Calendar of Events — Courses

Integrated Circuits Institute, Tucson, Ariz.; will be offered at two different times: 7–18 July and 28 July–8 August. Will provide the participant with an understanding of the design and fabrication of integrated circuits. In addition to the fabrication of actual circuits, device theory will be reviewed and engineering design compromises will be considered. It will be an intensive 80-hour program with an emphasis on practical experiences. Lectures explaining the theory will be interwoven with the laboratory experiences, and technology-imposed limitations will be pointed out. Component and device parameters will be related to processing steps during the lectures, and engineering trade offs will be explained. All participants will perform the processing steps including mask fabrication, photoengraving, wafer preparation, diffusion, oxidation, metallization, wafer scribing, die and wire bonding, and circuit testing. The enrollment fee for each Institute is $1000. (Dr. Roy H. Mattson, Electrical Engineering Department, University of Arizona, Tucson 85721)

Current Methods of Immunological Research and Diagnosis, Buffalo, N.Y., 21 July–8 August. It will consist of practical laboratory exercises supplemented by demonstrations, lectures, and discussions, designed to provide the participant with a survey of presently available methodology and insight into the underlying immunological principles. The topics will include antigen preparation methods, gel diffusion precipitation, passive agglutination, immunofluorescence, mixed agglutination, complement levels, complement fixation, localized hemolysis in gel, blood group determination and compatibility testing, immediate hypersensitivity, delayed hypersensitivity, transplantation, and tissue typing. Attendance will be limited to 20 participants. Limited fellowship support can be provided to applicants with financial need. Tuition is $300. (Professor N. R. Rose, Center for Immunology, Room 321, Sherman Hall, State University of New York at Buffalo 14214)

Subcellular Particulates: Medical and Biochemical Applications, Indianapolis, Ind., 16–19 June. Is intended for medical research workers, chemists, and biologists. The basic goal is to survey normal, pathological, and experimental organelle systems amenable to subcellular fractionation technology. Major problems of interest to the pathologist will be brought to the attention of other research workers. Efforts will be made to present the latest developments in methods of organelle separation and characterization which are applicable to the study of such problems in pathology. Latest techniques in subcellular isolation methodology will be demonstrated including differential, density gradient, and zonal centrifugation. Other techniques will include foam fractionation, filtration, and flotation methods. Subcellular procedures, including virus isolation, will be presented for brain, heart, kidney, liver, and culture cells. Nuclei, endothelial cells, mitochondria, mitochondrial subparticles, myelin, microsomes, ribosomes, lipofuscin, and virus particles will be emphasized, but other particles also will be considered. Emphasis will be placed on the isolation, electron and phase microscopic identification, lipid composition, and biochemical characterization of particulates from normal and pathological tissue. Registration fee: $100. (Dr. A. N. Siakotos, Department of Pathology, Indiana University Medical Center, Indianapolis 46202)

Microbes as Models for the Investigation of Biological Problems, Jerusalem, Israel, 27 April–16 May. The primary purpose of the course is to acquaint participants with techniques and concepts involved in the use of bacteria and bacteriophage as tools for the investigation of biological problems at the molecular level. Particular emphasis will be placed on the genetic approach to these problems. Attendance will be limited to 20 postgraduate students in mathematics, physics, chemistry, or biology. The course will be conducted in English. Each student will receive a sum of IL. 500 to cover living expenses. A limited number of travel grants will be available. Application deadline: *27 March.* (Professor M. Shilo, Institute for Microbiology, Hebrew University–Hadassah Medical School, P.O. Box 1172, Jerusalem, Israel)

Theoretical Physics, Waltham, Mass., 16 June–25 July. Lectures and seminars will be devoted to atomic physics and applications to astrophysics. (The Secretary, Physics Summer Institute, Brandeis University, Waltham, Mass. 02154)

Computer Applications in Chemistry, DeKalb, Ill., 4 June. An all-day workshop consisting of an introductory lecture, programming experience, numerical methods and applications. The fee is $30 plus registration at the Great Lakes Regional Meeting, American Chemical Society. Deadline: *8 May.* (Great Lakes Regional Meeting, Department of Chemistry, Northern Illinois University, DeKalb 60115)

Research Instrumentation, Brooklyn, N.Y., 19 July–9 August. The course is open to industrial and academic scientists and engineers from all disciplines. Medical research workers will find it valuable and are also invited to apply. It is intended for those who need a working knowledge of electronic instrumentation as applied to problems in research. There are no specific prerequisites beyond a basic understanding of college physics. The course will be supported in part by the National Science Foundation under its College Teacher Programs. Twenty-four college teachers from the United States will attend the course free of charge, and will receive a stipend from NSF for 3 weeks plus travel allowance. Applicants from business and industry will be accepted on a tuition-paying basis at $500, covering all laboratory fees, textbooks, and special notes. Applicants should secure a place in the course as soon as possible. *The final date for consideration of applications for NSF support is 1 April.* Industrial participants must file application by 1 June. (Professor Kenneth Jolls, Office of Special Programs, Polytechnic Institute of Brooklyn, 333 Jay St., Brooklyn, N.Y. 11201)