

lation to the epoch when the first stars and galaxies formed, and suggested important observational tests of this 'dark age' in the history of the Universe." Currently the UK's Astronomer Royal, Rees will be resigning later this year to become the 59th president of the Royal Society. He will remain a professor of cosmology and astrophysics at the University of Cambridge and master of Trinity College.

The prize will be awarded by King Carl XVI Gustaf in a September ceremony at the Royal Swedish Academy of Sciences in Stockholm. The laureates will split the cash prize of \$500 000.

In Brief

This fall, **Robert C. Kennicutt Jr.**, professor and astronomer at the Steward Observatory at the University of Arizona in Tucson, will become Plumian Professor of Astronomy and Natural Philosophy at Cambridge University. Kennicutt has served as the editor-in-chief of the *Astrophysical Journal* for six years. He plans to step down at the end of 2006 after completing his current term.

Edward E. Doomes has been appointed assistant professor in the department of physics at Southern University and A&M College in Baton Rouge, Louisiana.

Obituaries

James Arthur Krumhansl

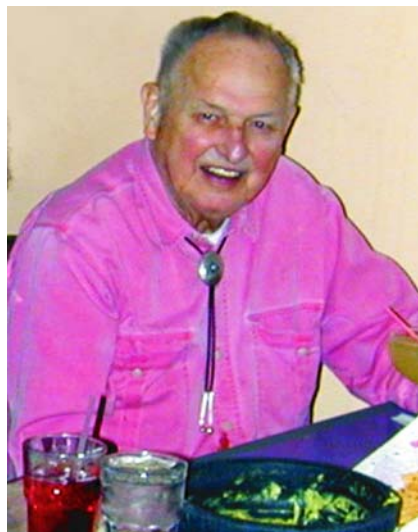
James Arthur Krumhansl, a distinguished materials physicist, died on 6 May 2004 in Lebanon, New Hampshire, of a massive stroke. Jim made countless contributions to physics, not only as a researcher but also as an adviser and policymaker for numerous educational, governmental, industrial, and professional institutions.

Jim was born on 2 August 1919 in Cleveland, Ohio. He received his BS in electrical engineering from the University of Dayton in 1939, his MS in physics from Case Institute of Technology (now Case Western Reserve University) in 1940, and his PhD in physics from Cornell University in 1943 on the topic of the microwave cavity klystron.

In 1943, Jim began his educational career as a physics instructor at Cornell. He left to work as an industrial physicist for the US Navy from 1944

The Royal Astronomical Society in the UK has announced the winners of its two highest honors. The Gold Medal for Astronomy is going to **Eleanor Margaret Burbidge** and **Geoffrey Burbidge** for "their joint contributions to astronomical research and their impressive record of service to the community." Margaret Burbidge, who served as president of the American Astronomical Society and the American Association for the Advancement of Science, and Geoffrey Burbidge, who spent 30 years as editor-in-chief of the *Annual Review of Astronomy and Astrophysics*, are both emeritus professors of physics at the University of California, San Diego. The Gold Medal for Geophysics is being awarded to **Carole Jordan**, professor of theoretical physics at Oxford University, for "her pioneering contributions to solar and stellar studies, her role in opening up the new field of ultraviolet astronomy . . . , and her wide-ranging contributions to the teaching and promotion of physics and astronomy in the UK."

Richard L. Liboff, professor emeritus of electrical engineering, applied physics, and applied mathematics at Cornell University, is moving to the University of Central Florida, where he will be a Distinguished Professor of Physics.



James Arthur Krumhansl

to 1946 before joining Brown University as an assistant professor of physics and applied mathematics. He left Brown in 1948 as an associate professor to return to Cornell, where he

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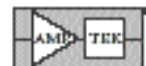
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became a full professor in 1959. A year later, he was directing the university's laboratory of atomic and solid-state physics (LASSP). He was not only instrumental in the actual design of LASSP and its staffing, but during his four-year tenure as director helped mentor it through its golden era that was capped by its remarkable impact on physics work done during the 1970s that led to Nobel Prizes in the 1980s and 1990s. In 1981, Jim was named Cornell's Horace White Professor of Physics.

Intertwined with Jim's academic career were several important government and industrial positions. During 1954–59, he was a member of various advisory committees for the US Atomic Energy Commission and concurrently was briefly the associate director of corporate research of National Carbon–Union Carbide Corp (1954–56). Jim took pride in cofounding, with Robb Thompson, the Materials Research Council for the Department of Defense's Advanced Research Projects Agency around 1960. Jim was a senior fellow of Los Alamos National Laboratory (1975–79). Most notably, he was the assistant director for mathematics, physical sciences, and engineering for NSF from 1977 to 1979. For that tenure, he received the foundation's distinguished service award for program development in microscience and computer systems. During that same period, he was a member of the board of directors of Allied Chemical Corp. He also spent many years on Allied's science advisory board (1979–87).

