# Personnel Placement

**RATE CHANGE**

**Effective 1 Jan. 1970**

POSITIONS WANTED: 40¢ per word, minimum charge $10. Use of Box Number counts as 10 additional words. Payment in advance is required. These rates apply to individuals only. Personnel agencies and companies take display rate for all advertising.

POSITIONS OPEN: $7 per column line, if publisher's type is used (12 lines = 1 inch). Minimum ad is 12 lines or $84. All ads using larger than 6 point type will be billed as display ads at $100 per inch. No charge for Box Number. Rates net. No agency commission allowed for ads under 4 inches. No cash discount. Ads over 1 inch will be billed to the nearest half inch. **Payment in advance** is required except where satisfactory credit has been established.

COPY for ads must reach SCIENCE 4 weeks before issue date (Friday of every week). Send copy for Personnel Placement advertising to:

SCIENCE, Room 211
1515 Massachusetts Ave., NW
Washington, D.C. 20005

Replies to blind ads should be addressed as follows:

Box (give number)
SCIENCE
1515 Massachusetts Ave., NW
Washington, D.C. 20005

## POSITIONS WANTED

**Biochemist,** Ph.D. (1962), M.S. in organic chemistry, postdoctoral research in transfer RNA sequence and structural modifications. Graduate school teaching and career development awardee. Desires research/government/industrial, any location. Box 84, SCIENCE. 3/13

**Cytogeneticist,** Ph.D. in biology; postdoctoral experience in mammalian cell kinetics in culture, experienced in autoradiography, microspectrophotometry, plant tissue cultures; desires research position. Box 95, SCIENCE. X

**Developmental Botanist** Ph.D. 1964. Postdoctoral/teaching experience. Twenty publications in physiology, tissue culture, radiations. Seeks employment in United States/Canada. Box 96, SCIENCE. X

**Microbial Geneticist,** Ph.D., January 1970. Numerous publications, 2 years of research experience with USPHS. Desires academic/industrial/government position. Box 97, SCIENCE. X

**Organic Chemist.** Ph.D. postdoctoral experience in biochemistry. Experienced in synthesis and characterization of organic compounds with emphasis on bioorganic and organofluorine compounds. Seeks industrial or academic position. Box 98, SCIENCE. X

**Physical Chemist:** Bio-medical background, Ph.D. 1954. Graduate and undergraduate teaching. Vital, modest research program. Teaching and/or research. Box 99, SCIENCE. X

**Physiologist.** Ph.D., 15 years' experience in biomedical research, principally cardiovascular. Publications. Desires research position. Box 100, SCIENCE. X

**Physiologist,** M.S., age 39, 9 years of teaching experience. Areas: zoology, botany, physiology, microtechnique, ecology, and bacteriology labs. Good laboratory man. Seeks academic or industrial position. Box 101, SCIENCE. X

**Times Series Analyst,** Ph.D. publications on random processes and pattern recognition with applications in neurophysiology, medicine, and engineering. Desires teaching/research position. Box 102, SCIENCE. X

## POSITIONS OPEN

### AUSTRALIA
### THE AUSTRALIAN MUSEUM, SYDNEY
### ASSISTANT CURATOR OF FISHES
### Position No. 574B

**Salary:** $A3723 per annum range $A5603 per annum with prospects of promotion to $A6149 per annum subject to meeting requirements. Opportunities exist for outstanding officers being considered as Research Scientists.

**Qualifications:** Research Degree in Zoology essential. Interest in tropical marine fishes desirable.

**Duties:** Standard curatorial responsibilities, shared with the Curator of Fishes. Independent research on systematics or ecology of fishes expected.

**General:** Total staff is 100, with 12 Departments covering all systematic groups of animals plus Environmental Studies, Palaeontology, Mineralogy and Anthropology. The professional scientific staff is 20. Field research is emphasized and vehicles, boats, diving gear, etc., are available. University affiliation is possible.

Subject to certain conditions the successful applicant will be eligible for:—

- payment of fares to Sydney
- financial assistance towards cost of removal and establishment expenses
- financial assistance towards initial accommodation expenses.

Apply: Secretary, Public Service Board, Box 2, G.P.O., Sydney, N.S.W., 2001, Australia, by **1 April.**

When applying applicants are requested to indicate the number of the position applied for and the title of the position.

