

8 others as foreign associates, increasing the number of foreign associates to 154.

Among the new members are the following who work in physics-related fields:

Mark G. Benz, a metallurgist at General Electric Corp's Corporate Research and Development Center in Niskayuna, New York.

Leon E. Borgman, a professor of geology and statistics at the University of Wyoming.

Robert W. Bower, a professor in the department of electrical and computer engineering at the University of California, Davis.

John F. Brady, a professor of chemical engineering and executive officer for chemical engineering at Caltech.

Melvin W. Carter, an international radiation protection consultant in Atlanta, Georgia.

John T. Christian, a consulting engineer in Waban, Massachusetts.

David R. Clarke, a professor of materials engineering at the University of California, Santa Barbara.

Alan H. Epstein, the R. C. Maclaurin Professor of Aeronautics and Astronautics at MIT.

Louis V. Gerstner Jr., chairman and chief executive officer of IBM Corp in Armonk, New York.

Don P. Giddens, holder of the Lawrence L. Gellerstedt Jr Chair in Bioengineering at the Georgia Institute of Technology.

Andrew R. Hileman, a consultant in Monroeville, Pennsylvania.

Salim M. Ibrahim, a consultant in Geneva, Switzerland.

Wilfred D. Iwan, a professor of engineering and applied mechanics at Caltech and director of the institute's Earthquake Engineering Research Laboratory.

Sungho Jin, supervisor of the applied materials and metallurgy group at Bell Laboratories, Lucent Technologies in Murray Hill, New Jersey.

William L. Johnson, the Ruben and Donna Mettler Professor of Materials Science, Engineering, and Applied Sciences at Caltech.

Howard S. Stone Jr., retired chief of microwave research at the US Army's Harry Diamond Laboratories in Adelphi, Maryland.

Stanley Kaplan, chairman of Bayesian Systems Inc in Rockville, Maryland.

Glenn F. Knoll, a professor of nuclear engineering and radiological science at the University of Michigan.

U. Fred Kocks, a retired fellow at Los Alamos National Laboratory.

Paul A. Libby, a professor of fluid mechanics at the University of California, San Diego.

Kuo-Nan Liou, a professor of at-

mospheric science at UCLA and director of the university's Institute of Radiation and Remote Sensing.

J. David Lowell, principal of Lowell Mineral Exploration in Rio Rico, Arizona.

Marshall I. Nathan, a professor of electrical engineering at the University of Minnesota.

William T. Plummer, director of optical engineering at Polaroid Corp in Cambridge, Massachusetts.

Gary A. Pope, holder of the Texaco Centennial Chair in Petroleum Engineering at the University of Texas, Austin and director of the university's Center for Petroleum and Geosystems Engineering.

Eugene M. Rasmusson, a senior research scientist in the department of meteorology at the University of Maryland at College Park.

Jerald L. Schnoor, a University of Iowa Foundation Distinguished Professor of Environmental Engineering at the University of Iowa.

Freeman D. Shepherd, a retired senior scientist for infrared arrays and sensors at the Rome Laboratory, at Hanscom Air Force Base in Massachusetts.

Peter G. Simpkins, a distinguished member of the technical staff at Bell Laboratories, Lucent Technologies in Murray Hill, New Jersey.

Katepalli R. Sreenivasan, the Harold W. Cheel Professor of Mechanical Engineering at Yale University.

Rangaswamy Srinivasan, president of UV Tech Associates in Ossining, New York.

Frank E. Talke, an endowed-chair professor at the Center for Magnetic Recording Research at the University of California, San Diego.

The new foreign associates include **Ghislain de Marsily**, a professor of geology at Pierre and Marie Curie University (University of Paris VI) and director of the university's Laboratoire de Géologie Appliquée.

Julia S. Higgins, a professor of polymer science at the University of London's Imperial College of Science, Technology and Medicine.

Timothy J. Pedley, the G. I. Taylor Professor of Fluid Mechanics at the University of Cambridge.

IOP Presents 1999 Awards, Names Honorary Fellows

At its awards dinner in January, ten physicists were honored by the UK's Institute of Physics with its 1999 awards. The institute also named five honorary fellows.

