Biological safety cabinet for microbiological studies. A 100% exhaust biological safety cabinet, Sterilchem-GARD, exceeds the minimum standards for Class II, Type B2 cabinets and is designed to protect product, personnel, and environment. Sterilchem-GARD helps control airborne particulate contaminants, including microorganisms and chemicals that could be potentially harmful. Both the downflow and intake air are completely exhausted from the cabinet. Because this 100% exhaust feature permits no recirculation, the cabinet may be useful for work that generates small amounts of chemical vapors and gases, thus broadening its range of applications.

The cabinet provides a work area that is essentially free from particulate contaminants and virtually eliminates cross-contamination inside the cabinet. Its 100% exhaust design prevents escape of particulate contaminants into the ambient environment. In addition, all plenums and sidewalls that contain contaminated air are kept under negative pressure, preventing any contaminated air from escaping into the laboratory environment.

Precise control of airflow velocities and volume is ensured through the unique voltage-compensating speed controller, StediVOLT, which maintains the voltage to the motor at a constant level, keeping the cabinet’s operation within its performance envelope. The Baker Co., P.O. Drawer E, Sanford, ME 04073, USA. Telephone 207–324–8773 or 800–992–2537; fax 207–324–3869. Circle 50 on Reader Service Card.

Chemical industry notes to be added on STN International. The Chemical Industry Notes (CIN) database, covering worldwide chemical business news, has been added to the STN International online network as of December 3. Like the printed form of CIN, available from Chemical Abstracts Service (CAS), CIN online offers chemical business news related to production, pricing, sales, facilities, products and processes, corporate activities, government activities, and people.

The file contains an estimated 785,000 records drawn from 80 sources from 1974 to the present, including both domestic and foreign journals, trade magazines, newspapers, and newsletters. The file will be updated weekly with approximately 1000 additional records.

CIN on STN offers a variety of special features, most notably the addition of CAS Registry Numbers for chemical substances that are both directly displayable and searchable. The Registry numbers are present in a special field inside each record with chemical names from the Registry file appearing in parentheses after the number.

The STN implementation of CIN also includes a thesaurus for geographic terms, alerting users to related geographic terms that may not have been considered. It informs the users of terms no longer used and offers substitutes.

CIN on STN also provides simultaneous left and right truncation in the basic index. Every company mentioned is searchable through the company name field, and a named person field identifies senior-level executives promoted at chemical companies. A language field identifies the language in which a journal is printed. STN International, c/o Chemical Abstracts Service, P.O. Box 3012, Columbus, OH 43210, USA. Telephone 800–848–6538 or 614–447–3624. Circle 54 on Reader Service Card.

Motorized pipette. EDP-Plus™, a new hand-held motorized pipette, comes with seven computer-controlled operational modes: pipette, multidispense, dilute, titrate, mix, measure, and volume sequence. Volumes and modes are set on the keyboard by the user and displayed on an easy-to-read LCD.

Seven user-interchangeable liquid ends are available for volume ranges from 10 µl to 10 ml. The new Micro-10™ liquid end and miniature Micro-10 tips permit accurate and precise measurements as low as 0.5 microliter.

The digital motor technology used in EDP-Plus makes pipette calibration obsolete. Piston movement is under the control of a self-contained microcom-
puter, which drives a linear actuator exactly the number of steps programmed. Pipetting errors caused by poor user technique are reduced, since the operator simply presses a trigger to pick up and dispense liquid. Pipetting speed is adjustable to compensate for a wide range of sample viscosities. Rainin Instrument, Mack Rd., Woburn, MA 01801, USA. Telephone 415-654-9142. Circle 51 on Reader Service Card.

Centrifugal vacuum concentrator. The RC10.10 centrifugal vacuum concentrator/evaporator is designed for safe and rapid concentration of biological and other samples as a preparative technique for analysis by HPLC, TLC, GC/MS, electrophoresis, and other sample analysis techniques. Samples are centrifuged at an optimal speed (1300 rpm), which eliminates bumping and foaming while vacuum and heat (switchable) are applied to remove the solvent. This results in virtually 100% recovery with no contamination of samples such as DNA, peptides, amino acids, enzymes, and drugs.

A variety of easy-to-change rotors are capable of handling sample containers from 0.5 ml to 50 ml. Custom rotors for other tube sizes are available. A high volume rotor capable of processing up to 202 five ml tubes per run assures high throughput and consistency of sample treatment.

Standard features include corrosion-resistant stainless steel interior, safety glass lid, and automatic vacuum bleeder valve. The RC10.10 can be used with your current high vacuum system or you can request an entire concentrator system including concentrator, cold trap, vacuum pump, and related accessories. Jouan, P.O. Box 2716, Winchester, VA 22601, USA. Telephone 800-662-7477 or 703-665-0863. Circle 57 on Reader Service Card.

Closed-container blood-sampling device. A new closed-container sampling device allows ready access to serum or plasma without uncapping the blood collection tube. Called the Pumppette™, this device fits on top of standard 16 × 100 mm blood collection tubes like Vacutainer® SST®, and aspirates serum through the stopper. Pumppettes are attached to Vacutainer blood collection tubes by inserting the sampling cannula through the rubber stopper. Teflon™ tubing runs through the cannula into the fluid. Sample is aspirated through the tubing by pressing the plastic Pumppette pump on top of the stopper. You can get just a drop (or two or three) or a milliliter. The accordion-stype pump gives excellent precision and control.

The new automated pumppette inserter automatically inserts pumppettes into racks of Vacutainer tubes, a dozen at a time. An entire rack of samples is ready for use in just a few minutes. Pumppettes help protect laboratory personnel from exposure to infectious agents. Vacutainer tubes remain capped at all times. The risk of exposure to aerosols released while removing the cap is eliminated; risk of accidental spills is reduced. Pumppette also streamlines sample handling. One pumppette is used for multiple dispensings and stays in place on the Vacutainer tube until final disposal. Samples are dispensed directly from the Vacutainer tube into specimen cups without ever uncapping the tube or pipetting. Helena Laboratories, P.O. Box 752, Beaumont, TX 77704, USA. Telephone 409-842-3714. Circle 53 on Reader Service Card.

