

Stipends for physics graduate students will go up 23% by 2004 to £9000. "We have got to send a clear signal to young people that research should no longer be seen as a Cinderella career," said a spokesperson for the government's Office of Science and Technology.

The 10% increase above inflation in the higher education budget has three main goals: to modernize university facilities, expand student numbers by at least 8%, and increase the pay of academics. Despite the funding boost to education, the UK still spends less as a proportion of its gross national product than most members of the Organization for Economic Co-operation and Development. To bring higher education up to the OECD average would cost an additional £7.5 billion per year.

Roughly one third of the new education cash (£330 million) is earmarked for salaries. The money is in addition to any nationwide pay increase negotiated with trade union leaders in the next few months. Universities have been told they can use the money for recruiting new staff or to break the national pay-scale and increase existing salaries at their institutions. "Universities and colleges have to compete internationally to recruit the best staff," says Brian Fender, CEO of the Higher Education Funding Council for England, which distributes public money to universities and colleges. "This funding settlement is a major step in helping them do that."

Currently an English literature professor earns the same salary as a physics professor anywhere in the country, but the pay raises are expected to change that. "There is now an acknowledgment amongst the government and some university institutions that it is no longer relevant to have a nationwide payscale," says Peter Cotgreave from Save British Science, a UK pressure group. "It should reflect national priorities." Science and technology are among those priorities, and low pay is widely believed to be the main reason for a UK academic "brain drain" both to industry and abroad.

PAUL GUINNESSY

Stirling to Head European Synchrotron

William Stirling, a physicist at the University of Liverpool in England, began a five-year stint this month as director general of the European Synchrotron Radiation Facility (ESRF) in Grenoble, France. He succeeds Yves Petroff, who has led the

AIP Forum Focuses on Energy and Defense

The annual Industrial Physics Forum, sponsored by the American Institute of Physics' Corporate Associates, was hosted by General Atomics (GA) in San Diego on 6-7 November. Some attendees opted to arrive a day early to participate in an academia-industry outreach workshop, which focused on training students for industry, designing a professional master's degree program, and forming collaborations between universities and industry. The forum was held in cooperation with *The Industrial Physicist* and the APS Forum on Industrial and Applied Physics. Additional sponsors of the workshop included several corporations and professional coalitions.

The theme of the forum was "Physics, Energy, and Defense: Synergistic Interactions." To reinforce the theme topics, the roughly 150 industrial and academic physicists in attendance toured two GA facilities. One was the DIII-D National Fusion Facility, housing GA's experimental tokamak, which has a D-shaped plasma. The other facility toured was

the GA Aeronautical Systems, Inc, production facility for the Predator (see photo) and other remotely operated aircraft that are used for surveillance in combat operations.

At the banquet, held on Monday night at the Scripps Institution of Oceanography, the crowd was addressed by Robert Dynes, chancellor of the University of California, San Diego, and by two local Congressional representatives: Randall "Duke" Cunningham and Robert Filner. AIP then presented its 2000 Award for Science Writing by a Scientist to Charles H. Townes of the University of California, Berkeley, for *How the Laser Happened* (Oxford University Press, 2000).

Next year's forum is slated for 22-23 October 2001, at the Xerox Wilson Center for Research and Technology in Webster, New York. The theme will be "Color Documents in the Internet Era."



THE UNMANNED PREDATOR AIRCRAFT features synthetic aperture radar and stays airborne for up to 40 hours.



STIRLING

most exciting jobs in Europe for a physical scientist." He has worked in Grenoble before: from 1973 to 1987 at the neighboring Institute Laue Langevin's high-flux neutron research reactor.

The ESRF has 16 member countries, whose annual dues provide the facility's budget of Fr 420 million (about \$55 million). "Over the last 10 years, the ESRF has been very successful at building and developing new beam lines," says Stirling. "It is now a very fine machine indeed." But that space is limited, he adds, "Almost everywhere you can put an instrument has been taken."

A challenge now, he says, is how to keep developing the facility. In partic-

ular, Stirling will continue Petroff's move to let scientists concentrate on their science, rather than on the mechanical details. For example, planned automation means that aligning a protein crystal will soon take seconds rather than minutes. Other aspects of data collection, such as powder diffraction, are also in line for automation.

The ESRF is used for research in physics, chemistry, materials science, and, increasingly, biology and medicine—for example, to do experiments on imaging human tissues. "Personally, as a physicist, I'm looking forward to getting to know more about the life sciences," says Stirling. His research as a condensed matter physicist involves x-ray investigations of magnetic structures and phase transitions of magnetic materials. LYNLEY HARGREAVES

AAS Reviews Education Strategy

When news got out this past May that the American Astronomical Society was closing its Chicago education office, Bruce Partridge, chair of the AAS's astronomy education board

(AEB), was deluged with e-mails from upset members. The numbers started dropping off, he says, after the AAS council and the AEB made it clear that funding for education programs would not be cut, but simply moved to the society's Washington, DC, headquarters.

