic Hazards Research Unit, Dayton, Ohio, will make a position available in predictive toxicology. This position provides a unique opportunity to train with experienced scientists in physiologically based modeling. Ph.D. (or equivalent) required with solid background in biology/biochemistry/toxicology, with interest and ability to apply these skills to computer simulation. Experience or training in pharmacokinetics is desirable. Successful applicant will design and execute dosimetry and mechanistic laboratory studies with rodents to support the co-development of physiologically based models. This individual will work in concert with our Risk Assessment Program to develop human risk assessments for the toxicants of interest. Publication of all results and presentation at national meetings is encouraged. Title and salary will be commensurate with background and experience. Interested individuals should send curriculum vitae, together with names and addresses of three references, to: **Ms. Lois Doncaster, Human Resources/04-08, ManTech Environmental Technology, Inc., A Subsidiary of ManTech International Corporation, P.O. Box 31009, Dayton, OH 45431-0009.**

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Bruce E. Wilson, M.D.
Department of Pediatrics and Human Development
B240 Life Science Building
Michigan State University (MSU)
East Lansing, MI 48824-1317

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SENIOR RESEARCH ASSOCIATE. For Stanford University School of Medicine in the Department of Dermatology. To conduct research on the molecular and cell biology of structural proteins of the extracellular matrix and on the regulation of expression of matrix metalloproteinases involved in the integrity and remodeling of the basement membrane zone of the skin. Emphasis is on various genetic disorders of the extracellular matrix. Candidates must have a Ph.D., or equivalent, degree in the biomedical sciences and previous postdoctoral experience. Candidates should have demonstrated ability in cDNA and genomic cloning and in DNA sequencing as demonstrated in peer-reviewed publications. Experience in eukaryotic gene expression is preferred. *Stanford University is committed to Equal Opportunity through Affirmative Action in employment, and we are especially eager to identify minority persons and women with appropriate qualifications.* Salary depends on qualifications and experience. Applicants should send curriculum vitae to: **Dr. Eugene A. Bauer, Chairman, Department of Dermatology (R-144), Stanford University School of Medicine, Stanford, CA 94305-5334.**

RESEARCH ASSOCIATE

A postdoctoral fellowship in experimental pathology/molecular biology of retroviral infections and AIDS at the Armed Forces Institute of Pathology (AFIP) is immediately available. Project areas include quantitative PCR and combined PCR/in situ hybridization for the detection of retroviruses in tissue sections. Salary ranges from \$35,000 to \$44,000 depending on experience and qualifications plus excellent fringe benefits. Duration: 2 to 3 years. Send curriculum vitae to: **Dr. Allen Burke, Cardiovascular Pathology, AFIP, Washington, DC 20306-6000.**

RESEARCH ASSOCIATE. Salary: \$22,000 per year; 40 hours per week. Will investigate immunological aspects of snail-larval trematode interactions, including mechanisms of host recognition of parasites, and parasite evasion of host responses in trematodes, and publish results. Ph.D. in immunoparasitology and 1 year of postdoctoral experience required, including experience in purification of proteins from digenetic trematodes. Must have authored publications demonstrating experience in helminth culture, immunosuppressive effects of purified parasite antigens on cultured host immune cells, handling of radioisotopes, affinity chromatography, vaccination protocols using purified antigens. Submit résumés to: **New Mexico Department of Labor, 501 Mountain, N.E., Albuquerque, NM 87103. CC#1001. JO# 334013.**

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RESEARCH SCIENTIST/PROGRAMMER

A position is available immediately for a Ph.D. in molecular biology with considerable programming experience to coordinate the Informatics component of Columbia University's effort in the Human Genome Project. Responsibilities will include development of relational and object-oriented database technology, parallel processing algorithms, and the design of user interfaces for an interdisciplinary group of investigators. Salary commensurate with experience. Comprehensive benefits package. Send letters of inquiry and curriculum vitae to: **Dr. Eric A. Schon, Room BB-324, Department of Genetics and Development, Columbia University, 630 West 168th Street, New York, NY 10032. Telephone: 212-305-1665 after 1 June 1991. Columbia University is an Equal Opportunity/Affirmative Action Employer.**

ANNOUNCEMENTS

PRE-PROPOSALS—Deadline: 1 August 1991. International Foundation for Ethical Research (IFER) has grants available for research into alternatives to the use of live animals in research, testing, and teaching. Projects must take into account the three R's: Refinement, Reduction, and Replacement plus a fourth R: Responsibility. For information and format write: **IFER, 53 West Jackson Boulevard, Chicago, IL 60604, or call: 312-427-6025.**

There will be a special "mid-year" opportunity for **COMPETITIVE AWARDS** in the NASA Space Biology Program for Research Associates. The mid-summer review will be 29 July 1991. The purpose of these postdoctoral grants is research leading to a better understanding of gravitational biology. Eligibility: postdoctoral U.S. citizens. Awards (\$18,000 to \$22,000 dependent on experience) are for 12 months with the possibility of renewal. Rules and guidelines are available from: **Dr. X. J. Musacchia, Department of Physiology, Room 1115A, HSC, School of Medicine, University of Louisville, Louisville, KY 40292. Telephone: 502-588-5564. FAX: 502-588-0085.**

MARKETPLACE

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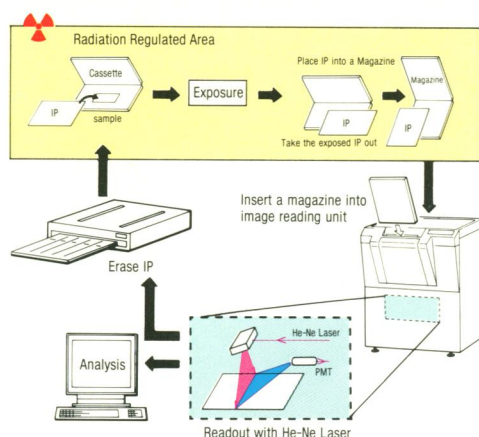
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