High performance capillary electrophoresis. Model 1600 delivers true automation of high performance capillary electrophoresis in a mid-priced unit. The model offers up to nine different programmable analysis methods, 30kv or 300 microampere programmable power supply, a 96-sample vial capacity with one to nine injections per vial using either electromigration or controlled vacuum injection. It uses a UV detection system outputting two analog channels selected from 5 wavelengths between 197 nm and 280 nm. The Model 1600 incorporates automatic buffer/electrolyte replenishment and programmable buffer/electrolyte cycling, fundamental to delivering reproducibility better than 1% RSD of peak migration time. Microphoretic Systems Inc., 750 N. Pastoria, Sunnyvale, CA 94086, USA. Telephone 408-739-2244; fax 408-739-0956. Circle 58 on Reader Service Card.

Precast concrete alternative to hazardous materials storage. With concern over the spread of Acquired Immune Deficiency Syndrome, hepatitis-B and other contagious diseases, the handling of contaminated hospital waste has gained greater attention. Precast concrete buildings are available throughout the United States and Canada and represent the best in safe and secure storage facilities for hazardous materials. Hospitals in the New York City area, in an attempt to allay fears of hospital waste washing up on Long Island beaches, have shown tremendous interest in concrete buildings as a solution to their waste storage needs. The buildings are most often used to store the wastes, which in addition to the needles and syringes include other "red tag" waste such as body parts, used blood, and gauze, until the materials can be incinerated. The EASI-SET building is fire resistant and its built-in curbing contains any spills. Some hospitals use the building to store propane and oxygen. The building is delivered completely pre-assembled; it needs no foundation or footers, and can be transported from one location to another. Easi-Set Industries, Midland, VA 22728, USA. Telephone 703-439-8911; fax 703-439-1232. Circle 56 on Reader Service Card.
In vitro translation kits. Three new in vitro translation kits are available: Reticulocyte Types I and II and Wheat Germ Extract all feature nuclease treated, pre- aliquoted lysates or extract for efficiency and convenience. In the Type II and Wheat Germ kits, the lysate or extract is also amino acid depleted to ensure translation of high specific-activity proteins.

These economical translation kits are supplied with two separate amino acid mixtures (minus leucine or minus methionine) as well as control RNA and detailed protocols. Results and stability are fully guaranteed. Boehringer Mannheim Biochemicals, 9115 Hague Rd., P.O. Box 50414, Indianapolis, IN 46250-0414, USA. Circle 59 on Reader Service Card.

Transilluminator. A new UVTM 25 transilluminator with a 21 × 25 cm illuminated surface can accommodate the largest of the standard gel formats. This size has not been available in a 300 nm transilluminator until now. Six 15W UV lamps provide two levels of light intensity to accommodate all requirements for DNA, analytical and preparative. The surface light intensity can be as much as 8000 W/cm². If the unit is accidentally left on, a timer will automatically turn it off after 30 min. The UVTM 25 is equipped with a fan in the chasis to dissipate heat, thus preventing damage to samples in the gels. Cooler temperature also reduces damage to the UV longlife filter. This specially formulated filter, designed to last more than 2000 hours, resists the solarization that occurs with the shorter UV wavelengths. The overall dimensions of the UVTM 25 are 47.5 cm L × 36.75 cm W × 11.5 cm H. A hinged transparent UV-blocking safety cover is standard with the unit. To convert the unit to a short wave length transilluminator, merely replace the 300 nm with 254 nm lamps. Hoefer Scientific, P.O. Box 77387, San Francisco, CA 94107, USA. Telephone 415-282-2307. Circle 55 on Reader Service Card.

Software for data analysis and graphing. Two intuitive software packages for scientific data analysis and graphing are available. GraphPAD InPlot (version 3) is a scientific graphing program with powerful analytical capabilities. In addition to graphing data points, bar graphs, histograms, and text, the program can also plot curves. The curves may be generated from a theoretical equation or determined by curve fitting, using either nonlinear or polynomial regression. Capabilities for data analysis include calculation of error bars, mathematical transformations of data, linear regression, and measuring the area under a curve.

GraphPAD InStat is a straightforward biostatistics program intended for scientists, not statisticians. Users may calculate t-tests, one-way analysis of variance, chi-square, Fisher’s test, and linear regression. InStat can also calculate the number of data points needed to reach specified significance. GraphPAD Software, 10855 Sorrento Valley Rd., Suite 9, San Diego, CA 92121, USA. Telephone 800-388-Graph or 619-457-3909; fax 619-453-5968. Circle 60 on Reader Service Card.

New delivery system for transforming plant and animal cells. The next generation of an instrument that injects genetic or biological substances directly into cells and tissues is the Biologic PDS-1000 particle delivery system. The process has successfully transformed both agricultural and non-agricultural plants, yeast, algae, organisms, and mammalian cells. The Biologic system delivers microcarriers coated with a biological substance. The carriers are accelerated at high velocity inside a vacuum chamber, so they penetrate thousands of cell walls and membranes simultaneously with an even distribution of the substance.

The new model is equipped with several new features: an improved and more efficient initiator mechanism, an interlock safety device, vacuum flow valves, and push-button action controls. Du Pont believes the process may aid research in applications of genetics and cellular transformations. Du Pont Co., External Affairs, Wilmington, DE 19898, USA. Telephone 302-992-4159 or 5021. Circle 52 on Reader Service Card.

Literature

Assay of Reproductive Hormones: When, Why, and How, a 66-page monograph describes the biochemical, biological function, and pathological conditions of the reproductive hormones in prepubertal and pubertal men and women, including a discussion of the sex hormone-binding globulin (SHBG), from Ventrex, 217 Read St., Portland, ME 04103, USA.

Allozyme analysis, a handbook with practical guidelines for using cellulose acetate electrophoresis in allozyme analysis, from Helena Laboratories, P.O. Box 752, Beaumont, TX 77704, USA.

