



PHYSICIST

Technical Operations is a medium-sized research and development firm, operating in such fields as physics, electronics, chemistry, operations research, and applied mechanics. Our headquarters laboratory is at Burlington, Massachusetts and research facilities are maintained at Washington, D. C., Hampton, Virginia and Monterey, California. Our staff presently numbers about 200.

Continued development of the Company's research activities has created two staff positions for physicists at Burlington. Candidates should be on the PhD level or possess equivalent experience. The work will be on a variety of projects in both experimental and theoretical fields. Initial assignments will be in solid state physics, weapons effects, rarefied gas dynamics, and kilojoule discharge circuits.

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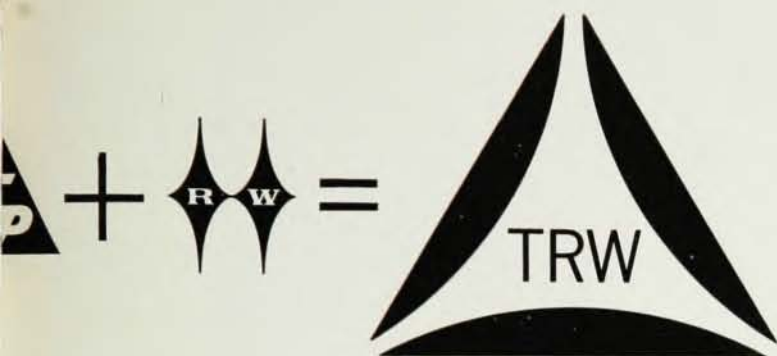
former *Journal* with the *Transactions, American Geophysical Union* and will be published by AGU with the assistance of the Carnegie Institution of Washington and the support of the National Science Foundation. It will consist of original research reports, a "Letters" section to provide for brief publication of unusual results or discussion of previous papers, and abstracts of papers presented at AGU meetings. Nonmember subscriptions are available (\$16 per year) from the American Geophysical Union, 1515 Massachusetts Avenue, N. W., Washington 5, D. C.

The Department of Commerce will begin publication this month of a periodical planned to serve as a central source of information in the US on Russian and other technical translations available to scientists. Entitled *Technical Translations*, it will be published twice a month by the Office of Technical Services in cooperation with the Special Libraries Association and will incorporate SLA's *Translation Monthly*. It will list and abstract translated materials available from US government sources, SLA, cooperating foreign governments, educational institutions, and private sources. *Technical Translations* will be sold at a subscription rate of \$12 a year (foreign rate, \$16); a single copy will cost 60¢. Orders should be addressed to the Office of Technical Services, US Department of Commerce, Washington 25, D. C.

A new set of tables of the Wigner $6j$ -symbol has been prepared (with the support of the British Department of Scientific and Industrial Research) as a University of Southampton Research Report, US 58-1. The tables were duplicated from stencils cut directly from the output tape of a digital computer, the Ferranti Pegasus, using a teleprinter with ribbon removed. The square of each $6j$ -symbol is printed as a rational fraction in terms of prime factors and not (as previously on a computer) as a decimal fraction. There are 205 pages of tables with approximately 12 500 entries. All integral and half-integral parameters are included for $(j_1 + j_2 + j_{12})$, $(j_2 + j_3 + j_{23})$, $(j_1 + j_{23} + J)$, $(j_{12} + j_3 + J)$, all less than or equal to 17. Thus all $6j$ -symbols with parameters less than 6 and some with parameters up to $17/2$ are included. A limited number of copies are available on application to K. M. Howell, Mathematics Department, The University, Southampton, England.

Education

The National Science Foundation will sponsor 350 summer institutes at 255 educational institutions this year. Most of the institutes will be for high-school teachers of science and mathematics, but some will be open to college teachers only and others will accept both high-school and college teachers. Tuition and fees will be paid by the Foundation and each participating teacher will receive a stipend of not more than \$75 per week for the duration of the institute, plus an allowance for travel and dependents. The summer pro-



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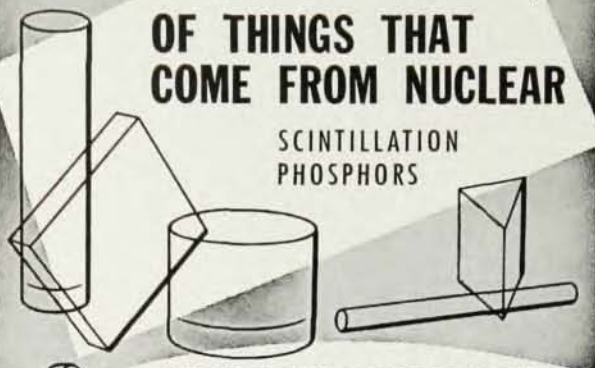
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grams will vary in length from four to twelve weeks and the participants will be chosen by the individual institutes. Approximately 14% of the 350 institutes are listed as being under the direction of representatives of the physics departments of the host institutions; these summer institutes and their directors are given below and all inquiries should be addressed to them:

Spring Hill College, Mobile, Ala. (Rev. Walter J. Rhein, S. J.)
Alaska, University of, College, Alaska (Prof. Alfred M. Bork)
Fresno State College, Fresno, Calif. (Dr. Frederic A. Scott)
Sacramento State College, Sacramento, Calif. (Dr. S. Winston Cram)
Colorado State University, Fort Collins, Colo. (Dr. John J. Faris)
Colorado, University of, Boulder, Colo. (Dr. John M. Cleveland)
Denver, University of, Denver, Colo. (Prof. Byron E. Cohn)
Purdue University, Lafayette, Ind. (Prof. R. W. Leffer)
Bowdoin College, Brunswick, Me. (Prof. Dan E. Christie)
Bowdoin College, Brunswick, Me. (Prof. Noel C. Little)
Worcester Polytechnic Institute, Worcester, Mass. (Dr. John C. Johnson)
Eastern Michigan College, Ypsilanti, Mich. (Dr. Harry L. Smith)
Macalester College, St. Paul, Minn. (Prof. Russell B. Hastings)
Minnesota, University of, Minneapolis, Minn. (2) (Prof. Frank Verbrugge)
Missouri School of Mines & Metallurgy, Rolla, Mo. (Dr. Harold Q. Fuller)
St. Louis University, St. Louis, Mo. (Dr. Arthur G. Rouse)
Nevada, University of, Reno, Nev. (Dr. George Barnes)
Rutgers University, New Brunswick, N. J. (Dr. Charles A. Whitmer)
New Mexico College of A & M Arts, State College, N. Mex. (Dr. E. L. Cleveland)
New Mexico Highlands University, Las Vegas, N. Mex. (Dr. James P. Zietlow)
Adelphi College, Garden City, N. Y. (Dr. Howard A. Robinson)
Buffalo, University of, Buffalo, N. Y. (Prof. Harriet F. Montague)
Buffalo, University of, Buffalo, N. Y. (Dr. L. W. Phillips)
Syracuse University, Syracuse, N. Y. (Prof. William R. Fredrickson)
Union College, Schenectady, N. Y. (Dr. D. K. Baker)
North Carolina College at Durham, Durham, N. C. (Dr. William H. Robinson)
North Dakota, University of, Grand Forks, N. D. (Prof. J. Donald Henderson)
Ohio Wesleyan University, Delaware, Ohio (Dr. Howard N. Maxwell)
Reed College, Portland, Ore. (Prof. Kenneth E. Davis)
Temple University, Philadelphia, Pa. (Prof. Elmer L. Offenbacher)
Thiel College, Greenville, Pa. (Dr. B. G. Kolosvary)
Villanova University, Villanova, Pa. (Rev. J. Bernard Hubbert)
Northern State Teachers College, Aberdeen, S. D. (Prof. J. Edmund Wood)
George Peabody College for Teachers, Nashville, Tenn. (Dr. H. Craig Sipe)
Texas, A & M College of, College Station, Tex. (Dr. James G. Potter)
Texas Christian University, Fort Worth, Tex. (Dr. Joseph Morgan)
Texas, University of, Austin, Tex. (Prof. R. N. Little)
Brigham Young University, Provo, Utah (Prof. Grant O. Gale, Grinnell College, Grinnell, Iowa)
Brigham Young University, Provo, Utah (2) (Dr. Lane A. Compton)
Vermont, University of, Burlington, Vt. (Prof. Nelson L. Walbridge)
College of William and Mary, Williamsburg, Va. (Dr. Melvin A. Pittman)
Washington, State College of, Pullman, Wash. (Prof. Alfred B. Butler)
Washington, University of, Seattle, Wash. (Prof. L. A. Sanderman)
Marshall College, Huntington, W. Va. (Dr. Donald C. Martin)
Wyoming, University of, Laramie, Wyo. (Prof. Carl A. Cinnamon)
Wyoming, University of, Laramie, Wyo. (Prof. R. J. Bessey)

Descriptive material relating to twenty-three of the 1959 NSF summer institutes which are primarily designed for instructors of junior-high-school, high-school, junior college, and college chemistry has been prepared by the Committee on Institutes and Conferences of the American Chemical Society's Division of Chemical Education. Also included is a listing of an additional ten institutes which will offer instruction in chemistry and one additional subject—either biology or physics. Those interested in obtaining this information should write to the committee's chairman, Prof. William B. Cook, Montana State College, Bozeman, Mont.

