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The Future of Development. Peter Heintz with the assistance of Suzanne Heintz. Huber, Bern, Germany, 1973. 152 pp., illus. Paper, 19 F.


Injuries of the Brain and Spinal Cord and Their Coverings. Emanuel H. Feiring,
FLOW VISUALIZATION
by WOLFGANG MERZKIRCH

This unique book covers virtually every widely used technique for visualizing flows in experimental fluid mechanics, aerodynamics, chemical engineering, and heat transfer studies. Flow visualization gives quantitative flow data, as well as a qualitative picture of a flow pattern; most of the techniques described yield quantitative flow data without disturbing the flow because of the presence of a measuring element. The methods discussed are: optical techniques for compressible flows, marking flow fields by heat and energy addition, and adding foreign particles into gaseous and liquid fluid flows. The book emphasizes the physical principles underlying each method, and uses flow pictures to illustrate the various techniques. It also includes an extensive bibliography for those interested in the details of technical performance.

1974, 266 pp., $26.00/£12.50

GENETIC AND ANTHROPOLOGICAL STUDIES OF OLYMPIC ATHLETES
edited by ALFONSO L. DE GARAY, LOUIS LEVINE, and J. E. LINDSAY CARTER

Most people went to the 1968 Olympic Games in Mexico City to watch and cheer. The scientists who have prepared this lavishly detailed volume had something else in mind as well: to make the most comprehensive study ever of the biology of athletes—especially their genetic and anthropological characteristics. The resulting work is remarkable not only for its depth of treatment, but also for what is perhaps the first such study of women athletes, and a unique analysis of racial differences within specific athletic events. About 1,265 athletes from 92 countries volunteered to cooperate with the project, along with 370 nonathletes from Mexico who were used in a comparative group. The investigations were arranged into three main categories: (1) Family studies—intended to reveal any possible roles of parents and siblings in the development of the athlete's career; (2) Anthropological analyses—involving perhaps the most comprehensive series of body measurements ever attempted on so large a number of athletes; and (3) Genetic characterizations—including studies of sex chromatin, chromosomes, blood groups, blood proteins, taste sensitivity to PTC, and finger and palm prints. A detailed model has been constructed of the type of body build that is best suited for each sport specialty. This model should prove most helpful in the selection of the particular specialty for which an individual is most highly adapted.

1974, 250 pp., $14.50/£6.95

Second Edition
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edited by DOUGLAS MacN. SURGENOR

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1974, 626 pp., $45.00/£21.60

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**Invertebrate Endocrinology and Hormonal Heterophily.** Walter J. Burdette, Ed. Springer-Verlag, New York, 1974, xviii, 438 pp., illus. $22.80.


**The Kielian Aura.** Photographing the Galaxies of Life. Stanley Krippner and Daniel Rubin, Eds. Anchor (Doubleday), New York, 1974, 208 pp., illus. Paper, $3.95.


**Man's Finite Earth.** Russell O. Utgard and Garry D. McKenzie, Eds. Burgess, Minneapolis, 1974, xiv, 368 pp., illus. $4.95.


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<table>
<thead>
<tr>
<th>Age at Issue</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Premium (Payable only 16 years)</td>
<td>$268.00</td>
<td>$318.00</td>
<td>$413.00</td>
<td>$580.00</td>
</tr>
<tr>
<td>Cash Dividend End of First Year*</td>
<td>122.00</td>
<td>133.00</td>
<td>154.00</td>
<td>191.00</td>
</tr>
<tr>
<td>First Year Net Premium</td>
<td>$146.00</td>
<td>$185.00</td>
<td>$259.00</td>
<td>$389.00</td>
</tr>
</tbody>
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Oakland, Calif., 94623

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State Archeologist - Iowa

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Iowa City, Iowa 52242

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Assistant Professor and Assistant Biometrician, Departments of Animal Science (25 percent) and Agronomy and Range Science (25 percent) at the University of California at Davis. Teaching 60 percent; research 40 percent. Ph.D. in biometrics or applied statistics desired. Salary $18,900. Interested parties should submit writing and experience in more than one of dynamic programming, operations research, systems analysis, biometrics, and/or toxicologic interest or training and experience in animal science, range management, nutritional biological disciplines. Send complete curriculum vitae with three references to R. H. Baldwin, Department of Animal Science, or W. W. Williams, Department of Agronomy and Range Science, University of California, Davis, Calif. 95616. Closing date: 1 October 1974.

