

2001 went to **Lester Andrews**, a professor of chemistry at the University of Virginia in Charlottesville. Andrews was recognized for his "prodigious vibrational spectroscopic investigations" and for "furthering quantum chemical calculations of vibrational frequencies."

Frank C. De Lucia, University Professor of Physics at Ohio State University in Columbus, received the 2001 William F. Meggers Award. The citation praised De Lucia for his "pioneering work in the development for the submillimeter-wave region of the electromagnetic spectrum and its application to scientific problems in physics, chemistry, and astronomy."

The 2001 Edwin H. Land Medal was presented earlier in the year to **George Smith** and **Willard Boyle**, who shared the prize for their "invention and development of the charge-coupled device." Both are researchers who are retired from Bell Laboratories in Murray Hill, New Jersey.

AVS Taps Bonnell as New President-Elect

Members of AVS recently chose **Dawn A. Bonnell** as their new president-elect. She took office on the first of this month, succeeding **Rudolf Ludeke**. Bonnell will become president of the society in 2003.

"AVS has demonstrated a capability to evolve exciting new topical areas while maintaining core strengths and a connection to industry that is unique among technical societies," says Bonnell. She adds, "One consequence is that the society faces the dynamic opportunities and challenges associated with these fields. During my term I will focus on fostering this aspect of our society as we consider the increasing opportunities of internationalization."



BONNELL

After earning her PhD in materials science from the University of Michigan in 1986, Bonnell was a Fulbright scholar at the Max Planck Institute for Metals Research in Stuttgart, Germany, and was a postdoctoral associate at IBM's T. J. Watson Research Center in Yorktown Heights, New York. Currently, she is director of the Center for Science and Engineering of Nanoscale Systems and a professor of materials science at

the University of Pennsylvania. Her research focuses on atomistic processes at interfaces of complex materials and proximal probes.

In other AVS election results, **John W. Coburn** (University of California, Berkeley) takes office as treasurer and **Joseph E. Greene** (University of Illinois at Urbana-Champaign) takes office as secretary, both for one-year terms. Starting three-year terms on the AVS board of directors are **Charles Bryson** (Surface/Interface Inc in Sunnyvale, California) and **Linda Cecchi** (Sandia National Laboratories). Elected as trustees of AVS for three-year terms are **Robert J. Hamers** (University of Wisconsin-Madison) and **John H. Weaver** (University of Illinois at Urbana-Champaign).

OSA Vice President Elected for 2002

Peter Knight took office as the new vice president of the Optical Society of America on 1 January, succeeding Michael Morris. Knight will become president-elect in 2003 and president in 2004.

Knight earned a PhD in physics from Sussex University in 1972 and then spent three years as a research associate in the department of physics and astronomy at the University of Rochester. During this period of his career, Knight was also a visiting associate at Stanford University, both in the physics department and at SLAC. After stints at Sussex University, Johns Hopkins University, and the Royal Holloway College at London University, Knight joined the



KNIGHT

faculty at Imperial College, London. Currently a professor of quantum optics and head of the physics department at Imperial College, he focuses on a variety of topics in the application of quantum optics in quantum information theory, on the properties of atoms in very intense laser fields, and on the quantum properties of radiation, especially nonclassical "squeezed states" of light.

In his new capacity, Knight plans to "encourage OSA to be more inclusive of the wider community in optics, using the expertise and enthusiasm of local chapters and student chapters... about 40% of our members are from outside the US. I will seek to involve this wider community more fully in our activities."

OSA also elected three new directors at large for three-year terms, which began on 1 January: **Tony F. Heinz** (Columbia University), **Wayne H. Knox** (University of Rochester), and **Antoinette J. Taylor** (Los Alamos National Laboratory).

IN BRIEF

Steven M. Girvin joined Yale University in September as a professor of physics and applied physics. He was previously a Distinguished Professor of Physics at Indiana University.

Also joining Yale is **Michel H. Devoret**, who will head Yale's new nanofabrication facility beginning this month. He was formerly the director of research in the condensed matter physics division at the Atomic Energy Research Commission (CEA) at Saclay, in France.

Thomas C. Mehen, formerly a postdoctoral researcher in nuclear theory at Ohio State University, will join the physics faculty of Duke University this month as an assistant professor in the nuclear and particle theory group.

OBITUARIES

Nathan Isgur

Nathan Isgur, a theoretical physicist who made landmark contributions to the physics of quarks in hadrons, died on 24 July 2001 in Williamsburg, Virginia. For the five years before his death, Nathan had been fighting multiple myeloma, a rare cancer of the bone marrow. Nathan was the chief scientist of the Thomas

Jefferson National Accelerator Facility at Newport News, Virginia.

Nathan was born in South Houston, Texas, on 25 May 1947. He went to Caltech, intending to major in molecular biology. However, exposure to the *Feynman Lectures on Physics*, Feynman himself, and a poor memory for chemical names led Nathan to switch to physics, in which he obtained his BS in 1968. This was the era of the Vietnam

War, and Nathan decided to go to the University of Toronto for a PhD in particle theory, which he received in 1974. His ability to travel freely was limited until 1977, when President Carter issued a pardon.

