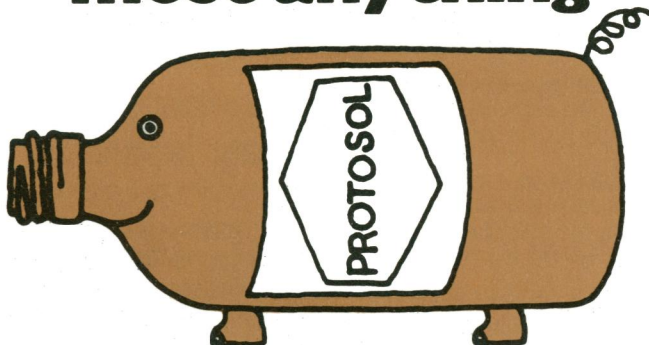


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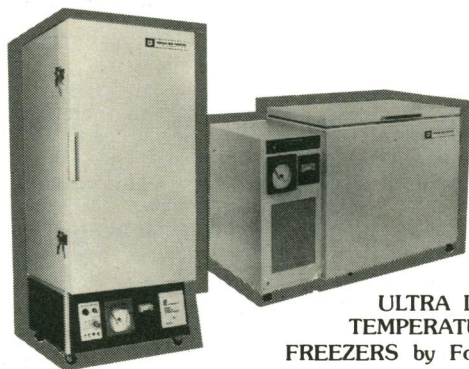
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Biochemist, Ph.D. (Chem. Eng. M.S.). Dreamer with philosophy of science and ability to unify diverse observations into a coherent picture. Wide range of interests. Experience in organic syntheses, tissue culture, protein biosynthesis, and fractionation. Protein folding and structure-function relationships. Nucleic acid biosynthesis. Over 30 publications. Seeks senior research and teaching position. Box 349, SCIENCE. X

Developmental Biologist—Cytologist, Ph.D. 1973, teaching experience, research experience with ultrastructure of gametes and fertilization. Seeks a postdoctorate or teaching position. Box 350, SCIENCE. X

Electron Microscopist in experimental pathology and cancer, Ph.D. 1958, 6 years of experience in tissue culture virology, recent interest in chemical induction of pancreatic tumor and related studies. Seeks permanent hospital, research institution, or university position. Box 339, SCIENCE. X

Immunologist, Ph.D. 1966 in microbiology (immunology). Extensive experience in tumor immunology, cancer cell biology, and tissue culture. Publications. Box 351, SCIENCE. 8/8, 15

Plant Physiologist, Ph.D., research experience with plant growth regulators and water stress. Publications. Teaching experience in biology and botany. Desires academic or industrial position. Box 344, SCIENCE. X

Programmer/Engineer. Minicomputer programming/hardware design/communication network experience. Desires work involving behavioral/biological sciences. C. Will, 660 Hamilton Avenue, Santa Clara, California 95050. X

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INSTRUCTOR OR ASSISTANT PROFESSOR Department of Anesthesiology

The University of Michigan Medical School is seeking an anesthesiologist, Board-certified or qualified. Duties include clinical and didactic instruction of residents and students in anesthesia. Code #800FO. Send résumé to Box 354, SCIENCE. A Nondiscriminatory, Affirmative Action Employer.

POSITIONS OPEN

ANATOMISTS. Openings are available for anatomists who are competent to teach one or more of the following: gross, microscopic, neuro- and developmental anatomy. Junior and senior positions depending on qualifications, including research productivity and promise, of applicant. Send curriculum vitae to Dr. Charles R. Noback, Department of Anatomy, College of Physicians and Surgeons, Columbia University, 630 West 168 Street, New York, N.Y. 10032.

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INTERIM ASSISTANT PROFESSOR, ANALYTICAL CHEMISTRY, University of South Florida, beginning September 1975 or January 1976. Applicants should hold Ph.D. with specialization in analytical or environmental chemistry and preference may be given to those who have postdoctoral research or teaching experience in the specialization. Position is for one 9-month academic year initially but with opportunity for subsequent summer employment and reappointment leading to possible appointment to a tenure-earning position. Salary approximately \$12,000/9 months. Active research, possibly in cooperation with other faculty members, essential. Send résumé, brief description of research interests, and three letters of reference or names of referees to Dr. Terence C. Owen, Chairman, Department of Chemistry, University of South Florida, Tampa, Fla. 33620. The University of South Florida is an Affirmative Action/Equal Opportunity Employer.

The University of Virginia is seeking candidates for openings at the ASSISTANT PROFESSOR level in several areas of biological science. One of these positions will be in the area of neurobiology, the specific subspecialty being open. Postdoctoral experience and demonstrated research ability are essential. Interested candidates should send curriculum vitae and arrange for three letters of recommendation to be sent to Dr. O. L. Miller, Jr., Department of Biology, University of Virginia, Charlottesville, Virginia 22901.

ASSISTANT PROFESSOR Department of Surgery

The University of Michigan Medical School is seeking a surgeon, Board-qualified in general surgery for full-time position in Section of General Surgery. Should be interested in career in academic surgery, with special training or expertise in a specific clinical or investigative area in general surgery. Rank and salary commensurate with qualifications and experience. Code #200FO. Send résumé to Box 352, SCIENCE. A Nondiscriminatory, Affirmative Action Employer.

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Applications are invited for positions at the ASSISTANT PROFESSOR level in the Division of Biological Sciences (Departments of Biophysics, Cell Biology, Developmental Biology and Cancer, Genetics, and Molecular Biology). Candidates with proven ability to do exceptional independent research and an interest in graduate student teaching should submit curriculum vitae, bibliography, a short description of future research plans, and the names of three references to: Dr. Matthew Scharff, Chairman, Search Committee, Division of Biological Sciences, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, N.Y. 10461. An Equal Opportunity/Affirmative Action Employer.

JEFFERSON MEDICAL COLLEGE OF THOMAS JEFFERSON UNIVERSITY

Invites nominations and applications for CHAIRMAN OF THE DEPARTMENT OF PHARMACOLOGY

Nominations and applications should be addressed to: Dr. Russell W. Schaedler, Chairman, Pharmacology Search Committee, Department of Microbiology, Jefferson Medical College, Thomas Jefferson University, 1020 Locust Street, Philadelphia, Pa. 19107. An Equal Opportunity/Affirmative Action Employer.