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**DIRECTOR OF AUDITION LABORATORY:** Ph.D. with specialty in audition to direct endowed and well-equipped audition research laboratory. Only stipulation on type of research is that it be primarily human. University appointment within psychology department. Rank and salary open. Send vitae to **Ronald E. Walker, Chairman, Department of Psychology, Loyola University of Chicago, 6525 N. Sheridan Road, Chicago, Illinois 60626.**

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### CLINICAL BACTERIOLOGIST

Ph.D., M.S., or B.S. with equivalent experience. Ability and interest in managing Department of Microbiology in very active 380-bed adult medical/surgical hospital. Ph.D. Biochemist and three full-time pathologists presently on staff. Excellent fringe benefits. Please submit résumé and initial salary requirement to: **St. Luke's Hospital Medical Center, 525 North 18th Street, Phoenix, Arizona 85006.**

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### DEAN
### COLLEGE OF PHYSICAL SCIENCE
### UNIVERSITY OF GUELPH

The University of Guelph invites applications for the position of Dean of the College of Physical Science.

The College of Physical Science has been established as a result of a recent reorganization within the University. The College consists of the Departments of Chemistry, Physics, and Mathematics and Statistics.

The Dean should be fully qualified in some area of physical science; preferably he will have had some administrative experience in a University environment.

Salary will be commensurate with qualifications and responsibilities.

Applications and inquiries should be directed to the **Vice-President, Academic, McLaughlin Library, University of Guelph, Guelph, Ontario.**

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### UNIVERSITY OF NEW BRUNSWICK
### Fredericton, New Brunswick, Canada
### DEAN OF ENGINEERING

To administer the Faculty of Engineering, consisting of the Departments of Civil, Chemical, Electrical, Mechanical, and Surveying Engineering. Applications and inquiries should be addressed to Desmond Pacey, Chairman of the Selection Committee. **Applications close 1 April 1970;** the appointment will be effective 1 July 1970. Salary negotiable.

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### ELECTRON MICROSCOPE TECHNICIAN

Applications are invited for the position of Electron Microscope Technician. Duties include supervision of EM laboratory, tissue preparation, and basic instruction. Send résumé and letters of recommendation to **Dr. Thomas P. Freeman, Division of Natural Sciences, North Dakota State University, Fargo, North Dakota 58102.**

The STATE UNIVERSITY of LEIDEN invites applications or suggestions for a

**FULL PROFESSOR in GENETICS**

He will be charged with lectures and courses in general genetics and with the direction of the research in population genetics and development genetics.

Applications, including curriculum vitae and references or suggestions should be sent as soon as possible to: **The Faculty of Science, University of Leiden, Rapenburg 46, Leiden, The Netherlands.**

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**THE UNIVERSITY OF MELBOURNE**
**SENIOR LECTURER/LECTURER**
**in the**
**SCHOOL OF MICROBIOLOGY**

Melbourne University's Department of Microbiology is the largest in Australia, occupies a well-equipped new building, and has an academic staff of 15, plus 20 research students, and about 40 ancillary personnel. Research facilities are outstanding, with current emphasis on virology, immunology and bacterial genetics.

Salary: Senior Lecturer $A7,500–$8,750 per annum
Lecturer $A5,400–$7,300 per annum

Further information, including details of superannuation, travel and removal expenses, housing assistance and conditions of appointment, is available from the Registrar. All correspondence should be addressed to The Registrar (position 106), The University of Melbourne, Parkville, Victoria, 3052, Australia. Applications **close on 30 April 1970.**

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# Pharmacologist, M.S.

Leading national firm seeks M.S. in pharmacology with B.S. in pharmacy or chemistry and 2 or more years of industrial experience. For position in pharmacology in a modern pharmaceutical research and development laboratory. Will assist in care, preparation and testing in experimentation, as well as biochemical studies of drug activity and toxicity. Excellent professional opportunity for growth.

*Send confidential resume and salary required to*

**Personnel Manager**

**CARTER-WALLACE, Inc.**

**Cranbury, New Jersey**

*An equal opportunity employer*

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**MICROBIOLOGIST**

B.S. degree. Have broad knowledge in laboratory techniques, also experience in bacteriology, virology and tissue culture. Responsible for seed lab for production of Veterinary Biologics. Fringe benefits include Profit Sharing Plan. Send to **Personnel Manager, Diamond Laboratories, Inc., 2538 S.E. 43rd St., Des Moines, Iowa 50317.**

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**PRODUCT DEVELOPMENT MANAGER**

To fill key position with division of FORTUNE 500 corporation making plastic labware, tanks, and piping.

