were drafted without their input. "I was not consulted by the minister … we didn't receive any formal information," says Lucio Bianco, CNR's president, adding that he first learned about the decree's contents in the newspaper. "If the description of the document is true, it cannot be acceptable to the researchers of the CNR."

Bianco says that he hopes to discuss the reforms with Moratti "in an open way" after the government returns from vacation in September. In the meantime, scientists are planning to stage a public protest and will discuss the government's proposal at a meeting on 10 September in Rome organized by Italy's Association of Ph.D.s and other groups. Few scientists contacted by *Science* believe that the reform measures will survive in their current version.

–ALEXANDER HELLEMANS

Alexander Hellemans is a science writer in Naples.

ANIMAL BEHAVIOR

Birds Spy on Neighbors To Choose Nest Sites

Information is power, even for birds. Faced with tough choices, animals that know how others have fared in comparable situations can make better decisions. On page 1168, researchers report that collared flycatchers decide where to nest and whether to return the next year based in part on knowledge of their neighbors' reproductive success. "How individuals collect this information is enigmatic," says Tomas Pärt, an evolutionary ecologist at the Swedish University of Agricultural Sciences at Uppsala. "This result suggests that the cues used may be unexpectedly fine."

Choosing a good breeding site may mean the difference between begetting many offspring or none at all. Previous work on group-nesting seabirds, such as cormorants and kittiwakes, had turned up observational evidence that birds monitor the success of their fellows in assessing breeding sites. A team led by Blandine Doligez, then at France's National Center for Scientific Research (CNRS) in Paris and Uppsala University, tested experimentally to what extent birds make use of information gleaned by watching their neighbors, which ecologists call "public information."

Doligez, now at the University of Bern, Switzerland, worked at a long-term research site at Gotland, Sweden, where collared flycatchers sport identifying color-coded leg bands. Researchers there had noticed flycatchers peering into the nest boxes of other birds. "No one really focused on this behavior, [but] I thought, that's really a sign" they're gathering information, she says.

To manipulate such information, the researchers took nestlings from some nests and added them to others, creating some plots of woodland with supersized broods and others with measly numbers of young. The team then monitored these plots and two types of control areas for 3 years.

The manipulation had a marked effect. Outsiders preferentially moved to plots augmented with nestlings, apparently judging these plots to be productive. But having extra mouths to feed forced parents to spread food more thinly, so youngsters on these plots were smaller. Emigrants picked up on both cues—and viewed the cup as half-empty rather than half-full. They fled both treatment plots at equally high rates, responding negatively to lowered quantity or quality of young. Emigrating birds "know what's going on in their own area," Doligez explains. Immigrants, however, are at a disadvantage and may be unable to pick up on relatively subtle clues, she says.

Nosy. Collared flycatchers peer into neighbors' nests when prospecting for breeding sites.

The birds also appear to be using information from their own breeding experience when making dispersal decisions. Parents of experimentally reduced nests were more likely to fly the coop than birds with unmanipulated nests, whereas the nestling recipients were more likely to stay put.

Such findings highlight the importance of animal behavior to population biology, notes conservation biologist J. Michael Reed of Tufts University in Medford, Massachusetts. "Dispersal is often treated as diffusion in population models even though for many species it is a result of a series of behavioral

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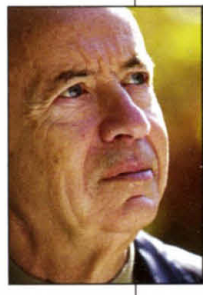
ScienceScope

Stem Cells by Intel The University of California, San Francisco (UCSF), last week announced a $5 million gift toward a $20 million fund that will allow its researchers to expand their work on embryonic stem cells.

Intel chair Andrew Grove (below) said that he would match every gift between $50,000 and $500,000, up to $5 million, to help the university set up the Stem Cell Discovery Fund and a research program to cultivate and study newly derived cell lines. UCSF is one of two U.S. universities to produce human embryonic stem cell lines listed in NIH's Stem Cell Registry, but the new fund will let its researchers go beyond those derived before President George W. Bush's deadline of 9 August 2001.



New Path for Ph.D.s A National Research Council (NRC) report has proposed a fellowship program for newly minted Ph.D.s who want to work with kids. The program would provide schools with expertise that's hard to come by and young scientists with an alternative career path.

The 2-year, $35,000-a-year fellowships would train scientists to use their skills in the classroom, at science museums, or in other education settings. "They probably won't be teaching fourth-grade math, but they could be a tremendous resource specialist for an elementary school," says panel member Margaret Cozzens, vice chancellor at the University of Colorado, Denver. "We think there'll be a big demand," says panel chair Patricia Morse, a marine biologist at the University of Washington, Seattle.

The report, *Attracting Science Ph.D.s to K–12 Education*, estimates it would cost $2.5 million a year to support 30 fellows.

Big Green Donation An international fund to protect the global environment won a $700 million boost last week after the United States agreed to increase its contribution. The agreement comes days before the World Summit on Sustainable Development in Johannesburg, South Africa.