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A challenging opportunity exists within the Warner-Lambert Research Institute for a neurochemist. The selected candidate will join a biochemical group which is part of a coordinated program directed towards the discovery and development of new CNS agents.

Responsibilities will include the development of biochemical procedures for neurotransmitters known to be related to Central Nervous System. Knowledge of cholinergic and cyclic nucleotide systems would be desirable. Candidate should possess a Ph.D. in Pharmacology or Chemistry with 1 to 2 years of related experience.

For consideration please forward your curriculum vitae to: R. F. Benthien, Warner-Lambert Research Institute division of

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Cardiovascular Pharmacologist

The Professional Products Group of the Warner-Lambert Research Institute has an excellent opportunity for a Ph.D. Pharmacologist with expertise in Cardiovascular and/or Autonomic research studies. Candidate should possess a Ph.D. with two or more years of industrial experience or postgraduate studies within these specialties. Position responsibilities include establishing new approaches for screening and secondary evaluation of active drugs. For consideration, please forward your curriculum vitae to: R. F. Benthien,

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Lakehead University

JOINT APPOINTMENT DEPARTMENT OF BIOLOGY AND SCHOOL OF FORESTRY

Lakehead University requires an **Assistant Professor in Biology** to teach botany in first-year biology and introductory plant ecology in second-year biology.

A Ph.D. is required. Experience in genetics is an asset. The position is to be filled as soon as possible with duties commencing on 1 September 1975. Send curriculum vitae and names of three referees to:

Mr. Donald E. Ayre
Secretary of the University
Lakehead University
Thunder Bay P7B 5E1
Ontario, Canada

ASSISTANT RESEARCH SCIENTIST

Ph.D. to study *Drosophila* differentiation in vitro with molecular biology techniques. Salary about \$14,000, start approximately 1 September 1975. Submit curriculum vitae, bibliography, two letters of reference, and brief statement of career goals to **Dr. Robert Seecof, Head, Department of Developmental Biology, City of Hope National Medical Center, Duarte, Calif. 91010.**

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CHAIRPERSON DEPARTMENT OF PATHOLOGY

The George Washington University Medical Center invites applications for this position. Full-time appointment with rank of professor and tenure. Experience in administration and teaching required. Development of strong research program desirable. Curriculum vitae should be sent to: **C. R. Treadwell, Chairman, Pathology Search Committee, The George Washington University Medical Center, 2300 Eye Street, NW, Washington, D.C. 20037.** *An Equal Opportunity/Affirmative Action Employer.*

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We seek an experienced D.V.M. to direct a large, centralized research animal colony, including procurement, maintenance and provision of veterinary medical services. Applicant must have previous experience in supervision of a laboratory animal service unit, and completion of a post doctoral program in laboratory animal medicine or ACLAM accreditation is desirable.

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Qualified applicant should write to:

Naim Khazan, Ph.D., Professor and Chairman
Department of Pharmacology and Toxicology
University of Maryland School of Pharmacy
636 West Lombard Street
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MASSACHUSETTS INSTITUTE OF TECHNOLOGY Department of Nutrition and Food Science Faculty Opening in Food Chemistry

Applications are invited for the position of **Assistant or Associate Professor** in the area of chemistry or biochemistry applied to problems in food science.

The Department of Nutrition and Food Science at the Massachusetts Institute of Technology is a multidisciplinary group which includes faculty in food science (chemistry, microbiology, engineering), biochemical engineering, toxicology, and nutritional biochemistry and metabolism. Research in food chemistry is presently conducted in lipid oxidation, protein chemistry and biophysics, N-nitroso compounds, folic acid, storage stability, and others. The applicant should be capable of organizing a research program in some aspect of chemistry or biochemistry related to food, possibly in collaboration with existing groups in food microbiology, engineering, or chemistry. Teaching is an important responsibility of the position and should be in some area of food chemistry or biochemistry.

Interested applicants should forward curriculum vitae, list of publications, and description of research interests to **Dr. Marcus Karel, Deputy Department Head, Department of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, Mass. 02139.**

Massachusetts Institute of Technology is an Equal Opportunity Employer.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Department of Nutrition and Food Science Faculty Opening in Food Microbiology

Applications are invited for the position of **Assistant or Associate Professor** in the area of microbiology applied to problems in food science.

The Department of Nutrition and Food Science at the Massachusetts Institute of Technology is a multidisciplinary group which includes faculty in food science (chemistry, microbiology, engineering), biochemical engineering, toxicology, and nutritional biochemistry and metabolism. Research in the area of food microbiology currently deals with the microbiology of sublethal stress, radiation, detection and mode of action of N-nitroso compounds, and others. The applicant should be capable of organizing a research program in some aspect of microbiology related to food, possibly in collaboration with existing groups in food microbiology, engineering, or chemistry. Teaching will be an important part of the position and should be directed toward food microbiology.

Interested applicants should forward curriculum vitae, list of publications, and description of research interests to **Dr. Marcus Karel, Deputy Department Head, Department of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, Mass. 02139.**

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CARBON-14 DATING SPECIALIST. Postdoctoral position available at Brookhaven National Laboratory in a joint project with the Smithsonian Institution (Conservation-Analytical Laboratory). Project involves design of small counters for use in ¹⁴C dating of very small carbon samples from archeological, fine arts, and historical contexts. Areas of research will include preparation of counter gases in miniature vacuum lines; innovative designs for low level counters and associated electronics to achieve lowest possible backgrounds; and dating of selected samples. Appointment will be for an initial period of 1 year starting as soon as possible. Please send curriculum vitae to: **Chairman, Chemistry Department, Brookhaven National Laboratory, Associated Universities, Inc., Upton, L.I., N.Y. 11973.** *An Equal Opportunity Employer M/F.*

Applications are invited for a **CHAIRPERSON** of the Department of Physiology at **DUKE UNIVERSITY MEDICAL CENTER.**

The University is seeking candidates with a strong academic background and a broad understanding of teaching and research in Physiology. Candidates should also have administrative experience and a demonstrated interest in organizing and developing interdisciplinary teaching and research programs.

