

the University of Washington; **James H. Stith**, a professor of physics at Ohio State University; and **Jack M. Wilson**, professor of physics and director of the Center for Innovation in Undergraduate Education at Rensselaer Polytechnic Institute.

85 Engineers Join the Ranks of NAE

The National Academy of Engineering announced in February the names of its 77 new members and 8 new foreign associates. The newly elected members include:

John C. Angus, professor in the departments of materials science and engineering and of chemical engineering at Case Western Reserve University, in Cleveland, Ohio

Arthur B. Baggeroer, the Ford Professor of Engineering at MIT

Federico Capasso, head of the quantum phenomena and device research department, AT&T Bell Labs, Murray Hill, New Jersey

E. Gail de Planque, commissioner of the US Nuclear Regulatory Commission, Washington, DC

Gene H. Haertling, the Bishop Distinguished Professor in Ceramic Engineering at Clemson University, South Carolina

Wesley L. Harris, associate administrator for aeronautics at the National Aeronautics and Space Administration, Washington, DC

Riki Kobayashi, the Louis Calder Professor of Chemical Engineering at Rice University in Houston, Texas

Robert G. Kouyoumjian, professor emeritus of electrical engineering at Ohio State University, Columbus

Ray B. Krone, professor emeritus of civil and environmental engineering at the University of California, Davis

John M. Rowell, executive vice president and chief technical officer at Conductus Inc, Sunnyvale, California

Carl H. Savit, retired senior vice president of Western Geophysical Co, Houston, Texas

Larry L. Smarr, director of the National Center for Supercomputing Applications at the University of Illinois, Urbana-Champaign

Vivian T. Stannett, professor emeritus of chemical engineering at North Carolina State University in Raleigh

Charles R. Steele, professor of applied mechanics, aeronautics and astronautics at Stanford University

Simon M. Sze, the NSC Professor of Engineering and director of the Institute of Electronics at the National

Chiao Tung University, in Hsinchu, Taiwan

Kathleen C. Taylor, head of the physical chemistry department at General Motors Corp in Warren, Michigan

Stephen Wei-Tun Tsai, research professor in the department of aeronautics and astronautics at Stanford

William H. Weinberg, professor of chemical engineering at the University of California, Santa Barbara.

Among the newly elected foreign associates are:

John E. Ffowcs Williams, professor of engineering at the University of Cambridge, England

Susumu Kato, vice chairman of the Japan-Indonesia Science and Technologies Forum in Tokyo

John R. Philip, fellow emeritus at the Centre for Environmental Mechanics of the Commonwealth Scientific and Industrial Research Organization in Canberra, Australia

David Tabor, professor emeritus of physics at the University of Cambridge, England

Kenneth Walters, professor of applied mathematics at the University College of Wales, United Kingdom.

IN BRIEF

Brookhaven National Laboratory has appointed **Thomas Kirk** as associate director for high-energy and nuclear physics. Kirk was most recently project manager and department head for the Solenoidal Detector Collaboration at the Superconducting Super Collider.

Steven Koonin, professor of theoretical physics at Caltech, has become

vice president and provost of that institution.

Federico Capasso, head of the department of quantum phenomena and device research at AT&T Bell Laboratories in Murray Hill, New Jersey, has received the 1994 Heinrich Welker Memorial Medal. He was cited for his pioneering contributions to quantum-effect III-V compound semiconductor devices. The award is bestowed by Siemens AG, headquartered in Munich, Germany.

The Third World Academy of Sciences, located in Trieste, Italy, announced in November the recipients of its 1993 prizes recognizing outstanding contributions by scientists in developing countries. The prize in physics went to **Girish S. Agarwal** of the school of physics at the University of Hyderabad, India, for "his predictions of fluctuation-induced as well as subharmonic resonances, and outstandingly incisive theoretical contributions to a wide variety of basic phenomena in quantum optics."

The Award in Magnetism given triennially by the Magnetism Commission of the International Union of Pure and Applied Physics has been presented to **Albert Fert**, of the Université Paris-Sud in Orsay, France, and to **Peter Grünberg**, of the Forschungszentrum Jülich, Germany. In the awards ceremony, held last August in Warsaw, Poland, the two were praised for "the pioneering nature of their work in the field of magnetic coupling and magnetoresistance in artificial magnetic multilayered structures."