The traditionally research-oriented AAS first hired people to focus on education in 1996. The decision to close the office after four years followed a review calling for a substantial rethinking of the society's education strategy. "A lot of our education effort is new," says Partridge, "and we're feeling our way." In Washington, DC, the new director of educational activities will have more opportunity to collaborate with other societies. That is important, says AAS executive officer Bob Milkey, for a small society to amplify its educational effect.

Doug Duncan, the education coordinator who lost his job with the office's end-of-year move, says, "One of the Chicago office's highest priorities has been to base [teaching] recommendations on solid research about what works and what does not." Duncan worries that the focus on education research—which is important for education sessions at AAS meetings, support of introductory college astronomy teaching, and development of a Web database with resource materials for teachers—will lose momentum once it is separated from an academic education research group.

But the AAS council plans to refocus its education effort, and is looking at how to juggle the office's responsibilities, which range from answering third graders' queries to implementing national K–12 standards. The council also hopes for more outside funding—the AAS has only netted \$60 000 in education grants since the Chicago office opened. The aim now, Partridge says, is to "maximize the bang for the buck."

LYNLEY HARGREAVES

NEWS NOTES

Merging millimeter arrays. Two California telescope arrays will be joined to form a bigger interferometer, the Combined Array for Research in Millimeter Astronomy. CARMA will marry Caltech's Owens Valley Array to the Berkeley Illinois Maryland Association's array from Hat Creek in Northern California; some new, smaller telescopes may join the family later. With six 10.4-meter and nine 6.1-meter telescopes, CARMA will have better reso-

lution at shorter wavelengths than the parent arrays. To be located at an undetermined site in the Inyo mountains, the newly combined array will move up in the world, from 1200 meters to roughly 2750 meters, where less atmosphere to cut through means improved sensitivity. The merger, which is expected to cost around \$15 million and be completed by 2004, will be overseen by Tony Beasley, who was recently hired away from the National Radio Astronomy Observatory in Charlottesville, Virginia. Creating CARMA had been recommended for several years, most recently last summer in the National Research Council's astronomy and astrophysics decadal survey. A consortium of four universities will run CARMA.

Graduate students stats. Non-US citizens made up about half the students who started physics and astronomy graduate programs in 1997. They tend to be older, have a more solid background in physics, and to have decided on a physics career earlier than their US counterparts, according to a recent report from the American Institute of Physics. They're also twice as likely to focus on condensed matter physics and less likely to study astronomy and astrophysics. Students from China still account for more than a quarter of foreign students, but the numbers coming from Eastern and Central Europe are rising. Women, who made up about a fifth of the survey respondents, aspire

to similar jobs as men—most of those with definite aims say they would like to go into research and teaching. But AIP found that incoming female students tend to be less certain of their career goals and are twice as likely as male students to feel underprepared for graduate work. The *1998 Graduate Student Report: First-Year Students* compares the perceptions and plans of first-year graduate students by citizenship, degree program, and gender. It is available for free from AIP, Statistical Research Center, One Physics Ellipse, College Park, MD 20740-3842; e-mail: stats@aip.org; or on the Web at <http://www.aip.org/statistics/trends/undtrends.htm>.

UK physics society. Peter Williams is the new president of the UK's Institute of Physics. He came to the IOP from Oxford Instruments, where he had held a series of managerial positions since 1982. Williams is chairing a study on undergraduate physics education in the UK. The new study is a follow-up to the last big look a decade ago and is intended to gauge the effects on the field of developments such as a larger total student body, the folding of several physics departments, the introduction of tuitions, and increased pressure on faculty to show research excellence. The IOP also wants Williams to strengthen ties between the institute and physics-related industry. Williams took office on 1 October and will serve for two years. He succeeds Gareth Roberts. ■



Web Watch

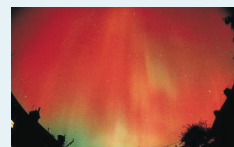
<http://physicscentral.com>

With the self-proclaimed aim of communicating "the excitement and importance of physics to everyone," the American Physical Society has launched **Physics Central**. The offerings on the weekly changing Web site include "Physics in Action," "People in Physics," and "Picture of the Week," as well as the opportunity to quiz physicist Lou Bloomfield about how things work.



<http://www.aurorawatch.york.ac.uk>

Earth's aurora borealis is the subject of **AuroraWatch**, a Web site produced by the physics department at the University of York in England. Linked to live data feeds from several Earth- and spaceborne detectors, the site provides predictions for when the aurora is likely to be visible from the UK and elsewhere.



<http://www.lamnetwork.org>

Physicists in Africa who work in the field of lasers, atoms, and molecules have formed the **LAM Network**. The Internet-based association is intended to promote pure and applied research and to break the scientific isolation of African universities and research structures.

The LAM Network

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

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