Applicants should submit a curriculum vitae, list of publications, and the names of three references to **Dr. Robert L. Hill, Chairman, Department of Biochemistry, Duke University Medical Center, Durham, North Carolina 27710,** by 1 September 1975.

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

CHAIRPERSON DEPARTMENT OF ANATOMY

Applications are invited for this position at the Chicago College of Osteopathic Medicine. Send curriculum vitae and a list of references to: **Dr. A. D. Alexander, Chairman, Anatomy Search Committee, Chicago College of Osteopathic Medicine, 1122 East 53 Street, Chicago, Illinois 60615.**

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The appointee will join the recently completed Sensory Processes Laboratory of the Department of Physiology and participate in the teaching and research commitments of the laboratory.

The staff of this laboratory (I. Darian-Smith, K. O. Johnson, and A. W. Goodwin) are responsible for the teaching of neurophysiology to medical and science undergraduate students in 1976 and for the supervision of postgraduate students working in the Sensory Processes Laboratory (four in 1975; increasing in 1976).

The research projects of the Sensory Processes Laboratory are all concerned with neural mechanisms of cutaneous sensibility in the primate. Neurophysiology and psychophysics laboratories of this unit provide facilities for correlative studies in human subjects and monkeys. Each laboratory has independent access to a PDP 11/40 computer system for experimental control, data collection analysis.

The applicant should have teaching and research experience in neuroscience, and either a Ph.D. in this field or an equivalent qualification.

Salary: \$11,655 to \$15,645 per annum (\$U.S.15,423 to \$U.S.20,703).

Commencing date: To commence no later than 1 January 1976 until 31 December 1977.

Further details may be obtained from **Professor I. Darian-Smith, Department of Physiology.** Details of application procedure together with conditions of appointment may be obtained from **The Registrar, University of Melbourne, Parkville, 3052, Australia.** Applications referring to Position Number F536014 should be addressed to The Registrar, and close on 5 September 1975.

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RADIOBIOLOGY—Ph.D. preferred. Experience in experimental mammalian radiobiology, particularly hematopoiesis and lymphopoiesis including proliferation kinetics of various blood cell lines essential. Should be thoroughly familiar with blood cell morphology in most common experimental animals. Experience in histochemistry and cytochemistry desirable. Will work with automated flow-systems instrumentation for cell analysis.

ANTIGENS/ANTIBODIES—Ph.D. or M.D. preferred. Should have experience in purification of antigens and antibodies as well as some knowledge of organic synthesis and chemistry of polymers. Will participate in development of immunochemically tagged polymeric microspheres to be used as cell makers in flow-system analysis of cell populations of interest in basic and cancer immunology.

CELLULAR IMMUNOLOGY—Ph.D. or M.D. preferred. Experience in cellular and/or clinical immunology necessary. Experience with fluorescent antibody/antigen techniques as applied to virus detection would be useful. Will interact with present staff in utilizing unique flow-systems instrumentation for identifying and concentrating immunologically active cells from hematopoietic and lymphoid tissue. Collaboration with clinical immunopathologists and theoretical immunologists will be expected.

IMMUNE SYSTEM—Ph.D. preferred. Should have experience in mammalian immunology, and familiarity with newest techniques in purification of antigens and antibodies. Some familiarity with aerosol physics helpful. Work will involve use of automated flow systems for cell analysis. Will interact with other groups interested in the role of the immune system in response of respiratory and other mammalian systems to carcinogenic and irritant aerosols and particulates.

CELL KINETICS—Ph.D. preferred with in-depth experience in mathematical analysis of cell proliferation kinetics. Will devise and conduct biological experiments using flow-systems analysis for elucidating *in vivo* and *in vitro* cellular kinetics under various conditions involving drugs, carcinogenic agents, irradiation, viral transformation, and/or chemical and physical agents; work with automated flow-system instrumentation for cell analysis; interaction with experimentalists and theoreticians presently on the staff.

RADIATION ONCOLOGY—D.V.M. or M.D. experienced in radiation oncology, to do clinical histopathology on autopsy and serial biopsy specimens. Cells isolated from specimens will also be studied using automatic flow-system instrumentation for rapid fluorometry and light-scattering measurements. Studies include experimental tumors in mice, spontaneous tumors in dogs, and tumors in human patients undergoing radiotherapy. The objective is to determine the correlation between the histopathology and cytopathology and the end result of radiotherapy.

CHROMOGENIC AGENTS—Ph.D. preferred. Thorough familiarity with chemistry of chromogenic agents and fluorochromes and their interactions with cells and cell components essential. Knowledge of modern techniques in high precision cytophotometry would be advantageous. Will develop concepts and techniques for tagging cell types and cell components on the basis of their biological specificity. Involves use of automated flow systems for cell analysis.

MOLECULAR BIOLOGY—Ph.D. required. Experience in nucleic acid hybridization both *in vitro* and *in situ*. Will work with an outgoing effort in RNA characterizations. (Post doctoral appointments—duration one to two years.)

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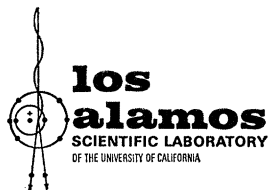
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IMMUNOLOGIST. Associate Professor. Individual must have proven outstanding research contributions in the area of cellular immunology. Background and research interests preferred: cell culture, metabolism of nucleic acids, proteins, and cyclic nucleotides. Present research area preferred is the regulation of antibody synthesis. The candidate should also have a broad background in molecular biology and an interest in biological regulatory mechanisms. The candidate should demonstrate an existing vigorous research program. The successful candidate would be expected to participate in the instruction of medical students, undergraduate and graduate students, and would also be expected to direct the research of graduate students and postdoctoral fellows. Ph.D. required. Postdoctoral experience strongly preferred. *Applications from qualified applicants are welcome: minorities and women are encouraged to apply.* The application deadline is 8 September 1975. Applications consisting of curriculum vitae and the names of three references should be sent to:

Dr. Paul S. Sypherd
Department of Medical Microbiology
University of California, Irvine
Irvine, California 92664

