

## EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH CERN

A vacancy exists for a senior experimental physicist (a national of one of the CERN member-states) to work in experiments with the 25 GeV Proton Synchrotron or the 600 MeV Synchro-Cyclotron, using counters or other electronic equipment.

Salary will be within the range 22.000—35.000 Swiss francs per annum (free of tax) depending upon qualifications and experience, plus certain allowances.

*To obtain application forms, please write to:*

**The Personnel Officer  
C.E.R.N.  
Geneva 23 Switzerland**

## RESEARCH PHYSICISTS

Staff openings exist for Senior Research Physicists, preferably at the Ph.D. Level, in an expanding research program in information storage. The internally sponsored program has a continuing goal of advancing the state-of-the-art in ferromagnetism, ferroelectricity, electrostatics, etc. as applied to information storage devices and media. This is an opportunity for physicists with applicable experience to conduct theoretical and experimental studies in stimulating research problems under highly desirable conditions at an excellent salary.

*Reply in confidence with brief resume or call for appointment:*

**Mr. W. J. Peckham  
Professional Employment Manager  
Bell & Howell Research Center  
360 N. Sierra Madre Villa  
Pasadena, California  
SYcamore 6-9381**

Evidence for Gravitational Theories, June 19–July 1, Varenna, Italy (Prof. C. Möller, Universitetets Institut for Teoretisk Fysik, Blegdamsvej 17, Copenhagen, Denmark)

Liquid Helium, July 3–15, Varenna, Italy (G. Careri, Istituto di Fisica dell'Università, P. le Delle Scienze 5, Rome, Italy)

Semiconductors, July 17–August 5, Varenna, Italy (Prof. C. A. Hogarth, Dept. of Physics, Brunel College of Science and Technology, Woodland Avenue, London W. 3, England)

Nuclear Physics, August 7–26, Varenna, Italy (V. F. Weisskopf, CERN, Geneva 23, Switzerland)

Underwater Acoustics, July 24–August 4, London, England or La Spezia, Italy (Prof. V. E. Neilly, Pennsylvania State University, University Park, Pa.)

Exploitation of Solar Energy, August, Corfu or Rhodes, Greece (Adm. G. Spanides, Greek Atomic Energy Commission, Merlin 5, Athens, Greece)

Many-Body Problems, May 22–June 3, Bergen, Norway (Prof. B. Trumpp, Fysisk Institut, Universitetet i Bergen, Bergen, Norway)

### *NSF Programs*

The National Science Foundation has awarded 357 new grants totaling \$3.2 million under its undergraduate research participation program, which is now in its third year. The grants, together with 165 awards made last year, will give several thousand undergraduate science students an opportunity to work alongside established scientists in college and university laboratories and in other research institutions. During the summer, 2400 students will take part in the program, and about 1900 will participate during the 1961–62 academic year. Of the total number of students, NSF estimates that 12 percent will work in physics, 37 percent in chemistry, 26 percent in the biological sciences, 13 percent in engineering, and the remainder in astronomy, mathematics, and other fields. The stated aims of the program are to help build the interest of superior students in research, to widen their understanding of scientific method, and to improve their ability to employ scientific investigative procedures.

Students receive nominal stipends while engaged in the programs, and are chosen on the basis of applications made to the individual institutions. Those scheduled to conduct undergraduate participation programs in physics and astronomy are listed below, together with the names of the program directors:

#### *Physics*

Spring Hill College, Mobile, Ala. (W. J. Rhein)  
University of Arkansas, Fayetteville (G. T. Clayton)  
University of California, Riverside (R. D. Archer)  
Pomona College, Claremont, Calif. (A. L. Beilby)  
San Diego State College, San Diego, Calif. (P. B. Sogo)  
University of Santa Clara, Santa Clara, Calif. (J. B. Drahmann)  
Stanford University, Stanford, Calif. (E. Hutchinson)  
University of Colorado, Boulder (D. G. Burkhard)  
University of Georgia, Athens (L. A. Rayburn)  
University of Idaho, Moscow (M. M. Renfrew)  
Illinois Institute of Technology, Chicago (P. Chiarulli)  
De Pauw University, Greencastle, Ind. (J. L. Warren)  
Earlham College, Richmond, Ind. (W. K. Stephenson)  
Grinnell College, Grinnell, Iowa (G. O. Gale)  
Iowa State University, Ames (D. E. Hudson)  
University of Kansas, Lawrence (F. E. Samson)  
Kansas State University, Manhattan (A. B. Cardwell)  
Kansas Wesleyan University, Salina (C. B. Creager)  
University of Kentucky, Lexington (J. R. Meadow)  
Loyola University, New Orleans, La. (Rev. F. A. Benedetto)  
Northwestern State College, Natchitoches, La. (F. L. Judd)  
University of Maryland, College Park (H. Laster)  
Boston College, Chestnut Hill, Mass. (Rev. W. G. Guindon)  
University of Massachusetts, Amherst (P. R. Jones)



