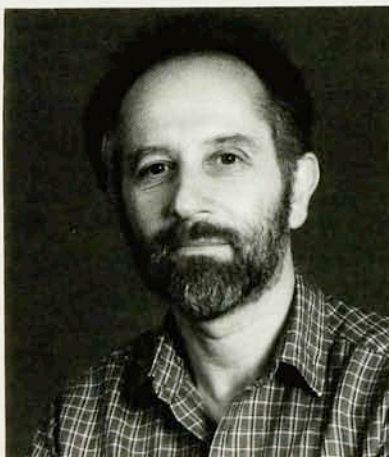


AWARDS FROM APS AND AAPT HIGHLIGHT NOTEWORTHY ACHIEVEMENTS

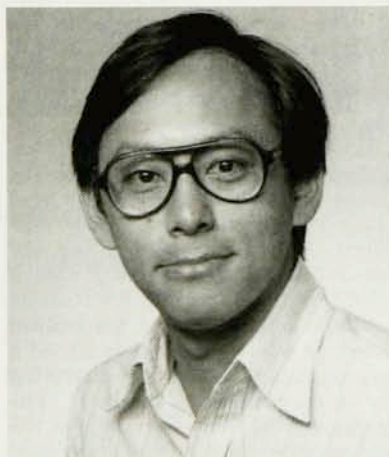
At the 1990 winter meeting of The American Physical Society and the American Association of Physics Teachers, held in Atlanta, Georgia, several individuals were honored for their contributions to physics and physics education. Meeting participants had the opportunity to attend a lecture given by the 1990 winner of APS's Julius Edgar Lilienfeld Prize, Michael Berry of the University of Bristol, England. AAPT awarded the Oersted Medal, the association's highest honor, to Carl Sagan of Cornell University. Steven Chu, a professor of physics and applied physics at Stanford University, presented the 1990 AAPT Richtmyer Memorial Lecture.

Berry received the Lilienfeld Prize for his "seminal work on the unifying concept of geometric phase and for the beauty, grace, coherence and simplicity of his lectures on difficult matters of mathematical physics." Berry is well known for his work on the geometric phase (also known as the "Berry phase") acquired by a quantum system as it is carried around a closed path in the space of adiabatically varied external parameters. His work has had an impact on such fields as optics and the quantized Hall effect, and bears implications for conceptual problems such as those surrounding the Aharonov-Bohm effect and the nature of quantum statistics.

Berry earned his PhD in theoretical physics from the University of St. Andrews in Scotland in 1965. He has been a physics professor in the H. H. Wills Physics Laboratory of the University of Bristol since 1978. As part of the Lilienfeld Prize, which comes with a \$12 000 stipend, the winner gives three lectures on his or her research, two of them at a research university or undergraduate institution of the winner's choice and one at an APS meeting. Berry's lecture at the January APS meeting was entitled "Some Geometric Phases." Shortly thereafter he gave a Lilienfeld lecture at Cornell on "Stokes and



Michael Berry



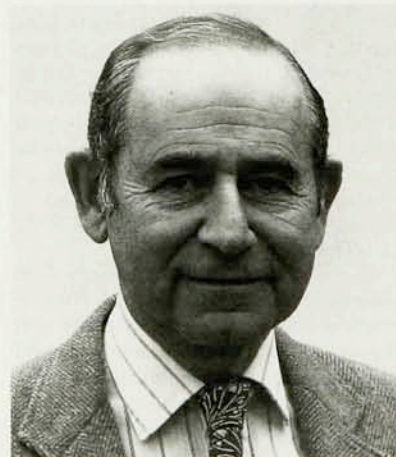
Steven Chu

the Rainbow: Interpreting Divergent Series." His third lecture will be delivered at Reed College in Portland, Oregon, and will be entitled "Beyond Rainbows."

In presenting Sagan with the Oersted Medal, which recognizes contributions to the teaching of physics, AAPT praised him as a "master communicator and teacher in the broadest and deepest sense of the word." The medal citation said that Sagan, who is active in public debate on such issues as arms control, nu-



Carl Sagan



Peter Lindenfeld

clear winter, the greenhouse effect and science education, acknowledges the scientist's responsibility "to call to the public's attention important and difficult national policy issues related to science."

Sagan is best known to the public for his popularization of astronomy and physics through books, magazine articles and television programs. His television series "Cosmos" has aired in 60 countries, and the accompanying book of the same name (Random House, 1980) is the best-selling

science book ever published in the English language. His articles appear regularly in *Parade* magazine.

Sagan received his PhD in astronomy and physics from the University of Chicago in 1960. From 1962 to 1968 he was a lecturer and then assistant professor of astronomy at Harvard University. Since 1968 he has been on the faculty at Cornell, where he is now the David Duncan Professor of Astronomy and Space Sciences and director of the Laboratory for Planetary Studies.

The topic of Chu's Richtmyer Memorial Lecture was laser-cooled atoms. Chu described several techniques used for optical cooling and trapping of atoms and molecules and discussed how they could be applied to answer some questions in basic physics and biology.