LECTURER, ASSISTANT RESEARCH NEUROPHYSIOLOGIST. To supervise undergraduate laboratory courses in psychobiology, teach lecture course in neural systems, and perform research on transmitter action in the hippocampus. Must have a doctorate, expertise in bioelectronics and experience in multibarrel iontophoretic techniques. Send résumé no later than 25 August 1975 to **Dr. N. M. Weinberger, Professor and Chairman, Department of Psychobiology, School of Biological Sciences, University of California, Irvine, Calif. 92664.** *Applications from all qualified candidates are welcome; applications from minorities and women are encouraged.*

The Faculty of Environmental Studies is seeking a **NATURAL SCIENTIST or ECOLOGIST** for graduate-level instruction in a transdisciplinary setting with students of varied backgrounds. Should have a strong interest in the applications of the principles of ecology and other natural sciences, in planning, impact assessment, and other intervention activities. Rank and salary commensurate with qualifications. Immediate appointment open. Write to **Professor A. Murray, Chairman, Appointments Advisory Committee, Faculty of Environmental Studies, Room 553, Scott Library, York University, 4700 Keele Street, Downsview, Ontario M3J 2R2.**

ORAL BIOLOGIST

Columbia University School of Dental and Oral Surgery is seeking a senior person as **Director** of the Division of Oral Biology. Extensive experience in research, clinical practice, dental teaching on pre- and postdoctoral levels, curriculum development, and administration required. Send résumé to **Dr. Irwin D. Mandel, Chairman, Oral Biology Search Committee, School of Dental and Oral Surgery, Columbia University, 630 West 168 Street, New York, N.Y. 10032.** *An Equal Opportunity/Affirmative Action Employer M/F.*

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Background in analysis and reduction techniques using film or digital data is required, and background in any of the following subjects is desired: general solar physics, MHD, plasma physics, stellar atmospheres, x-ray spectroscopy, and EUV spectroscopy. For further information contact: **Dr. G. William Curtis, High Altitude Observatory, National Center for Atmospheric Research, P.O. Box 3000, Boulder, Colorado 80303.** Telephone: 303-444-1550.

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PROFESSOR Department of Surgery

The University of Michigan Medical School is seeking a surgeon, Board-qualified in general surgery, for full-time position in Section of General Surgery. Should be interested in career in academic surgery, with special training or expertise in a specific clinical or investigative area in general surgery. Rank and salary commensurate with qualifications and experience. Code #300B0. Send résumé to **Box 353, SCIENCE.** *A Non-discriminatory, Affirmative Action Employer.*

POSITIONS OPEN

LUNG CELL BIOLOGIST

Research position for **Cell Biologist** to work as part of interdisciplinary effort oriented to further understanding of the effects of environmental and energy-related agents on lung tissue. Experience in biochemistry, autoradiography, histochemistry, and electron microscopy desirable. Opportunity to participate in graduate-level teaching. Send résumé to: **Dr. W. S. Taylor, Director, California Primate Research Center, University of California, Davis, Calif. 95616.** *The University of California is an Equal Opportunity Employer. We encourage applications from persons regardless of sex, ethnic, or racial background.*

POSTDOCTORAL LUNG RESEARCH PROGRAM

University of California at Davis postdoctoral fellowships available in lung biochemistry, physiology, and pathobiology for 1975-76 and 1976-77. Program designed primarily for those interested in interdisciplinary approaches to studies of lung diseases, especially those relating to environmental toxicology. Applicants must be committed to academic or research careers. Send résumé to: **Dr. C. E. Cross, Section of Pulmonary Medicine, School of Medicine, University of California, Davis, Calif. 95616.** *The University of California is an Equal Opportunity Employer. We encourage applications from persons regardless of sex, ethnic, or racial background.*

Ph.D. IN ORAL BIOLOGY

Applications from good honors graduates are invited for two predoctoral positions available immediately, each at \$4750 plus tuition waiver. Candidates should have a master's or bachelor's degree in biological sciences, microbiology, biochemistry, or chemistry. The successful candidates will work on the isolation and characteristics of lymphocyte and oral bacterial receptors specific for antibacterial components of saliva and gingival fluid. Applicants should send curriculum vitae, transcripts, and the names and addresses of three references to: **Dr. J. Pollock, School of Medicine, State University of New York at Stony Brook, Stony Brook, New York 11794.** *An Equal Opportunity/Affirmative Action Employer.*

PLANT CELL BIOLOGIST

Assistant or associate professorship available September 1976 for a plant biologist using electron microscopy as a major research tool. Must have demonstrated competence in research beyond doctorate and be interested in teaching cell and plant biology. Send curriculum vitae, names of three references, and description of current and future research plans to **Dr. V. Walbot, Department of Biology, Washington University, St. Louis, Mo. 63130.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL NATIONAL RESEARCH SERVICE AWARDS

POSTDOCTORAL POSITIONS are available on or before 1 September 1975 for studies on trace elements in prenatal and perinatal development and connective tissue metabolism. Stipends start at \$10,000. Applications are invited from individuals with D.D.S., M.D., D.V.M., or Ph.D. degrees in one of the biological sciences.

Send résumé and two letters of recommendation to the **Program Director, Dr. Lucille S. Hurley, or Dr. Robert B. Rucker, Department of Nutrition, University of California, Davis, California 95616.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS

Two postdoctoral positions immediately available for work related to a Radiation Oncology Program. One for a **Cell Biologist** with background in cell culture and interests in the cell cycle. The other for an **Immunologist** with interest in tumor immunology. Send résumés and names of references to: **Jesse E. Siskin, Ph.D., or Thomas L. Roszman, Ph.D., Department of Cell Biology, University of Kentucky, College of Medicine, Lexington, Kentucky 40506.** *The University of Kentucky is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION available at once for studies on the role of mitochondrial monoamine oxidase in the metabolism of biogenic amines. Experience in mitochondrial or membrane biochemistry and/or in biogenic metabolism is essential. Knowledge of and experience in ultrastructural approaches to membrane structure/function are desirable. Send curriculum vitae and letters of recommendation to: **John W. Greenawalt, Professor and Head, Department of Biochemistry, The University of Tennessee, Knoxville, Tenn. 37916.** *Affirmative Action/Equal Opportunity Employer*

POSITIONS OPEN

POSTDOCTORAL POSITION AVAILABLE

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Contact:

Dr. Douglas D. Davis, Associate Professor
Chemistry Department
Box 57
University of Maryland
College Park, Maryland 20742
Telephone: 301-454-2616

POSTDOCTORAL POSITION

Immediately available. Biochemist with background in enzyme purification and/or endocrinology required to participate in cancer research sponsored by NCI National Research Traineeship in collaboration with nuclear medicine. Starting salary \$10,000. Support for 1 to 3 years available. Send résumé to:

Dr. Merle Mason
Department of Biological Chemistry
The University of Michigan
Ann Arbor, Michigan 48104

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POSTDOCTORAL RESEARCH ASSOCIATE

Available immediately for recent Ph.D. in physiology, animal science, or biochemistry. Salary \$10,000 per year. Research on enzymology of sperm acrosomes. Experience with affinity chromatography, electrophoresis, and enzyme kinetics is necessary. Send curriculum vitae and letters of recommendation to **Dr. Duane L. Garner, Department of Physiological Sciences, Oklahoma State University, Stillwater, Oklahoma 74074.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE

Immediate openings in the following areas of research in our department: (i) effect of estrogen on the structure of chromatin; (ii) effect of insulin on liver plasma membrane; (iii) protein chemistry and sequence studies on glutamine aminotransferase; (iv) in vitro transcription and enzyme synthesis; (v) characterization of lysosomal phosphatase; (vi) lipoxigenase, prostaglandin synthetase, and other oxygenases. \$8,000 to 10,000 per year depending on experience. Send résumé applications with curriculum vitae, naming three references, to: **Jennie R. Johannesen, Department of Biochemistry, Purdue University, West Lafayette, Ind. 47907.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE. A position is available for an analytical chemist, chemical engineer, or bioengineer with experience in electrochemistry and an interest in biomedical applications. Problem area relates to the development of stable oxygen electrodes for chronic implantation studies. Send résumé and names of three references to: **Dr. R. E. Barr, Dalton Research Center, University of Missouri, Columbia, Missouri 65201.** *An Equal Opportunity/Affirmative Action Employer.*

The University of Lethbridge offers the following employment opportunity:

Position: POSTDOCTORAL RESEARCH FELLOW in physiological psychology (preferably with interest in hippocampal function).

Salary: \$850 per month with possible stipend for associated teaching in the Department of Psychology.

Commencement date: 1 September 1975.

Applications should be directed to: **Dr. Ian Whishaw, Department of Psychology, The University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4, Canada.**

The University of California, Irvine, College of Medicine has **POSTDOCTORAL RESEARCH POSITIONS** available in the Department of Medical Microbiology, in the areas of virology, immunology, regulation of mammalian cell growth, enzyme regulation in bacteria and mammalian cells, and microbial development, genetics, and metabolism. Applicants must have a Ph.D. and a background in the quantitative aspects of biochemistry, microbiology, or genetics. *Applications from all qualified candidates are welcomed; minorities and women are encouraged to apply.* Interested individuals should write: **Dr. Paul Sypherd, Department of Medical Microbiology, College of Medicine, University of California, Irvine, Irvine, Calif. 92664.**

**UNIVERSITY OF AUCKLAND
NEW ZEALAND**

SPELEOLOGICAL RESEARCH

Applications are invited for Tourist Hotel Corporation scholarships for doctoral research into conservation problems related to the glow-worm tourist caves at Waitomo. Applicants should state for which research field they wish to be considered, as follows:

1. Hydrology and sedimentation
2. Ecosystem of the glow-worm (*Arachnocampa luminosa*)
3. Cave flora (Lampenflora)

Qualifications Required

First or upper second class honours degree

Applications

Closing date August 1975

Information

Professor P. W. Williams, Department of Geography, University of Auckland, Private Bag, Auckland, New Zealand.

MICROBIOLOGIST (Fermentation)

Group Leader to direct research program in microbiology. Activities include: isolation of new microorganisms, exploration of capabilities in fermentation of usual and unique substrates for production of antitumor substances and application of microbial systems to the induction of chemical change in novel compounds for production of antitumor agents.

Candidate should have Ph.D. in Microbiology with extensive biochemical training and emphasis on a minimum of 5 years productive experience in fermentation research and development.

Well equipped laboratory, fermentation and pilot plant facilities, an extensive scientific library, and professional computer support available.

Send resume with current salary to:

**D.S. Loker, Personnel Mgr.
Frederick Cancer Research Center
P.O. Box B
Frederick, MD. 21701**

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DIRECTOR OF VIRAL ONCOLOGY

Unusual opportunity to provide scientific leadership to an ongoing, multi-faceted program of research in viral oncology and to conduct a personally directed research project in his/her area of expertise. Will be closely associated with colleagues in immunobiology and chemical carcinogenesis. Excellent laboratory facilities, a good scientific library, an extensive experimental animal farm and other related support activities are available.

Candidates should have a doctorate degree in one of the biomedical sciences and a minimum of 10 years' subsequent experience. Evidence must be presented of research originality and productivity.

The successful candidate will be offered a liberal salary, attractive benefits and relocation expenses.

Letters of application, accompanied by a comprehensive curriculum vitae, complete bibliography, and three references will be accepted until Sept. 5, 1975.

All correspondence should be addressed to:

**Dr. Robert E. Stevenson
Chairman, Search Committee
Litton Bionetics, Inc.
Frederick Cancer Research Center
Post Office Box B
Frederick, Maryland 21701**

An Equal Opportunity Employer, M/F

**ASSOCIATE DIRECTOR
For Clinical Care, NIH**

and

**DIRECTOR,
The Clinical Center**

The National Institutes of Health invites nomination and applications for the position of Associate Director for Clinical Care, NIH/Director, The Clinical Center. The Clinical Center is a 500 bed research hospital in which 10 research Institutes conduct clinical investigations. The incumbent is responsible for the leadership and direction of this program, and for advising the Director, NIH on policies relating to clinical research.

Applicants should have a doctorate in medicine and demonstrated achievement in clinical research. The position requires a high degree of scientific knowledge, leadership and executive ability.