Human chromosome-specific genomic libraries, a handbook of human and mouse genetic probes and clones, probes and clones for oncogenes and transforming proteins, bacterial hosts for transformation or plating libraries, in a catalog from American Type Culture Collection, 12301 Parklawn Dr., Rockville, MD 20852-1776, USA.

Life sciences products, featuring special sections devoted to major applications, including molecular biology, immunology, protein synthesis/electrophoresis, biomedical research assays, peptides/growth factor assays, autoradiography, in a catalog from Amersham, 2636 S. Clearbrook Dr., Arlington Hts., IL 60005, USA.

Nontoxic, biodegradable scintillation solutions formulated for aqueous and nonaqueous samples detailed in a four-page technical data bulletin from National Diagnostics, 1013-1017 Kennedy Blvd., Manville, NJ 08835-2031, USA.

Refrigerated micro centrifuge described in a full-color brochure from Brinkmann Instruments, Cantiague Rd., Westbury, NY 11590, USA.
The FASEB Journal
Information for Authors*

The FASEB Journal (FJ) is the official publication of the Federation of American Societies for Experimental Biology (FASEB). FJ publishes two types of articles: 1) brief, definitive, and essentially final research communications of fundamental interest and significance that are considered to warrant prompt publication; and 2) state-of-the-art reviews, drawn, as far as possible, from the topics of the FASEB symposia.

Manuscripts containing original communications, or proposals for reviews, should be sent to the Editor-in-Chief, Dr. W. J. Whelan, The FASEB Journal, P.O. Box 016129, Miami, FL 33101-6129, USA.

Original Research Communications
FJ devotes a major portion of its pages (outside the meeting abstracts) to the publication of brief, definitive, original, and essentially final research communications that are considered to warrant prompt publication.

The aim of FJ is to illustrate the unity of biology and the interdependence of its constituent disciplines. Therefore, in keeping with this policy, and to qualify for acceptance, an original communication must not only be of outstanding scientific quality but must also be of fundamental interest.

The subject coverage of FJ is illustrated by the following disciplinary areas: biochemistry, biophysics, cell biology, developmental biology, genetics, immunology, neurobiology, nutrition, pathology, pharmacology, and physiology.

Papers should begin with an abstract written for the general reader and be free from jargon. They should conclude with an introduction followed by the results and discussion; they should conclude with a succinct bibliography. Methods may be included within the figure legends and tables or as a separate section. Papers may not occupy more than five printed pages (equivalent of 5000 words and inclusive of illustrations and diagrams) and will be returned as unacceptable if they exceed this limitation.

Papers (an original and four copies) should be sent to the Editor-in-Chief. Prompt publication of acceptable papers will be ensured by careful conformity to the instructions to contributors and the expeditious return of proofs.

State-of-the-Art Reviews
FJ also presents research reviews. Heretofore these have been in the form of extended reports emanating from symposia or mini-symposia presented at FASEB meetings. To provide such research summaries in a more compact form and thereby to allow, within space limitations, a more comprehensive and representative survey of the acquisition of new biological knowledge, FJ publishes state-of-the-art reviews that emphasize interdisciplinadic aspects of the topics of research.

These reviews will serve as a window on topics addressed at Society-sponsored symposia or plenary lectures. Therefore, review authors are sought from among those engaged in organizing the symposia. At the same time, volunteered reviews are welcomed that embody the principles of timeliness, topicality, and broad interest. A proposal for such a review, not a completed review, should be sent to the Editor-in-Chief, who will advise on its acceptability.

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Authors will be asked to certify that an original communication has not been published other than as an abstract and is not being considered for publication elsewhere, and that the paper will not be submitted for publication elsewhere until its acceptability for FJ has been decided. Authors of reviews will be asked to certify that the review has not been published, is not being considered elsewhere, and will not be submitted elsewhere until its acceptability for FJ has been decided.

Style of Manuscript
General Instructions
1) Manuscripts should be typewritten, with double spacing and 1-inch margins, on 8½ × 11 inch bond paper. Computer printouts of manuscripts must be readable; a dot-matrix printer is generally unacceptable. Metric units should be used. An original and four copies (trademarked) with figures, legends, and abstracts should be sent to the Editor-in-Chief. Pages should be arranged and numbered consecutively in the following order: title page, footnotes, abstract (of up to 200 words and indexing key words [maximum of five], text, references, figure legends, tables, and illustrations.
2) The title page should show: title of article; author(s); laboratory or institution of origin with city and state or country; complete address for mailing proofs and telephone and fax numbers for corresponding author; and shortened title (maximum of 50 characters and spaces) for the running foot.
3) The title should be brief (no more than 90 characters, including letters, spaces, and punctuation) and informative. Do not use phrases in which more than three words modify another word (use "Renal hemodynamic effects of atrial natriuretic factor" rather than "Atrial natriuretic factor renal hemodynamic effects"). Serial titles, such as "Interferon, IX," are not permitted, except as a footnote.
4) The abstract, a paragraph of no more than 200 words, should be written for the general readership and be free from jargon. It should be self-explanatory and suitable for use by abstracting services without rewriting. It should state the purpose and major findings and conclusions of the study. Citation of references should be avoided; if used, include bibliographic information.
5) Footnotes, double-spaced, should be assembled on one or more separate sheets; they should be numbered consecutively throughout.
6) The text should be readable, clear, and concise. Any corrections should be neat and legible. Standard nomenclature should be used; unfamiliar or new items should be defined at first mention. (See Abbreviations section below.) Foreign words not in general use in the English language should be underlined for italic type; italics should not be used for emphasis. Latin plurals should not be used if the English equivalent has been accepted, e.g., lamellae, not lamellae. Webster's New Collegiate Dictionary (1977) should be followed for spelling, compounding, and word separation.
7) Drugs and trade names. The chemical or generic name should precede the abbreviation of a drug name the first time it appears. Proprietary (trademarked) names should be capitalized and the spelling carefully checked. Trade names of chemicals or equipment should also be capitalized. Authors should supply an acceptable scientific name in every case as an alternative to the trade name. Trade names should not ordinarily be used in titles.
8) Active voice rather than passive voice should be used whenever possible. Present tense is used for references to existing knowledge or accepted concepts, and for proven conclusions from the present work; past tense is used when describing experimental work on which the paper is based.

