

Miscellany

Education

Total college enrollments are up 7.6 percent over last year, according to the annual survey prepared by Raymond Walters, president of the University of Cincinnati, for the journal *School and Society*. The survey, covering 846 colleges and universities in the United States with a combined enrollment of almost 1.4 million full-time students and an over-all total of 1.9 million, reported that full-time enrollments increased 6.8 percent over 1953-54 and part-time enrollments exceeded last year's by 9.7 percent. Dr. Walters also found that enrollments in teacher's colleges have increased 19.4 percent and that the number of freshman engineering students is up 9 percent over last year. The University of California ranks first in full-time student enrollment with 35 273. In over-all enrollment New York University leads with more than thirty-nine thousand full- and part-time students.

At least eleven of the torrent of more than one thousand bills introduced during the opening moments of the 84th Congress call for emergency federal aid to the states and territories in the building of urgently needed school facilities. One such measure (S.5), submitted by Senator Lister Hill (D. Alabama) on behalf of himself and eighteen other members of the Senate, urges that a two-year, \$1 billion program of assistance to education be undertaken by the government. "This year," Senator Hill said in a supplementary statement, "enrollment again broke all records. We entered the school year lacking at least 370 000 classrooms to house the flood of students. We faced a net lack of about 135 000 new teachers. . . . The picture will grow blacker every year as the birthrate continues at record heights, as costs grow, and as teachers' salaries remain below adequate levels. . . . As of today, the Russians are outstripping us in engineering graduates, in scientific specialists, in the production of those skills essential to national strength and security. We dare not fall behind. We dare not neglect our elementary and secondary schools, where training of physicists, mathematicians, engineers, and other highly skilled and educated personnel must begin."

Increased enrollments in high schools, coupled with a decrease in the production of secondary school teachers, according to a report of the Ford Foundation's Fund for the Advancement of Education, are leading to a crisis in education in the years immediately ahead. An increase of "at least two-thirds" in the na-

tion's capacity for educating high school students is needed over the next ten to fifteen years, the report said, and there is a "staggering" need for increased facilities in the more rapidly growing communities. The Fund, which has spent almost \$26 million for improving formal education since its creation in 1951, reported further that the "annual output of elementary and high school teachers has dropped 26 percent since 1950 while enrollments in elementary and high schools have risen 24 percent and 10 percent respectively."

The Du Pont Company has established a fund of \$291 000 for grants to universities and colleges to help improve the teaching of science and mathematics. The fund, which is part of the Company's \$800 000 aid-to-education program for 1955-56, is earmarked largely for training in chemistry, but \$75 000 has been set aside for summer and winter fellowships for master's degree training to be awarded to high school science and mathematics teachers. The support for better teaching, according to an announcement by the Company, expands an activity which, until this year, was largely experimental. It was developed by Du Pont in recognition of a growing need for such assistance and was worked out in cooperation with educators throughout the nation. Another part of the larger program makes available 57 postgraduate fellowships (of which five are in physics) to 38 institutions for distribution as they see fit. The postgraduate fellowships in physics are at Duke University, Massachusetts Institute of Technology, Ohio State University, University of Virginia, and Yale University.

Massachusetts Institute of Technology has announced the availability of a number of graduate and advanced research fellowships in electronics. Known as Industrial Fellowships in Electronics, they are sponsored jointly by a group of industrial organizations concerned with the advancement of electronics and its applications. Applicants for graduate student fellowships must satisfy the requirements for admission to the MIT graduate school. A few advanced research fellowships will be awarded to candidates possessing the PhD or its equivalent who wish to pursue advanced studies in electronics. The annual stipend is between \$1500 and \$2400 (including tuition fees) for the graduate fellowship and a minimum of \$3000 for the advanced research fellowship. Application should be made at least four months prior to the intended date of entrance. For further information write to J. B. Wiesner, Director, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

