important position, but saddened that I must leave NNSA before the entire job is done," Gordon wrote in a 27 June departing message to NNSA employees. Gordon worked in the 1970s as a physicist at the Air Force Weapons Laboratory and at Sandia National Laboratories in Albuquerque, New Mexico. After working in a number of national security positions during his air force career, he became a deputy director of the Central Intelligence Agency in the late 1990s. Gordon moved from the CIA to NNSA in June 2000.

Department of Energy Secretary Spencer Abraham, in announcing Gordon's departure from NNSA, said he "launched an ambitious effort to revitalize the nuclear weapons complex and its infrastructure after a decade of decline. He has also ensured that the nation's nuclear weapons stockpile is safe and secure, that our nonproliferation programs are effective, and that we are continuing to meet the nuclear propulsion needs of the US Navy." —JLD

NASA on campus. This month, in a new partnership with universities, NASA is establishing seven University Research, Engineering, and Technology Institutes. Each URETI, consisting of three dozen or so researchers from as many as 11 universities, will get roughly $3 million a year for five years. The Department of Defense may contribute to some of the institutes.

The URETIs will undertake research and educational activities in specific areas of long-term strategic interest to NASA. The areas are aerospace propulsion and power, led by the Georgia Institute of Technology; the intersection of bio-, nano-, and information technology, led by UCLA; nanoelectronics and computing, led by Purdue University; third-generation reusable launch vehicles, with two separate URETIs, led by the University of Florida, Gainesville, and the University of Maryland, College Park; and bio- and nanomaterials and structures for aerospace vehicles, again with two institutes, led by Princeton and Texas A&M universities.

The lifetime of the URETIs can be extended once, to a total of 10 years, and additional institutes will be selected every two or three years, says program architect Michael Reischman. The new institutes are loosely modeled on research centers that NASA set up in the late 1980s but that were phased out a few years later, he adds. "NASA sees the URETIs as a component of their overall plan to reengage and reenergize the intellectual horsepower in the nation's academic community." —TF

Research reactor funds. Four university-led consortia have been awarded a total of $5.5 million in the first year of five-year grants intended to improve campus nuclear research reactors and related educational programs and to counter a predicted shortage of nuclear engineers and scientists. The funding, from the Department of Energy's new Innovations in Nuclear Infrastructure and Education program, which commenced in July, is the most significant infusion of federal money to the nation's aging research reactors since they were built, many of them 40 or more years ago (see PHYSICS TODAY, April 2002, page 23).

The INIE awardees are consortia led by MIT; Pennsylvania State University; Oregon State University and the University of California at Davis; and Texas A&M University. DOE national laboratories are participating in several of the consortia. Three additional consortia are on a waiting list in case DOE scrapes together more money for the INIE program. —TF

Pendulum project. Can the pendulum enhance science education and literacy? That's the aim of the International Pendulum Project, launched this year by Michael Matthews, an education professor at the University of New South Wales (UNSW) in Sydney, Australia.

The project focuses on using different aspects of the pendulum in developing curricula for all levels of science, math, technology, history, music, literature, and the interconnections among these fields. The project has initial funding of $30 000 a year for three years from the Australian Research Council.

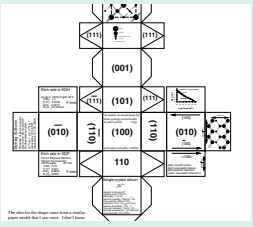
The pendulum project grew from Matthews's book, *Time for Science Education: How Teaching the History and Philosophy of Pendulum Motion Can Contribute to Science Literacy* (Kluwer Academic/Plenum, 2000). In the 17th century, Matthews writes, pendulums transformed the precision of marking time, which in turn transformed not only measurements in mechanics and astronomy, but also in navigation, mapping, work, religion, and social customs. On finishing the book, says Matthews, "I realized that it was just an introduction to the wider and deeper fields of pendulum study."

Among the project's planned activities are teacher-development workshops, a special pendulum issue of the journal *Science & Education* in 2004, and a pendulum conference this October at UNSW. For more information about the project, visit http://www.arts.unsw.edu.au/pendulum/ or e-mail Matthews at m.matthews@unsw.edu.au. —TF ■

WEB WATCH

http://www-bsac.eecs.berkeley.edu/~pister/crystal.pdf
http://www-bsac.eecs.berkeley.edu/~pister/guidelines

Kris Pister of the University of California, Berkeley, has written down "all I know about silicon on one sheet of paper." The compact reference source takes the form of a **foldup crystal**, which is available as a PDF file on Pister's Web site. Pister, a member of Berkeley's department of electrical engineering and computer sciences, also shares his **philosophy and info for new students**, a set of guidelines on such topics as publishing, collaboration, and the purchase of lab equipment.



http://www.pp.okstate.edu/ehs/manuals

Compiled by Oklahoma State University's environmental health and safety department, **OSU Safety Manuals** address laboratory safety. Among the topics covered are lasers and what to do if your lab is threatened by a tornado.

http://whitedwarf.org/education/vis

White dwarf stars pulsate in modes that can be described with spherical harmonics. To see what these modes look like, Travis Metcalfe, a theoretical astrophysicist at the University of Aarhus in Denmark, has created **Visualizations**, a set of online animations of various spherical harmonics.

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

Compiled by CHARLES DAY