

Acoustical society honors Bolt with gold medal

The Acoustical Society of America will present the 1979 Gold Medal to Richard H. Bolt at the 50th Anniversary Meeting held on 13 June. The Gold Medal, which is the highest honor of the Society, is presented in the spring of odd-numbered years. Bolt is to be cited "... For outstanding contributions to acoustics through research, teaching, and professional leadership, and for distinguished administrative and advisory service to science, engineering, and government."

Bolt received his formal education at the University of California at Berkeley. Interested in music and graphic design, he earned a bachelor's degree in architecture in 1933. It is noteworthy that Bolt retained his interest in design; he later acted as a consultant to the sculptor of the Gold Medal. Bolt had little contact with physics until he read some articles on acoustics in architecture that piqued his curiosity. Despite the doubts of the Berkeley Physics Department, he immersed himself in the subject and eventually qualified himself for entry into the graduate physics program. After obtaining his PhD in 1939, he was granted a National Research Council postdoctoral fellowship in physics. He spent the next year doing research in acoustics at Massachusetts Institute of Technology. Bolt



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then joined the faculty of the University of Illinois, but soon returned to MIT as a research associate and for two years directed its Underwater Sound Laboratory. Then in 1943, he was named Scientific Liaison Officer in Subsurface Warfare at the Office of Scientific Research and Development in London, where he played a significant role in the coordination of the British-American submarine warfare ef-

fort. Bolt came back to MIT as an associate professor of physics in 1945 and began organizing the interdepartmental Acoustics Laboratory.

He and another member of the MIT faculty, Leo L. Beranek, set up the consultative partnership that bears their names in 1948, adding Robert B. Newman a year later. Bolt became a full professor of acoustics in 1954. Taking a leave of absence from MIT in 1960, he joined the National Science Foundation as Associate Director. Bolt spent 1963-64 as a Fellow of the Center for Advanced Study in Behavioral Sciences at Stanford. He resigned as professor of acoustics in 1963 and became a lecturer in the Department of Political Science, where he taught for the next seven years.

In 1973-74, Bolt was chairman of a committee of consultants engaged by US Judge John J. Sirica to study the White House "Watergate" tapes. As a visiting scientist to the Massachusetts state legislature, he initiated a successful program to help legislators understand the meaning of scientific evidence presented in support of proposed legislation.

The Acoustical Society honored Bolt in 1942 when it presented him with its first Biennial Award. Seven years later he became the ASA's President.

Engineering academy elects new members

The National Academy of Engineering has announced the election of 99 engineers to membership in the Academy and 18 to foreign associateship. Election to the Academy is the highest distinction that can be conferred on an engineer and honors those who have made a significant contribution to fields in engineering and technology.

Joining the roster of the Academy as new members are these physicists and scientists who work in physics-related areas: James G. Baker (Harvard Observatory), Coleman duPont Donaldson (Aeronautical Research Associates of Princeton, Inc.), Harry G. Drickamer (University of Illinois), Pol Duwez (California Institute of Technology), Adolf P.

Gagge (Yale University), William J. Galoway (Bolt Beranek and Newman, Inc., Canoga Park, Calif.), Eugene I. Gordon (Bell Laboratories, Murray Hill, N.J.), Harold B. Law (Hopewell, N.J.), Max V. Mathews (Bell Laboratories, Murray Hill, N.J.), Robert D. Maurer (Corning Glass Works), Arthur B. Metzner (University of Delaware), Richard B. Neal (Stanford University), Milton S. Plesset (California Institute of Technology), William C. Reynolds (Stanford University), Otto H. Schmitt (University of Minnesota), Manfred R. Schroeder (University of Göttingen), Elias Snitzer (United Technologies Research Center, East Hartford, Conn.), Charles E. Taylor (University of Illinois, Urbana), Marshall P. Tulin (Hydronautics, Inc., Laurel, Md.), Robert H. Wentorf, Jr. (GE Research and Development Center, Schenectady, N.Y.)

and Jack H. Wernick (Bell Laboratories, Murray Hill, N.J.).

Among the recently elected foreign associates are: Per V. Bruel (Brüel & Kjær, Naerum, Denmark), Arne S. Eklund (International Atomic Energy Agency, Vienna, Austria), Walter Marshall (UK Atomic Energy Authority, London, England) and Sir Charles Oatley (University of Cambridge, Cambridge, England).

Breton becomes OSA congressional fellow

Michael E. Breton, a research associate at the National Research Council of Canada, has been chosen as the 1979-80 Congressional Science and Engineering Fellow of the Optical Society of America and the American Association for the Advance-

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ment of Science. Breton will be the third fellow supported by the Optical Society since 1976. The fellowship was established to provide for greater interaction between the legislative and scientific communities by allowing scientists and engineers to spend a year working on the staffs of US Congressmen or one of the congressional committees.

