I hope to foster informed involvement by members throughout the AGU."

Also taking office on 1 July will be **Terry Tullis** (Brown University) for a two-year term as general secretary and **Anny Cazenave** (Laboratoire d'Etudes en Géophysique et Océanographie Spatiales) for a two-year term as the union's international secretary.

In Brief

James Gillies became the new editor of the *CERN Courier* beginning with the January/February issue. A staff science writer at CERN since 1995, he succeeds **Gordon Fraser**, who oversaw the magazine starting in September 1979 and officially became its editor in 1986.

In February, **Cees Dekker**, a professor of molecular biophysics at the Delft University of Technology in the Netherlands, received the 2002 Julius Springer Prize for Applied Physics, which is awarded by the editors of *Applied Physics*. Dekker was recognized for "the discovery of the electronic properties of carbon nanotubes and for pioneering work on their application in single-molecule electronic devices." He received a cash prize of $5000.

Obituaries

Victor Iosifovich Belinicher

Victor Iosifovich Belinicher, a prominent Russian theoretical physicist, was among the passengers on the airplane traveling from Tel Aviv, Israel, to Novosibirsk, Russia, that was accidentally hit by a Ukrainian antiaircraft missile fired during military exercises on 4 October 2001. This senseless tragedy ended the life of a highly respected member of the scientific community, a colleague, a friend, and a teacher.

Born on 7 November 1945 in Sverdlovsk, Russia, Belinicher was one of the first students who graduated from the newly established Novosibirsk University in the Akademgorodok Scientific Center in Novosibirsk. In 1971, he received his PhD in physics and mathematics, under the supervision of Dmitrii Shirkov, for work on the Lagrangian formalism for particles of arbitrary spin. He earned his DSc degree in 1982 on the theory of the photogalvanic effect.

In 1973, Belinicher joined the Institute of Automation and Electrometry of the Russian Academy of Sciences (RAS) as a research scientist. He particularly enjoyed the atmosphere of intense scientific interaction and intellectual challenge at Akademgorodok. He studied a variety of problems in condensed matter physics, semiconductor physics, and the physics of nonlinear phenomena. One of his most important contributions was a comprehensive theory of the photogalvanic effect in crystals that lack inversion symmetry. The systematic microscopic theory worked out by

VICTOR IOSIFOVICH BELINICHER

Belinicher and his colleagues addressed the most important mechanisms producing the effect, ultimately connecting the effect's origin to the absence of a detailed balance condition in media that lack a center of symmetry. A review article by Belinicher and Boris I. Sturman published in 1980 in *Soviet Physics Uspekhi* on the photogalvanic effect remains one of the most cited works in the field.

While at the institute, Belinicher began a long-lasting collaboration with one of us (L'vov). In 1984, they developed a new diagrammatic technique—which generalized the Keldysh formalism to the case of spin operators—for nonequilibrium processes in magnetism. In subsequent work in 1987, they formulated the scale-invariant theory of hydrodynamic turbulence. An earlier approach, advanced in the 1960s by Henry Wyld, suffered from divergences in each order of perturbation theory, and known regularizations were limited to the first order. Belinicher and L'vov found a transformation, now named after them, which removes divergences from all orders. This notable work created a basis for further intensive studies of hydrodynamic turbulence by means of modern methods of theoretical physics.

Belinicher joined the RAS's Institute of Semiconductor Physics in 1988 as a leading research scientist. His interests turned toward the newly discovered high-T_c superconductors and to the general problem of strong electronic correlations associated with those materials. Belinicher worked intensely to develop a model that would describe the essential electronic properties of high-T_c materials. The contributions he made, together with his graduate students and colleagues, to the understanding of the physics of the Hubbard model, spin liquids, and spin–polaron mechanisms of superconductivity significantly influenced progress in those areas. In recent years, he devoted much of his time to the derivation of a consistent field theory of the two-dimensional antiferromagnet and to yet another strongly correlated problem—Coulomb blockade in a system of quantum dots. Undoubtedly, Belinicher's contributions to physics will continue to serve as a basis for new findings, and his work will become part of textbooks for future generations of physicists.

Belinicher also lectured and mentored many students at Novosibirsk University, where he was appointed as a professor of physics in 1995. He taught both undergraduate and advanced theoretical courses.

In the 1990s, Belinicher was a visiting professor at several institutions in Europe and Israel, particularly at the University of Coimbra in Portugal, and the Weizmann Institute of Science in Rehovot, Israel, where he contributed invaluably to many studies. His outgoing, cooperative character together with an extraordinary dedication to physics brought him many friends and professional colleagues from all around the world.

Belinicher was an intense and persistent man who believed deeply in maintaining the quality of his research. For him, science was the absolute priority in his life. He approached nonscientific problems

with the same energetic attitude that he applied to his research, whether they involved an issue in turbulent Russian politics or a development of the local computer network. He taught students to treasure the time they devoted to research.

