

his experience on ozone expeditions, he said that small numbers of researchers have been working literally to the point of exhaustion.

The second half of the first day was devoted to a tour of the GM Research Laboratories, with stops at 12 locations. In many places the work being done was much as one would expect in a facility dedicated, ultimately, to the manufacture of automobiles. For example, Galen B. Fisher, a senior staff research scientist in the physical chemistry department, described research into the mechanisms of catalytic CO-CO and NO-CO reactions over rhodium, a process crucial to the development of catalytic converters.

In other locations, physics of a surprisingly basic character was being done. Gary L. Eesley, a senior staff research scientist in the physics department, gave a tour of GM's ultrafast laser laboratory, in which time-resolved measurements in the femtosecond range provide information about how conduction electrons ballistically transport thermal energy over distances of several hundred angstroms.

At many stations it was evident that the advent of a Cray supercomputer was revolutionizing the design, testing and manufacture of automobiles.

The automotive future

"Advances in automotive technology" was the subject of an after-dinner speech delivered at the end of the first day by Nils L. Muench, the executive director of GM Research Labs. Muench opened his talk by describing, to considerable hilarity, how he barely made it to the banquet because he discovered upon leaving work that he had locked himself out of his own car (a new Chevy Lumina APV, which was parked in the darkened GM Research garage). He solved the problem, he said, by what increasingly seems to be the American way: "I stole a car."

Muench said there is now a real acceptance of new technology at GM in contrast to 25 years ago, when he arrived. For example, anti-lock braking systems have been developed that rely on electronic speed sensors to regulate braking and acceleration spin. (Now he would like to see superconducting materials worked into such a system, he said, so that he can call it the Superconducting Anticollider.)

The typical GM engine now has an electronic control capability equivalent to two personal computers; soon the hydraulically controlled transmission will also be electronically

controlled, he said.

In the future, Muench said, we might look for an active suspension, for greatly improved ride and handling; active sound suppression systems, capable of reducing internal noise by up to 15 decibels; and adaptive cruise control, to regulate spacing

on highways.

In response to a question, Muench said he thought gasoline would still be with us for a long time to come, and that the transition then would be to methanol, then maybe to electric cars.

—WILLIAM SWEET

AIP AWARDS MADE TO AMALDI, HOLTON, REDINGTON AND LITTMANN

Four awards were presented at the AIP Corporate Associates meeting banquet, which was held on 3 October in the Detroit Renaissance Center.

Edoardo Amaldi of the University of Rome received the John T. Tate International Award, Gerald Holton of Harvard University was presented with the Andrew Gemant Award, Rowland W. Redington of General Electric received the Prize for Industrial Applications of Physics and Mark Littmann was given the AIP Science Writing Award in Physics and Astronomy.

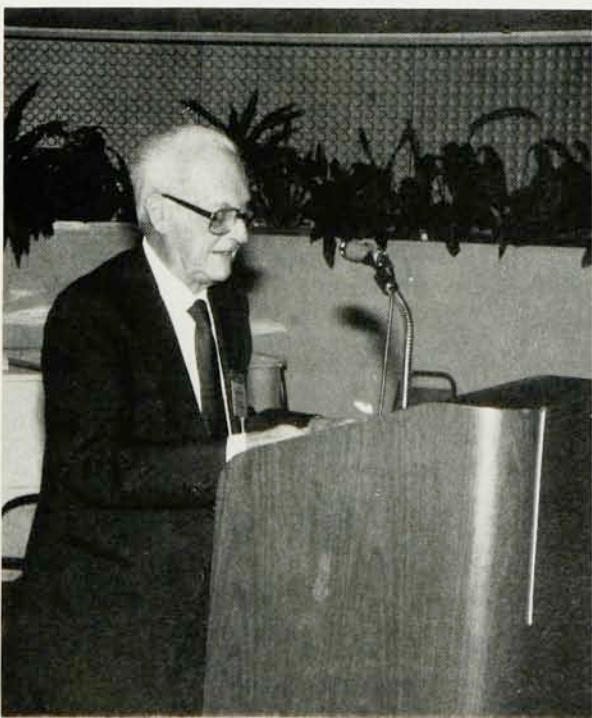
Amaldi, a professor of physics at the University of Rome, has long been involved in promoting both Italian and international physics research. He received the Tate Award "for his crucial role in the rebuilding of Italian and European physics following the devastation of World War II, for his leadership in the establishment and operation of CERN as a great international laboratory, and for his many other contributions to interna-

tional physics." The Tate award is given every few years by AIP to a foreign national in recognition of distinguished service to the profession of physics. Amaldi was presented with a medal, a prize of \$5000 and an award certificate.

