

to the US's spending on defense-related research).

Compounding the problem, Esaki says, is that within the government each ministry has its own objectives and supports its own research activities, and little effort is made to unify the efforts. The need to boost university-based research funding and to improve basic research has been acknowledged by officials as high up as Prime Minister Kiichi Miyazawa, and in late August the government announced a new spending program of

10 trillion yen (about \$80 billion), of which \$3.7 billion is to go toward research and education. Esaki expects the situation to improve, but gradually.

Six months into the job, Esaki says he is too busy to pursue active research at the moment. But he is taking a scientific approach to his work. "I can learn how to apply mechanisms and systems to what I do," he says. "I sort of enjoy that." His biggest lesson to date: "I'm learning what a bureaucrat is."

—JEAN KUMAGAI

SURVEY FINDS FEW REWARDS FOR THOSE ACTIVE IN EDUCATION

Most physicists in academia are expected to wear two hats: one as researcher and the other as teacher. But according to a survey of US physics departments, conducted by the American Physical Society's committee on education, "comparatively few department chairs reward faculty for involvement in [educational] activities."

The survey, which was carried out by the education and employment statistics division of the American Institute of Physics, polled the chairs of all 752 US physics departments during the fall of 1991; the response rate was 71%. The current chair of the APS education committee is William E. Cooke of the University of Southern California.

The survey was a follow-up to an informal poll conducted by the APS subcommittee on educational activities and academic recognition. A report that the subcommittee released in April 1990 concluded that "all departments claim to recognize teaching as well as research and service in the promotion and tenure process, but the formal criteria are not generally a useful guide to what actually happens."

The extent to which faculty are involved in educational activities varies by the type of department. Among departments granting bachelor's degrees, the survey found, over 80% of the faculty are engaged in educational activities beyond regular teaching, such as writing textbooks or developing new kinds of courses. By comparison, less than 30% of the faculty in the PhD-granting departments are active in education outside the classroom.

And what rewards, if any, can faculty expect from such involvement? Very few, it turns out. For one, some department chairs said they do not have the authority to provide such rewards. Also, particularly among undergraduate departments, professors are expected to be active as educators, and so that work is not specifically rewarded. At those schools that do reward educational activities, the survey found, the most common rewards are merit raises, student or secretarial support and travel support to meetings.

The survey also looked at the importance of teaching ability in hiring and promotion decisions. Not surprisingly, nearly all of the PhD-granting schools said they look first for research accomplishments when hiring new faculty, while over three-quarters of

AGU HELPS SECURE DECLASSIFICATION OF GEOPHYSICS DATA

The American Geophysical Union, working with representatives of other organizations, has played a key role in obtaining the release of several previously classified sets of geophysical data. These include sonar data describing the depth of water along the US continental shelf and data from the GEOSAT satellite determining ocean heights.

Several years ago AGU set up a panel representing different fields of geophysics to identify data sets that deserved to be more widely used. According to John D. Bossler, who is the outgoing head of the AGU Panel on Access to Geophysical Data and the director of the Center for Mapping at Ohio State University, "We quickly gravitated toward classified data because there were four or five sets that were highly sought."

Panel member Paul G. Richards of the Lamont-Doherty Geological Observatory says that Bossler was very effective in dealing with the Navy's Office of Oceanography. The first important data set to be released contained information on ocean depths in the Exclusive Economic Zone—that is, the continental shelf around the US. Next came a band of GEOSAT data—radar measurements of the distance from the satellite to the ocean surface, containing clues to ocean currents, the variability of the ocean surface, the Earth's gravity fields and so on. Most recently all GEOSAT data covering the ocean surface below 30 degrees south latitude were declassified—"very valuable stuff, which will keep a lot of scientists busy for a long time," Bossler says.

The AGU panel has been less successful in getting the Air Force to release seismological data. However, the panel also has played a part in getting the US government to inaugurate a broad review of classified

data pertaining to the Earth's ecosystems. Language recommending a systematic government review of classified data pertaining to the Earth's environment was incorporated into a legislative proposal sponsored by Senator Al Gore of Tennessee and Senator Sam Nunn of Georgia for a Strategic Environmental Research and Development Program, a \$200-million fund that Congress subsequently authorized. Last November Gore held an informal meeting with about 30 Earth scientists, including a representative from the AGU panel, to discuss possible declassification of data. The Council on Foreign Relations has sponsored informal meetings between scientists and members of the intelligence community to discuss ecological reconnaissance data.

As a result of such efforts, Director of Central Intelligence Robert M. Gates agreed to establish a committee to consider declassification of ecological data, and on 5 June President Bush signed a directive ordering that both military and civilian space-based instruments be evaluated to improve "our ability to detect and document changes in the global climate system."

A number of factors are likely to drive the declassification of data further, Bossler says. For one, the collapse of the Soviet Union has to some extent relieved satellites of their original military purpose. Second, instruments such as the ERS-I satellite are now providing European scientists with data comparable to those from GEOSAT, and so the declassification of US Earth science data is only logical if American researchers are not to be placed at a disadvantage.

The bipartisan support won for declassification of geophysical data suggests that the process will indeed go forward.