Atoms for Peace

Delegates from seven nations held their first meeting on January 17th to consider plans for the forthcoming international conference on the peaceful uses of atomic energy called for under the terms of a resolution approved by the United Nations General Assembly in December. The resolution specified that the confer-

nance is to open "not later than August, 1955". Members of the seven-nation advisory committee include: I. Rabi (United States), Higgins professor of physics at Columbia University; Sir John Cockcroft (Great Britain), a member of the British Atomic Energy Authority; W. B. Lewis (Canada), director of research and development at the Canadian atomic energy establishment at Chalk River; Bertrand Goldschmidt (France), a member of the French AEC; Homi Bhabha (India), chairman of India's AEC and head of the Tata Institute for Fundamental Research in Bombay; Dmitri V. Skobeltsyn (USSR), a leading Russian physicist and member of the Soviet Academy of Science; and Jayme de Barros (Brazil), a member of the Brazilian delegation to the United Nations. Several governments have also named alternate delegates to the committee. They are: J. V. Dunworth (Great Britain), deputy chief of the science office in the British Ministry of Supply; David J. Keys (Canada), vice president for research and development at Chalk River; Jacques Tine (France), a member of the French delegation to the UN; and Joaquim Coste Ribeiro (Brazil), scientific director of the Brazilian National Research Council.

It has already been decided that the international scientific conference will be held in Geneva, Switzerland, probably in August. The sixty member states of the United Nations will be invited to take part in the meeting, and it has been anticipated that an additional twenty or so other states belonging to the UN's various specialized agencies will also be invited to send delegates to the conference.

The Atomic Energy Commission has completed arrangements for a special four-week training course in radioisotope techniques for "scientists and technicians from the 53 countries qualified to receive shipments of U. S. manufactured isotopes". The first of several AEC projects to be conducted in "furtherance of the President's proposal for an international atomic agency", the special course is identical with the training given six times a year at Oak Ridge and will open on May 2nd.

A private organization designed to further the atom's for peace program proposed by President Eisenhower has been formed under the name "Fund for Peaceful Atomic Development, Inc.", with the help of a grant of \$150,000 from the Ford Foundation. The Fund, incorporated on a nonprofit basis with headquarters in Detroit and offices in New York and Washington, is headed by W. L. Cisler, president of the Detroit Edison Company. Initially, the group plans to arrange for "task forces" of leading industrialists and scientific and technical experts from abroad to visit the United States and survey unclassified aspects of this country's nonmilitary atomic programs. "Only with a private organization supplementing the work of our Government can the available talent throughout the world be mobilized in a maximum effort to bring into reality the beneficial uses of the atom," Mr. Cisler said. He added that the Fund will emphasize worldwide "people-to-people, industry-to-industry, and science-to-science co-

Research Physicists

*At Hughes
Research and
Development
Laboratories
unusual attention
is devoted to
creation and
preservation of a
professional
climate suited
to the
individual
needs and
interests of the
advanced
physicist,
mathematician
and engineer.*

FOR
SYSTEMS
PLANNING
AND
ANALYSIS
IN THE
FIELD OF
INTERCEPTOR
RADAR FIRE
CONTROL

The Laboratories are presently in need of physicists with experience in systems planning and analysis. The work involves military studies of radar fire control systems for supersonic interceptor aircraft. Directly concerned is evaluation of strategic and tactical needs of the services to establish design objectives following a period of systems invention and early paper design down to the "black box" stage—with comparison of possible alternatives leading to recommendations for development.

Considerable analytic effort is also required on advanced projects involving complex interactions of noise, smoothing and prediction, multi-loop nonlinear servos, aircraft dynamics and controls, and the properties peculiar to mixed analog and digital systems.

Scientific and Engineering Staff

Hughes

*Culver City,
Los Angeles County,
California*

RESEARCH AND
DEVELOPMENT
LABORATORIES

Relocation of applicant must not disrupt an urgent military project.

operation" in seeking to "put to work all of the private resources in this country and abroad so as to improve the welfare of men and women throughout the world and raise their living standards by means of atomic energy". Other officers are William C. Foster, vice president; Oscar M. Reubhausen, secretary; and Joseph M. Dodge, treasurer. The organization's directors are Robert F. Bacher, Prentiss M. Brown, Chester Bowles, William A. Calvin, Arthur H. Dean, John R. Dunning, William T. Gossett, Paul G. Hoffman, C. D. Jackson, Philip D. Reed, David Rockefeller, Hartley Rowe, E. Blythe Stason, William Webster, and Theodore P. Wright.

