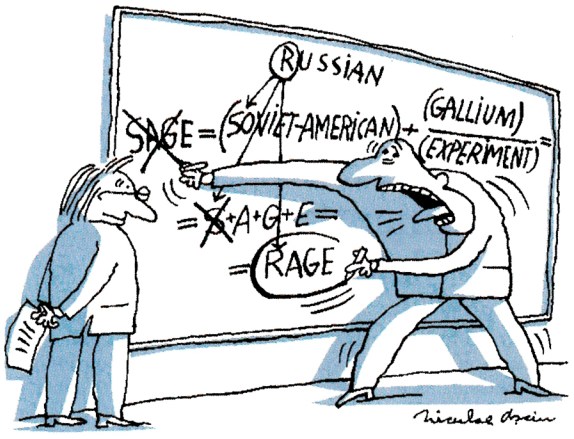


main under government authority, reportedly was rejected in June, and when PHYSICS TODAY went to press SAGE scientists were still waiting for word on a new petition. Says Gavrin, "The SAGE gallium problem can be solved finally and completely only if the government decrees that the gallium be transferred to the Russian Academy of Sciences." But convincing Kiriyenko to do so could be "a big problem," Gavrin says, noting that Kiriyenko previously headed the fuel and energy ministry, "the very ministry that tried to take the gallium." Nor, say Russian and American SAGE scientists, is Bulgak's support for SAGE assured. **TONI FEDER**

As US–Cuba Ties Improve, Scientists Ask that Travel Restrictions be Lifted

The easing of political tensions between the US and Cuba following Pope John Paul II's trip to Havana last winter has brought with it greater freedom for American and Cuban scientists pursuing joint collaborations. Nevertheless, policies in both countries continue to restrict scientists' travel, "a freedom fundamental for scientific enterprise," states a report issued last month by the American Association for the Advancement of Science.

A particular concern is the arbitrariness that seems to govern the granting of licenses and visas required for travel between the two countries, notes AAAS's Elisa Muñoz, the author of the report. Among the report's 23 recommendations is that both governments abolish the travel license requirement and cease applying "political criteria" in judging visa applications.

The number of US and Cuban scientists being barred from travel "seems to be declining a little bit," observes Irving Lerch, the American Physical Society's director of international affairs. Physicists have learned, for example, that travel applications containing words like "nuclear" or "quantum" tend to get rejected, he says. "It's a game, and we're becoming more sophisticated at it," adds Lerch. "But if you don't know the ins and outs, your ability to travel can be abridged."

US scientists may rule out traveling to Cuba simply because they don't know how to go about it, Muñoz says. And so, despite having one of the largest science establishments in Latin America—it is one of only five countries in the region to belong to the International Union of Pure and Applied Physics—Cuba is seldom tapped to host international meetings, out of fear that Americans won't attend. AAAS now plans to set up a clearinghouse for information on US–Cuba scientific exchanges. Among other things, it will assist those whose visa or license requests have been denied.

Of course, travel restrictions are not the only impediments to scientific collaborations. The report also touches on the detrimental effects of the US's longstanding trade embargo on Cuba, and on grosser human rights violations in Cuba, such as the firing of dissident scientists.

Down to the wire

According to the US State Department, 82% of Cuban scientists who applied for visas between January 1997 and March 1998 got them. However, the AAAS report notes, "many [visas] were received too late for the intended travel to take place."

Such late-hour decisions are common fare, confirms Luis Montero Cabrera, a Cuban quantum chemist whose visa rejection last year was vigorously disputed by APS leaders (see PHYSICS TODAY, July 1997, page 55). At the end of June, he was again preparing to visit the US, but several days before his scheduled departure, he had received no word on his visa. Two of his American hosts then called the State Department. "I told them, 'You might recall that Montero is one of the scientists who was denied a visa a year ago, and there was a lot of protest over the State Department's action,' " says Carlos Handy, a physics professor at Clark Atlanta University. "I don't know if the calls helped, but anyways it worked out."

Montero received his US visa on 26 June, the day before his flight. During his four-week stay, he gave talks at Clark Atlanta and Cornell University and visited a former student who's now at the University of Arkansas.

Copies of *The Effect of Travel Restrictions on Scientific Collaboration between American and Cuban Scientists* are available from the Science and Human Rights Program, AAAS, 1200 New York Avenue NW, Washington, DC 20005; phone 202-326-6790; e-mail shrp@aaas.org.

JEAN KUMAGAI

University of Texas Opens Materials Institute

The University of Texas at Austin has started up a multidisciplinary research center, the Texas Materials Institute. Among the research areas that TMI is stressing are electronic materials, polymers, structural and mechanical studies of materials, materials chemistry and electrochemical and photochemical processes, says Donald Paul, TMI's director, a chemical engineer who for 17 years headed the university's Center for Polymers, which is now a part of the institute.

DONALD PAUL

A joint undertaking of UT-Austin's Colleges of Engineering and Natural Sciences, TMI draws its 75 or so members from the university's physics, chemistry and engineering faculties. UT-Austin "felt that we really needed to give a big push to materials science because our program has not been highly ranked in the past," says Sanjay Banerjee, an electrical engineer who serves on TMI's steering committee. "We want a more visible and cohesive program." The university will provide the institute, which opened in April, with $600 000 annually for instruments, technical and administrative personnel and other infrastructure.