OBITUARIES

Jerome Bert Wiesner

Jerome Bert Wiesner, who died on 22 October 1994, was an uncommon man, a man with a broad spectrum of interests and capabilities. In his life he occupied positions of high responsibility and endowed each with influence and significance that were the direct consequence of his intellectual power and daring. From weapons development to nuclear arms control, from enlarging the scope of MIT while its president to his steady and strong support of civil rights, Wiesner contributed mightily to important national and international issues with his characteristic pragmatic ingenuity

and inventiveness.

A strong advocate of nuclear arms control, Wiesner was one of the earliest participants in the Pugwash movement, through which he influenced the thinking of many US and foreign leaders. As a member of the National Academy of Science's committee on international security and arms control, he opened a productive dialogue with influential scientists in the Soviet Union aimed at reaching a common understanding of the dangers incubated by the futile, escalating arms race.

Wiesner's advocacy of sensible defense policy was lifelong. As a member and later chairman of the President's

science advisory committee under Presidents Kennedy and Johnson, and as science adviser to Kennedy and Johnson from 1961–64, his participation was decisive for the construction and passage of the Partial Test Ban and the Anti-ABM Treaties. He played a major role in establishing the Arms Control and Disarmament Agency and the Office of Technology Assessment. A year ago, together with Philip Morrison and Kosta Tsipis, he published a pamphlet entitled "Beyond the Looking Glass," which argued for a sharp reduction (more than 50%) in military spending. He continued to pursue this proposal with government officials up to the last day of his working life.

Wiesner was born in Detroit, Michigan, on 30 May 1935. He received undergraduate degrees in electrical engineering and mathematics in 1937 and his MS in electrical engineering in 1938, all from the University of Michigan at Ann Arbor. He received his PhD in electrical engineering from the University of Michigan in 1950.

In 1940 he became chief engineer for the Acoustical and Record Laboratory of the Library of Congress. In that position he traveled with the folklorist Alan Lomax through the South and Southwest recording folk music for the Library of Congress archives. Wiesner joined the MIT Radiation Laboratory in 1942. At the Radiation Laboratory and at its successor, the MIT Research Laboratory of Electronics, he specialized in the study and development of microwave radar. He was the leader of the laboratory's Project Cadillac, which developed an airborne radar system. Later he developed over-the-horizon radar transmission, which greatly expanded the usefulness of radar. He was director of



JEROME BERT WIESNER

Production Ion Beam Systems

- Etching
- Deposition
- DLC



Ion Beam Cluster Tools

CSC's cluster platform with ion beam process modules is a Cassette-to-Cassette Loadlocked production tool ideal for thin film deposition and etching. Fully automated computer control system provides complete system management, including process control and data acquisition. Multiple process recipe storage and selection make this an extremely flexible tool that will meet a variety of process requirements.

- **Magnetically Oriented Stage**
- **Windows™ Based Auto Beam Software (ABS)**
- **Clean Room Interface Compatible**
- **Multiple Target Assembly**
- **Separate Ion Beam Assist and Preclean Source**
- **MESC Compatible**
- **Small Footprint**
- **DC and RF Ion Sources Available**



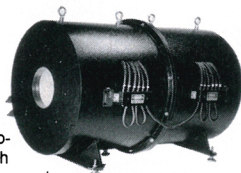
Commonwealth Scientific Corporation

500 Pendleton Street
Alexandria, VA 22314
Telephone: 703.548.0800
FAX: 703.548.7405

Circle number 65 on Reader Service Card

.. WE'RE NOT JUST ELECTROMAGNETS !!!

**WINDOWS
WATERLOADS & DRY LOADS
ARC SENSORS
FILTERS
etc**



.. from the **premier** manufacturer of electromagnets and other high power microwave components.



Join the leading worldwide authorities in the fields of linear accelerators, fusion research, plasma physics, plasma RF etching systems, radiotherapy and electron tubes - and choose their supplier of choice.

With over 30 years of experience, we continue to deliver components to the highest standards of quality and reliability.



Premier Microwave Corporation

33 New Broad St.
Port Chester, NY 10573.
Phone: (914) 939-8900
Fax: (914) 939-9239

5451 Patrick Henry Drive
Santa Clara, CA 95054
Phone: (408) 988-6655
Fax: (408) 970-8492

Circle number 58 on Reader Service Card

American Institute of Physics 1995/96 PRIZE FOR INDUSTRIAL APPLICATIONS OF PHYSICS

Call for Nominations

Nominations are sought for this prize awarded biennially by the American Institute of Physics and sponsored by the General Motors Corporation and other AIP Corporate Associates.

