

call said, "The APS must help members of Congress and the executive branch to understand that the future of our nation depends upon having a strong technological base, which in turn depends upon research and education in the physical sciences. The APS can play a significant role in increasing awareness of the dangers from the spread of weapons of mass destruction and in outreach programs that stimulate scientific literacy and promote interest in scientific activities." In addition to increasing federal support for physics, Bahcall said that it is important "to join with physicists in industry to reverse the tragic and dangerous decline of physics research in the private sector."

In other APS election results, **Philip Bucksbaum** (University of Michigan, Ann Arbor) was selected as the new chair-elect of the nominating committee, and the society's new international councillor will be **Sukekatsu Ushioda** (Tokoku University in Sendai, Japan). **Evelyn Hu** (University of California, Santa Barbara) and **Art Ramirez** (Lucent Technologies' Bell Labs in Murray Hill, New Jersey) are the newly elected general councillors of the society.

In Brief

The National Academy of Engineering, at its annual meeting in Washington, DC, in October, bestowed its Arthur M. Bueche Award on **Robert A. Frosch**. He was recognized for having "a career of advances in aerospace and automotive technology, and 'industrial ecology,' and for administration of research and development in industry, government, and academia." He is a senior research fellow with the Belfer Center for Science and International Affairs in Harvard University's John F. Kennedy School of Government.

Also at its annual meeting, the ANAE presented its Founders Award to **Carver Mead**, Gordon and Betty Moore Emeritus Professor of Engineering and Applied Science at Caltech. The academy acknowledged Mead for his "visionary contributions in the field of microelectronics, including VLSI (Very Large Scale Integration) technology and computational neural systems."

On 1 December, **Vladimir Agranovich** began his appointment to the NanoTech Institute of the University of Texas at Dallas as the insti-

tute's first "Pioneer of Nanoscience." The purpose of this position is to help bring science and technology pioneers to the university for extended sabbaticals. Agranovich retains his post as head of the theoretical department in the Institute of Spectroscopy at the Russian Academy of Sciences near Moscow.

Next month, **Matthew Colless**, senior fellow of the research school of astronomy and astrophysics at the Australian National University, will become the new director of the Anglo-Australian Observatory in Sydney.

Obituaries

Jean Brossel

With the death of Jean Brossel on 4 February 2003 in Périgueux, France, the scientific community has lost a key figure in the development of modern atomic physics and quantum optics in France after World War II.

Brossel was born in Périgueux in 1918 and entered the Ecole Normale Supérieure de Paris in 1938. The war interrupted his studies for two years, but he completed them in 1945. At that time, French laboratories were in bad shape: The research groups were disorganized and the equipment was very poor. Alfred Kastler of the physics laboratory at the Ecole Normale advised Brossel to go to Manchester, England, to receive research training in Samuel Tolansky's group at the physics laboratories of Manchester University. Brossel did. There, he learned Fabry-Pérot techniques and applied them to the study of atomic surfaces and the measurement of atomic hyperfine structures. The expertise he gained during that stay was very useful in his subsequent research work.

After three years in Manchester, Brossel returned to Paris. In the meantime, Kastler had received an offer from MIT to send one of his students to Francis Bitter's group for PhD work. Kastler proposed that Brossel go, and Brossel happily accepted the offer and went to MIT in 1948. Bitter's idea for detecting magnetic resonance in the excited state by changing the Zeeman structure of the emission spectrum didn't come to fruition. But while working on that same idea, Brossel came up with another one—the double resonance method—that turned out to be very successful and made for an outstand-

On 3 November, **Steven J. Dick** became the new director of NASA's history office and chief historian at NASA headquarters in Washington, DC. Before joining NASA, Dick worked as an astronomer and historian of science at the US Naval Observatory.

In October, **Louise Johnson** joined Diamond Light Source, a synchrotron facility in Oxfordshire, England, as director of life sciences. Johnson will continue her affiliation with Oxford University, where she is the David Phillips Professor of Molecular Biophysics.



Jean Brossel

ing PhD thesis. Instead of looking for a change in the frequency of emitted light, Brossel suggested that one look for a change in the light's polarization. That change would result from the radio-frequency-induced transfers between the excited Zeeman sublevels. Kastler had independently come up with the same idea and, a few months later, proposed the optical pumping method—polarizing atoms in the ground state through a transfer of angular momentum from polarized photons to atoms.

After completing his doctoral work, Brossel returned to Paris. In 1951, he and Kastler founded a research group that is now called the Laboratoire Kastler Brossel, and so started a great period at the Ecole Normale. Researchers at the lab demonstrated optical pumping the following year and obtained a wealth of exciting new results. They observed multiphoton RF