

SCIENCE EDUCATION

Les Houches Summer School

The 1964 session of the University of Grenoble's Summer School of Theoretical Physics will be held from July 1 through August 25 at Les Houches (Haute-Savoie), France. The main topic of the session will be the interaction of electromagnetic waves with matter, including individual courses by N. Kroll, quantum theory of radiation; R. Glauber, statistical properties of light beams; W. E. Lamb, quantum theory of optical masers; J. Brosset, optical pumping; N. Bloembergen, nonlinear processes; J. M. Winter, linewidth of energy levels; A. Abragam, paramagnetic resonance and relaxation; and A. Aigrain, solid-state physics and optical masers. Seminars, with the participation of C. H. Townes and others, are also planned. Both French and English will be used in class.

Intended primarily for young physicists who are interested in the fundamental aspects of quantum electronics, the session will require a solid background in quantum mechanics, classical physics, and, particularly, electromagnetism and atomic physics. Admission will be limited to about thirty participants.

In the past, a number of National Science Foundation travel grants have been available to US citizens who attend such schools as Les Houches, which receive partial support from NATO, and it is hoped that similar grants will be available in 1964. Further information and application blanks can be obtained from Prof. Cecile DeWitt, Department of Physics, University of North Carolina, Chapel Hill, N. C. Completed blanks must be received in Grenoble no later than March 1.

Visiting Fellowships

The visiting-scientists program of the Institute of Mathematical Sciences, Madras, India, periodically invites theoretical physicists and mathematicians from Europe, the United States, and Japan to spend several weeks or months researching and teaching at the Institute in association with its permanent staff. The same program sponsors, by invitation or request, recent graduates for postdoctoral study.

Further information may be obtained by writing to the director, Professor Alladi Ramakrishnan, The Institute of Mathematical Sciences, Madras 4, India.

The University of Colorado at Boulder is offering approximately ten stipends to visiting fellows for study at the Joint Institute for Laboratory Astrophysics during 1964-65. The fellowships will be based solely on scholarly achievements, without restrictions as to citizenship or national origin, and the recipient will be able to do research in whatever area of laboratory astrophysics he chooses. The amount of the stipend will normally equal the fellow's present academic salary,

adjusted to a 12-month basis, and (for those coming from abroad) will be matched to an equivalent US position. No stipend will exceed \$19 000. Round-trip transportation costs for the recipient and his immediate family will be covered over and above the stipend and \$400 will be available for professional travel inside the US during the fellowship. Requests for application forms (closing date January 15) should be addressed to the Secretary for Visiting Fellows, JILA, University of Colorado, Boulder, Colo.

Graduate Programs

Graduate-level study in the field of chemical physics is available under a new program recently established at the University of Maryland. A joint effort of the University's Departments of Physics and Chemistry and Institute for Molecular Physics, the new curriculum will be administered by a three-man committee chaired by Dr. Joseph Vanderslice, professor of molecular physics. The Physics and Chemistry Departments will be represented on the committee by Drs. Ralph E. Glover, III, and William J. Svirbly, respectively.