Abbreviations, Symbols, and Terminology
Each author must include, as a footnote to the first page of text, a list of any new or special abbreviations used in the paper, with the spelled-out form and definition if necessary for clarity. For information on style in general, authors are referred to the CBE Style Manual, 5th ed. (1983), prepared by the CBE Style Manual Committee (Bethesda, MD). Chemical and biochemical terms and abbreviations should be in accordance with the recommendations for usage by the International Union of Pure and Applied Chemistry (IUPAC), the International Union of Biochemistry (IUB), and their Committee on Nomenclature [see Biochemical Nomen-

*November 1989.
Book references should include information in the following order: author(s), year of publication, title, city of publication, publisher, and pages. The title of the book should be underlined for italic type. When one chapter is cited its title and page numbers should be included, and the book's authors or editors should be named.


Illustrations
Illustrations should be identified lightly with pencil on the reverse side of the figure with the figure number and author name(s); when necessary, the top should be clearly marked. They should be referred to as figures in the text, and should be numbered with Arabic numerals; each should have a legend.

When preparing figures, particularly graphs, authors might follow the suggestions of H. G. Hers (Nature 307: 205, 1984). They are included in the following:

1) Illustrations should be sharp, contrasty, unmounted photographs on glossy paper. Photographs should be the width of one column (3/4 inches) or two columns (7/8 inches). All drawings for reproduction to a given size should be drawn and lettered to the same scale.
2) Lettering should be in black ink and must be legible after reduction (i.e., at least 1.5 mm high). The smallest elements (subscripts or superscripts) should be readable when reduced. Type-written or computer-generated lettering is not preferred.
3) Graphs such as electrocardiograms, kymograms, and oscillograms should be prepared so that the dark cross-hatched background is eliminated, the faint portions of the graphs are intensified, and sharp prints are obtained. To avoid this processing, use blue-ruled instead of black-ruled recording paper for the original records.
4) A figure containing several panels with the same axes, usually denoted a, b, etc.: authors should indicate on each panel its experimental specificity and should label axes as precisely as possible: e.g., 'Time after drug additions rather than 'Time'. Also, express results in mol rather than cpm or absorbance units. If results are given in percent, define 100% in standard units in the legend.
5) When possible, all lettering should be within the framework of the illustration; likewise the key to symbols should be on the face of the chart. Use one symbol for the same experimental conditions in all comparable figures in the article. When the figure is so filled that it is necessary to explain symbols in the legend, only these standard characters should be used: □ ■ ○ ● △ □ ▽ ▼ ▼ x.
6) Actual magnification of all photomicrographs should be given. The Editorial Office will make corrections for reduction. An appropriate scale on the photomicrograph itself is, however, preferable and more accurate.
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10) Figure legends should be typed double-spaced, consecutively on one or more sheets of paper. Legends should contain sufficient information to provide adequate description without reference to the text.

Tables
Each should be typed double-spaced, on a separate sheet of paper. Each should have a brief title and should be numbered with Arabic numerals. Explanatory matter should be in footnotes. Table footnotes should be listed in order of their appearance with consecutive superior letters.

Tables should not duplicate material in text or illustrations. They should be prepared for printing either 3/4 or 7/8 inches wide. Nonsignificant figures in tabular data should be omitted. Short or abbreviated column heads should be used. Statistical measures of variation, \( P, S, SE, \) etc., should be identified as such.

The approximate position of each table should be indicated in the margin of the text.

Formulas and Equations
Structural chemical formulas, process flow diagrams, and complicated mathematical expressions should be precisely and carefully arranged, but they should be kept to a minimum because in typesetting they are composed by hand and are expensive. Glossy prints of complicated formulas and expressions suitable as line drawings are preferred. All subscripts, superscripts, Greek letters, and unusual characters must be clearly identified.

Acknowledgments
It is customary to acknowledge only persons who have made substantive contributions to the studies reported in the manuscript. Authors should obtain written permission for everyone acknowledged by name (including references to unpublished work) because readers may infer their endorsement of the paper and its conclusions. If appropriate, a statement of grant support may be included. Names of grant sources should not be abbreviated.

Experimental Procedures
This journal endorses the principles embodied in the Declaration of Helsinki and expects that all investigations involving humans will have been conducted in conformity with these principles. It is expected that the "Guiding Principles in the Care and Use of Animals" will have been observed in all animal experimentation reported in EF.

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Additional detailed tables, appendices, descriptions of materials and methods, mathematical derivations, extra figures, and other supplementary matter too costly to be included in the journal article may be submitted for deposition without charge to the author with the American Society for Information Science (ASIS), National Auxiliary Publications Service. Material is deposited by the Editorial Office with the consent of the author, and a footnote is carried in the published article to the effect that photoprints or microfiche copies are available at moderate cost.

Author Charges
Authors of original research communications are allowed the equivalent of one full page of tables, figures, and half-tones, or a half page of chemical and mathematical formulas and equations. Authors may be charged for material exceeding this allowance. When excess charges are anticipated, authors should make the necessary arrangements at the time a manuscript is submitted (i.e., initiation of an institutional purchase order, obligation of funds under a grant, etc.).

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Two sets of page proofs together with the original manuscript are sent to the author. Proofs should be carefully checked without delay and any necessary changes or printer's errors (to be marked in red) should be clearly indicated in the margins. Except for correction of typographic errors, the cost of authors' alterations of subject matter in type will be charged to authors if these charges exceed the journal's allowance. Proofs and the original manuscript should be returned within 48 hours to the Editorial Office, The FASEB Journal, 9650 Rockville Pike, Bethesda, MD 20814, USA.

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Each author receives with the proofs a reprint order form that must be completed and returned with the proofs to the Editorial Office if reprints are desired. Orders submitted after the journal is printed are subject to considerably increased prices.
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Employment in countries other than the United States may be restricted by government visa and other policies. Moreover, it is suggested that the generally accepted employment practices, the cultural conditions, and the exact provisions of the specific positions being considered be investigated thoroughly. The U.S. Embassies in countries of interest to potential employees should be able to provide up-to-date data concerning internal conditions.

