

endless ways a column of air can be made to vibrate, rather than as a saxophone used to punch out discrete frequencies."

Though a minority taste—just 22 people turned up to hear Butcher in Georgetown—freely improvised music has enough fans worldwide to support a host of independent CD labels (including ACTA, which Butcher runs) and an extensive network of performance spaces and festivals, most of which are in Europe. Still, no one gets rich playing such esoteric music. To supplement his income, the London-based Butcher spends eight hours a week teaching high school students a subject he hasn't completely forgotten—physics.

To hear samples of Butcher's work and learn about his upcoming concerts, visit Peter Stubley's European Free Improvisation Web page at <http://www.shef.ac.uk/misc/rec/ps/efi/eaudmp3.html>.

CHARLES DAY

Ban on Nuclear Waste Transport Eased in Germany

Nuclear waste shipments will be allowed to resume in Germany as of August. They were banned there and in several other European countries in May 1998, when it emerged that there was too much radioactivity on the outer surfaces of the containers and vehicles used—and that for years the nuclear utility companies responsible had hidden those violations from their governments (see *PHYSICS TODAY*, July 1998, page 54). Shipments were allowed to resume in France and Switzerland after just a few months, but they are still banned in the Netherlands. In Germany, where the scandal prompted the greatest public outcry, resumption remains controversial.

Germany's nuclear utilities have been pressing their government to lift the ban, with some of them claiming they are running out of on-site storage space for spent fuel, and will have to close down reactors if the waste isn't moved out. Now, waste shipments to storage sites within Germany will resume, but only with advance approval by the government on a case-by-case basis. Shipments to and from reprocessing plants in France and the UK, however, have not been given the go-ahead.

The German government has laid out 60 conditions aimed at improving the cleaning and monitoring of

nuclear waste cargo. But similar measures haven't solved the problem in France, where illegal amounts of radioactivity were found on the outer surfaces of 10 of the first 109 nuclear waste shipments made since the ban was lifted there, notes Susanne Ochse, an energy expert at Greenpeace. "The cause of the contamination has not been determined. Shipments should not start up again before the problem is understood." In allowing transports, she adds, the German government is putting "the interests of nuclear power plant operators before the safety of train workers, police, or residents along the transport route."

In Germany, the issue of nuclear waste transportation is entwined with the Social Democratic-Green coalition government's goal of phasing out nuclear power. On 26 January, in announcing the end of the ban, environment minister Jürgen Trittin warned that "if in the coming weeks the government and nuclear utilities do not reach an agreement about phasing out nuclear power, the discussion about waste transport is likely to heat up again. A technology that can be implemented only over the protests and disapproval of the majority of the population . . . hurts democracy."

TONI FEDER

Cosmology Prize Starts with a Bang

The newly established Cosmology Prize of the Peter Gruber Foundation will carry a cash award of \$150 000, and will be given annually "to an outstanding astronomer, cosmologist, physicist, or mathematician [to] recognize fundamental scientific advances that shape the way we see and comprehend the universe." Nominations are due by 31 May. The timeline is a bit tight, according to Larry E. Tise, the executive administrator for the foundation's awards, because "Peter Gruber wanted to establish and award the prize during the year 2000, as one more element of our observance of the millennium." Three more \$150 000 Gruber awards are anticipated for 2001—in science, culture, and code of law.

Gruber was born in Hungary in 1929, and moved with his parents to Calcutta, India, at age ten. When World War II reached India, he was sent to a boarding school in the Himalayas. In 1951, he came to the US, where he served in the army and ultimately built a successful asset management business on Wall Street. In 1993, he started the Peter Gruber Foundation, which is known for its

Strasbourg Interdisciplinary Institute Gets Off the Ground

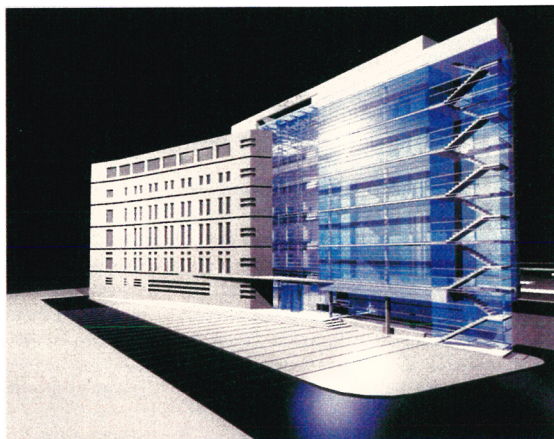
Exploring the interfaces among physics, chemistry, and biology, providing research autonomy for young scientists, and forging ties with industrial researchers are the core aims of the new Institute of Supramolecular Science and Engineering in Strasbourg, France. Says ISIS founder and chemistry Nobel laureate Jean-Marie Lehn, "The spirit of ISIS is to study complex matter seen from different points of view—it's ambitious."

The institute, which is part of Louis Pasteur University, will eventually have five departments led by senior scientists—so far, these are Lehn's own group studying supramolecular chemistry and a nanostructures and technology group under Thomas Ebbsen—and five headed up by junior researchers, as well as space rented out to private companies.

Says Lehn, who wants to break from the European tradition of investigators remaining for years under the thumb of a senior professor, "ISIS will offer young people independence and the possibility to do their own research." In addition, no more than half of the 120 or so staff positions will be permanent. "We want to have flux," says Ebbsen. "It refreshes us—and it's good for visiting scientists."

ISIS is still in temporary quarters, but work on a new building is expected to begin this summer (see architect's rendering), and it should be ready by 2002.