Prerequisites include technical background with experience in, and flair for development of laboratory-oriented products.

Please send résumé to **Personnel Manager, Nalge Company, Division of Sybron Corporation, P.O. Box 365, Rochester, New York 14602.**

*An Equal Opportunity Employer*

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**SCIENCE EDUCATION.** Applications are invited for a science education position in the Department of Physical Science. The position entails student teaching supervision and the teaching of courses in Methods of Teaching High School Science and Physical Science. Requirements: three or more years of high school teaching, M.S. degree or higher. Rank and salary dependent on qualifications. Apply to: **Dr. Dobbs, Chairman, Department of Physical Science, Northeastern Illinois State College, Bryn Mawr and St. Louis Ave., Chicago, Illinois 60625.**

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**STAFF POSITIONS**

The W. Alton Jones Cell Science Center, owned and operated by the Tissue Culture Association, Inc., a research training center for animal and plant cell and organ culture.

Applications are invited from persons having a primary research interest in cytology (preferably fine-structure), biochemistry (especially cell nutrition and metabolism), cytogenetics or cell biology. Experience in cell or organ culture is mandatory, and teaching and research excellence are required. Rank and salary commensurate with qualifications.

Applications with curriculum vitae and names of three references to **Dr. Donald J. Merchant, Director, W. Alton Jones Cell Science Center, P.O. Box 631, Lake Placid, New York 12946.**

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**DIAGNOSTIC MEDICAL VIROLOGY**

Applications are invited from suitably qualified individuals to supervise a diagnostic virology laboratory, within the department of microbiology. The department is directed by a full-time medical microbiologist and is affiliated with the Medical School of McMaster University. The successful applicant will be recommended for appropriate academic rank and will be encouraged to develop his own research interests. Apply with résumé to: **Dr. J. F. Lynch, Director of Laboratories, Henderson General Hospital, Hamilton 53, Ontario, Canada.**

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**ZOOLOGIST**

Ph.D. areas include one or more of following: Anatomy, Embryology, Physiology, Radiation Biology. Starting June or September 1970. Salary competitive. Teaching and research Masters program. Submit résumé to **Drs. J. M. Cummings, Chairman, Biology Department, John Carroll University, Cleveland, Ohio 44118.**



**RESEARCH AND TRAINING PROGRAM IN BIOMEDICAL ENGINEERING OR SCIENCE**

Postdoctoral and predoctoral fellowships for investigation and training leading to M.S. or Ph.D. in Biomedical Engineering or Science. Individually designed for life scientists (Ph.D., M.D., D.V.M., D.D.S., etc.), physical scientists and engineers with academic studies in mathematics, engineering sciences, physics, and basic biological and medical sciences culminating in individual supervised research studies in the biocontrol, biomechanics, bioinstrumentation, biophysics, biotelemetry, signal processing and biomaterial aspects of cardiovascular, neural, neuromuscular, reproductive, respiratory, and dental physiology. Address inquiries to:

**Director, Biomedical Engineering & Science**
**Drexel University**
**32nd and Chestnut Streets**
**Philadelphia, Pennsylvania 19104**

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Positions open for students with a B.S. or B.A. in Chemistry or Biology to do work leading to an M.S. with a major in **Biochemistry**. Teaching and Research Assistantships available. Write to:

**Dr. A. Baich**
**Biological Sciences Faculty**
**Southern Illinois University**
**Edwardsville, Illinois 62025**

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**PREDOCTORAL FELLOWSHIPS IN BIOMETRY**

Fellowships are available for U.S. citizens leading to a Ph.D. in Statistics with concentration in Biometry and Biostatistics. Initial stipends are approximately $3000 plus tuition and dependency allowance. Students with good mathematical or scientific backgrounds, who are interested in applications to the biomedical sciences, are invited to apply. Write: **Program Director, Biometry Training Program, Department of Statistics, State University of New York at Buffalo, 4230 Ridge Lea Road, Amherst, New York 14226.**

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**PREDOCTORAL AND POSTDOCTORAL TRAINEESHIPS IN ENDOCRINOLOGY-REPRODUCTIVE PHYSIOLOGY**