After obtaining his PhD, Nathan was forced to stay in Canada because of passport problems. Robin L. Armstrong, who chaired the physics department at Toronto, and other members of the department recognized Nathan's outstanding talent and allowed him to stay as a postdoctoral fellow. In 1976, Nathan joined the faculty as an assistant professor. These circumstances helped one of us (Karl) start, in 1977, a long collaboration with Nathan on the physics of baryons in the quark model. It was natural to extend to excited baryons the ideas of quantum chromodynamics (QCD) previously applied to ground states; a few new ingredients were needed. Without any prior knowledge of excited baryons, and nominally the junior collaborator, Nathan had the insight, surefootedness, and drive that made a success of the enterprise. In addition to formula derivations, there was a lot of numerical work. For example, Nathan would diagonalize 5×5 matrices approximately, by hand, to check the computer output of his collaborator. The QCD-improved quark model for baryons was successful and remains the benchmark.

Simultaneous with this work on baryons, Nathan taught undergraduate and graduate courses—mentoring five to six graduate students at a time—advised experimentalists, organized seminars, and arranged picnics, among other activities. He was a superb teacher and lecturer at all levels. While on the faculty at Toronto, he mentored 14 PhD students; most of them now have faculty positions. The research with his students was also at the interface between particle physics and nuclei. The University of Toronto became a center of quark physics. Nathan helped organize memorable conferences in Toronto in 1980 and in the Yukon in 1984.

While on sabbatical and other leaves at Oxford University in the 1980s, Nathan collaborated with Jack Paton on flux-tube models for gluons in hadrons. Their model made predictions for new excited hadrons, which remain to be confirmed. In another notable collaboration at Oxford, with Chris Llewellyn Smith, the applicability of perturbative QCD to exclusive processes was discussed in detail and some results in the literature

CAMERON HAYNE



NATHAN ISGUR

were criticized.

Nathan's most celebrated work was with Mark Wise, one of his undergraduate students at Toronto who was by then at Caltech. Isgur and Wise studied semileptonic decays of mesons containing a charm or beauty quark; this research led to the discovery of heavy quark symmetry in QCD. This symmetry, which becomes exact in the limit of infinite quark mass, allows an economical description of many heavy meson decays. Two of their seminal papers received more than 1000 citations. Their discovery also led to the award of the American Physical Society's J. J. Sakurai Prize for Theoretical Particle Physics to Nathan Isgur, Mark Wise, and Misha Voloshin (see PHYSICS TODAY, April 2001, page 81).

In 1990, Nathan moved from Toronto to Jefferson Lab to assume leadership of the theory group. He was attracted by the opportunities to build a group of theorists of his own choosing and to play a role in guiding the experimental program of the new facility.

Nathan recognized that Jefferson Lab was well suited to answer open questions relating QCD to nuclei. He focused the experimental program on these key issues by always asking, "What do we learn from this experiment?" Nathan was very effective in such discussions because of his ability to express basic ideas in simple ways. This same ability was a great asset in contacts with public, state, and congressional bodies. Because of these activities, Nathan was effectively the chief scientist at Jefferson Lab; this became his official title in 1996.

Nathan was also concerned with building ties with physics groups in the Southeast region of the US. Through joint appointments with local universities, he doubled the number of positions in the theory group; Jefferson Lab extended his approach to experimental appointments. Nathan also instituted a program of bridged positions, which allowed physics departments to recruit young nuclear physicists for future faculty positions. These programs resulted in more than 60 new physics faculty positions in the Southeast. Nathan devoted a great deal of effort to these programs and was very pleased when they were imitated elsewhere.

When Nathan was diagnosed with his illness, he realized there would not be enough time to record all of his ideas related to physics. In addition to his work as chief scientist and head of theory, Nathan began to publish at an accelerated rate, producing some 10 papers in refereed journals in the four years before his death and leaving about seven preprints in the process of publication. During his last two years at Jefferson Lab, he also established a lattice QCD collaboration with MIT. Nathan's determination was heroic.

A great enthusiast for the outdoors and for baseball, Nathan never lost his Eagle Scout spirit of adventure. He was very competitive, even in endeavors such as hiking in the desert, climbing mountains, and taking canoe trips. This same spirit also showed up in research, in which a calculation was often a little competition with his collaborators (Nathan usually won). When physics controversies ensued, Nathan defended his position skillfully and with vigor.

Nathan was a Fellow of the Royal Society of Canada and received many honors both in Canada and in the US. He was very devoted to his wife and his two sons.

We lost a very special friend. Physics lost a great leader and teacher.

JOHN DOMINGO

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GABRIEL KARL

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Michael John Murtagh

Michael John Murtagh, chair of the Brookhaven National Laboratory's physics department, a world