For a description of operation at annual meetings, please refer to the January or February issue or contact the Placement Service.

Address all correspondence to FASEB Placement Service, 9650 Rockville Pike, Bethesda, MD 20814. (301) 530-7020

** ** **

RESEARCH FACULTY/TRANSPLANT IMMUNOLOGY. A faculty position at the instructor level is immediately available in the Department of Surgery, University of Miami School of Medicine. Candidates should have a Ph.D. and a minimum of two years postdoctoral experience in transplant immunology, immunobiology and immunogenetics. In addition, hands-on experience is required in the following areas: serological and cellular immunology, methodological approaches in molecular biology, monoclonal antibody and T cell cloning technology, molecular genetics as related to histocompatibility antigens and immunohistochemistry. Send CV with references to Violet Esquenazi, Ph.D., University of Miami School of Medicine, Department of Surgery, P.O. Box 016310, Miami, FL 33101. The University of Miami is an equal opportunity/affirmative action employer.

POSTDOCTORAL POSITIONS. Available immediately to work in the field of hematopoiesis, neutrophil function and aging. Recent Ph.D. in cellular and molecular biology or biochemistry required. Experience in in vitro narrow culture or cellular signal transduction is desirable. Submit CV and three references to Dr. K. B. Udupa, GRECC, VA Medical Center, 4300 W 7th Street, Little Rock, AR 72205.

ASSISTANT PROFESSOR/IMMUNOLOGY. The Department of Veterinary Microbiology and Immunology, School of Veterinary Medicine, University of California is seeking a highly qualified applicant to fill a tenure-track position in immunology. Qualifications include the Ph.D. degree and advanced training in cellular and/or molecular biology with demonstrated research productivity and interest in immunology. The successful candidate will be expected to contribute to the department's and the school's immunology teaching commitments and to establish independent and collaborative-type research programs. Apply in writing and include CV, list of publications, and names of three references. Send to Dr. Jeffrey L. Stott, Chairperson, Search Committee, Department of Veterinary Microbiology & Immunology, University of California, Davis, CA 95616. Applications accepted through January 15, 1990 or until a suitable candidate is identified. The University of California is an affirmative action/equal opportunity employer.

FACULTY POSITIONS in immunology (microbiology background preferred) and microbiology, to initiate strong research program and teach in undergraduate and graduate Chemical Biology program. Ph.D. and evidence of research and teaching required. Send CV, three letters of recommendation and research plans to Biology Search, Chemistry Department, Stevens Institute of Technology, Castle Point on the Hudson, Hoboken, NJ 07030. Stevens is an equal opportunity/affirmative action employer.
CHAIRPERSON
DEPARTMENT OF CELL BIOLOGY
UNIVERSITY OF MEDICINE AND DENTISTRY
OF NEW JERSEY
SCHOOL OF OSTEOPATHIC MEDICINE

The Department of Cell Biology of the University of Medicine and Dentistry of New Jersey, School of Osteopathic Medicine is seeking applications and nominations of distinguished academic scientists qualified to serve as the founding Departmental Chairperson. The new Department consists of six faculty and is expected to grow to twelve faculty under the leadership of its new Chairperson. The present faculty are young and vigorous and encompass research programs in signal transduction mechanisms, cell mobility and developmental neurobiology. The Department will have responsibility for the instruction of medical students in the disciplines of Physiology, Anatomy, Histology and Neuroscience.

We are seeking candidates who have an outstanding record of research achievements, who are dedicated to educational programs of high quality and who have administrative experience. Although we are seeking individuals with research interests in any area of modern cell biology, we are particularly emphasizing recruitment of individuals with research interests in cardiovascular, cellular or smooth muscle function or cellular neurobiology. The existing faculty in the school's clinical departments have a strong research focus centered around cardiovascular functions and individuals seeking to engage in collaborative research programs in this general area are particularly encouraged to apply. Appointment will be made at the Professor level with a starting date as early as April 1, 1990 and no later than July 1, 1990.

Letters of application, curriculum vitae, and the names, addresses and telephone numbers of four references should be submitted to: Dr. Richard Schimmel, Acting Assistant Dean for Basic Sciences, Department of Physiology, UMDNJ-SOM, (FASEB), 675 Hoes Lane, Piscataway, NJ 08854-5635.

The UMDNJ is an Affirmative Action/Equal Employment Opportunity Employer M/F/HN.

THE NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES
DIVISION OF DIGESTIVE DISEASES AND NUTRITION
IS CURRENTLY RECRUITING CANDIDATES FOR THE VACANT POSITION OF
DEPUTY DIRECTOR
DIVISION OF DIGESTIVE DISEASES AND NUTRITION

Incumbent must be a recognized and respected leader in the field of biomedical research and nutrition. Responsibilities include identifying research needs and opportunities, along with planning, developing, and implementing a high priority extramural research and research training program in the field of nutrition.

Salary Range - ES-1 ($68,700) to ES-4 ($76,400) per annum (Physicians may be eligible for a comparability allowance up to $20,000 per year)

Position information and qualifications requirements may be obtained by contacting:

Mr. Clifford Moss, Executive Secretary
Search Committee for Deputy Director
Division of Digestive Diseases and Nutrition
National Institutes of Health
9000 Rockville Pike
Building 31, Room 9A30
Baltimore, Maryland 20892
(301) 496-4231

Applications (SF-171, CV and Bibliography) must be submitted to above address and postmarked no later than December 31, 1989.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

ASSISTANT PROFESSORS
TENURE TRACK
DEPARTMENT OF PHARMACOLOGY
THE UNIVERSITY OF NORTH DAKOTA
SCHOOL OF MEDICINE

The University of North Dakota invites applications and nominations for three tenure-track faculty positions in the Department of Pharmacology at the rank of assistant professor. The positions are full-time twelve-month appointments completely funded by state-appropriated monies to the University of North Dakota Medical Center. A competitive start-up package is available. Candidates should have an M.D. and/or Ph.D. in pharmacology or a related area. He/She should present evidence of strong teaching credentials and the ability to initiate or transfer a vigorous and extramurally-funded research program in an area of pharmacology suitable towards graduate education within the department and the University. Candidates should provide a letter of application, CV, a comprehensive statement of research plans and objectives, representative publications and the names, addresses and telephone numbers of three individuals from whom the candidate has requested letters. The application materials and reference letters should be sent to Dr. David W. Hein, Professor and Chairman, Department of Pharmacology, University of North Dakota School of Medicine, 501 North Columbia Road, Grand Forks, ND 58203. Review of the completed applications will begin December 15 and continue until the three positions are appointed. The positions are available immediately and should be filled no later than July 1, 1990.