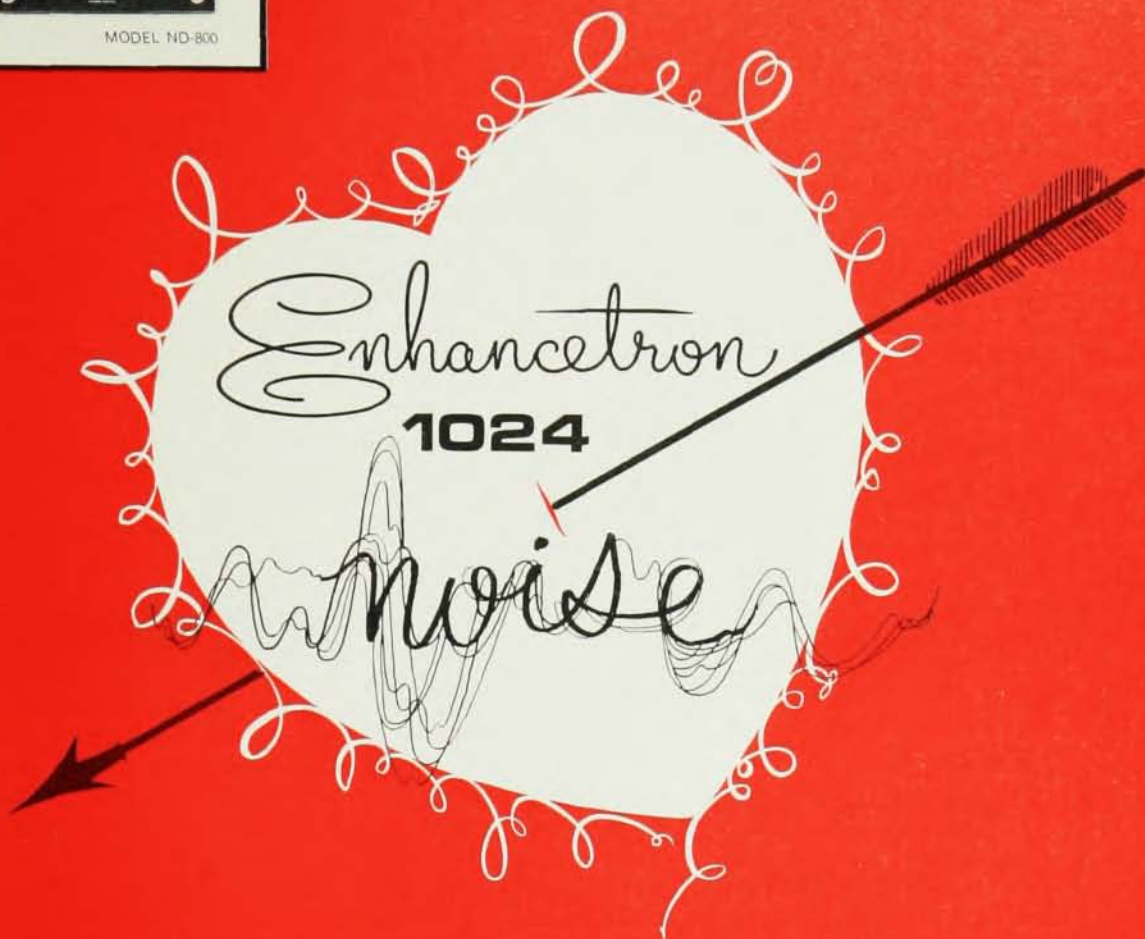
Robert R. France, Acting Provost of the University of Rochester, has announced the University's intention to establish a graduate-level Center for Visual Science. Patterned after the University's existing centers for brain research and space sciences, the new Center will offer courses taught by faculty members from the Department of Psychology, the Institute of Optics, the Center for Brain Research, the Department of Electrical Engineering, the Division of Ophthalmology in the University's medical school, and others. Degrees will be conferred through the students' academic departments, and, for the present, the new interdisciplinary unit will use laboratory facilities already existing at the University.

Montana State College in Bozeman has inaugurated a PhD program in physics, the first such program in Montana or in any of the four adjoining states. Research in the Physics Department is concentrated in the areas of atomic, molecular, and solid-state physics and in astrophysics. Further information can be obtained from Dr. Irving E. Dayton, Montana State College, Bozeman, Mont.

The Oak Ridge Graduate Fellowship Program, administered for the Atomic Energy Commission by the Oak Ridge Institute of Nuclear Studies, is open to US citizens from any American university that offers the PhD degree. Accepted applicants perform thesis re-



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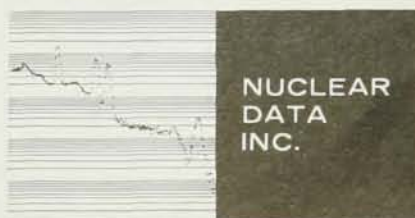
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search at AEC installations at Oak Ridge, the Puerto Rico Nuclear Center, and the Savannah River Laboratories, supported by an annual stipend of \$3000 plus \$500 for each dependent, in addition to tuition and fees. Details of the program and application forms may be obtained from the Oak Ridge Graduate Fellowship Office, ORINS, Oak Ridge, Tenn.