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Immediate opening for postgraduate research biochemist with training in immunology and/or protein chemistry. Send curriculum vitae and references to:

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Chairman, Department of Chemistry, University of Washington, to begin as early as 30 June 1975. Applications, nominations, or letters of inquiry should be sent to Professor Edward Meek, Chairman, Search Committee, Physics Department, Box 351, University of Washington, Seattle, Washington 98195. Applications should include a curriculum vitae, other qualifications, and the names of four or more references. An Equal Opportunity/Affirmative Action Employer.

Commonwealth of Australia

As part of a general review of the fishing industry in the Northern Territory, the Department of the Northern Territory requires the services of a

Consultant Resource Economist
to examine data on existing and potential fish resources around the Northern Territory and to advise on future development strategies for the industry in the following situations:

1) Maximum development within a framework of specified controls, such controls to include current Northern Territory legislation and policy, together with other controls imposed on the industry by Commonwealth policies in respect to Taxation, Immigration, Transport, Education, and so forth.

2) Unrestricted maximum development. The study is to be restricted to resources for which background information has been collated and does not extend to aquaculture. In particular, the consultant shall assess the extent of desirable development to a given level of availability of particular resources.

• Management strategies to achieve these rates.

• Economic advantages or disadvantages of diversification of fishing activity.

• Existing wage structures and modifications which may arise under guidelines proposed from the study.

Applications should be prepared to commence study in 1974 for completion over a period of approximately 3 months, and it is envisaged that the successful applicant will spend an appropriate amount of time in the Northern Territory in consultation with local industry. Further details including a synopsis of the fishing industry on the Northern Territory and a detailed list of all available source material are available from:

The Executive Member
Northern Territory Fishing Industry Review Committee
P.O. Box 649, Northern Territory, 5794, Australia

Applications should include appropriate personal details, summary of experience and any relevant publications, period available together with full estimate of fees and costs including expenses of traveling within the Northern Territory of Australia, living expenses, office accommodation, and transportation. Closing date: 8 October 1974.

Address proposals to:

Assistant Director (Supply)
Department of the Northern Territory
P.O. Box 4975, Darwin
Northern Territory, 5794, Australia

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All inquiries will be accepted as potential proposals.

Newfoundland University of Science, Vol. 185

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Send curriculum vitae and three references to: Dr. Robert B. Utter, Department of Psychology, University of Michigan, Ann Arbor, Mich. 48104. A Non-discriminatory, Affirmative Action Employer.

FACULTY POSITION

The University of Tennessee-Oak Ridge Graduate School of Biomedical Sciences seeks applicants for at least one position in Pathology or a related area. Research affiliation with the Biology Division, Oak Ridge National Laboratory, Rank and salary depend on qualifications. Applications should be submitted by 31 August 1974, and interviews are expected to be conducted during September 1974. Send curriculum vitae and three references to: Dr. Robert Patterson, Committee, University of Tennessee-Oak Ridge Graduate School of Biomedical Sciences, Biology Division, Oak Ridge National Laboratory, P.O. Box Y, Oak Ridge, Tenn. 37830.

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ANNouncements and applications are invited for the position of Associate Dean. This is a five-year term position beginning as of 1 July 1975. Applications will be received until 31 August 1974.

Send curriculum vitae and three references to: Mr. P. B. Blevins, Executive Director, University Hospital, 339 Windermere Road, London, Ontario.

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Applications for this position are being invited from candidates with a record of success as a dean or Head of a Veterinary School or equivalent.

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Send curriculum vitae and three references to: Dr. Robert B. Utter, Department of Psychology, University of Michigan, Ann Arbor, Mich. 48104. A Non-discriminatory, Affirmative Action Employer.