Position will be filled by appointment to the U.S. Public Health Service Commissioned Corps or to a top U.S. Civil Service grade. Salary will range between \$36,000 and \$45,000 depending on qualifications. Letters of interest, curriculum vitae, and bibliography should be sent to the Chairman of the Search Committee:

**Dr. Phillip Gordon, Clinical Director
National Institute of Arthritis, Metabolism and
Digestive Diseases**

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OF HEALTH**

Public Health Service

Building 10, Room 9N-222, Bethesda, Maryland 20014

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POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE position in biochemistry available September 1975 for the study of the structure of articular cartilage. A background in the biochemistry of connective tissues is required and a specific knowledge of the chemistry of glycoproteins, protein-polysaccharides, and collagen desirable. Please send résumé and letters of recommendation to **Dr. David A. Swann, Massachusetts General Hospital, Fruit Street, Boston, Massachusetts 02114.**

POSTDOCTORAL TRAINEESHIPS available 1 September 1975 in general areas of cellular and developmental biology. Send curriculum vitae, transcripts, three letters of recommendation, and brief statement of research interests to: **Dr. Thad Pittenger, Biology Division, Kansas State University, Manhattan, Kansas 66506. An Equal Opportunity/Affirmative Action Employer.**

RADIOBIOLOGIST and TUMOR IMMUNOLOGIST. Two postdoctoral positions available to (i) study radiation effect on tumor circulation and cell kinetics and (ii) investigate radiation effect on host immune mechanism against tumors. Send résumé and three references to: **Dr. C. W. Song, Department of Therapeutic Radiology, University of Minnesota Medical School, Minneapolis, Minn. 55455.**

REPRODUCTIVE ENDOCRINOLOGIST in the Division of Reproduction, Institute of Comparative Medicine, Texas A & M University/Baylor College of Medicine. The position is research-oriented with some teaching and graduate education duties. The applicant will be expected to develop a research program. Applicants should have experience in the latest techniques of hormone assays; equipment to perform these assays is available. The faculty position is at the Assistant or Associate Professor level with a salary range of \$18,000 to \$21,000, depending on experience. *The Institute is an Equal Opportunity Employer* and all applicants who believe they qualify are invited to contact **Dr. Stephen W. J. Seager, Institute of Comparative Medicine, Baylor College of Medicine, Houston, Texas 77025.**

RESEARCH ASSOCIATE IN PHYSIOLOGY

Ph.D. or equivalent. Project entails isolation and purification of neurophysin proteins, production of antibodies, and radioimmunoassays. Position to be filled April 1976 or later, contingent upon continued federal support.

Reply to: **Heinz Valtin, M.D., Department of Physiology, Dartmouth Medical School, Hanover, N.H. 03755.**

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RESEARCH POSITION. Seeking Ph.D. or M.D. with experience in microelectrode techniques to direct a fully equipped electrophysiology laboratory located in the Department of Cardiology. Salary commensurate with training and experience. Federal Civil Service position with fringe benefits available to qualified applicant. Send inquiries including curriculum vitae to: **Anthony N. Damato, M.D., U.S. Public Health Service Hospital, Staten Island, New York 10304.**

RESEARCH SCIENTISTS CAWTHRON INSTITUTE Nelson, New Zealand

This Institute is expanding its small research group working on the microbial transformations of organic materials of concern in waste utilization and in soil and water quality, and requires two research scientists.

MICROBIOLOGIST with broad background and experience in industrial fermentations, waste utilization and treatment, and aquatic microbiology.

MICROBIAL BIOCHEMIST preferably with qualifications and experience in the isolation and study of microbial enzymes.

Applicants must have a Ph.D. in microbiology and/or biochemistry and must have proven ability to carry out creative, independent research.

The positions are permanent and salaries will be in the scale \$NZ6,287 to \$NZ13,700 depending on qualifications and experience. Applications from experienced research leaders will be welcomed.

A superannuation scheme and travel assistance is available.

Applications (three copies) including a curriculum vitae, photograph, and the names of three professional referees should be addressed to the **Director, P.O. Box 175, Nelson, New Zealand.**

Closing date: 31 August 1975.

POSITIONS OPEN

POSTDOCTORAL TRAINEESHIPS ENVIRONMENTAL SCIENCES/STATISTICS

The Departments of Oceanography and Statistics at the Florida State University invite applications for two postdoctoral NIH traineeships from individuals interested in an interdisciplinary program of study in environmental health measurement and statistics. One position is available for a Ph.D. in a basic science and one for a Ph.D. in statistics or biostatistics. Informal inquiries are encouraged. Apply to the program director: **Professor F. W. Leyieffer, Department of Statistics, Florida State University, Tallahassee, Florida 32306. Telephone: 904-644-3034. Closing date: 15 September 1975.**

An Equal Opportunity/Affirmative Action Employer

SCIENCE POSITION OPENED

A **Virologist or Immunologist Research Associate (Ph.D.)** to join an active research team with major emphasis on viral mediated autoimmune disorders. Duties will include studies of cell mediated immunity against viruses and quantitative studies of MIF. Previous experience in viral, immunological, and tissue culture techniques are desirable. This is a 2- to 3-year appointment starting 1 September 1975 with a salary of \$12,000 to \$14,000 depending upon experience. Send curriculum vitae and letters of recommendations to **Shih-Wen Huang, M.D., Division of Pediatric Research, University of Maryland Hospital, 29 South Greene Street, Baltimore, Maryland 21201.**

NEW ZEALAND FOREST SERVICE SCIENTIST PROTECTION FORESTRY DIVISION FOREST RESEARCH INSTITUTE, RANGIORA

Applications are invited for the above position. Commencing salary up to \$12,941 (NZ) per annum depending on qualifications and experience.

Qualifications desired: Interdisciplinary postgraduate background in geology, hydrology, soil engineering, and physical geography. Headquarters will eventually be transferred to Ilam Campus, University of Canterbury, New Zealand.

Application forms and details of passage assistance may be obtained from **The New Zealand Embassy, 19 Observatory Circle, NW, Washington, D.C. 20008**, with whom applications close on 8 October 1975. Please quote Vacancy No. 9/75/3660.