Research and Development

Cosmic-ray physicists from several universities participated last month in a series of "Skyhook" balloon flights from Texas, under the sponsorship of the Office of Naval Research and the Atomic Energy Commission. Some 12 flights of high-altitude plastic balloons, each carrying up to 150 pounds of scientific apparatus, were launched from Goodfellow Air Force Base, San Angelo, Texas. The experiments, which were expected to be concluded by January 20th, were part of the broad ONR-AEC nuclear physics research program.

Yale University has been awarded a grant of more than \$3 million by the John A. Hartford Foundation to be used for research and training in biophysics and for the construction of a new biophysics research laboratory. The fund will be received in the form of an annual grant of \$180 000 for the next fifteen years, plus \$460 000 for the construction of the laboratory, which will be located on the Hartford Foundation's property in Valhalla, N. Y., two miles north of White Plains. Ernest C. Pollard, professor of biophysics at Yale, will be chairman of the University's new department of biophysics, and Franklin Hutchinson, assistant professor of radiation physics, will be resident director of the Biophysics Research Laboratory at Valhalla upon its completion. The new department of biophysics, according to Professor Pollard, will have a staff almost double the present faculty now interested in biophysics and will include physicists, chemists, biologists, and physicians. Instructional headquarters of the program will be located in the new research laboratory for biology and physics currently under construction at Yale. The Valhalla laboratory, in addition to being the center of a research program, will also be used for conference and seminar purposes as well as for summer studies.

Ground was broken on January 10th for the first of four laboratory buildings to be constructed under a \$10 million development program of the Missile Systems Division of the Lockheed Aircraft Corporation at Van Nuys, California. The new research building, which is expected to be completed by next fall, will provide 74 000 square feet of laboratory and office space. "This new facility is the forerunner of a completely integrated system of research laboratories," said Elwood

R. Quesada, vice president and general manager of the Division. "They will be staffed by some of the world's outstanding scientists—men whose mission is to put totally reliable defense and retaliatory weapons in the hands of our armed forces." Since it was organized in 1953, the Division has grown from 30 to 1250 employees. The research laboratory is headed by E. H. Krause, formerly associate director of research at the Naval Research Laboratory.

The American Locomotive Company has been awarded a \$2.1 million AEC contract to design, build, and test-operate a prototype "package" nuclear power plant with components that can be air-lifted to remote bases. To be known as the Army Package Power Reactor (APPR), it will have a capacity of about 2000 kilowatts of electric power, with future models to include provisions for space heating as well.

The West German government, according to a dispatch from Bonn to *The New York Times* dated December 4th, is reported to have "set about drafting an atomic energy bill" which will be bound by the restrictions on atomic energy development in Germany contained in agreements with the Western powers. A group of sixteen German industrial concerns led by four major companies is at the same time preparing to build a \$5 million reactor for "civilian experimentation in the nuclear energy field", the newspaper said.

Publications

Comprehensive lists of serial publications in the United States and the Soviet Union have been prepared by the Science Division of the Library of Congress under a grant from the National Science Foundation. The two lists are intended to inform scientists and others who work with scientific literature of the existence, nature, and availability of current scientific and technical publications of both the United States and the USSR. The first list (*Scientific and Technical Serial Publications, United States, 1950-1953*) contains approximately 3600 titles. The USSR list (*Scientific and Technical Serial Publications, Soviet Union, 1945-1953*) contains about 1700 titles, including those of which the compilers have some knowledge but which do not appear to be available in the United States. It is noted that of the Russian publications some 350 are apparently not available anywhere in the United States, and only a few scattered issues of some 200 others could be found in this country. In both lists, the serials and periodicals are listed under broad subject headings and are described wherever possible in terms of issuing organization or publisher, place of publication, date of first issue, frequency, and nature of contents. The U. S. list (price, \$1.25) and the Russian list (price, 60 cents) are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

The National Bureau of Standards has issued a 108-page *Report of the Thirty-Ninth National Conference on Weights and Measures, 1954*. The volume, NBS