The University of North Dakota is an equal opportunity/affirmative action employer.

THE NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES
DIVISION OF DIGESTIVE DISEASES AND NUTRITION
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Applications (SF-171, CV and Bibliography) must be submitted to above address and postmarked no later than December 31, 1989.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER
STATE EXTENSION SPECIALIST, HUMAN NUTRITION AND HEALTH. Nevada Cooperative Extension is seeking nominations and applications for a 12-month, tenure-track, assistant/associate professor position with state-wide responsibilities in human nutrition. Responsibilities include providing leadership in the development of educational programming including the identification of needs and priorities as well as program impacts. Expectations also include the development of a productive research program of sufficient quality to be competitive for extramural funding. Applicants must have an earned doctorate and R.D. status as well as a record of productive teaching and research. The position is located on the university campus in Reno, Nevada, and reports to the Chair, Department of Nutrition. Send letter of application, CV, official transcripts, brief statement of research interests and request three letters of reference by February 1, 1990 to Chair, Foods and Nutrition Extension Specialist Search Committee, College of Human and Community Sciences, Department of Nutrition, University of Nevada, Reno, NV 89557-0004 (702) 784-6977. AA/EEO. The University of Nevada, Reno, employs only U.S. citizens and aliens authorized to work in the U.S.

CHAIR, DEPARTMENT OF NUTRITION. Nominations and applications are being accepted for Chair, Department of Nutrition, College of Human and Community Sciences, University of Nevada, Reno. Qualifications include an earned doctorate, successful record of research, extramural funding and teaching, knowledge of plan IV V dietsetic programs, evidence of strong leadership qualities and administrative abilities. Responsibilities include fostering the growth and development of the department, managing of departmental resources to achieve excellence in teaching and research, cultivating and maintaining agency and professional contacts and participating in professional organizations. Send letter of application, CV, official transcripts, brief statement of research interests and three letters of reference to Chair, Nutrition Department Chair Search Committee, College of Human and Community Sciences, University of Nevada, Reno, NV 89557-0038 (702) 784-6611. Application deadline is January 2, 1990. AA/EEO. The University of Nevada, Reno, employs only U.S. citizens and aliens authorized to work in the U.S.

IMMUNOLOGIST ASSOCIATE RESEARCH SCIENTIST. The Division of Organ Transplantation and Immunology, Department of Surgery at the Yale University School of Medicine is seeking a qualified individual to join its active and growing research group. The appointee to this research track position must hold the M.D., Ph.D. or equivalent degree with appropriate training and/or experience in cellular immunology. Additional expertise including molecular and/or biochemical techniques is desirable. Interested applicants should send a CV, bibliography and addresses of three references to Marc I. Lorber, M.D., Director, Division of Organ Transplantation and Immunology, Department of Surgery, Yale University School of Medicine, P.O. Box 3333, New Haven, CT 06510. The deadline for applications is December 15, 1989. Yale University is an equal opportunity/affirmative action employer. Women and members of minority groups are urged to apply.

ASSISTANT PROFESSOR, PHARMACOLOGY/TOXICOLOGY. The Department of Pharmacology & Toxicology at the University of Kansas, Lawrence, is expanding its program in receptor molecular biology, pharmacology, toxicology and is seeking a new faculty member with research interests and expertise in this area. Appointment will be at the assistant professor level in a tenure-track position. We are looking for an individual with training and experience in the areas of receptor isolation and reconstitution, signal transduction, molecular biology of receptors, gene regulation or protein biochemistry and biophysics. Strong collaboration with researchers in the departments of biochemistry, medicinal and pharmaceutical chemistry, microbiology, physiology/cell biology and chemistry are ongoing. Candidates should hold the Ph.D. or M.D. degree and have a minimum of two years postdoctoral experience. All faculty are expected to establish a strong research program and participate in the teaching of graduate students in the department and of undergraduate students in the School of Pharmacy. Send CV, Department of research interests and names of at least three references to Dr. Elias K. Michaelis, Chairman, Department of Pharmacology/Toxicology, 5064 Malott Hall, University of Kansas, Lawrence, KS 66045-2505. Applications must be postmarked by December 30, 1989. Equal employment opportunity/affirmative action employer. Women and minority groups are encouraged to apply.

THE NATIONAL RESEARCH COUNCIL ANNOUNCES POSTDOCTORAL & SENIOR RESEARCH ASSOCIATESHIP AWARDS

The awards sponsored by the National Research Council are available at the U.S. Army Institute of Dental Research. The research opportunities are in physical and biochemistry of bone regeneration (which also includes studies of growth factors using bone cell cultures), purification and characterization of bone-inductive proteins and monoclonal antibodies, engineering of predictably degrading bone-regenerating systems, biodegradable polymer chemistry and microencapsulation and time-release drug delivery systems. Doctoral degree in life sciences or biomedical sciences is required. Annual stipend for recent graduates is $28,000 and is appropriately higher for those with more than 5 years of experience. Relocation reimbursement and funds for professional travel are available, and a health insurance program is offered. Awards are for 1 year with possible renewals to a total of 3.