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Position available in Department of Neurology, University of Arizona, Tucson. Must be Board certified or eligible with excellent clinical abilities, and have demonstrated abilities in teaching. The candidate must be experienced in the conduct of research in any area of neuroscience. Applications, in confidence, should be addressed to: Dr. Richard O. Stone, Chairman, Department of Neurosciences, University of Southern California, Los Angeles, California 90007.

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SCIENCE, VOL. 185
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The duties and responsibilities of the post include (1) to assist in the establishment of a fish hatchery/demonstration fish farm station; (2) to set up and demonstrate modern methods of aquaculture in fish cages; (3) to train counterpart personnel and fish farmers in the techniques of pond and cage fish culture.


Further details can be obtained from the Personnel Officer, Department of Fisheries, FAO, Rome. Closing date for receipt of applications: 15 September 1974.
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DUTIES: The appointee will participate in the departmental teaching activities, including the organising and supervision of laboratory exercises for undergraduate students.

It is anticipated, but not essential, that the appointee’s research interests relate to one of the fields being studied at present in the Department. These include: Neurophysiology; Renal, Respiratory and Cardiovascular function; Haematology and Physiology of the nervous system with emphasis on sensory processes.

SALARY: Lecturer $9,002–$12,352

COMMENCING DATE: 1 January 1975, or as soon as possible thereafter.

Further details may be obtained from Professor W.F. Darian-Smith, Department of Physiology. Details of application from the Registrar, University of Melbourne, Parkville, 3052 Australia. Applications referring to position Number 530614 should be addressed to the Registrar and close on 6 September 1974.

MURDOCH UNIVERSITY
Western Australia

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Duties include: Teaching; participation in the first part of the veterinary biology programme leading to an understanding of the animal. It starts with concurrent themes on the BODY AS A WHOLE and CELL BIOLOGY followed by an integrated study of BODY SYSTEMS. Research: candidates will be expected to have an active research interest either in general cell biology or in one or more of the body systems.

Level of appointment: One of the Anatomy/Histology vacancies is at a senior level. The other appointments will be in the scales of Lecturer or Senior Lecturer. Present salary scales are: Lecturer $9,002–$12,352; Senior Lecturer $12,645–$14,724; Associate Professor $16,389.

General Information: 48 veterinary students will enter this phase of the course in March 1976. The Head of the Veterinary School is Professor R. H. Dunstan who will direct the Division of Veterinary Biology. The Division of Veterinary Biology will be Dr. J. McC. Rowell, presently at the University of Liverpool. The Chair in Physiology will be held by Dr. A. W. Dacre, University of Sydney. You will coordinate the study of the animal and be available to commence at various times during 1975.

Further information is available from the Secretary, Murdoch University, Murdoch, Western Australia 6150 or from the Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.

Applications close on 30 September 1974.

NEW ZEALAND

UNIVERSITY OF CANTERBURY
CHRISTCHURCH

The Council of the University invites applications for the following vacancy.

SENIOR LECTURER IN ELECTRICAL ENGINEERING

Applications should possess a higher degree and experience in the design of electronic systems related to the broad field of Bio-engineering, and the interfacing of such systems to computers. The salary for Lecturers is on a scale from NZ$9,736 to NZ$13,539 per annum; for Senior Lecturers NZ$11,153 to NZ$14,684 per annum. Further particulars including information on travel and removal allowances, study leave, housing, and superannuation may be obtained from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

Applications close on 31 August 1974.