TMI is housed in several existing departments at the university and is

intended to encourage collaborations among scientists in different fields. "It's meant to be a 'virtual' department," says Paul. "The faculty felt that a departmental structure would impose unwanted boundaries on the diverse and ever-changing field of materials science and engineering." The institute has subsumed an advanced degree granting program in materials science and engineering and, Paul says, "We're looking into revving it up."

One of the first instruments planned for TMI is the $1.1 million Ultrafast Nanoscale Optical Imaging and Spectroscopy Research Facility. By combining femtosecond light pulses with nanoscale microscopy, says UT-Austin physicist C. Ken Shih, this facility will overcome some of the limitations of existing microscopy techniques. For example, it should make possible observation of subpicosecond processes, such as coherent wavepacket evolution within a quantum semiconductor, or exciton dynamics within thin conjugated polymer films. Shih adds that the facility will also provide high-contrast discrimination against scattered light to allow for high-resolution imaging of biological tissues.

The new institute is loosely modeled on the campus's Center for Synthesis, Growth and Analysis of Electronic Materials, which is one of the National Science Foundation's centers for science and technology, and similarly includes an emphasis on forming ties with industry, Banerjee says. But, he notes, unlike the NSF centers, which are funded for 11 years at most, "TMI will be permanent." **TONI FEDER**

IN BRIEF

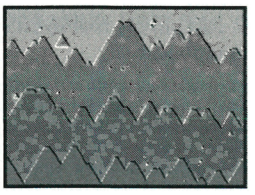
New money means that all scientific disciplines have come out ahead in Canada's recent funding reshuffle, the Natural Sciences and Engineering Research Council announced in June. Each scientific subfield had put 10% of its annual NSERC funding into a pot for which they all then competed (see PHYSICS TODAY, April, page 57). Thanks to its own recent budget hike, NSERC was able to up that pot by 50%, or $10 million Canadian, and also give each subfield a 10% budget increase. As a result, the cuts made to physics four years ago will be reversed: The condensed matter physics budget will increase by 17%; subatomic physics and general physics will each see a 14.6% hike; and space and astronomy—the only one of the four physics subfields that didn't lose money the last go-round—will go up by 15.7%. Had all the money been distributed evenly, each subfield would have got a 15% increase. NSERC said it will hold a reallocation exercise every four years.

Next January, *Nuovo Cimento D*, the Italian Physical Society's journal of condensed matter physics, will merge with the *European Physical Journal*, which was formed at the start of this year by combining France's *Journal de Physique* and Germany's *Zeitschrift für Physik*.

Soprano saxophonist and jazz composer Jane Ira Bloom got an asteroid named after her this year. Astronomer Brian Skiff discovered the asteroid, 6083 Janeirabloom, back in 1984 using a 13-inch photographic telescope at the Lowell Observatory near Flagstaff, Arizona—the same instrument with which the planet Pluto was discovered in 1930. Skiff felt Bloom deserved asteroidal recognition because of her NASA connection—in 1989 she became the first musician to take part in the NASA Art Program, for which she composed "Most Distant Galaxy" and because he likes what he calls her "evocative spacey compositions." For her part, Bloom—who also composed "Einstein's Red/Blue Universe"—says she is interested "in stellar phenomena and patterns that spin and have their own motion and flow, and in connecting images to sound." One technique she uses is to sweep her horn in front of a set of microphones to "see how sound changes when it moves . . . kind of like a Doppler effect." Bloom's asteroid, 5 km in diameter, orbits the Sun with a period of 3.35 years, and will next be visible from Earth this winter near the constellation Cancer. ■

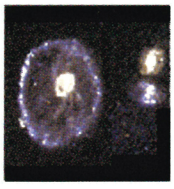
Web Watch

www.chem.cornell.edu/~mah11/SelfPin.html



In their article on page 34, John Boland and John Weaver emphasize the dynamic nature of etched semiconductor surfaces, as well as how small surface features can control the progress of etching. You can see both properties in action in Yi-Chiau Huang's Web movie of a kind of etching known as **step-flow etching**. The model featured in the movie is primarily the work of Huang and fellow graduate student Jaroslav Flidr, who are members of Melissa Hines's research team at Cornell University.

nedwww.ipac.caltech.edu



If you need to check the coordinates of a galaxy or the redshift of a quasar, then maybe you want to consult **NED**. NASA and Caltech's Infrared Processing and Analysis Center (collectively, the "N" in NED; "ED" stands for extragalactic database) have collaborated to make available a multifaceted database of nearly one million celestial objects outside the Galaxy. Particularly useful is NED's capability of displaying the light output of a galaxy, as a broadband spectrum from the radio to the ultraviolet. Click on "Photometry" to use this option.

imagine.gsfc.nasa.gov

Young astronomers and the people who teach them in high school will probably be interested in **Imagine the Universe**, an on-line educational resource created by the High Energy Astrophysics Science Archive Research Center at NASA's Goddard Space Flight Center. It offers not only illustrated tutorials about all aspects of astronomy, but also lesson plans based on real astronomical data.

www.yoto98.noaa.gov

To emphasize the importance of Earth's marine environment, the United Nations has declared 1998 to be the **International Year of the Ocean** (YOTO). As part of its YOTO program, the National Oceanographic and Atmospheric Administration (NOAA) has assembled a Web page that reflects the varied ways in which the oceans influence our lives. NOAA's YOTO page contains, for instance, a study of ocean energy and mineral resources, a kids' and teachers' corner and over a hundred links to other ocean-associated sites.

To suggest topics or sites for Web Watch, please contact ***ptwww@aip.org*** *by e-mail.*
Compiled by **CHARLES DAY**