In accepting the award, Amaldi said that over the years, he had made about 35 trips to the United States and had always learned a great deal.

Amaldi received his doctorate in physics from the University of Rome in 1929, and continued his postdoctoral work at the University of Lipsia, then at the Cavendish Laboratory at Cambridge, Columbia University and the Carnegie Institution of Washington. Since 1937 he has been at the University of Rome.

This year's Gemant award was presented to Gerald Holton "for his own work at the interface between the humanities and physics as a leading historian of science" and "for his major contributions in interpreting physics to the public through his



LORRAINE DeCANDOTTIS/AIP

Edoardo Amaldi accepts Tate Medal at banquet in Detroit's Renaissance Center.



Gerald Holton



Rowland W. Redington

public lectures and media presentations [and] for his key role in development of a new curriculum for physics in secondary schools." The award is sponsored by AIP and consists of a \$5000 prize for the winner and a \$3000 companion grant to be made to the History of Science Society, the institution selected by Holton. He has also been invited to give a lecture at an upcoming American Physical Society meeting.

"It is a lonely task to explain and defend the culture of science in America," Holton said upon receiving the award. Despite that sentiment, he has been active in science-related policy making throughout much of his career and has served on numerous government committees, including the National Commission on Excellence in Education, NSF's advisory committee on the ethical and human impact of science and the National Academy of Sciences Committee on the Conduct of Science. Holton was

Mark Littmann



instrumental in developing the Project Physics high school course and has frequently written and lectured on the subject of science and society.

Holton received his PhD in physics in 1948 from Harvard University, where he is now the Mallinckrodt Professor of Physics and a professor of the history of science.

Redington accepted the Prize for Industrial Applications of Physics for his work on "medical diagnostic scanning and imaging devices, resulting in a competitive advantage for his company and improved health care worldwide." The prize, which is awarded on behalf of the AIP Corporate Associates and sponsored by General Motors, is awarded every other year and consists of \$5000, a certificate and a travel allowance.

Since the early 1970s, Redington has directed GE's research on medical imaging technology, including computer tomography and magnetic resonance scanning. General Electric now dominates the market for magnetic resonance equipment with sales in the billion-dollar range.

Redington received his PhD in experimental physics from Cornell University in 1951, after which he began working at the GE Corporate Research and Development Center in Schenectady, New York.

Mark Littmann was honored for his book *Planets Beyond: Discovering the Outer Solar System*, published by John Wiley and Sons in 1988. The book discusses what is known of the outermost planets, Uranus, Neptune and Pluto; the soon-to-be-published paperback edition will include updated material on Voyager 2's fly-by of Neptune. Arthur Fisher of *Popular Science* magazine, who chaired the selection committee, called Littmann's book "one of the strongest

selections that I can remember since doing this." Littmann will receive \$3000, a certificate and an engraved Windsor chair. David Sobel accepted a certificate on behalf of John Wiley.

Littmann received his bachelor's degree in chemistry and literature in 1961 from MIT and his PhD in English from Northwestern University in 1969. He was director of the Hansen Planetarium in Salt Lake City from 1965 until 1983. Currently, Littmann is president of Starmaster Corporation, an educational publishing company.

—JEAN KUMAGAI

BAHCALL IS PRESIDENT-ELECT OF AAS

John N. Bahcall is the president-elect of the American Astronomical Society. He began the one-year term in June, at the end of which he will serve a two-year term as president. Donald E. Osterbrock of the Lick Observatory at the University of California, Santa Cruz, is the Astronomical Society's current president.

Just before being elected, Bahcall was named chair of the National Academy of Sciences Astronomy and Astrophysics Survey Committee, which is to identify the field's priorities for the next decade (see page 45).

Bahcall received his BA in 1956 from the University of California, Berkeley, his MA in 1957 from the University of Chicago, and his PhD in physics in 1961 from Harvard University. From 1962 to 1968, he was a resident fellow and later an associate professor of theoretical physics at California Institute of Technology. Since 1968 he has been a member of the Institute for Advanced Study in Princeton, New Jersey, where he is now a professor of natural sciences. His research includes solar physics and stellar distributions.

Several others chosen in the last election also took office in June. Harvey D. Tananbaum of the Harvard-Smithsonian Center for Astrophysics began a three-year term as vice-president; he replaces Stephen E. Strom of the University of Massachusetts, Amherst and joins the two current vice presidents, J. Roger Angel, whose term ends in 1990, and Frank H. Shu, whose term ends in 1991. Roger A. Bell of the University of Maryland took over as secretary, and Christine Jones of Harvard University, R. Bruce Partridge of Haverford College and Stanford E. Woosley of the University of California, Santa Cruz, became councilors.