Further particulars about the position may be obtained from the **Director, Protection Forestry Division, Forest Research Institute, P.O. Box 106, Rangiora, New Zealand.**

STAFF POSITION in small primate oncornavirus research group at National Cancer Institute currently available for recent Ph.D. and/or M.D. with proven ability in mammalian somatic cell hybridization, cytogenetics, and competition radioimmunoassay. Salary range approximately \$15,000 to \$29,000 yearly depending upon experience and credentials. Also **TISSUE CULTURE TECHNICIAN** for above with master's degree, publications, and at least 5 years of experience with oncornaviruses. Salary approximately \$12,000. Send curriculum vitae and references to **Box 333, SCIENCE.**

STATISTICIAN

Ph.D. in statistics with 2 or 3 years of experience in consulting or M.S. or M.A. in statistics and 6 or more years in industrial consulting or equivalent. Knowledge and application of computer methods to statistical problems. Particular knowledge of analytical methods in time series, stochastic processes, regression, and experimental design. Consulting topics involve chemistry, physics, engineering, and nuclear science. Excellent progression potential in newly formed organization.

Mail Application (Standard Form 171—available at most Federal Offices) or résumé including salary history to:

**U.S. Nuclear Regulatory Commission
Division of Organization and Personnel
Recruitment Branch
Washington, D.C. 20555**

An Equal Opportunity Employer
U.S. citizenship required.

POSITIONS OPEN

VIROLOGIST—Molecular Biologist. A full-time faculty position. Applicant must have a Ph.D. or equivalent degree and strong postdoctoral experience in molecular and/or biochemical aspects of animal viruses, and be capable of developing an independent research program, preferably dealing with some aspects of tumor viruses. Teaching duties include participation courses for medical and graduate students. Send curriculum vitae and references to **Dr. Gerald D. Shockman, Chairman, Department of Microbiology and Immunology, School of Medicine, Temple University, Philadelphia, Pa. 19140. An Equal Opportunity/Affirmative Action Employer.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS (NRSA)

The Department of Physiology has postdoctoral research positions (\$10,000–\$13,200) available in the area of trauma and shock research. The 2-year NIH-supported trauma training program is structured in an interdisciplinary manner between physiology and surgery and is specifically designed for individuals (Ph.D. or M.D.) who plan basic or clinical academic careers with an orientation toward trauma. Areas of research training include cardiac, peripheral vascular, pulmonary, reticuloendothelial host defense, endocrine, and cellular metabolic studies as well as immunologic aspects of resistance to sepsis. Fellows will have experience in the human shock unit in monitoring of physiological variables in patients. Send curriculum vitae to:

**Dr. Thomas M. Saba, Ph.D.
Professor and Chairman
Department of Physiology
Director of Training Program
Albany Medical College
Albany, N.Y. 12208**

An Equal Opportunity Employer

POSTDOCTORAL FELLOWSHIPS CLINICAL PHARMACOLOGY JOHNS HOPKINS

Research positions in clinical pharmacology are currently available for qualified M.D.'s or Ph.D.'s. Areas of faculty research include: mechanism of action and toxicity of chemotherapeutic agents, pharmacokinetics, hormone receptor interactions, developmental pharmacology, cardiovascular pharmacology and drug metabolism. Salaries are provided through NIH stipends. Applicants should send a curriculum vitae, list of publications, and names of three references to **Dr. Paul S. Lietman, Director, Division of Clinical Pharmacology, Johns Hopkins University School of Medicine, Baltimore, Maryland 21205.**

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Western Electric Reports:

Moving phone calls bit by bit.

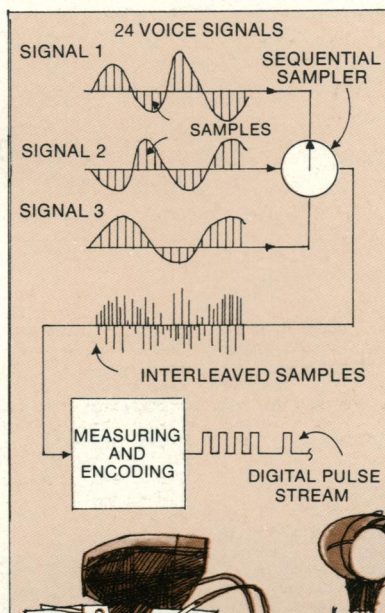
To meet the growing demand for communications facilities, the people at Western Electric and Bell Labs have developed digital techniques, which dramatically increase the number of phone calls that can be carried over existing wires.

In digital communications, a voice signal is sampled 8,000 times a second. Each sample represents the amplitude of the voice's wave pattern on a scale from 1 to 256. This measurement is coded in binary form as a series of pulses or "bits." And the code is transmitted to the receiving end where it's decoded to faithfully recreate the voice. Because this is a sampling technique, the pulses representing a number of voice signals can be interleaved. For example, the T1 System, workhorse of the Bell System's evolving digital network, transmits 24 simultaneous conversations on two pairs of wire.

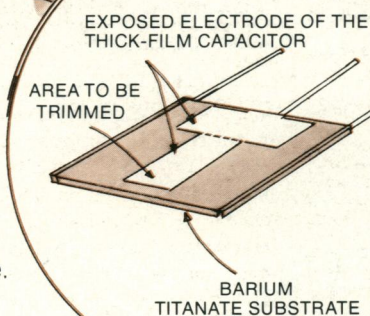
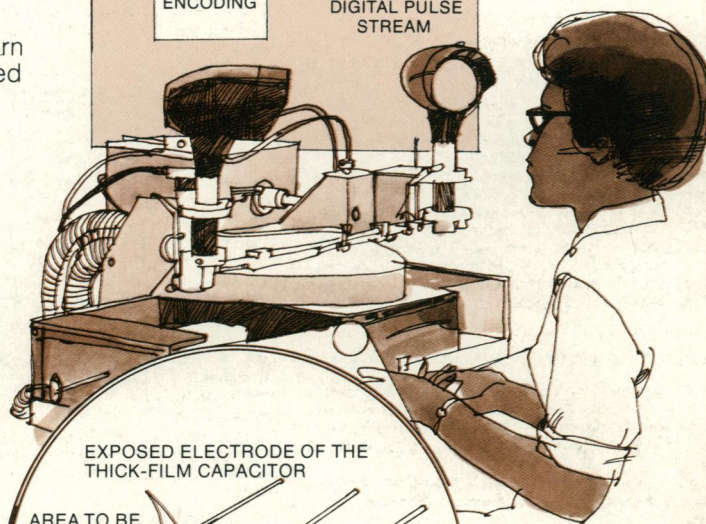
Development of digital techniques has demanded close coordination between designer and manufacturer. Interleaving 24 conversations on wire pairs originally intended to carry a single voice signal meant designing the T1 System to fit the characteristics of cable already in place. It meant manufacturing components that operate with clockwork precision, since the system must transmit a "bit" precisely every 648 nanoseconds. (The time it takes light to travel about 650 feet.) And because the stream of pulses must be regenerated at about one mile intervals—often in manholes under busy city streets—the components must be extremely stable.