Chu received his PhD in physics from the University of California, Berkeley, in 1976. From 1983 to 1987 he was head of the quantum electronics research department at AT&T Bell Laboratories. He has been a professor of physics and applied physics at Stanford University since 1987.

At the January meeting AAPT also presented distinguished service citations to John L. Hubisz Jr, a physics professor at the College of the Mainland in Texas City, Texas; Karen L. Johnston, an associate professor of physics at North Carolina State University; Philip C. Peters, a physics professor at the University of Washington; Roger H. Stuewer, a professor of physics and astronomy and director of the history of science and technology program at the University of Minnesota; and Howard G. Voss, a physics professor at Arizona State University.

Also at the January meeting, APS presented the 1989 Apker Award, which recognizes undergraduates who have excelled in both academics and physics research, to Deborah Kuchnir, who was an undergraduate at MIT, and to Steven H. Simon, who was an undergraduate at Brown University (see *PHYSICS TODAY*, December, page 85). Steven Gubser, the 1989 International Physics Olympiad Gold Medal winner (see *PHYSICS TODAY*, October, page 115), received a special award from APS.

At the June 1989 meeting of the American Association of Physics Teachers, Peter Lindenfeld of Rutgers University received the Robert A. Millikan Lecture Award, which recognizes "notable and creative contributions to the teaching of physics." The award citation called him "that rare combination of distinguished researcher and inspiring teacher."

Much of Lindenfeld's effort has been aimed toward strengthening ties between research physicists and physics teachers, including preparing experiments and materials for summer institutes for high school teachers. He currently heads the executive committee of the Center for Mathematics, Science and Computer Education at Rutgers. Lindenfeld's research is in superconductivity and other properties of metals.

Lindenfeld's Millikan lecture was entitled "The Einsteinization of Physics." In it he deplored the popular image in which physics—as symbolized by Einstein—is perceived as largely incomprehensible, and urged that physics teaching become less abstract.

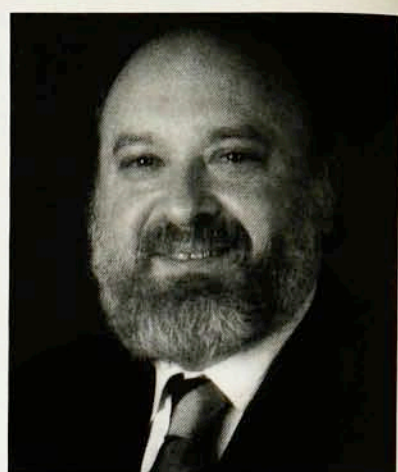
Lindenfeld received his PhD in physics from Columbia University in 1954. He then joined the department of physics and astronomy at Rutgers, where he became a professor in 1966.

IUPAP COMMISSION MARKS KADANOFF'S CONTRIBUTIONS

The statistical physics commission of the International Union of Pure and Applied Physics has named Leo Kadanoff winner of the Boltzmann Medal. The medal was presented by the chairman of the commission, J. M. J. van Leeuwen, at the commission's Statphys conference held last July in Rio de Janeiro, Brazil.

Kadanoff is best known for introducing the idea of scaling into the theory of critical phenomena and phase transitions. In a paper published in 1966, he pointed out the association between the properties of critical correlations and the thermodynamic singularities at the critical point. In a follow-up article, he led a large collaboration in demonstrating the consequences of scaling. The group showed that the details of the interactions among the individual molecular units are irrelevant because of scale-invariance. From this work emerged the experimentally supported hypothesis that the behavior of a system very near its critical point depends only on its dimensionality and on the dimensionality in which the system's spins are free to move and not on local interactions between particles, the "universality hypothesis."

Other topics that have attracted Kadanoff's attention are correlation functions in quantum statistical mechanics, superfluid helium and theoretical models of quarks and strings.



Leo Kadanoff

His current research interests are chaos, multifractality and turbulence.

Kadanoff received his PhD in physics from Harvard University in 1960. From 1961 to 1969 he was on the faculty of the physics department at the University of Illinois at Urbana-Champaign. From there Kadanoff moved to Brown University, where he was a professor of engineering and physics. Since 1978 he has been a John D. and Catherine T. MacArthur Distinguished Service Professor of Physics and Mathematics at the University of Chicago.

IN BRIEF

As of September, Sigma Xi has a new executive director, **John F. Ahearne**, formerly vice president and senior fellow of Resources for the Future in Washington, DC. Ahearne is overseeing the relocation of Sigma Xi headquarters from New Haven, Connecticut, to Research Triangle Park in North Carolina, and will direct the organization's major expansion of activities planned for the next decade.

Haim Harari, the Annenberg Professor of High-Energy Physics at the Weizmann Institute of Science in Rehovot, Israel, has become president of the institute. Harari has been at the Weizmann Institute since 1966.

David Neufeld, most recently a visiting postdoctoral researcher in astronomy at the University of California, Berkeley, has become an assistant professor at The Johns Hopkins University, in the department of physics and astronomy.

Last year **Gerald Dugan** became head of the accelerator division at the Fermi National Accelerator Laboratory. He replaced **Helen Edwards**, who left Fermilab to head the accelerator division of the Superconduct-