The Guthrie Medal and Prize went

to **George Bacon**, an emeritus professor of physics at the University of Sheffield. He was recognized for "his distinguished contributions as the founding father of neutron scattering in Britain" and for his studies of hydrogen bonding and of atomic and magnetic order in alloys.

Jeffrey Forshaw received the Maxwell Medal and Prize for "demonstrating, in the early stages of his career, a nationally and internationally respected gift for deepening our understanding of particle physics by combining a deep insight with an exceptional mathematical ability and a realistic awareness of experimental practicability." He is a lecturer in the University of Manchester's department of physics and astronomy.

John Harries, a professor of physics at the University of London's Imperial College of Science, Technology and Medicine, was awarded the Charles Chree Medal and Prize. The citation praised him for over 30 years of distinguished contributions to infrared spectroscopic studies of Earth's atmosphere and climate change, and for having developed "novel experimental techniques and sensitive detectors allowing global measurements to be made by satellites."

The Paterson Medal and Prize went to **Thomas Harvey** for "his significant scientific and managerial contributions at the interface of physics and chemistry in the study of polymer optical devices and for the subsequent exploitation of the new technologies developed." Harvey is a senior physicist and new business development manager at Epigem Ltd in Wilton, England.

Peter Knight, a professor of quantum optics and director of the laser consortium at the University of London's Imperial College, won the Thomas Young Medal and Prize. He was recognized for "a career dedicated to the furtherance of quantum optics in all of its aspects."

Christopher Llewellyn Smith was honored with the Glazebrook Medal and Prize for "his outstanding and distinguished contributions over many years as a particle physicist, leader, tactician, politician and diplomat." The director general of CERN from 1994 to 1998, Llewellyn Smith is now provost of the University of London's University College London.

Averil Macdonald received the Bragg Medal and Prize "in recognition of her committed, inspirational and highly-valued communication of the fascination of physics to students of all ages and abilities." A part-time physics lecturer at the University of Reading, she also handles the organization of events for the public and recruiting for

the physics department.

The IOP awarded the Paul Dirac Medal and Prize to **Ian Percival** for "his distinguished contributions to the interpretation of quantum theory, to quantum and classical dynamical chaos, and to atomic and molecular theory." Percival is a research professor of physics at the University of London's Queen Mary and Westfield College.

Frances Ross of IBM's Thomas J. Watson Research Center in Yorktown Heights, New York, garnered the Charles Vernon Boys Medal and Prize. She was honored for "ground-breaking contributions to real-time visualisation of materials growth and processing using novel electron microscopy techniques leading to a deeper understanding of oxidation, etching and thin film growth."

The IOP presented the Kelvin Medal and Prize to **John Anthony Scott** for "championing the cause of physics in Ireland through an exceptional gift for teaching, demonstrating, organising and enthusing." He was also praised for "enabling invaluable mutual trust and friendship to be established between those who love physics both in Ireland and in Britain." Scott is a senior lecturer in the department of physics and the director of public affairs at University College Dublin.

The winner of the Duddell Medal and Prize was **Rex Watton** of the UK's Defence Evaluation and Research Agency. Watton was recognized for "over 30 years of seminal contributions to the understanding and application of thermal imaging principles, to the maturing of the appropriate technology and to its eventual commercial exploitation."

The IOP's new honorary fellows are **Michael Berry**, the Royal Society Research Professor at the University of Bristol; **Stephen Hawking**, the Lucasian Professor of Mathematics at the University of Cambridge; **Peter Higgs**, a professor emeritus of physics at the University of Edinburgh; British-born **Anthony Leggett**, who holds the John D. and Catherine T. MacArthur Chair of Physics at the University of Illinois at Urbana-Champaign; and **Roger Penrose**, the Rouse-Ball Professor of Mathematics at the University of Oxford.