An experimental psychologist, Breton specializes in the psychophysics of color vision. He received his bachelor's degree from Amherst College and his doctorate from the University of Chicago. Breton was a postdoctoral fellow at Columbia University for two years before joining the Optics Section of the National Research



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Council of Canada. He has performed research in temporal response characteristics of chromatic mechanisms, saccadic eye movements, visual quantum counting and color matching. Currently, he is working on a model for chromatic brightness perception.

Daniel C. Drucker of the College of Engineering in the University of Illinois (Urbana) has been awarded the Gustave Trassenster Medal for 1979 from the University of Liege, Belgium. Drucker is cited for his work on the theory of plasticity.

Gerhard Ertl, professor of physical chemistry at the University of Munich, has been awarded the E.W. Müller Lecture-ship for 1979 by the Laboratory for Surface Studies at the University of Wisconsin-Milwaukee.

Jean Teillac was reelected president and **Paul Levaux** vice-president of the CERN Council for 1979. **Günther Lehr** was elected vice-president in succession to **A. C. Pappas**.

Thomas F. George has been given the 1979 Marlow Medal of the Faraday Division of the Chemical Society. The medal is

awarded to scientists under 33 years old who have done outstanding work in physical chemistry and chemical physics.

Henry Kressel has been appointed staff

vice-president, Solid State Technology, RCA Laboratories. Kressel will be responsible for RCA's integrated circuit research at Princeton, N.J. and for the RCA Solid State Technology Center, Somerville, N.J.

obituaries

Donald E. Kirkpatrick

Donald E. Kirkpatrick, for many years chairman of the physics department at Queens College of the City University of New York, died on 8 February after a long illness. He had almost reached his seventy-fifth birthday.

Kirkpatrick was born in Swepsonville, North Carolina, located just a few miles from Duke University where he received his bachelor's degree in 1927 and his master's degree in 1928. He earned his PhD at New York University in 1934 and continued teaching there until 1937 when the newly established Queens College opened. He was the first chairman of the new physics department and served in that capacity at intervals for many years. Before his retirement in 1972 he was instrumental in starting graduate work in physics at Queens College when the city colleges united into the present City University of New York.

The present Placement Service of the American Institute of Physics owes much to the efforts of Kirkpatrick, who in 1946, with the cooperation of Director Henry A. Barton and Wallace Waterfall, revived George H. Burnham's project, which had been interrupted by the war.

During the war years, from 1942 to 1945, Kirkpatrick served as Senior Physicist at the Oceanographic Institute at Woods Hole, Massachusetts, where, with two of his colleagues, Edward M. Thorndike and Alexander P. Marion, he engaged in research involving underwater signalling and photography.

During the years immediately following the war, when Civil Defense became a matter of national concern, Mayor Robert Wagner named a committee of scientists to advise on radiation dangers in New York City and Kirkpatrick was chosen as a member of that committee. He helped to select the instruments necessary to detect and monitor harmful radiation and instructed local groups in their use.

Kirkpatrick's contribution to Queens College touched practically every facet of college life from teaching and administration to the mechanical aspects of running an educational institution. He served for two years as Dean of Administration. His devotion to general college matters was recognized by a presidential citation in the spring of 1968.

Underlying Kirkpatrick's many activities at Queens College was a deep

concern for the development of both intellect and character in students. On his retirement his colleagues honored him by setting up the Donald E. Kirkpatrick Award to be given annually to an outstanding graduating senior.

HUGO N. SWENSON
Professor Emeritus
Queens College

Dennis Gabor

Dennis Gabor, the inventor of holography, died 9 February in London at the age of 78. He was born in Budapest, Hungary and received his education at the Technical University, Budapest, the Technische Hochschule in Charlottenburg, Germany, where he received the degree Dr Ing in 1927, and the University of London. He was a research engineer at Siemens and Halske in Berlin (1927-33) and at Thomson-Houston in Rugby (1933-48). He then joined the staff at Imperial College, London, where he became Professor of Applied Electron Physics until his retirement in 1967.

In 1947, while concerned with improving the resolution of the electron microscope, Gabor made the invention that later brought him fame and the Nobel Prize. He conceived a technique for recording the wave field scattered by the electron-illuminated object, then recreating from this record a replica of the wave field, complete in amplitude and phase, but with light waves instead of the original electron waves. All of the electron-wave aberrations, resulting from the imperfections of electron lenses, would carry over to the light waves, and could be compensated by the well-known techniques of the lens designer. To this process Gabor gave the quite descriptive name "wavefront reconstruction," and the record he called a "hologram," from the Greek *holos*, meaning "whole."

Gabor's solution to the electron-wave problem was a bold and imaginative one, although, as it turned out, not very successful. Nevertheless, when carried out entirely with light waves, holography became an immensely successful process, giving rise to three-dimensional imagery that has captivated scientists and non-scientists alike, to powerful optical computing techniques, to rather surprising forms of interferometry, and to many other significant optical processes.

In its early years, however, even purely