The purpose of the prize is to recognize outstanding contributions by an individual or individuals to the industrial application of physics.

**Nomination deadline:
30 June 1995**

For full information about the rules, eligibility, and selection process contact the office of the Executive

Director at:

American Institute of Physics
One Physics Ellipse
College Park, MD 20740-3843
Tel: 301-209-3131
Fax: 301-209-3133

E-mail: bhammer@aip.org

the MIT Research Laboratory of Electronics from 1952-61.

Wiesner was a good friend of the MIT physics department. During his tenures as dean of science (1964-66), provost (1966-71) and president of MIT (1971-80), the Center for Theoretical Physics was founded and, with his support, the department's condensed matter and astrophysics divisions were brought up to full strength. Key personnel were recruited in these areas, as well as in nuclear, particle and atomic physics, and the department's present profile was established.

Wiesner's support of the physics department is but one example of his dedication to MIT's intellectual quality and breadth. He helped to expand the institute's commitment to the humanities; to the social sciences, literature and the fine arts; and, not surprisingly, to its participation in the study of the ways in which science and technology and the arts intersect. The work pursued at MIT's Media Laboratory, which he helped found, is an example of the possible positive consequences of the achievements of science and technology for communication and the arts.

A most important idea was the inclusion of health sciences in MIT's teaching and research. The development of a superb biology department, with a strong emphasis on molecular biology, was part of the institute's evolution during the Wiesner years.

In his own words, Wiesner considered his role while president of MIT to be that of an "enthusiasm amplifier": He would find ways to implement bright ideas that faculty and students brought to him.

Jerry, as his many friends called him, was a man who cared: He cared passionately about peace and justice, about intellectual rectitude and truth, and also about friends and colleagues and students and neighbors. He would listen carefully and then act confidently to help, to create, to inform and to advise, to make the world around him better. He was indeed a most uncommon man.

**HERMAN FESHBACH
KOSTA TSIPIS**

*Massachusetts Institute of Technology
Cambridge, Massachusetts*

Odd Dahl

Odd Dahl, a pioneer in nuclear physics, died on 2 June 1994 in Bergen, Norway, at the age of 95.

Dahl had a modest formal education and entered scientific instrumentation by accident when Roald Amund-

sen hired him in 1922 as an air pilot for an Arctic expedition by ship. On the second takeoff from a makeshift airstrip on the ice, his plane was damaged beyond repair. Confined to ship for the next few years, he redirected his energy to inventing and making oceanographic instruments. Harald Sverdrup, the expedition's scientific leader, became his tutor when Dahl turned to the ship's library to study physics.

At Sverdrup's recommendation, Dahl was hired in 1926 by the Carnegie Institution of Washington, DC, where he gained a solid reputation in the development of instrumentation for studying terrestrial magnetism, in the study of the Kennedy-Heaviside layer and in nuclear physics. One of his best-known contributions, made in collaboration with Lawrence Hafstad and Merle Tuve, was using a Tesla coil to demonstrate the production of gamma rays, beta rays and protons with energies above one million volts.

He continued to make important contributions in the US until 1935, when he was asked to join the Chr. Michelsen's Institute in Bergen. In Norway he built three Van de Graaff machines: one in Trondheim (0.5 MV, in the mid-1930s), one in Bergen (1.5 MV, in the early 1940s) for radiation therapy and another in Bergen (1.5 MV, in the late 1940s) for research. He also built a betatron in Bergen. These were remarkable achievements in a small country with limited funds.

Dahl, together with Gunnar Randers, felt that it was important for Norway to enter the field of nuclear energy. Under their supervision Norway became the first country other than the wartime nuclear powers to construct a nuclear reactor. They had no access to classified work, but the reactor functioned very well and starting in 1951 was a successful international research tool for many years. Dahl built a solar observatory for the University in Oslo in 1954, which also was very successful.

In 1951 Dahl was invited by the new CERN laboratory to take responsibility for the design of a Cosmotron-like proton synchrotron of 10-12 GeV. However, Dahl's intuition led him to switch plans to the new principle of alternating-gradient focusing only weeks after Ernest Courant, Stanley Livingston and Hartland Snyder invented it in 1952. This courageous decision was one of the most important taken in the history of CERN.

Dahl returned to Norway in 1954. In the later part of his professional life, he designed payloads for scientific rockets launched in northern Nor-