—WILLIAM SWEET

the departments granting bachelor's degrees make teaching ability the top criterion. Among the master's degree departments, 52% said teaching ability is most important in hiring faculty, while 33% said research is most important and 12% said personal characteristics are most important. When deciding on promotion, less than 10% of all schools consider a professor's educational activities beyond normal teaching, the survey found.

GIACCONI TO HEAD EUROPEAN SOUTHERN OBSERVATORY

Riccardo Giacconi, the director of the Space Telescope Science Institute in Baltimore, Maryland, has agreed to become the next director general of the European Southern Observatory. He will take office in January, succeeding the Dutch astronomer Harry van der Laan.

As head of ESO Giacconi will oversee construction of the Very Large Telescope, which will consist of four 8-meter mirrors, in Cerro Paranal, in northern Chile. ESO, headquartered in Garching near Munich in southern Germany, also has 12 telescopes at the La Silla observatory, 350 miles south of Cerro Paranal.

Known primarily for pioneering work in x-ray astronomy, Giacconi conceived and directed the development of the UHURU x-ray satellite (launched in 1970), and he served as principal investigator for the Einstein Observatory (launched in 1978). He has been director of the Space Telescope Science Institute and a professor of astronomy at The Johns Hopkins University since 1981.

Born in Genoa in northern Italy in 1931, Giacconi earned his PhD in physics at the University of Milan in 1954, and he became a naturalized US citizen in 1957. He was an assistant professor of physics at the University of Milan from 1954 to 1956, a Fulbright fellow at Indiana University from 1956 to 1958 and a research associate at Princeton University in 1958-59.

From 1959 to 1973 Giacconi was executive vice president and a member of the board of directors of American Science and Engineering Inc in Massachusetts. He was a professor of astronomy at Harvard University and associate director of the Harvard-Smithsonian Center for Astrophysics, where he was responsible for the high-energy astrophysics division, from 1973 to 1981.

Giacconi's association with Hubble will continue at ESO, because the Garching headquarters hosts the Space Telescope's European Coordinating Facility, a joint venture of ESO and the European Space Agency. The Association of Universities for Research in Astronomy, which manages the Space Telescope Science Institute, is seeking a successor to Giacconi.

ACA BRINGS TEACHERS AND SCIENTISTS TOGETHER

Seven high school math and science teachers from the Pittsburgh area were recently treated to a day of lectures, tours and demonstrations on crystallography. The event, sponsored by the American Crystallographic Association, was held on 12 August during the association's annual meeting at the University of Pittsburgh. The educators' day was the first of what ACA hopes will become an annual event.

According to Linda Hannick of the Naval Research Laboratory, who helped organize the event, one of the main goals was to introduce the teachers to local researchers, with the hope that they will develop lasting relationships. Similar programs have been sponsored by several other member societies of the American Institute of Physics.

The day began with talks from four crystallographers, including Larry DeLucas, who was a crew member on the space shuttle Columbia's mission in July. After lunch the teachers toured crystallography laboratories at the University of Pittsburgh. They also watched demonstrations of simple experiments and were given kits containing crystal-growing experiments to use in their own classrooms.

The next educators' day is scheduled for the ACA meeting next May in Albuquerque, New Mexico.

GOMBOSI BECOMES SENIOR EDITOR OF JGR—SPACE PHYSICS

Tamas I. Gombosi of the University of Michigan, Ann Arbor, has been named senior editor of the *Journal of Geophysical Research—Space Physics*, a publication of the American Geophysical Union. He succeeds James A. Van Allen, who served as interim senior editor following the death of Christoph K. Goertz last November. Gombosi's term began on

1 August.

A native of Hungary, Gombosi did his graduate work at Roland Eötvös University in Budapest, earning an MS in 1970 and a doctorate in physics in 1974. He then became a research scientist at the Central Research Institute of Physics in Hungary and eventually became a research adviser there. In 1987 he moved to the University of Michigan, where he is a professor of space science and of aerospace engineering. Gombosi's research includes heliospheric physics and planetary atmospheres, ionospheres, exospheres and magnetospheres.

As editor, Gombosi intends to begin a letters to the editor section and to expand the coverage of areas that are now underrepresented in the journal, such as solar physics, cosmic rays and fundamental plasma physics. To assist authors whose first language is not English, Gombosi proposes hiring an editor whose main responsibility would be to make their papers more understandable.

NEW OSA PRIZE FOR ENTREPRENEURIAL CREATIVITY IN OPTICS

The Optical Society of America and the Society for Imaging Science and Technology have created a prize to recognize "pioneering entrepreneurial creativity that has had a significant public impact." The Edwin H. Land Prize, which consists of a medal and \$10 000, was endowed by the Polaroid Foundation. OSA and the Society for Imaging Science and Technology will alternate from year to year in presenting the prize.

Land, who died in March 1991, founded the Polaroid Corporation in 1937. (Land's obituary appeared in *PHYSICS TODAY*, April 1992, page 106.) He is perhaps best known for conceiving and developing commercial applications for instant photography. He founded the Rowland Institute for Science in 1979 to carry out research on color vision. Land attended Harvard College in the late 1920s but never graduated.

The Land Prize will recognize individuals who are identified with one of the areas in which Land himself specialized: optics, the mechanisms of vision, the properties and use of light, and the creation, manipulation and communication of images. The first prize is to be presented in May 1993 in Cambridge, Massachusetts, at the Society for Imaging Science and Technology's annual conference. ■