Professorship Endowed

The Carnegie Institute of Technology has established a Buhl Professorship of Theoretical Physics, with the aid of a \$750 000 endowment from the Buhl Foundation of Pittsburgh. Dr. R. E. Cutkosky of Carnegie Tech has been appointed the first of the Buhl Professors. In addition to the professorship, part of the income from the endowment will be used to bring to Pittsburgh, for limited periods, outstanding theoretical and experimental physicists for seminars, conferences, and lectures.

Brandeis Astrophysics Institute

Brandeis University has announced the establishment of a new Astrophysics Institute located on the University's campus in Waltham, Mass. The Institute, under the direction of J. S. Goldstein, associate professor of astrophysics, will undertake a program of teaching and research in stellar structure, stellar atmospheres, galactic physics, and the interstellar medium. A program of laboratory astrophysical research is planned.

Training Programs

The International Atomic Energy Agency has helped to sponsor several international training programs this year. A course on nuclear science for high-school physics and chemistry teachers, held from July 28 through September 5, was organized jointly by the IAEA and the government of Israel at the Nahal Soreq Radioisotope Training Center of Israel. Intended as an interregional activity for African and Asian countries, it attracted teachers from Cyprus, Ghana, Nigeria, Tanganyika, Thailand, Turkey, and Israel.

A sixteen-week regional training course for Latin America on the applications of radioisotopes in medicine, organized by the IAEA in cooperation with the government of Argentina, began on August 12 at the National Atomic Energy Commission in Buenos Aires.

The IAEA is currently holding a five-month advanced international training course on the physics of radiotherapy. This course, which began on September 2, is being held in cooperation with the United Kingdom Hospital Physicists' Association at the Middlesex Hospital Medical School in London.

Since July, several young and enthusiastic physics professors from Argentina, Brazil, Chile, and Ecuador have been working in São Paulo, Brazil, to create new materials for the teaching of secondary-school physics

in Latin America. Their pilot project, which will last a year, is cosponsored by the United Nations Educational, Scientific, and Cultural Organization and the São Paulo branch of the Instituto Brasileiro de Educação, Ciência e Cultura (otherwise IBECC, or the Brazilian National Commission for UNESCO). Inexpensive laboratory equipment, experimental programmed instruction manuals, short film loops for classroom use, and longer films for television teaching in Spanish and Portuguese are being developed by the group. The project represents the collaborative efforts of the UNESCO Departments of Education, Mass Communication, and Natural Sciences. UNESCO is providing financial support amounting to \$140 000 for the current year. That sum will be approximately matched by contributions for fellowships and facilities from the Brazilian government and other sources. The pilot project, which was originally proposed by Albert V. Baez of UNESCO's Department of Natural Sciences, was located in Brazil primarily because of the availability of the facilities of the IBECC, an outstanding center of activities in science education known for its pioneering work in producing teaching materials in the basic sciences.

The project is designed to have the largest possible multiplying effect by concentrating on the training of professors of physics in universities and pedagogical institutes who are responsible for teaching physics to prospective teachers. In addition, the intent is to have participants from as many Latin American countries as possible, to explore the use of self-instruction techniques, and to prepare experimental television films. The project will draw on the work of the Physical Science Study Committee (particularly the PSSC text, which already exists in a Spanish edition and is being translated into Portuguese as well) and on other recent efforts to improve teaching methods and course content in physics. Two physicists, Pär Bergvall of Uppsala, Sweden, and Nahum Joel of Santiago, Chile, are included in the UNESCO field staff assigned to the pilot project. Dr. Bergvall is the director. The staff also includes two specialists in behavioral analysis and programmed instruction and a producer of educational films. The participants are expected eventually to number somewhere between twenty and forty.

Because the time available is not sufficient to prepare educational materials for a complete physics course, it was decided to concentrate on a single topic of broad interest and significance. The topic chosen is the wave-particle duality, with special emphasis on the properties of light, which has the advantage that the experimental apparatus required is relatively inexpensive and simple to build. It is planned that at least six and possibly as many as twelve 22-minute films will be produced for telecasting in São Paulo during the six-week period from June 15 to July 30, 1964. These films will be designed for a test population of some two hundred high-school students, but hopefully they will also prove of value to another test group of about one hun-