tissue restoration that have led to the widespread use of numerous clinical devices." He is the Showalter Distinguished Professor Emeritus of Bioengineering at Purdue University.

A medal went to **Paul G. Kaminski**, chairman and CEO of Technovation Inc in Fairfax Station, Virginia, "for contributions to the national security through the development of advanced, unconventional imaging from space, and for developing and fielding advanced systems with greatly enhanced survivability."

Herwig Kogelnik, adjunct photonics systems research vice president at Bell Labs, was recognized "for pioneering contributions and leadership in the development of the technology of lasers, optoelectronics, integrated optics, and lightwave communication systems that have been instrumental in driving the tremendous capacity growth of fiber optic transmission systems for our national communications infrastructure."

National Academy of Engineering president **Charles M. Vest** received the medal "for his visionary leadership in advancing America's technological workforce and capacity for innovation through revitalizing the national partnership among academia, government, and industry."

James Edward West was selected "for co-inventing the electret microphone while working with Gerhard Sessler at Bell Labs in 1962. Ninety percent of the two billion microphones produced annually and used in everyday items such as telephones, hearing aids, camcorders, and multimedia computers employ electret technology." West is a professor in the Johns Hopkins University department of electrical and computer engineering.

The **Semiconductor Research Corp** of Durham, North Carolina, received the medal "for building the world's largest and most successful university research force to support the rapid growth and advance of the semiconductor industry; for proving the concept of collaborative research as the first high-tech research consortium; and for creating the concept and methodology that evolved into the International Technology Roadmap for Semiconductors."

Xerox Corp of Stamford, Connecticut, was honored "for over 50 years of innovation in marking, materials, electronics, communications, and software that created the modern reprographics, digital printing, and print-on-demand industries."

AVS to present awards

At its annual symposium next month in Seattle (see page 61), four researchers will be honored for their achievements by AVS: Science and Technology of Materials, Interfaces, and Processing.

Jerry Tersoff, a research staff member at the IBM Thomas J. Watson Research Center, will receive the Medard W. Welch Award "for seminal theoretical contributions to the understanding of surfaces, interfaces, thin films and nanostructures of electronic materials."

The Albert Nerken Award is going to **Richard J. Colton** "for seminal scientific insights that accelerated the development of vastly improved surface and nanoscale analytical techniques, and of innovative biomolecular sensors." Colton is director of the Institute for Nanoscience at the US Naval Research Laboratory and is acting superintendent of NRL's chemistry division.

Stephen J. Pearton has garnered the biennial John A. Thornton Memorial Award and Lecture "for pioneering the science and application of advanced device fabrication techniques, including plasma etching, ion implantation for doping and electrical isolation, and formation of Ohmic and Schottky contacts for compound semiconductors." He is a Distinguished Professor and Alumni Professor in the department of materials science and engineering at the University of Florida.

"For pioneering work in the application and development of in situ plasma and surface diagnostics to achieve a molecular understanding of thin film growth," **W. M. M. Kessels** will receive the Peter Mark Memorial Award. He is an assistant professor in the department of applied physics at Eindhoven University of Technology in the Netherlands.

in brief

Peidong Yang has received the 2007 Alan T. Waterman Award, NSF's highest honor. The foundation praised Yang for his research into nanowires, which show promise for devices ranging from lasers and computer circuits to solar panels and biological sensors. An associate professor of chemistry at the University of California, Berkeley, Yang will receive a medal and a grant of $500 000 over three years.

This fall, condensed-matter physicist and materials scientist **Jinke Tang** will be leaving the University of New Orleans to join the faculty of the physics and astronomy department at the University of Wyoming.

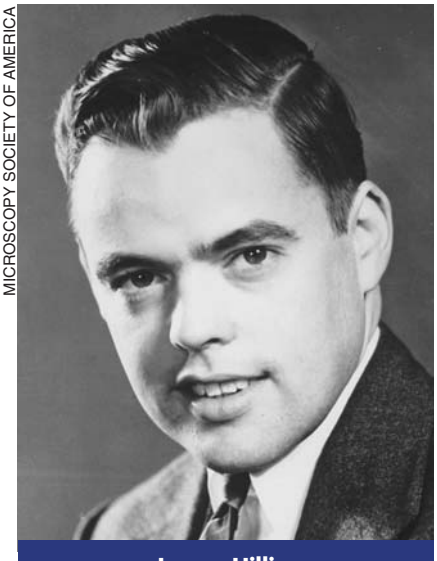
obituaries

To notify the community about a colleague's death, subscribers can visit http://www.physicstoday.org/obits, where they can submit obituaries (up to 750 words), comments, and reminiscences. Each month recently posted material will be summarized here, in print. Select online obituaries will later appear in print.

James Hillier

James Hillier, who initiated or helped initiate some of the major electronic advances of the past 75 years, died of a stroke on 15 January 2007 in Princeton, New Jersey. His first and perhaps most important contribution was his role in creating the first commercially successful electron microscope in North America.

Born 22 August 1915 in Brantford, Ontario, Canada, Hillier went to the University of Toronto, where he earned his BA in 1937, MA in 1938, and PhD in 1941, all in physics. The physics department had been working to produce a high-resolution microscope under the direction of Eli Burton. Hillier and Albert Prebus were assigned to the effort in December 1937. They asked permission to



MICROSCOPY SOCIETY OF AMERICA

James Hillier

go from 40 kV to 60 kV and to use direct exposure on photographic plates instead of taking a picture of the fluorescent screen. Based on their freehand drawings of the design changes, Burton let them alter the existing microscope and start building what became the successful electron microscope.