Program offers pre- and postdoctoral training leading to M.S. and Ph.D. degrees. Traineeships available to students with B.S. degrees and to persons with professional degrees. Research emphasis is on vertebrate endocrinology and mammalian reproductive physiology and is centered in ten separate laboratories. Stipend, research support, and tuition available for approximately 50 trainees per year. Write **Dr. Roland K. Meyer, Program Director, Zoology Research Building, University of Wisconsin, 1117 West Johnson Street, Madison, Wisconsin 53706.**

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# The Market Place

**BOOKS • SERVICES • SUPPLIES • EQUIPMENT**

**Histology Service, Inc.**
**Servicing Pharmaceutical Industry.**
**Toxicologists and Research Projects.**
**Emergency Service for peak load periods.**
**Serial Sections—Special stains.**
**Full Range of Histology Studies and Chemical Analyses.**
*HISTOLOGY SERVICE, Inc.*
**6190 Rising Sun Avenue**
**Phila., Pa. 19111 (215) RA 5-5103**

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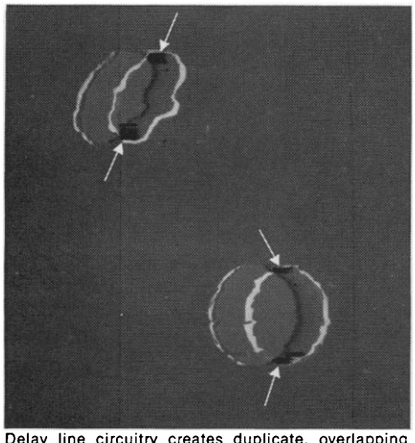
**LaMotte Chemical**

**Chestertown, Maryland 21620**
Manufacturers of Chemical Testing Equipment and Science Demonstration Units.
**Write Educational Products Div. for free catalog**

# How Western Electric spots dots with TV.



Delay line circuitry creates duplicate, overlapping "ghost" images for pencil mark (upper left) and regular .025" dot (lower right). The points where the images cross can be made to produce black areas (marked by arrows). The ghosts are moved right or left, and the positions of the black areas tested

How would you use automation for drilling holes when every hole has to be in a precise spot, but every spot isn't exactly where you expect it to be?

That became a critical problem for Western Electric when we started using a polyethylene with very superior electrical properties as the base laminate in printed circuit boards. Unfortunately this material showed a tendency to shrink when the circuit pattern was etched in the copper on the board—not enough to affect its electrical properties, but enough to dislocate the dots which indicated where holes were to be drilled for placing components. The shrinkage was unpredictable but could move a dot by as much as 1/32"—more than its own diameter.

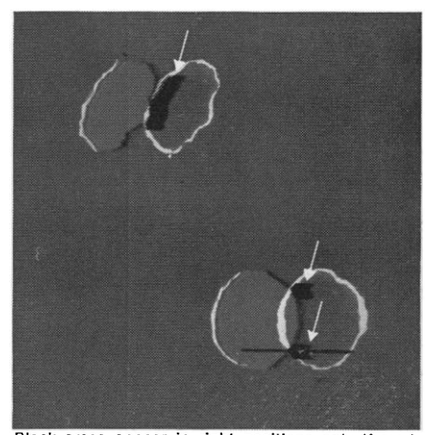
What that meant was that we could not use a conventional tape-controlled drilling machine, which put the drill in precisely the same spot every time. We needed a machine that could, in effect, "see" a dot, no matter where it was, tell it apart from an accidental marking of about the same size and shape, and put a drill right through it.

Engineers at our Greensboro, N.C., Works made such a machine. It consists of a TV camera hooked up to circuitry which removes the grays from the picture, turning it into a series of true on-or-off digital pulses; and logic circuitry which can respond to such pulses and activate a mechanism which moves the board around.

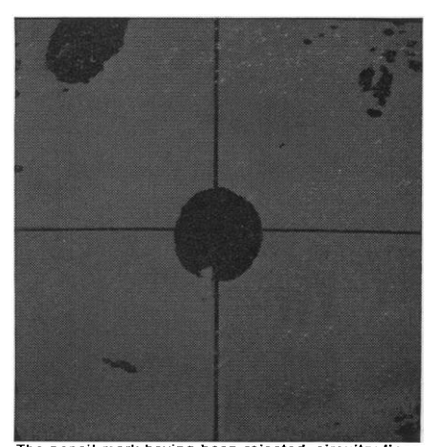
Once the dot has been roughly centered beneath the camera, delay line circuitry creates a second image which is first superimposed on the original, then moved by successive stages to the right. The points where the two images meet—i.e., where the two circles cross—will be in certain positions if and only if the original dot is a perfect circle of the proper size. Logic circuitry tests these positions, and if they are not exactly right, it won't drill and the circuitry sets itself to search for another dot. If they are, it lines the dot up, moves the camera aside, moves the drill into position, and there you are.