DEPARTMENT OF ENTOMOLOGY
OREGON STATE UNIVERSITY

The Department of Entomology at Oregon State University invites applications for a position at the Assistant Professor level in the fields of pest management and crop protection entomology. The position is open immediately. Completed applications are desired as soon as possible, but will be accepted for consideration until 15 September or until the position is filled, whichever is later. The position is a three-Quarter Affective Action Equal Opportunity Employer and encourages applications from women and minority group members. For further information about the Department and the position requirements, write:

Paul Oman, Acting Head
Department of Entomology
Oregon State University
Corvallis, Ore. 97331

POSTDOCTORAL POSITIONS

Available immediately, in Laboratory of Neurochemistry to investigate proteins and lipids of myelin and relationships to demyelinating diseases. Send curriculum vitae to Chairman, Department of Neurology, Medical University of South Carolina, Charleston, S.C. 29401. An Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF QUEENSLAND
READER IN ANATOMY

Applications are invited from applicants with research interests in cytology, histochimistry or neuroanatomy. (Quote Reference No. B48074)

LECTURER IN ANATOMY

Applications are invited from applicants with research interests in embryology, or physical anthropology. (Quote Reference No. B48174)

GENERAL CONDITIONS:

Salary: Reader $16,389 per annum; Lecturer $9,002–$12,352 per annum.

Other Benefits: Superannuation similar to FSSU, housing assistance, study, leave, and travel and removal expenses.

Additional information and application forms are obtainable from the Staff Office, University of Queensland, St. Lucia, Qld., Australia, 4067, with whom applications close on 13th September 1974.

LAKEHEAD UNIVERSITY
THUNDER BAY, ONTARIO, CANADA

Nutrition and Food Science

Applications invited for position, rank open, in Nutrition Science. Ph.D. or equivalent, with concentration in community nutrition preferred. To teach undergraduate courses, conduct research and assist in curriculum development.

Salary commensurate with experience and rank. 1974 Boors: Professor $21,630; Assistant Professor $17,235; and Assistant Professor $13,865.

Send curriculum vitae and names of three referees to:

Dr. Robert Gwynn, Department of Psychology, University of Texas Medical School, Houston, Texas 77023.

POSTDOCTORAL POSITION

September 1974. Biochemical investigation of interaction of ethanol with phospholipid metabolism. Research ranges from basic biochemistry to the study of liver and brain metabolism in vivo. Background in enzymology desirable. $10,500 per year. Send curriculum vitae and references to: Dr. Robert Gwynn, Department of Psychology, University of Texas Medical School, Houston, Texas 77023.

POSTDOCTORAL POSITION

September 1974 to work on Human Cell DNA Polymerases. $12,000 per year. Send curriculum vitae and reference letters to: Dr. Srivastava, Roswell Park Memorial Institute, Buffalo, New York 14203.

POSTDOCTORAL RESEARCH

Position immediately available for individual with training in Molecular Biology, background in Microbial and Physiogenetics and an interest in the role of cyclic nucleotides in regulation in bacteria. Send curriculum vitae and two references to Seymour Werthamer, M.D., Director, Department of Pathology and Clinical Laboratories, The Methodist Hospital, 506 Sixth St., Brooklyn, N.Y. 11215.

RESEARCH ASSOCIATE IN APPLIED PHYSICS

DEPARTMENT OF PHYSICS
UNIVERSITY OF GUELPH

Immediate opening for a one year research position associated with two closely related government contracts. Experience in programming (FORTRAN and assembler) and light scattering (photon counting). Some familiarity with physical chemistry of polymer solutions would be useful, but not necessary.

Apply to the Chairman, Department of Physics, University of Guelph, Guelph, Ontario, Canada N1G 2W1.
**BIOLOGICAL MARKERS**
**PROJECT DIRECTOR Ph.D. or M.D.**

Our client is a major research and development laboratory — fully funded in collaboration with the National Cancer Institute.

The project executive will direct a research center for the analysis of established biological markers in body fluids and for finding and developing new markers for specific cancerous diseases. Anti-tumor drugs and their metabolites in body tissues will be determined. The research center will also develop new analytical techniques for these purposes. Director will manage programs of diverse scope, involving substantial numbers of personnel.

Qualified candidates must have 3 to 5 years' managerial experience in a pharmacological or clinical laboratory, and at least 10 years of post-doctoral and established research investigative experience.

Candidates will be familiar with a broad range of analytical tools in pharmacological and biochemical research — e.g., mass spectrometry, gas chromatography, trace metal analysis, high pressure liquid chromatography, amino acid analysis, and radioimmunoassay.