By 1938 German claims of electron microscopes with 100-Å resolution—20 times better than the light microscope—were reported in major newspapers. The announcement gave Burton leverage for more funding and indicated existence of a market for such microscopes. It spurred Hillier and Prebus to renewed urgency and caused them to wonder how they might get a piece of the action. They reached 100-Å resolution by December 1939. That same year, electron microscope imports from overseas were blocked by war in Europe. Canada did not have the industrial power to quickly begin large-scale manufacture of such equipment. Hillier, after defending his doctoral thesis, "The Fundamental Principles of Practicing Electron Microscopy," in the early spring of 1940, telephoned GE and RCA for interviews.

He found his first opportunity at RCA. Vladimir Zworykin, associate director of RCA Research Laboratories, had gone through two designers without getting an electron microscope that would work in normal light, a criterion that he and RCA marketing considered essential. Hillier told him that if the specimen was thin enough, high beam current could be used and the fluorescent screen seen in a well-lighted room.

Zworykin asked Hillier how long it would take to produce a prototype based on the one Hillier and Prebus had made in Toronto. The answer: two weeks, because students had to make extra parts in the university shops after working hours. Thus, Hillier had a working scope in 12 days and nights with help from his Toronto associates, especially William Ladd. Zworykin and Hillier then got RCA to agree to have its laboratory begin manufacturing the microscopes until the company's factory could take over one to two years later.

Many industries purchased microscopes primarily for prestige; others had trouble finding good operators. Zworykin and Hillier realized they needed to educate clients and develop trained operators more than they needed to increase sales. They endorsed an idea to convene an open meeting to discuss the future of electron microscopy in the US. Organized by chemical physicist G. L. Clark, the meeting was held in Chicago. Hillier gave concise, straightforward answers to questions. He impressed the audience with his broad understanding of the microscope's problems and test results and his phenomenal memory of historical details of RCA's work.

Toward the end of the meeting, a resolution to establish a permanent organization—the Electron Microscope Society of America—was passed unanimously. Hillier was elected president for the 1945 term. He made many contributions to EMSA, including developing standards of measuring and reporting magnification and resolution. He showed that by slightly defocusing an image, he could measure a specimen regardless of its quality. He was active in the formation of the International Federation of Societies for Electron Microscopy. At IFSEM's 1954 meeting in Toronto, Canada honored Hillier, his University of Toronto partners, and their German counterparts as the first scientists to achieve 100-Å resolution.

When foreign microscope manufacturers tried to capture part of the US market in the 1960s, RCA was not affected. Hillier had assembled a strong research and development team during his first 15 years there. The RCA scopes were now reliable and user-friendly. One of Hillier's most important staff additions was John Reisner. Hillier had been overseeing the microscope work at RCA's laboratories in Princeton and Camden. Always a good judge of character, Hillier saw in Reisner a man he could trust and in 1951 placed him in charge of the Camden laboratory. Their teamwork between the two labs produced the golden years of RCA's microscope development.

In 1967, after 27 years of working directly on electron microscopes, Hillier became a business executive with RCA. His coworkers and friends appreciated his interest in a wide range of subjects, his directness of action, and his exceptional self-confidence. He retired in 1977.

Hillier and I were lifetime friends and sometimes competitors. We both had worked in successful programs to make a transmission electron microscope. The last time I saw him, we talked as usual about friends we had lost but mainly about the future of technology. When I asked if he regretted having to do graduate work in physics instead of art—he received a physics and math scholarship to Toronto—he said, "I enjoy drawing and painting to clear my thinking or bond with other people, but the day I was forced into electron microscopy was the luckiest day of my life."

Sterling Newberry
Rumford, Rhode Island

Recently posted death notices at http://www.physicstoday.org/obits:

Waldemar Gorzkowski
12 November 1939 – 15 July 2007

Tom Metcalf
5 October 1961 – 7 July 2007

Warren Witzig
26 March 1921 – 13 June 2007

Ole Kleppa
4 February 1920 – 27 May 2007

Dorrit Hoffleit
12 March 1907 – 9 April 2007

James Edward Bishop
16 January 1954 – 30 December 2006

Walter Ernst Meyerhof
22 April 1922 – 27 May 2006

Edward der Mateosian
6 August 1914 – 20 May 2006

Gilbert Jerome Perlow

Gilbert Jerome Perlow, one of the pioneers of the Mössbauer effect and an editor of the *Journal of Applied Physics* and *Applied Physics Letters*, died on 17 February 2007 of heart failure, a week after his 91st birthday.

Born in New York City on 10 February 1916, Gil attended Townsend Harris Hall (now Townsend Harris High School) in Queens. A science teacher realized he had a pupil who could make apparatus run and who had the intellectual curiosity to try to understand how the world works. That teacher gave Gil the freedom to study what he wanted and in return had a skilled helper to assist with his classes.

At age 16 Gil went to Cornell University as an undergraduate to study medicine, which his parents saw as a good career during the Depression. But so strong was his interest in physics—and, as he said, his talent for medicine was not so great—that he switched. He went on to do graduate work at Cornell; his master's thesis, on measurements of L_α satellite x rays, was supervised by Floyd Richtmyer. He then moved to the University of Chicago and did his PhD thesis research with Samuel Allison on nuclear reactions of lithium-6 using a