IN BRIEF

At a ceremony this month in Bonn, Germany, the Deutsche Forschungsgemeinschaft will present the Eugen and Ilse Seibold Prize for the Promotion of Science and Understanding between Germany and Japan to two scientists, one German and the other Japanese. The recipients will be **Hans-Joachim Queisser**, a founding director

of the Max Planck Institute for Solid State Physics in Stuttgart and a director of the National Institute for Advanced Interdisciplinary Research in Tsukuba, Japan, and **Yasuo Tanaka**, director of the liaison office in Bonn of the Japan Society for the Promotion of Science.

John Larese and **Laurence Passell** of Brookhaven National Laboratory have won the Department of Energy's 1998 Materials Science Award. The cash award of \$50 000 recognizes "their pioneering work on neutron scattering studies of films adsorbed on graphite and magnesium oxide surfaces."

Jerry M. Woodall, past president of the American Vacuum Society, joined the Yale University faculty in January as the C. Baldwin Sawyer Professor of Electrical Engineering. He was previously the Charles William Harrison Distinguished Professor of Microelectronics at Purdue University.

The Association of American Publishers awarded its prize for the best professional and scholarly book of 1998 in physics and astronomy to *New Perspectives on the Earth's Magnetotail*, published by the American Geophysical Un-

ion and edited by **Atsuhiko Nishida** of the Institute of Space and Astronomical Science in Sagami-hara, Japan; **Daniel N. Backer** of the University of Colorado at Boulder; and **Stanley W. H. Cowley** of the University of Leicester in England. The association also awarded its 1998 honorable mention for the best single issue of a journal to the American Institute of Physics's *Chaos*, volume 8, number 1, edited by **David K. Campbell** with guest editor **Arthur T. Winfree**. The issue focused on fibrillation in normal ventricular myocardium.

The new chairman of the Coalition for Plasma Science is **Gerald L. Rogoff**, an independent consultant and president of Plasma Associates. The coalition, which the APS division of plasma physics recently joined, works to increase nonscientists' awareness and understanding of plasma science.

John Rumble Jr., chief of the standard reference data program at the National Institute of Standards and Technology in Gaithersburg, Maryland, has been elected president of the Committee on Data for Science and Technology (CODATA).

OBITUARIES

Alexey Andreevich Anselm

Alexey Andreevich Anselm, one of the leading Russian physicists, died of cancer on 23 August 1998 in Boston. He was director general of the St. Petersburg Nuclear Physics Institute from 1992 to 1994, after having headed its theory division for 14 years.

Born on 1 July 1934 in Leningrad (now St. Petersburg), Alyosha received his PhD in physics in 1961 from Leningrad State University.

His first appearance in physics was dramatic. In 1959, Landau and others were trying to prove that zero charge was the only possible regime in field theory, even in four-fermion interactions (in which the sign of the coupling can be arbitrary). By considering a fermion model with several flavors in two dimensions, Alyosha proved, first of all, that Landau was wrong (Landau had used an improper cutoff procedure), and, what was more important, discovered that the model was asymptotically free—that is, the effective interaction logarithmically tended to zero at small distances. Published in 1959, Alyosha's paper was the first treatment of this highly important and general phenomenon. (The Anselm model was rediscovered in 1974 and is

now called the Gross-Neveu model.) At first, Landau reacted angrily, but quickly realized his error. Subsequently, he and his circle were respectful toward, and even slightly apprehensive about, Alyosha.

Next in Alyosha's research career was a period (1961–70) of work on Regge poles. He became one of the leading figures of the Leningrad school of high-energy physics, which was headed by Vladimir Gribov. Together, they undertook state-of-the-art explorations of the properties of Regge poles, especially those close to experiment. Enormously prolific, their group discovered many subtle and beautiful features of Regge poles.

It must be said that, despite its excellence, the members of the Leningrad school were somewhat intolerant about field theory. Alyosha was a notable exception—much to my benefit and, perhaps, that of others. Apart from providing much-needed moral support, he helped me to publish papers on renormalization group analyses of deep inelastic scattering, which, in the late 1960s, were considered pathological. This kind of personal assistance reflected some of his best qualities—namely, his benevolence, common sense and an intellectual ability that was never obscured by prejudices. He also had wonderful intuition,