

"Despite extensive questioning, we did not get a clarification as to how [the policy] is being interpreted," says Joseph Birman, Distinguished Professor of Physics at City College of New York and chair of the NYAS Committee on Human Rights of Scientists. "For example, while 'quantum chemists' was a deniable category, 'physical chemists' or 'environmental chemists' may not be." He points out that during the cold war, Soviet physicists routinely were granted visas by the US. "Basically, what I think we achieved was revealing the arbitrariness of our government's actions in this area."

How will this policy affect the US's eligibility to host international meetings? Meeting organizers seeking IUPAP sponsorship, for example, must be able to show that all qualified scientists will be welcome. The denial of visas to attend an IUPAP-sponsored meeting can result in the union's recommending that "no conferences be held in the country in question" until the offending policy is changed. As a precaution, IUPAP urges meeting attendees to apply for visas at least three months before they intend to travel.

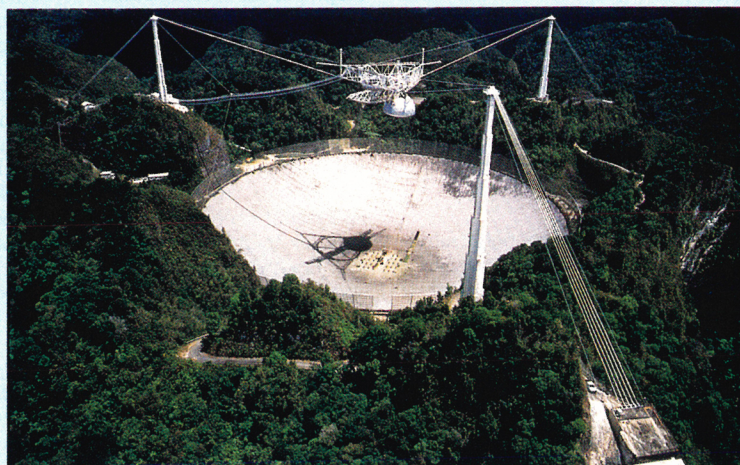
Birman and Lerch recommend that any US researcher who is inviting Cuban colleagues should forward as much information as possible to the State Department's Office of Cuban Affairs, to clarify that the visit is for bona fide scientific activity with no foreseeable military implications. "This is not saying it will help," Birman says. "But it might."

A cancelled trip

During their thwarted March trip, Montero and his colleagues had planned to attend the Sanibel Symposium on quantum chemistry in St. Augustine, Florida, and to meet with researchers in Georgia and New York. Montero has had "fruitful scientific exchanges" with researchers in Sweden, Spain and Germany, and he hopes to do the same in the US. The March visit, he says, was meant "to build bridges for future exchange, by showing who we are and what we are doing in science to an academic community which is fairly far from us, even though it is the nearest geographically."

Yngve Öhrn of the University of Florida, who was head organizer of the Sanibel Symposium, says that about 35 countries were represented at this year's meeting, with a number of participants from Latin America, as well as the former Soviet Union and China; only the Cubans were barred from attending. That is unfortunate, Öhrn says. "Quantum chemistry is a truly international field, and the total number of people in it is very small. So

Arecibo Telescope Is Upgraded



DAVID PARKER, 1997/SCIENCE PHOTO LIBRARY

The dome suspended above the telescope dish is 26 meters in diameter and weighs about 75 tons. Inside it, among other things, are 22- and 8-meter mirrors and electronics—the new Gregorian focusing system and cryogenically cooled receivers installed at the National Astronomy and Ionosphere Center's Arecibo Observatory in Puerto Rico. Hoisted 150 meters above the bottom of the 300-meter-diameter radio-radar dish in mid-May, the dome is part of a \$25 million upgrade, paid for by NASA and the National Science Foundation.

The fixed, spherical dish can be focused by positioning the dome along a suspended track. And focusing signals by using mirrors (rather than the line feeds previously used) has increased the telescope's sensitivity by about 3 to 20 times, according to Tor Hagfors, now at the Max Planck Institute for Aeronomy in Katlenburg-Lindau, Germany, who headed the upgrade design team, and Don Campbell, a planetary astronomer at Cornell University, who supervised the project. The new setup also extends the instrument's observable frequency range to 10 GHz; with the line feeds, 3 GHz was the maximum. To shield from thermal ground radiation, a 15-meter-high steel fence has been added around the telescope's perimeter, and a new 1 MW transmitter, housed in the dome, more than doubles the power that can be transmitted for radar astronomy experiments.

The world's largest single-dish telescope, Arecibo Observatory is used for radio pulsar research, planetary and asteroid astronomy and studies of the ionosphere, interstellar matter and distant galaxies.

TONI FEDER

when you have a meeting like this, it's important to have as wide a representation as possible."

Montero and his colleagues had also planned to visit Clark Atlanta University's Center for Theoretical Studies of Physical Systems and Cornell University, where they'd been invited by Nobel laureate Roald Hoffmann, Paul Houston and Andreas Albrecht as a follow-up to trips the three Cornell professors had made to Montero's lab.

Like everyone else in Cuba, the University of Havana group must contend with the long-standing US trade embargo, which makes it difficult to get computer parts and other research equipment. Still, Albrecht says, their work is impressive: "They've adapted and optimized available quantum chemical codes to run on their PCs. They have their own approaches that are very interesting." That includes computational studies of hypersurfaces of solute-solvent supermolecules for

modeling environmental effects on calculated molecular properties; application of the Bardeen-Cooper-Schrieffer approach to correlation energy in molecules; and theoretical models of interactions between proteins and antibiotic enzyme inhibitors.