Additional grants to 32 colleges and universities have been awarded by the Science Foundation in support of 1959-60 academic-year institutes for high-school

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science and mathematics teachers. The grants will provide stipends of \$3000 each to approximately 50 teachers in each institute and allowances for dependents and travel will also be provided. Six of these academic-year programs are under the direction of members of the physics departments of participating schools and are listed below. In each case, inquiries should be addressed to the person in charge of the program:

Arizona State College, Tempe, Ariz. (Prof. A. T. Wager)
Harvard University, Cambridge 38, Mass. (Prof. E. C. Kemble)
Iowa State Teachers College, Cedar Falls, Ia. (Prof. R. A. Rogers)
North Dakota, University of, Grand Forks, N. D. (Prof. J. D. Henderson)
Utah, University of, Salt Lake City 12, Utah (Prof. T. J. Parmley)
Washington University, St. Louis 5, Mo. (Prof. E. U. Condon)

A program of postdoctoral resident research associateships for advanced training in basic research in a variety of fields, including physics, will be offered for 1959-60, according to an announcement by the National Academy of Sciences—National Research Council. The participating laboratories are the National Bureau of Standards (Boulder, Colo., and Washington, D. C.); the Naval Ordnance Laboratory (White Oak, Silver Spring, Md.); the Naval Research Laboratory (Washington, D. C.); the Navy Electronics Laboratory (San Diego, Calif.); and the US Army Chemical Corps Biological Warfare Laboratories (Fort Detrick, Frederick, Md.). The Air Research and Development Command is also participating in this program at four Air Force installations: Air Force Cambridge Research Center (Bedford, Mass.); Air Force Missile Development Center (Alamogordo, N. M.); Rome Air Development Center (Rome, N. Y.); and Wright Air Development Center (Dayton, Ohio). In addition, the ARDC is sponsoring a program of postdoctoral university research associateships tenable at twenty-one universities, of which the following five will offer advanced training in physics: Columbia, Duke, Michigan, Yale, and Rice Institute. Applicants must be US citizens and must hold the doctoral degree or its equivalent and must have demonstrated superior ability for creative research. Remuneration is from \$5985 to \$7510 a year, subject to income tax. Application materials may be secured by writing to the Fellowship Office, National Academy of Sciences—National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C. Applications must be filed at the Fellowship Office on or before January 19, 1959.

Oxford University is offering ICI and Pressed Steel Fellowships, tenable for three years, to commence at the beginning of the 1959-60 academic year. The fellowships (open equally to men and women) are for research in physics or chemistry or allied subjects. Stipends will be within the range £700-£1000 depending on seniority and qualifications; fellows must normally have a doctoral degree by the date of their appointment. Applications should reach the Registrar, University Registry, Clarendon Building, Oxford, England no later than February 14, 1959. Further information can be obtained from the Registrar.

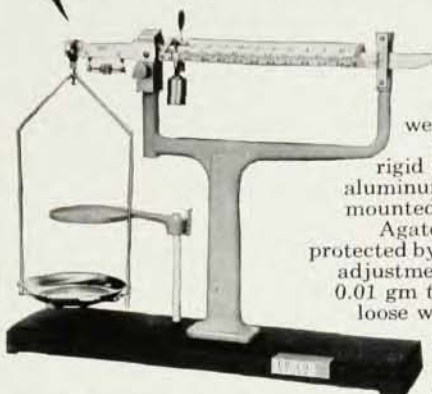
Massachusetts Institute of Technology will award two categories of industrial fellowships in electronics for the 1959-60 academic year: (1) graduate student fellowships which provide tuition and stipends of between \$1600 and \$2400, contingent upon experience and qualifications, and (2) advanced research fellowships for postdoctoral candidates carrying stipends ranging from \$3000 upwards. A limited number of research assistantships are also available. Further information may be obtained from Prof. J. B. Wiesner, director of the Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge 39, Mass.

An intensive five-day course in gas chromatography for chemists, engineers, and physicists will be given from February 2-6 at the University of California at Los Angeles. Lectures will be given by H. W. Patton (Tennessee Eastman Co.), S. A. Greene (Rocketdyne Research), H. S. Knight (Shell Development Co.), Charles M. Drew (US Naval Ordnance Test Station), Hadley Ford (Stanford Research Institute), and Robert L. Pecsok of the UCLA Department of Chemistry, who will coordinate the course. Enrollment will be limited to holders of the bachelor's degree in science or engineering or its equivalent. Information and applications may be obtained through University of California Extension, Los Angeles 24, Calif.

Space Technology Laboratories, Inc., the newly formed company that was previously a division of the Ramo-Wooldridge Corp., is offering graduate fellowships for the 1959-60 academic year. Recipients, who must have completed one or more years of graduate study in science, engineering, or mathematics by July 1959, will pursue a 12-month program, part of which is to be conducted at the firm's laboratories and the remainder at either the California Institute of Technology or the Massachusetts Institute of Technology. Each fellowship will provide for an education grant of not less than \$2000 and a salary for summer and part-time work at STL. For further information contact Gerald H. Backer, Building D, Space Technology Laboratories, P. O. Box 45564, Airport Station, Los Angeles 45, Calif.

Frank A. Waterman, emeritus professor of physics at Smith College, died in Northampton, Mass., on November 16. His age was 93. Born in Oswego, N. Y., Dr. Waterman received his PhD from Princeton University in 1896. He taught at Purdue University and at Princeton before being named a professor of physics at Smith College in 1897, a position he held until his retirement in 1933. In addition to teaching, he designed apparatus for use in elementary physics laboratories and for many years he served as chief examiner and chief reader on the college entrance examination board. A fellow of the American Physical Society, Dr. Waterman was the father of National Science Foundation Director Alan T. Waterman.

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