Belinicher was open and optimistic, and generously shared his energy and vigor. He was a bright, talented theorist who pursued the deepest and most complicated problems in physics. He was full of plans for the future when the terrible accident ended his life. His family, friends, and colleagues have suffered a great loss.

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William McCullough MacDonald

William McCullough MacDonald, a versatile and distinguished theoretical physicist, educator, and administrator, died on 19 September 2001 under hospice care near his home in Potomac, Maryland. He lived his last 18 months valiantly struggling with Lou Gehrig' s disease.

Bill was born on 25 November 1927 in Salem, Ohio, and grew up in nearby Canfield. His administrative skills became apparent when he was young: He worked summers for a local dairy company and eventually was promoted to manager of the company store.

In 1950, Bill graduated from the University of Pittsburgh, where he received his BS in mathematics and physics. In 1955, he earned his PhD in physics at Princeton University under the guidance of Eugene Wigner with a study of isotopic spin in light nuclei.

Bill carried out early research at the US Bureau of Mines in Pittsburgh, Pennsylvania; Los Alamos Scientific Laboratory; Princeton's Project Matterhorn; Nuclear Development Associates in White Plains, New York; and the University of California Radiation Laboratory (now the Lawrence Berkeley National Laboratory). He was a visiting lecturer at the University of Wisconsin in 1955 and then joined the physics faculty of the University of Maryland, College Park, in 1956. He became a full professor there in 1963. During sabbatical leaves, he was a visiting scientist at the Laboratoire Joliot-Curie (now the Institut de Physique Nucléaire d'Orsay); the UK Atomic Energy Research Establishment in Harwell; and the National Bureau of Standards (now NIST) in Gaithersburg, Maryland.

WILLIAM MCCULLOUGH MACDONALD

Bill was a pioneer in nuclear, plasma, and space physics. In the 1950s, he studied isotopic spin in light nuclei and demonstrated the theoretical inconsistency between the beta decay of nuclei and μ mesons. This work helped lay the foundation for Nicola Cabibbo's theory of beta decay, which, along with isospin, is essential to the present standard model of particle physics. Subsequently, in the 1960s, Bill formulated and applied the shell model of nuclear reactions, and developed the theory of fine structures in nuclear reactions.

Bill's foundational work with Marshall Rosenbluth and David Judd on classical transport theory is included in *The Physical Review: The First Hundred Years—A Selection of Seminal Papers and Commentaries* (American Institute of Physics, 1995). In space physics, as a consultant to Lockheed Missiles and Space Company in Palo Alto, California, Bill worked with Martin Walt over the period 1956–65 on analyzing particles trapped in Earth's magnetic field and showed that the electrons in the Van Allen radiation belts could not be accounted for by the decay of cosmic-ray albedo neutrons. His predictions for low-altitude electron lifetimes were tested in 1962, when the Starfish nuclear detonation injected relativistic electrons into Earth's magnetosphere, and were found to agree with the Starfish experiment.

Bill also made notable administrative contributions. In 1967, he initiated the University of Maryland's theoretical nuclear physics research group, guiding it to its present national stature. He led the group aggressively into the use of workstation research computation. He also championed large-scale computation by his early proposal for national supercomputing centers, and played a key role on the NSF committee, whose 1980 recommendations led to the establishment of five national supercomputer centers. In 1987, Bill served as the NSF program director for theoretical physics.

Bill was an especially enthusiastic and dedicated teacher. His graduate and undergraduate students found in him a mentor and friend. A leader in the use of computers in research, he likewise was an advocate of, and a leader in, the use of computers in instruction. He was a codirector of the NSF-supported consortium for upper-level physics software (CUPS) program, which published nine books of computer simulations for classroom use. He coauthored a 10th book—a manual providing the common computer framework for the work of the 27 widely dispersed consortium members.

Bill's application of computers to teaching and learning emphasized both numerical and symbolic computation. During the fall of 1995, he was a visiting scholar at Wolfram Research Inc in Champaign, Illinois. When *Mathematica*® first became available, he sought it out and developed physics courses based on its use. Over the next dozen years, his continued innovations were highly regarded throughout the education community and became a model for many other *Mathematica*-based educational technology projects. In 1997, Bill became a professor emeritus at the University of Maryland.

Bill was active in the civic and religious communities, and had a special concern for the poor. The University of Maryland community will long honor Bill's memory. Those who worked with him will cherish his enthusiastic and generous spirit. His Maryland colleagues treasure his contributions to their institutional structure, especially his legacy of a democratic plan of organization for the operation of the physics department. At NSF he is remembered both as an effective colleague and a staunch advocate and vigorous defender of the field of theoretical physics.

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