TONI FEDER



charitable giving, principally in the US Virgin Islands, where Gruber lives. Throughout his life, Gruber has studied philosophy, religion, and science on his own. He describes cosmology as "the most scientifically rigorous, aesthetically elegant, and most poetic of the sciences."

David DeVorkin, curator of astronomy for the Smithsonian's Air and Space Museum, told us, "The time is right for this award, given the tremendous excitement that has grown over the last few years in the field of cosmology. We now understand, or are about to understand, things undreamed of only a decade ago."

The winner will be announced in August at the General Assembly of the International Astronomical Union in Manchester, UK, and the formal presentation will take place on 11 November at the Pontifical Academy of Sciences at the Vatican.

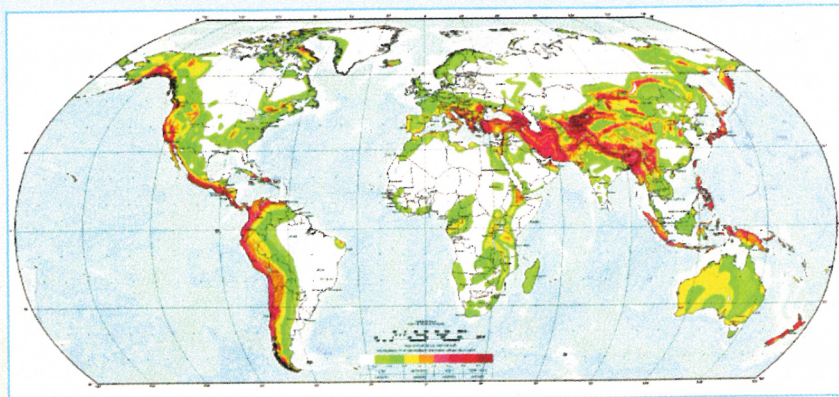
For nomination guidelines, procedures, and forms, contact: Larry E. Tise, Cosmology Prize of the Peter Gruber Foundation, P.O. Box 15792, Philadelphia, Pennsylvania 19103, USA. Phone: 215-765-4525. Fax: 215-765-2721. E-mail: ltise@ibm.net. Web (under construction): <http://www.gruberawards.org>.

IN BRIEF

Revitalizing physics education. Concern about poor coverage of interdisciplinary subfields, inadequate preparation of K-12 physics teachers, and the need for better career training in US undergraduate physics programs has prompted the American Association of Physics Teachers, the American Physical Society, and the American Institute of Physics to launch the National Task Force on Undergraduate Physics. Robert Hilborn, a physics professor at Amherst College and chair of the new, eleven-member task force, notes that the field and the job market have changed dramatically over the past thirty years, and that the number of physics majors is at a forty-year low. "Our plan is to launch a number of different activities aimed at improving undergraduate physics and to coordinate our efforts with others who already have projects under way," says Hilborn. He anticipates that the task force will write reports on various aspects of undergraduate physics programs periodically over the next five to ten years. Suggestions from the physics community are welcome; write to Robert Hilborn, Department of Physics, Amherst Col-

Global Seismic Hazard Map Unveiled

What's shaking? This global seismic hazard map is the first map to show quantitatively the hazard associated with earthquakes the world over. Here, hazard is defined as a 10% chance within any 50-year period that an earthquake will cause horizontal shaking with a given peak ground acceleration: White and green



represent low hazard ($\leq 8\%$ g, where g is 9.8 m/s^2 , the acceleration of gravity); yellow and orange are moderate hazard ($8\text{--}24\%$ g); the pinks are high hazard ($24\text{--}40\%$ g); and red and brown are the highest hazard ($>40\%$ g). Intended to help minimize harm caused by earthquakes, the map was unveiled this past December at the American Geophysical Union's San Francisco meeting. Some 500 scientists worldwide worked on the project, which was carried out as part of the United Nations International Decade for Natural Disaster Reduction, with financial support from more than a dozen international organizations. Information on seismic hazard—including, for example, how it's calculated and interpreted, what to do about it, and details for specific geographic regions—is available on the Web at <http://seismo.ethz.ch/GSHAP/>. While they last, posters of the global seismic hazard map can be obtained for free by e-mailing your request, including your postal address, to gshapmap@usgs.gov or sed@seismo.ethz.ch.

Web Watch

<http://www.earlham.edu/~peters/knotlink.htm>

<http://www.tcm.phy.cam.ac.uk/~ym101/tie/aps97tie.html>



On his Web page **Knots on the Web**, philosopher Peter Suber of Earlham College in Richmond, Indiana, has gathered together a host of Internet resources on the mathematics, tying, history, and art of knots. If you're interested in the theory behind one particular kind of knot—the kind that holds neckties in place—then visit **Theory of Tie Knots**, a site created by physicists Thomas Fink and Yong Mao of the University of Cambridge.

<http://www.ucar.edu/40th/webweather/>

From the University Corporation for Atmospheric Research in Boulder, Colorado, comes **Web Weather for Kids**, a Web site devoted to teaching children about the physical processes behind the weather. In addition to providing tutorials on such topics as thunder and lightning, the site describes simple experiments that can be done at home or in the classroom.



http://ranier.oact.hq.nasa.gov/telerobotics_page/coolrobots.html

Every week, members of NASA's Space Telerobotics Program bestow the title **Cool Robot of the Week** on a robot and its associated Web site. Recent cool robots have included Troody, a bipedal walking dinosaur robot, and Nomad, a four-wheeled robot that roams Antarctica in search of meteorites.



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

Compiled by CHARLES DAY