For further information contact:
Dr. Jeffrey Hollinger at (202) 576-3764 or
Dr. Anshuman Chaudhuri at (202) 576-2088.
Their mailing address is:
U.S. Army Institute of Dental Research
Walter Reed Army Medical Center
Washington, D.C. 20307-5300

For application materials, write to:
National Research Council
2101 Constitution Avenue, NW
Washington D.C. 20418
FAX: (202) 334-2759

Application Deadlines are January 15 and August 15, 1990.
RESEARCH ASSOCIATES. Two positions available to work on genetics and molecular regulation of Mg\textsuperscript{2+} transport systems in bacteria and yeast and on relationship of Mg\textsuperscript{2+} transport systems to those for other ions, especially Ca\textsuperscript{2+}-ATPases. Experience in molecular cloning and/or bacterial genetics preferred. Available: January 1, 1990. Send CV, publications, list of references to Dr. Michael E. Maguire, Department of Pharmacology, School of Medicine, Case Western Reserve University, Cleveland, OH 44106. CWRU is an equal opportunity/affirmative action employer.

RESEARCH SCIENTIST. The Division of Connective Tissue Diseases in the Department of Medicine at the University of Tennessee is seeking an M.D. or Ph.D. scientist to perform epitope mapping studies in collagen-induced arthritis. Must have experience in the physicochemical characterization of collagen and in immunologic recognition by antibody and T-cells. Emphasis is on the specific interactions between collagen and immune cells in the development of arthritis. Accomplishments must be exemplified by publication record. Send resume to Dr. John M. Stuart, Research Service (151), VA Medical Center, 1030 Jefferson Avenue, Memphis, TN 38104. The University of Tennessee is an affirmative action/equal opportunity employer.

RESEARCH ASSOCIATE. Fulltime faculty level position for a Ph.D. physiologist in the Department of Anesthesiology at Oregon Health Sciences University. Candidates must have a primary focus in cardiovascular physiology. The position will involve development of research proposals, conducting experiments, laboratory direction and some teaching of medical students and anesthesiology residents. Candidates should be familiar with blood flow measurements (electromagnetic, ultrasound, microphones), electrocardiography, HPLC, spectrophotometry, blood gas analysis, acute and chronic animal preparations and data analysis. Interested parties should respond with a resume to Richard F. Davis, M.D., Anesthesiology Service (1128), VA Medical Center, PO Box 1034, Portland, OR 97207. OHSU is an affirmative action/equal opportunity employer.

FACULTY. The Department of Pathology, Medical College of Georgia, Augusta, Georgia, invites applications for a tenure-track faculty position at the rank of associate professor or professor. The applicant should have a M.D. or Ph.D. degree with training and experience in molecular biology, molecular genetics and/or immunopathology. In addition to participation in the graduate and undergraduate educational programs, the successful candidate will establish an independent or collaborative extramurally funded research program. Applicants should submit a detailed CV, names and telephone numbers of three references and a statement of personal and professional goals to R. N. Rao, M.D., Chief, Section of Anatomic Pathology, Medical College of Georgia, Augusta, GA 30912-3605. EO/EAA.

PHARMACOLOGY FACULTY. Ohio University seeks to fill a tenure-track faculty position in pharmacology by September 1, 1990. A Ph.D. degree is required and postdoctoral experience is preferred. This position is a joint appointment in the College of Osteopathic Medicine and the Department of Zoological and Biomedical Sciences. The successful candidate is expected to develop an externally funded research program. Collaborative opportunities exist in several areas including signal transduction and second messengers, cardiovascular and autonomic pharmacology, endocrinology, molecular and cellular biology, and neurobiology. The successful candidate is to teach neuropharmacology to osteopathic medical students and to participate in training graduate (M.S./Ph.D.) students. Rank is open. Salary will be commensurate with rank and experience. The letter of application, CV, description of research plans, copies of most significant publications and three letters of recommendation must be received by January 1, 1990. Address to Dr. Leon C. Wince, Pharmacology Search Committee, 228 Irvine Hall, Ohio University, Athens, OH 45701. Ohio University is an affirmative action/equal opportunity employer.

ASSISTANT/ASSOCIATE PROFESSOR. Applications are invited for tenure-track positions in pharmacology by September 1, 1990. A Ph.D. degree is required and postdoctoral experience is preferred. This position is a joint appointment in the College of Osteopathic Medicine and the Department of Zoological and Biomedical Sciences. The successful candidate is expected to develop an externally funded research program. Collaborative opportunities exist in several areas including signal transduction and second messengers, cardiovascular and autonomic pharmacology, endocrinology, molecular and cellular biology, and neurobiology. The successful candidate is to teach neuropharmacology to osteopathic medical students and to participate in training graduate (M.S./Ph.D.) students. Rank is open. Salary will be commensurate with rank and experience. The letter of application, CV, description of research plans, copies of most significant publications and three letters of recommendation must be received by January 1, 1990. Address to Dr. Leon C. Wince, Pharmacology Search Committee, 228 Irvine Hall, Ohio University, Athens, OH 45701. Ohio University is an affirmative action/equal opportunity employer.

ASSISTANT/ASSOCIATE PROFESSOR. Applications are invited for assistant/associate professor position in the Division of Gastroenterology, Department of Pediatrics at Vanderbilt University. The candidate must have a Ph.D. degree and training in molecular biology and/or molecular physiology or cell biology. Send CV or call Dr. F. Ghishan, Vice-Chairman of Pediatrics/Research, MCN D-4130, Vanderbilt Medical School, Nashville, TN 37232 (615) 322-7449. Vanderbilt is an equal opportunity employer.

ASSISTANT PROFESSOR, FOOD TOXICOLOGY. The Food Research Institute (Department of Food Microbiology and Toxicology), University of Wisconsin-Madison, invites applicants to fill positions in individuals for a tenure-track faculty position at the assistant professor level. Applicants should have a Ph.D. or equivalent in an appropriate scientific discipline and demonstrated expertise in the toxicological aspects of food safety. The primary duty of the incumbent is to establish a high-quality toxicology research program that is directly applicable to food safety. The incumbent will also be expected to deliver several lectures each semester in area of specialty to undergraduate and graduate students, perform University-related public service and participate in activities contributing to the support of the department and the Food Research Institute. This is an exceptional annual (12 month) appointment offering excellent facilities, research support and a competitive salary in a challenging intellectual environment. Applicants should submit CV and the names of three references by January 15, 1990 to Dr. M. W. Pariza, Director, Food Research Institute, University of Wisconsin, 1925 Willow Drive, Madison, WI 53706. The UW-Madison is an equal opportunity employer and especially encourages women and minorities to apply.