A simple, fast, economical, and very, very precise solution to a vexing problem. The kind of solution that helps us keep the quality of the equipment we make for the Bell System high, and the costs low.

**Western Electric**



Black areas appear in right positions only if marking is a circle of the proper size.

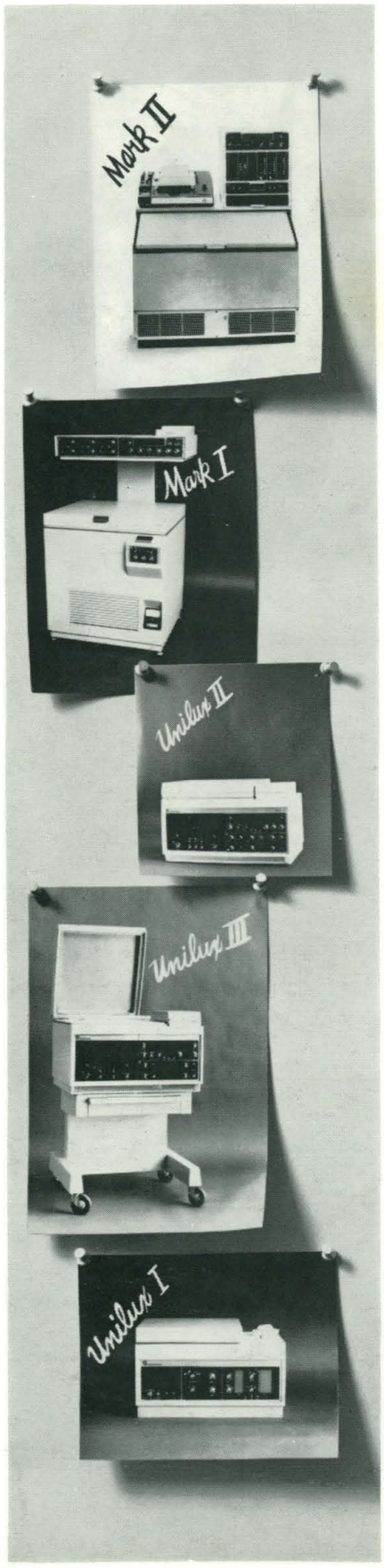


The pencil mark having been rejected, circuitry lines up acceptable dot for drilling.

*A point of view on*

# YOU AND THE SYSTEM

*No single liquid scintillation system can be all things to all users. When you come to us, you get only what you need.*




Don't be concerned with the complexities of liquid scintillation counting. With us on your side, you *can* beat the system.

Let's say you want to start at the top. And you want to share your system with others. Your choice: one of our cooled Mark II™ Liquid Scintillation Systems. Uncompromising peak performance, super-simple operation for 300-sample counting. For you alone or for as many as 12 *different* users. Because a Mark II accommodates up to 12 different counting programs. And offers 5 standardization options, *autocalibration*, and more.

Or perhaps you seek complete *versatility* in a system. Look no further than our 150-sample, cooled Mark I™ Liquid Scintillation Computer. Performance that goes as far as you ask it to in matching your specific application. Plus computer-calculated data, high reproducibility, and a host of counting program and readout options —only *part* of the Mark I story.

Can you have the advantages of controlled-temperature cooling in a *compact* system? Of course—our Unilux® II Bench-top Liquid Scintillation System. For 100 *dual-labelled* samples. With an ultra-reproducible external standardization method. Plus a notably reliable, remarkably smooth sample changer.

And sharing many of these virtues, again in a compact bench-top system, our Unilux® III. This time designed for *ambient*-temperature counting. Also for ambient-temperature counting: our Unilux® I. The *utilitarian* bench-top system. Simple to set-up and operate. Routine counting was never better.

One of these systems is *your* system. Let us help you decide. Call your Nuclear-Chicago sales engineer or write us. 9-231

**NUCLEAR-CHICAGO**

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