The cancellation of Montero's trip was "horribly disappointing," says Albrecht. "The message is that the US can do whatever it wants with respect to Cuba. But we wouldn't dare do the same thing with China, because of the economics."

JEAN KUMAGAI

Government Employs Physicists in Many Ways

A recent study of physicists in government finds that "government is not a homogeneous entity." Indeed, wide variations in age, education and work activities are seen among government physicists depending on where

they work: federally funded R&D centers (FFR&DCs, which employ 36% of respondents); defense and space agencies, such as NASA (32%); the military (10%); and other federal, state and local agencies (22%). The last category includes science-oriented agencies such as the National Institute of Standards and Technology, as well as other government entities, including the Internal Revenue Service and the Veterans Administration.

The study found that 70% of those working at an FFR&DC have a PhD, compared to 38% of those at a defense or space agency and none in the active military. Physicists who work for FFR&DCs and defense and space agencies are more likely to engage in research, while those in the military tend to be engaged in more managerial activities. When asked to identify aspects of their physics education that had been most important in shaping their careers, about half of the respondents cited their analytical skills, a third said physics knowledge and a quarter mentioned technical knowledge.

The report, prepared by the American Institute of Physics, is based on a survey of members of Sigma Pi Sigma, the physics honors society; those surveyed had earned at least one degree in physics. Single copies of *Physicists in Government* are available free of charge from the Education and Employment Statistics Division, AIP, One Physics Ellipse, College Park, MD 20740; phone 301-209-3070, e-mail stats@aip.org.

Springer-Verlag Acquires AIP Press

On 30 April, Springer-Verlag New York purchased the assets of AIP Press, the book publishing branch of the American Institute of Physics. In exchange for an undisclosed cash payment plus royalties on future book sales, Springer-Verlag acquired the AIP Press backlist (about 170 titles) as well as the 50 books still under contract, which it will publish and distribute internationally. Future titles and new editions of current books will carry the logos of both Springer-Verlag and AIP Press.

AIP began soliciting bids for AIP Press late last year. In weighing the offers tendered, said Darlene Walters, AIP's vice president for publishing, the institute "wanted to make sure that those authors who had signed up in good faith with AIP would be satisfied." Springer-Verlag New York, a subsidiary of Springer-Verlag GmbH, is one of the world's leading science publish-

ers, with over 10 000 titles in print. "This sale will mean wider support for the authors and editors of AIP Press and better distribution of books," said Marc Brodsky, AIP's executive director and CEO.

Maria Taylor, who joined Springer-Verlag at the end of May after six years as head of the books division at AIP, will serve as editor for the AIP Press imprint. Taylor said there are already plans to expand several AIP Press series, including those on acoustics, biological physics and atomic, molecular and optical physics.

AIP's entry into book publishing was a fairly recent one. According to AIP journal publisher John T. Scott, the institute began publishing books in the early 1980s, when it agreed to take over several history of science books from Tomash Publishers. Prior to that, AIP had handled only conference proceedings and an occasional title for one of its member societies. Eventually, the institute's book catalog grew to more than 200 titles, including reference volumes, general-interest books, textbooks and research monographs. In 1993 the books program was renamed AIP Press.

AIP continues to publish physics and astronomy journals and conference proceedings, as well as a small number of specialty directories, including the *Directory of Physics, Astronomy and Geophysics Staff* and a guide to physics graduate programs.

Physicists' Salaries Rise, though Not All Beat Inflation

Every two years, the American Institute of Physics reports on salary trends among the members of its ten member societies. The latest such survey, conducted in 1996, found that, on average, physicists' salaries paid by the government and federally funded R&D centers stayed slightly ahead of inflation, while those in industry and universities lagged behind the inflation rate.

The median annual salary for members with PhDs—who represent the vast majority of member society members—was \$65 000 in 1996, up only 1.6% since 1994. Those working in federally funded R&D centers garnered the highest median annual salary, \$78 500, while those at four-year colleges, who tend to work on 9–10 month contracts, continued to be the lowest paid, at \$49 200. Universities, which employ nearly half of the society members with PhDs, paid median salaries of \$58 000 to those on 9–10 month contracts and \$70 000 to those on 11–

12 month contracts. Among the one-fifth of society members who work in industry, the median annual salary was \$77 000. Salaries for postdocs, who make up 5% of member society members, remained virtually unchanged since 1992, ranging from \$39 000 for those working in federally funded R&D centers to \$31 000 for those in universities.

Although median salaries vary widely across employment sectors for PhDs in their early and middle careers, they converge on the \$90–\$95 000 range for PhDs who have spent 25 years or more in the workplace.

About one-fourth of employed society members hold a bachelor's or master's degree as their highest degree; they work primarily in industry, secondary schools and government. The median annual salary in 1996 for those with master's degrees was \$55 000 and with bachelor's degrees, \$50 000.

Copies of *1996 Salaries: Society Membership Survey*, which also reports on geographical and gender differences in salary, are available from the Education and Employment Statistics Division, AIP, One Physics Ellipse, College Park, MD 20740; phone 301-209-3070, e-mail stats@aip.org.

Lectureship Prize for Young Physicists Is Established

The Michelson Postdoctoral Prize Lectureship is a new award that will be given annually to a promising young physicist who shows a talent for communicating physics to a nonspecialist audience. The lectureship was established by Case Western Reserve University's physics department, using money from its 1987 centenary celebration of the Michelson–Morley experiment (which was originally performed at Case Western). The winner is invited to give several lectures at Case Western, expenses paid, and receives a \$750 honorarium.

The first winner was Thomas Walther, a postdoc at Texas A&M University. His lectures, delivered in April, were on diverse topics: ultraviolet–infrared and infrared–ultraviolet



THOMAS WALTHER