

we have never had before,” adds SFI awardee Michael Coey, a physicist at Trinity who specializes in spin electronics. “For the past 20 years, I’ve supported my research on outside money, mostly from the European Union, and it was mainly applied. SFI changes the climate. It gives more room for basic research.” Still, he adds, “don’t bet on that lasting. At the end of five years, we have to show we have done something significant.”

“We want people to make the connection between the research they propose and the payoff for biotechnology and ICT,” says Alastair Glass, who oversees information and communications technology for SFI. The hope is that the new research money will catalyze companies to set down R&D roots, stimulating the economy and creating jobs. Says Treacy, “For the past century, we’ve been exporting our best and brightest to foreign shores. We feel we should be able to absorb our own people.”

Seven of the eleven initial awards went to researchers in physics or a related field, mostly nanoscience. About half of the awardees were already in Ireland, and the rest are moving from the US or UK.

The next SFI competition will again aim to attract top-notch scientists from abroad. But in February SFI decided to flesh out its programs, and the new round of awards adds funding for researchers in Ireland, as well as for visitors, conferences, workshops, and interdisciplinary centers.

Strains of success

While information and communications technology and biotechnology are the clear winners in Ireland’s spending spree, money for research has risen across all fields, including the humanities. Non-SFI science funding for new projects, for example, doubled to €6 million this year. “SFI is building two narrow spikes of excellence on a foundation,” says Walsh. The expansion of SFI programs, adds Brian Harvey, vice president of research at University College Cork, “has dispelled the initial disquiet that SFI was very narrow and that they were focused on bringing in outside talent rather than funding researchers here.” Still, fields such as astrophysics and zoology fall outside SFI’s range, Harvey says, “and we need to be vigilant about supporting excellent researchers even if they are not in mainstream areas—to offer tenure and retain them.”

Not surprisingly, the sudden influx of money puts a strain on universities,

which not only have to cope with jealousies arising from the focus on two niche fields, but also have to find space and money for new people. With an additional €605 million from the government for bricks and mortar, the biggest challenge for universities is to offer permanent positions and pay internationally competitive salaries to newcomers.

“We are putting down metrics to measure our progress,” says SFI’s Glass. “One is the people we attract. Another is the number of postgraduate students here. We want the rest of the world to say, Wow! What’s happening in Ireland?” **TONI FEDER**

Physics Project Scores in Siemens Westinghouse Competition

While other students their age were off on their summer vacations, Shira Billet and Dora Sosnowik, seniors at the Stella K. Abram High School for Girls in Hewlett Bay Park, New York, were putting time in at the lab. Their work paid off last December when they placed first in the team category of the 2001 Siemens Westinghouse Science and Technology Competition. They shared the \$100 000 prize for their viscometer for ultrathin films.

In Billet and Sosnowik’s viscometer, two distinct layers of liquid polymers are painted on a silicon wafer, with the more viscous film on top. The difference in surface tension between the two films causes the upper layer to dewet, a process similar to water beading into droplets on the hood of a car. The dewetting forms holes in the upper film, exposing the lower film, whose viscosity is then calculated from the rate of hole growth. “We were

interested in this topic,” says Billet, “because it’s very difficult to measure the viscosity of thin-film lubricants using existing methods and [we] wanted to get involved with a modern and real problem.”

And they succeeded, says Miriam Rafailovich, director of the NSF Materials Research Center at SUNY Stony Brook and Billet and Sosnowik’s mentor. Rafailovich predicts the new method “will have far-reaching consequences in the fields of electronics and micromechanical systems.”

Billet and Sosnowik, whose interest in science was sparked by their chemistry teacher, will use their winnings to pay for college. Billet plans to major in chemistry or journalism and Sosnowik wants to become either a musician or doctor.

The individual prize went to Ryan Patterson, a senior at Central High School in Grand Junction, Colorado, for a glove that translates the hand movements of sign language into text displayed on a screen.

ANTHONY TWEED

New Medal Named for Rosalind Franklin

The UK is honoring crystallographer Rosalind Franklin (1920–58) by creating a medal in her name to recognize innovations in science. Franklin’s research was largely ignored during her lifetime, but is now widely accepted as having been key to discovering the structure of DNA. The new medal—the Royal Society’s first to carry a woman’s name—has a purse worth £30 000 (approximately \$42 000).

Franklin died four years before the Nobel Prize in Medicine went to Francis H. C. Crick, James D. Watson, and Maurice H. F. Wilkins for the discovery of the structure of DNA. “It has been a long haul to bring Rosalind’s contribution into the light of day,” says the University of Cambridge’s Joan Mason, who has given lectures on Franklin’s research. Watson, now at Cold Spring Harbor Laboratory in New York State, agrees: “It’s a great idea, not just honoring a woman, or a crystallographer, but also the memory of a fantastic scientist and a good friend.”

But according to Franklin biographer Lynne Elkin of California State University, Hayward, Watson and Crick did not give Franklin’s contribution its due in their seminal 1953 *Nature* article. She says that it was not until years later, in his book *The Dou-*



TOP HONORS in the 2001 Siemens Westinghouse Science and Technology Competition went to Shira Billet (left) and Dora Sosnowik (team winners) and Ryan Patterson (individual winner).