## Notable Achievements at JPL

**MOON BOUNCE...** a collaborative project of the National Aeronautics and Space Administration, the Jet Propulsion Laboratory, and the Australian Ministry of Supply to link two continents by radio signals bounced off the Moon

**TOTAL DISTANCE  
455,682 MILES**

**ELAPSED TIME  
2.44 SECONDS**

### CAREER OPPORTUNITIES AT JPL IN THESE FIELDS—NOW

#### Electronic Engineers

- ... for component and system design of deep space communications, instrumentation, and automatic control equipments.
- ... for microwave and RF solid state circuit design and flight evaluation.
- ... for project management assignment on advanced development and contracted effort in space communications.

#### Physicists

- ... for analysis in communications theory, orbital mechanics, guidance and control, and systems performance.
- ... for analysis of digital communication and control systems; real-time digital computer and closed-loop systems.
- ... for research and development of servo and control mechanisms for large ground based and spacecraft antenna systems.

Other opportunities exist for electronic engineers and physicists in many areas at JPL which has been assigned the responsibility for the nation's Lunar, Planetary and Interplanetary unmanned exploration programs.

On February 10, 1961, California and Australia were linked in the first international space communication experiment that bounced voice messages between the two points via the Moon. The words were beamed at the Moon from the Jet Propulsion Laboratory transmitter at Goldstone, California to the receiver at Woomera, Australia.

Principals in the conversation were Dr. Hugh L. Dryden, NASA Deputy Director, whose voice was relayed from Washington by telephone; Dr. Lee DuBridge, President of California Institute of Technology, who spoke directly from Goldstone; and Alan Hulme, Australian Minister of Supply at Woomera.

The occasion tested the new Australian station, the second of three Deep Space Instrumentation stations developed and directed for the National Aeronautics and Space Administration by the Jet Propulsion Laboratory.



CALIFORNIA INSTITUTE OF TECHNOLOGY

**JET PROPULSION LABORATORY**  
PASADENA, CALIFORNIA



|            |                                                                                   |
|------------|-----------------------------------------------------------------------------------|
| Materials  |  |
| Research   |                                                                                   |
| Scientists |                                                                                   |

STL offers opportunities for Scientists and Research Engineers with advanced degrees who desire an environment that stimulates independent research in the field of solid state physics, radiation damage, mechanical properties, high temperature materials, high vacuum techniques and optical properties.

These challenging assignments are with a newly created group of scientists in the materials field. Selected applicants will be invited to follow their independent interests in the field of Materials Research.

STL is an expanding organization with a professional staff of more than 1,700 scientists and engineers engaged in advanced space and missile programs.

Resumes directed to Dr. R. C. Potter, Manager of Professional Placement, will be treated in confidence and will receive immediate attention.

## SPACE TECHNOLOGY LABORATORIES, INC.



a subsidiary of Thompson Ramo Wooldridge Inc.  
P.O. Box 95005W, Los Angeles 45, California

## ATLANTIC RESEARCH CORPORATION



Alexandria, Virginia

ARC is an expanding technical R&D-for-profit firm, with headquarters in the National Capital area, whose technical interests and capabilities run the gamut from basic work in solid state physics to production of piezoelectric transducers; combustion research through shelf-item solid propellant rockets; and structural and chemical studies of polymers to development of foamed-in-place plastics.

The range of technical disciplines is sometimes broadened through new organizational acquisition, but is always strengthened by the addition of well-grounded, versatile scientists and engineers. Our Electromechanical Division now needs an

### experimental physicists

for applied research and development in acoustics, rheology, solid state, shock, vibration, and high atmosphere experimentation. Requires ability to plan, promote and execute physical research programs, a Ph.D. in physics, and recognized accomplishments in one of the above listed physical fields.