Engineers at Western Electric's plant in Massachusetts are working with Bell Labs on a wide range of design and manufacturing innovations. For example, previous timing circuits used in the regenerator for the T1 System were tuned manually. Western Electric engineers have developed a computerized process that tunes the circuits faster and more accurately. Meanwhile, Bell Labs has developed even higher capacity digital systems. The latest can interleave 4,032 simultaneous conversations on a pair of coaxial conductors.

Benefit: Digital communications techniques are one more way the Bell System is working to meet your communications needs reliably and economically.

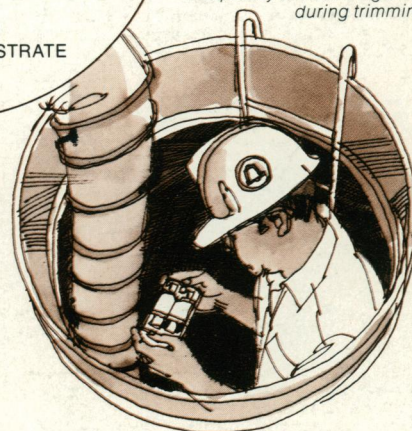


The T1 System samples 24 voice signals and encodes the measurements in binary form for transmission over a conventional pair of telephone wires as a stream of pulses.



The timing circuit is an inductor-capacitor. It is brought to a specific frequency by abrading the exposed electrode of the thick-film capacitor. A computer controls the process by measuring the frequency of the timing circuit during trimming.

The automatically adjusted timing circuit helps make the latest regenerator smaller, less expensive and even more reliable than its predecessors.



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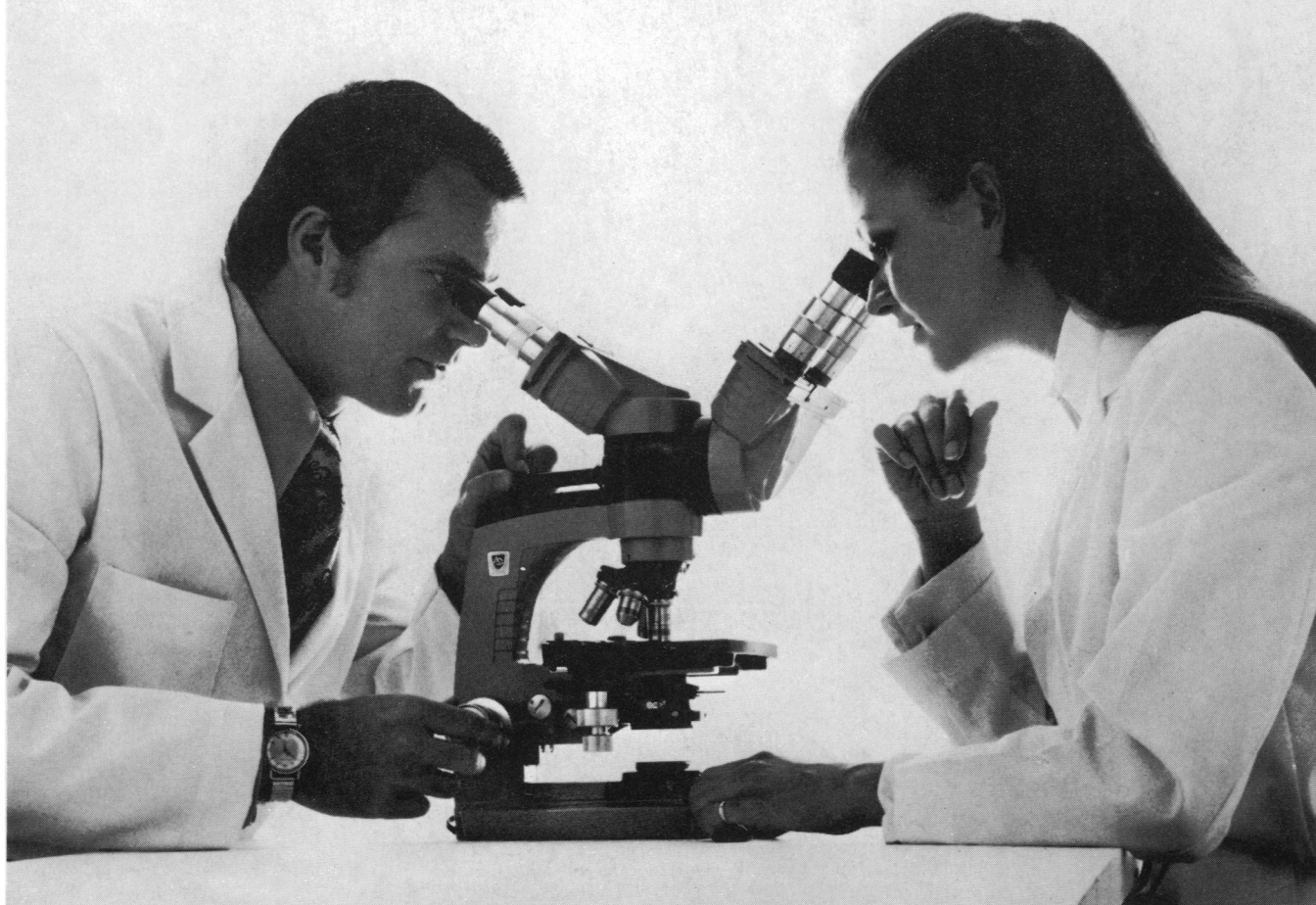
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