Jim's service to the physics community was equally impressive. He was the editor of the *Journal of Applied Physics* (1958–64), an associate editor of *Solid State Communications* (1963–70), and an associate editor of *Reviews of Modern Physics* (1968–73). From 1974 to 1977, he was the editor of *Physical Review Letters* and transformed many of its structures and procedures into those still used today. In 1989, he began his post as president of the American Physical Society. As president in the years following the massacre at Tiananmen Square, he became well known for his support of visa and immigration reforms for Chinese students, postdoctoral associates, and visiting scholars. He also helped usher the move of APS headquarters from New York to College Park, Maryland.

Never one to shy away from taking strong principled stands on major scientific issues, Jim testified before Congress in 1987 against the con-

struction of the Superconducting Super Collider because its expense would divert funding from many other important and promising areas of research. He also was a proponent of human rights. In addition to supporting Chinese scholars, for example, he also vehemently opposed the imprisonment, without any charges filed, of an Argentine physicist in Argentina during 1975–77.

Jim characterized his own research style as that of a gadfly. Peripatetic would be more fitting. Through his scientific endeavors, he traveled through communication and information theory, applied mathematics, theoretical condensed matter physics, materials science, nonlinear physics, statistical mechanics, and biophysics. He had a special talent for seeing the connections between fields and linking workers across those fields. For example, he advocated the notion of phonons to metallurgists and, with Robert Schrieffer, the concept of solitons to materials scientists. His contributions (with Schrieffer) to the statistical mechanics of structural phase transitions and (with Gerhard Barsch) to martensitic twinning without dislocations are particularly noteworthy. He had a strong belief in the inherent unity in science. Accordingly, he was an advocate of broader training for physicists. Cornell established in 2004 the J. A. Krumhansl Postdoctoral Fellowship, which, very much in line with Jim's style, offers an independent and unrestricted choice of theoretical research directions for the selected candidate.

Jim remained on the Cornell faculty until his retirement in 1990, and then held adjunct professorships at the University of Massachusetts Amherst and at Dartmouth College. One month before his death, he delivered his last invited lecture, on multiscale modeling of materials and biological matter, at the Dynamic Energy Landscapes and Functional Systems Conference in Santa Fe, New Mexico. A memorial symposium was held at Los Alamos in January 2005 to thank him for his service to the laboratory and to celebrate his remarkable life and its impact on physics and science policy. He is remembered by his students, postdoctoral associates, colleagues, and collaborators for his quick mind, humor, and unlimited energy.

Alan R. Bishop

James E. Gubernatis

Avadh Saxena

*Los Alamos National Laboratory
Los Alamos, New Mexico*

Gustav Konrad Medicus

Gustav Konrad Medicus, who had a long and illustrious career at the organizational predecessors to the present Air Force Research Laboratory at Wright–Patterson Air Force Base (WPAFB) in Dayton, Ohio, died of heart failure on 6 June 2004 at his residence in Spencer, Indiana. His talents covered the scientific spectrum from highly innovative laboratory vacuum and electronics techniques, to sophisticated theory on how patchiness in the metallic-surface work function affects probe measurements, to an explanation of the exceptionally low-voltage “ball-of-fire discharge.”

Born on 28 April 1906 in Augsburg, Germany, Medicus received his MS and PhD in technical physics in 1933 and 1935, respectively, from the Technical University in Munich. Apart from a year with the R. Bosch Co in Stuttgart in 1936, he performed research and lectured at the TUM, and became an associate professor in 1947. He worked in the “electrophysics” department of Winfried Schumann.

At the Bosch Co, Medicus investigated metallized paper capacitors and designed and constructed secondary-emission multipliers. After he returned to the TUM, his work expanded to include the corona discharge, Geiger counters, and polarization by reflection. He immigrated to the US in 1949 under Operation Paper Clip, a US Department of Defense program to bring talented German and other European scientists to work in the US following World War II.

Medicus became a member of WPAFB's advanced electronic devices branch in the electronic technology division of the Wright Air Development Center. He conducted research on low-voltage arc tubes, especially by means of Langmuir-probe measurements, and investigated some of the original approaches to thermionic energy conversion. He worked with Gottfried Wehner to produce some of the first reliable quantitative data for cathodic sputtering by low-energy ion bombardment. In 1962, Medicus became a senior scientist in the newly organized avionics laboratory at WPAFB.

Medicus is renowned for his development, in 1964, of a system for the automatic plotting of Langmuir-probe curves. His research team introduced the electronic second-derivative system, which measures the energy-distribution function of the plasma electrons. Their work made the sys-