Outstanding compensation and benefits.

Send vitae and salary desired to: James P. McKenna, Vice President.

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**ASSOCIATE DIRECTOR FOR DIABETES, ENDOCRINE, AND METABOLIC DISEASES**

The Public Health Service, National Institutes of Health, National Institute of Arthritis, Metabolism, and Digestive Diseases, Bethesda, Maryland, invites applications for the position of Associate Director for Diabetes, Endocrine, and Metabolic Diseases, GS-602-16, salary range $32,806 to $36,000 per annum. Duties will include planning and direction of programs of support for research and training in the diagnosis, prevention, and treatment of diabetes mellitus and related endocrine and metabolic diseases. M.D. with Board Certification in Internal Medicine, and extensive experience in basic or clinical investigations in this area mandatory. Must have held position involving program development and direction in this area, and have recognized leadership ability. Must also be a citizen of the United States.

Forward resume or Federal Application Form SF-171 no later than 27 September 1974, to: Mrs. June Ardizzone, Personnel Officer, Bldg. 31, Room 9A-34, National Institute of Arthritis, Metabolism, and Digestive Diseases,

NATIONAL INSTITUTES OF HEALTH
Public Health Service
Bethesda, Maryland 20014

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**TOXICOLOGIST**
**DRUG SAFETY EVALUATION**

The Endo Laboratories Department of Toxicology is seeking a qualified Ph.D. with industrial experience for a position as Toxicologist or Senior Toxicologist. The position will involve direct responsibility for all aspects of in-house acute, subacute and chronic toxicity studies of new drug candidates. Applicants should have an active research interest in general toxicology and the ability to communicate research findings quickly and effectively.

You will join a major pharmaceutical company, in our Nassau County, Long Island, New York, headquarters. Convenient to all transportation facilities and easy access to New York City and all its cultural activities.

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*Please send résumé in confidence to:*

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  - $60 Airlift to Europe, North Africa, Near East

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23 AUGUST 1974
Applications for the above-mentioned appointment are invited from graduates with a first-class or upper division second-class honours degree in Botany, and Forestry or Agriculture graduates whose courses of study have included at least four years and who have had appropriate research experience. The Fellowship, financed by the Forests Department of Western Australia, will be tenable for one year, initially with prospects of renewal for up to two further years. The value of the Fellowship is $43150 per annum. The Fellow will be required to undertake research in a field covering mycological, physiological or ecological aspects of tree growth in relation to the use of coniferous, oak or other such fields as may be prescribed. Further information may be obtained from the Head of the Department, Professor J. S. Pate, in the first instance.

Applications in triplicate stating personal particulars, academic record, research experience, work proposed, etc., should be addressed to the Staffing Officer, University of Western Australia, Nedlands, Western Australia 6009, by 31 December 1974. Candidates should request two academic referees to write immediately to the Staffing Officer.

Conditions of Appointment obtainable from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H OPF.

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**UNIVERSITY OF WESTERN AUSTRALIA**

Perth

**FORESTS DEPARTMENT POSTGRADUATE RESEARCH FELLOWSHIP IN BOTANY**

Applications are invited for a Postdoctoral Fellowship in Botany. Candidates must have a Ph.D. or D.V.M. degree in botany or a closely related field. The research will be in the area of plant pathology and disease control. Applications are invited from candidates with a strong background in the area of plant pathology and disease control. The fellowship is tenable for up to three years and will be awarded on the basis of academic excellence. The fellowship will provide a competitive salary and benefits. Applications should be sent to the Head of the Department of Forest Sciences, University of Western Australia, Nedlands, Western Australia 6009, by 31 December 1974. Further information may be obtained from the Staffing Officer, University of Western Australia, Nedlands, Western Australia 6009.