UNIVERSITY FACULTY POSITION. Tenure-track assistant professor or instructor opportunity available July 1, 1990 in B.S. Respiratory Therapy and M.S. Allied Health programs at major research university/academic health center. Master's degree required; doctorate and/or scholarly productivity preferred. Clinical respiratory care experience required; RRT preferred. Write for more information or send CV and names, addresses, telephone numbers and your relationship to three references by January 15, 1990 to Dr. Richard J. Burns, Respiratory Therapy Search Committee, The Ohio State University, 1583 Perry Street, Columbus, OH 43210. OSU is an equal opportunity and affirmative action employer. Women and minorities are encouraged to apply.

ASSISTANT PROFESSOR, ORGANISIC BIOLOGY. The Department of Biology invites applications for organicist biologist working with multicellular systems for a tenure-track assistant professorship beginning September 1990. Although the specific area of research and teaching is open, the ability to teach introductory (undergraduate) immunology is an asset, but not a requirement. Postdoctoral research and teaching experience are desirable. The successful candidate will be expected to establish a productive research program, pursue external funding, teach in major and non-major introductory sequences, supervise the training of M.S. and Ph.D. students and serve on committees. To apply, send a CV, a list of publications, including relevant reprints, statement of research interests and goals and arrange to have three letters of recommendation sent directly to Dr. Paul L. Doerger, Chair, Search Committee, Department of Biology, Cleveland State University, E 24th and Euclid Avenue, Cleveland, OH 44115. Deadline for receipt of applications is January 2, 1990. Cleveland State University is an equal opportunity employer, M/F/H.

ASSISTANT/ASSOCIATE PROFESSOR. Applications are invited for tenure-track positions. Candidates must have a Ph.D. or an M.D. and postdoctoral training and are expected to maintain an independent research program and a strong commitment to teaching. Special consideration will be given to candidates with a background in molecular and/or cellular physiology and an interest in renal tubular transport, vascular smooth muscle or endocrine mechanisms. Faculty rank and salary will be commensurate with credentials. Interested applicants should send a CV, a statement of research interests and the names of at least three references to Dr. John Hall, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS 39216. Equal opportunity employer, M/F/H/V.

ASSISTANT PROFESSOR. Tenure-track position available for Ph.D. in immunology (at least two years postdoctoral experience). The opportunity is to establish an independent extramurally funded laboratory at The M.D. Anderson Cancer Center within the Department of Head and Neck Surgery with a focus on immunocchemistry. The candidate will have an opportunity to collaborate actively with clinical investigators in a program involving biologic response modifiers. Interested applicants should send CV and brief description of research interests to Dr. Stimson P. Schantz, Director of Research Programs, Department of Head and Neck Surgery, U.T. M.D. Anderson Cancer Center, 1515 Holcombe, Houston, TX 77030. An equal opportunity/affirmative action employer.

2692 EMPLOYMENT OPPORTUNITIES Vol. 3 Dec. 1989
RESEARCH ASSOCIATES. Two positions are available for cellular and molecular studies of regulation of β-galactoside specific lectin expression during postnatal lung development. The research project involves: (1) using antibodies against rat lung galaptin to examine the expression of galaptin by rat lung fibroblasts as a function of postnatal age and (2) studying the hormonal regulation of galaptin expression using primary cultures of pulmonary fibroblasts and endothelial cells. Applicants for both positions should have a background in biochemistry and/or cell biology, a Ph.D. or M.D. for one position and a M.S. or Ph.D. for the second position. These positions are available immediately. Send CV and three references to Gary L. Sanford, Ph.D., Biochemistry Department, Morehouse School of Medicine, 720 Westview Drive SW, Atlanta, GA 30310-1495. Morehouse School of Medicine is an equal opportunity/affirmative action employer.

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE. Available immediately. Research project involves studies on regulation of gene expression, of cell surface receptors and mitogenesis in cultured airway smooth muscle. Candidates should have a Ph.D. with primary interest in pharmacology and experience with methods in cell and molecular biology. Send CV and three letters of reference to Michael M. Grunstein, M.D., Ph.D., Division of Pulmonary Medicine, Children's Hospital of Philadelphia, 34th Street & Civic Center Boulevard, Philadelphia, PA 19104. EOE.

ASSISTANT/ASSOCIATE PROFESSOR OF ANATOMY. The Department of Anatomy at Loyola University Stritch School of Medicine invites applications for a tenure-track position at the assistant/associate professor level beginning 1 July 1990. Candidates may have either a Ph.D. or M.D. and must demonstrate a commitment to independent research in neurobiology. Primary teaching responsibilities are in medical gross anatomy. The department has modern facilities and comprises II faculty with research emphasis in neurobiology and cell biology/immunology. Opportunities for collaborations exist through the Neuroscience Graduate Program. Applicants should submit a letter indicating qualifications and research goals, CV and the names of three references by 1 January 1990 to Dr. A. J. Castro or Dr. J. A. McNulty, Department of Anatomy, Loyola University Stritch School of Medicine, 2160 S First Avenue, Maywood, IL 60153. Loyola University is an equal opportunity employer.

BIOCHEMISTRY CHAIR, University of Arkansas for Medical Sciences, Little Rock, Arkansas. This position is open to candidates holding the M.D. or Ph.D. degree who would also qualify for a tenured appointment as Professor of Biochemistry. Any individual interested in being considered for this position should send CV to Dr. T. E. Andreoli, Chairman, Biochemistry Search Committee, Department of Internal Medicine, 4301 W Markham, Slot 640, Little Rock, AR 72205. Application deadline is January 1, 1990. The University of Arkansas for Medical Sciences is an equal opportunity/affirmative action employer.
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