SIEMENS FOUNDATION

ble *Helix* (first edition, Atheneum, 1968), that Watson clearly acknowledged the debt he and Crick owed Franklin. Even then, says Elkin, the Franklin described in Watson's book "is unrecognizable by anyone who knew her."

The new medal, which will be presented annually, is open to all UK researchers, male and female. It has one of the largest monetary values of any UK award. That, along with the prestige associated with winning the medal, will "help other brilliant

women scientists get the acknowledgment they deserve in their lifetimes," says Patricia Hewitt, the UK's secretary of state for trade and industry. Details on the medal can be found on the

Royal Society Web site at <http://www.royalsoc.ac.uk>. The inaugural medal will be bestowed next year to coincide with the 50th publishing anniversary of Crick and Watson's *Nature* article.

PAUL GUINNESSY

CO₂ emissions from 1990 to 2012. Since 1990, the US emission intensity has dropped by 1.7% per year but CO₂ emissions increased by 12%.

If the US does not reach the proposed 18% cut in emission intensity, Bush promises that "additional measures" will be introduced in 2012.

Meanwhile, the European Union and its allies appear certain to ratify the Kyoto Protocol, bringing it into international law by their self-imposed September 2002 deadline. —PKG

Plutonium conversion. The US will dispose of 34 metric tons of surplus weapons-grade plutonium by converting it into mixed oxide fuel (MOX) for use in commercial nuclear reactors. The decision, announced in late January by Secretary of Energy Spencer Abraham, ends the dual-track approach that considered immobilizing the plutonium in glass logs as an alternative to fuel conversion. The elimination of the storage alternative will save about \$2 billion, Abraham said.

The surplus plutonium is the result of an agreement signed by the US and Russia in 2000 committing each country to dispose of 34 metric tons of plutonium from their weapons programs. The decision to go with fuel conversion came after the National Security Council staff spent a year reviewing the costs and implications of alternative methods of disposing of the plutonium. "This path forward is

workable, technologically possible, and an affordable solution that meets our commitments . . .," Abraham said. The MOX conversion process is estimated to cost \$3.8 billion over 20 years. A number of public interest advocacy groups, led by the Washington-based Nuclear Control Institute, plan to oppose the licensing of the MOX processing plants on the grounds that the plutonium immobilization is safer. —JLD

New degrees for new careers. For scientists who want a career in management or policy-making, three new master's degrees offered at the UK's University of Cambridge may be the way to go. Run jointly by Cambridge and MIT, the one-year programs in technology policy, bioscience enterprise, and environmental engineering and sustainable development combine coursework in fields like economics and international negotiating with politically and socially relevant topics that have a science bent, such as transportation, communications technology, and nuclear waste disposal. The programs aim to train scientists for an expected worldwide increase in the number of industry and government jobs that demand technical knowledge. Holders of bachelor's or higher degrees may apply. Applications are due by 15 May. For more information, visit <http://www.cmi.cam.ac.uk/pp/masters>. —TF

MEDICAL RESEARCH COUNCIL



FRANKLIN

NEWS NOTES

Bush's answer to Kyoto. Months after refusing to ratify the Kyoto Protocol (see PHYSICS TODAY, January 2002, page 26), the Bush administration has proposed an alternative: a voluntary 18% cut over the next 10 years in "greenhouse gas intensity" (based on the ratio of carbon dioxide emissions to the size of the US economy) instead of reducing overall US CO₂ emissions by 7% through national and international regulations.

Both the Canadian and Australian governments have welcomed the Bush proposal, but elsewhere it has been roundly condemned. "The Kyoto Protocol, with its legally binding targets and timetables, remains the only workable basis for taking forward international action on climate change," says Margaret Beckett, the UK's environment secretary.

Critics, such as the Pew Center on Global Climate Change in Arlington, Virginia, claim that the Bush proposal is just a business-as-usual scenario that will result in a 30% increase in

Web Watch

<http://ie.lbl.gov/xray/mainpage.htm>

Thanks to Gregory Rech of Lawrence Berkeley National Laboratory and his collaborators, you can now use your Web browser to view the **X-ray Spectrum of Elements on the Periodic Table**. You can plot the fluorescent spectrum of each element or, if you prefer, the spectra of two elements simultaneously.

<http://www.opticalres.com/kidoptx.html>

Bruce Irving of Optical Research Associates in Pasadena, California, has put together **Optics for Kids**, an educational Web site aimed at 6- to 11-year-olds. The site is structured around a series of questions, such as What's cool about lasers? that lead to more detailed information elsewhere.



<http://adswwww.harvard.edu>

With more than 2.8 million freely available abstracts, NASA's **Astrophysics Data System** is the largest noncommercial database of scientific literature in the world. And, thanks to a collaboration with the American Physical Society, ADS, which is hosted by the Harvard-Smithsonian Center for Astrophysics, has recently gotten even bigger. Its core collection of astronomical abstracts and articles is now supplemented with abstracts from the various APS journals.



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

Compiled by CHARLES DAY