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**UNIVERSITY OF NEW ZEALAND**

Christchurch

**UNIVERSITY OF CANTERBURY**

**CHAIR OF ELECTRICAL ENGINEERING**

The Council of the University invites applications for a Chair of Electrical Engineering, which is the third Chair established in the Department. Candidates should have a strong research background and broad experience in Electrical Power Systems. The appointee will be expected to develop the subject in relation to the special problems encountered in New Zealand and the opportunities these offer, as well as advancing any other interests he may have. At present the salary for a Professor is within the range of NZS 15,111 to NZS 15,233 per annum. The minimum salary in consequence of the above may be increased as a result of the review of individual professorial salaries which the University makes at the beginning of each year. Particulars, including information on travel and removal allowances, study leave, housing and superannuation may be obtained from the Secretary General, Association of Commonwealth Universities, 36 Gordon Square, London WC1H OPF.

Applications close on 31 October 1974.

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**POSTHIGHER TRAINING IN CARCINOGENESIS RESEARCH**

The University of Tennessee–Oak Ridge Graduate School of Biomedical Sciences and the Carcinogenesis Program of the Biology Division, Oak Ridge National Laboratory invites applications from recent Ph.D. or D.V.M. degree candidates for postdoctoral training in carcinogenesis. Successful applicants will join an integrated, interdisciplinary research program involving pathology, immunology, genetics, physiology, organic and analytical chemistry, biochemistry, and biophysics. Openings available immediately. Application information and application forms write: Training Office, The University of Tennessee–Oak Ridge, Oak Ridge National Laboratory, P.O. Box Y, Oak Ridge, Tennessee 37830.

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**RESEARCH ASSOCIATE**

Two protein biochemists and one bioorganic chemist interested in the areas of cellular metabolism, immunology, and molecular biology. The biochemists will be involved in research on the primary structure of proteins and the sequence of proteins in isolation and metabolism. One chemist will be involved in the preparation of oligonucleotides and their use in nucleic acid research. The successful candidate will have a Ph.D. in biochemistry or a closely related field. The position is available immediately. The salary will be competitive with other universities. Applications should be sent to: Professor James A. Richardson, Department of Biochemistry, University of Wisconsin, Madison, Wisconsin 53706.

**STAFF SCIENTIST**

Two staff positions for research in the field of radiobiology are available at the Arecibo Observatory (operated by Cornell University) for work on the mechanisms of radiobiological effects. Positions are available immediately. The successful candidate will work on research projects in the area of radiobiology, with a particular emphasis on the effects of ionizing radiation on cellular and molecular processes. The successful candidate will have a Ph.D. in radiobiology or a closely related field. The position is available immediately. The salary will be competitive with other universities. Applications should be sent to: Professor John A. Wood, Department of Radiobiology, Arecibo Observatory, P.O. Box 995, Arecibo, Puerto Rico 00612.

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**TOXICOLOGIST**

We are seeking candidates with a Ph.D. or D.V.M. degree in toxicology or environmental science. Salaries range from $23,000 to $28,000, depending on experience. Experience in toxicology research is desirable. Applicants should have a strong academic record and excellent written and oral communication skills. The position is located in the Toxicology Laboratory at the National Center for Toxicological Research. Applications should be sent to: Dr. John A. Wood, Department of Toxicology, Arecibo Observatory, P.O. Box 995, Arecibo, Puerto Rico 00612.

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**POSTDOCTORAL FELLOWSHIP IN CRYSTALLOGRAPHY**

Applications are invited for a Postdoctoral Fellowship in Crystallography. Candidates must have a Ph.D. in physical chemistry, materials science, or a closely related field. The position is available immediately. The salary will be competitive with other universities. Applications should be sent to: Dr. John A. Wood, Department of Crystallography, Arecibo Observatory, P.O. Box 995, Arecibo, Puerto Rico 00612.

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**POSTDOCTORAL FELLOWSHIP IN REPRODUCTIVE BIOLOGY**

Applications are invited for a Postdoctoral Fellowship in Reproductive Biology. Candidates must have a Ph.D. in reproductive biology or a closely related field. The position is available immediately. The salary will be competitive with other universities. Applications should be sent to: Dr. John A. Wood, Department of Reproductive Biology, Arecibo Observatory, P.O. Box 995, Arecibo, Puerto Rico 00612.

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