If you qualify and are interested, send a resume of your academic and professional experience, age, salary needs, and professional references to:

Clarence H. Weissenstein, Director, (PT)  
Technical Personnel Recruitment

## ATLANTIC RESEARCH CORPORATION

Alexandria, Virginia

(In the suburbs of the Nation's Capital)

Wheaton College, Norton, Mass. (B. H. Jennings)  
Worcester Polytechnic Institute, Worcester, Mass. (A. E. Parker)  
Michigan State University, East Lansing (S. K. Haynes)  
Wayne State University, Detroit, Mich. (H. V. Bohm)  
Western Michigan University, Kalamazoo (P. Rood)  
Saint Olaf College, Northfield, Minn. (F. E. Christensen)  
University of Missouri School of Mines and Metallurgy, Rolla (H. Q. Fuller)  
Saint Louis University, St. Louis, Mo. (A. G. Rouse)  
Dartmouth College, Hanover, N. H. (W. P. Davis, Jr.)  
New Mexico Institute of Mining and Technology, Socorro (W. Hume)  
Adelphi College, Garden City, N. Y. (Joan Brooks)  
Colgate University, Hamilton, N. Y. (R. J. Myers)  
Fordham University, New York, N. Y. (Rev. C. C. Schubert)  
New York University, New York 3 (L. Yarmus)  
Polytechnic Institute of Brooklyn, Brooklyn, N. Y. (J. J. Dropkin)  
Rensselaer Polytechnic Institute, Troy, N. Y. (S. E. Wiberley)  
Western Reserve University, Cleveland, Ohio (B. L. Robinson)  
Linfield College, McMinnville, Ore. (J. A. Day)  
University of Oregon, Eugene (J. L. Powell)  
Allegheny College, Meadville, Pa. (Georgiana W. Scovill)  
Bartol Research Foundation, Swarthmore, Pa. (W. E. Danforth)  
Juniata College, Huntingdon, Pa. (B. E. Blaisdell)  
Lafayette College, Easton, Pa. (W. Keck)  
Fisk University, Nashville, Tenn. (J. R. Lawson)  
North Texas State College, Denton (R. C. Sherman)  
University of Texas, Austin (R. N. Little)  
Utah State University, Logan (R. L. Berger)

### Astronomy

San Diego State College, San Diego, Calif. (B. Nelson)  
University of Santa Clara, Santa Clara, Calif. (S. Kownacki)  
Louisiana State University, Baton Rouge (V. E. Parker)  
National Radio Astronomy Observatory, Green Bank, W. Va. (C. M. Wade)

Grants totaling approximately \$366 000 have also been awarded to several colleges and universities by the National Science Foundation for the support of a new series of summer conferences for college teachers of science, mathematics, and engineering. Patterned after the NSF summer institutes for high-school and college teachers, but lasting four weeks or less instead of the four to twelve weeks of the summer institutes, the conferences are designed to give college staff members who must teach during summer terms an opportunity to familiarize themselves with recent advances in specific fields. Participants will receive stipends (up to \$15 per day plus travel allowance) and will pay neither tuition nor fees. Inquiries should be sent as soon as possible to the directors of the individual programs. Among the conferences scheduled for this summer (dates have not been indicated), the following are likely to be of interest to physicists. The names of the directors are included.

Recent Advances in Astro-Geophysics, Rev. M. P. Thekaekara, S.J., Dept. of Physics, Georgetown University, Washington, D. C.  
Solid-State Physics, Prof. Elmer L. Offenbacher, Dept. of Physics, Temple University, Philadelphia, Pa.  
Nuclear and Electron Spin Resonance, Dr. Wallace S. Brey, Jr., Dept. of Chemistry, University of Florida, Gainesville, Fla.

### Aid to Education

On March 13 the Woodrow Wilson National Fellowship Foundation designated 1333 students from 381 colleges and universities in the United States and Canada as Woodrow Wilson Fellows for 1961-62. Chosen from among more than 10 000 nominees, the winners represent the largest number elected by the foundation in its 15-year history. Students in mathematics and the natural sciences account for 15.9 percent of the total. The awards cover the first year of graduate study and are intended to encourage the fellows to consider college teaching as a career.