After months of negotiations (*Science*, 31 May, p. 1596), the donor countries of the Global Environment Facility approved a $2.92 billion budget for the next 4 years. CEO Mohammed T. El-Ashry says the money will support continuing efforts to protect biodiversity and mitigate climate change as well as new work on combating persistent organic pollutants and desertification. Some $70 million of the $500 million U.S. contribution will be tied to the fund's performance.

decisions," Reed says. The work may also prove useful for conservation efforts to reintroduce species to new areas, he adds.

The new study beats to press studies on colonial seabirds that show a similar use of public information. Thierry Boulinier and Etienne Dauchin of CNRS and co-workers have found that kittiwakes whose young were removed by researchers were less likely to leave when surrounded by successful neighbors than when surrounded by failed ones. And Thomas Bregnballe and colleagues at the National Environmental Research Institute in Rønde, Denmark, have found comparable patterns with cormorants. Says Pärt: "I'm convinced that this is a widespread phenomenon." –JAY WITHGOTT

COMPUTER SECURITY

Congress Expands Cyberfellows Program

In his 14 years at the University of Tulsa, says computer scientist Sujeet Shenoi, "I never had a student go on to work for the [U.S.] government." But this year some two dozen have promised to join the federal workforce to safeguard the nation's computing and communications infrastructure, with 30 more banging on the door. Shenoi, who sees a terrorist attack on the country's power or communications grid as a matter of "when, not if," couldn't be more pleased with his students' sudden shift in career plans: "I want them to make a difference before they make a buck."

The Oklahoma students are part of a growing network of scientists and technical experts of all ages being trained in various aspects of computer security. "It's time to be as smart about cybersecurity as we are about cyberspace," says Joseph Bordogna, deputy director of the National Science Foundation (NSF), which runs the Scholarship for Service (SFS) program (www.ehr.nsf.gov/DUE/programs/sfs). A $29 billion supplemental spending bill signed into law 2 August gives NSF an additional $19.3 million for the program, which offers 2-year full scholarships for students to earn a bachelor's or master's degree in return for at least 2 years of government service.

The scholarships are aimed at filling a years-long shortage of scientists, engineers, and policy professionals in computer security and information assurance. NSF made the first SFS awards in May 2001, averaging $2.5 million over 4 years, to the University of Tulsa and five other institutions. Last fall's terrorist attacks convinced Congress to nearly double the current year's $11.3 million budget, which in May was distributed to five more institutions. The program has also awarded more than a dozen "capacity-building" grants to universities to train faculty members at institutions breaking into the field of cybersecurity.

The intent of the 2002 supplemental funding is "to produce more professionals as quickly as possible," explains Norman Fortenberry, head of NSF's division of undergraduate education, which manages the SFS program. A partisan fight between Congress and the White House on broader homeland security issues delayed passage of the funding bill until nearly the end of the current fiscal year and the start of the new academic year. To save time, Fortenberry says NSF is likely to "ask existing grantees" if they could grow larger rather than staging a new competition. The foundation might also consider funding highly ranked proposals that didn't make the earlier cut.

Corey Schou of Idaho State University in Pocatello hopes that his school's proposal, submitted in the hope of a supplemental bill, falls in that category. "We didn't apply in 2001 because our program is already in pretty good shape," says Schou, who also chairs a national organization of university programs on computer systems security. "But the government's need for trained professionals is real. We also have a shortage of faculty trained to teach this stuff." Schou points to one student who left Idaho State this winter before completing his bachelor's degree to take a corporate job that pays $83,000 a year. "I couldn't in good conscience tell him to stick around," he confesses.

Cyberdefenders. Rick Ayers (left) and Julie Evans are graduate students in the federally funded Cyber Corps program at the University of Tulsa.

"This stuff" goes well beyond computer technology. Idaho State's program includes a heavy dollop of business management training along with technical expertise, for example. Carnegie Mellon University in Pittsburgh, another member of the 2001 class, offers public policy as one of its four tracks; it has asked NSF to support a new master's degree program in information security that will be run jointly by its computer science and public policy schools.

Shenoi, who came to the U.S. from India 20 years ago for graduate training, says he's looking for students who "want to make a career of federal service" and who see themselves "not just as scientists but also as public-minded citizens." The program, he says, is also "a way to pay back this wonderful country for everything it's done for me." –JEFFREY MERVIS

PATIENT RECORDS

Researchers Welcome Revised Privacy Rules

Greater protection of patient records doesn't have to come at the expense of research. That's the message intended for scientists in final rules announced last week by the Bush Administration (www.hhs.gov/ocr/hipaa) giving patients more control over how their records are used.

The "privacy rule" is a response to growing concerns about access to medical records by health care providers. However, many researchers were upset by a December 2000 rule issued by the Department of Health and Human Services (HHS), especially a provision that applied to using "de-identified" records without prior permission. The language would have stripped the records of so much demographic information, including ZIP codes and birth dates, that the data would no longer be usable for research.

The modified rule includes several changes suggested by researchers. One creates a new "limited data set" specifically for research, public health, and health care that retains more identifiers, including ZIP code and birthdate. Researchers must sign an agreement stating they will keep the information secure and use it only for specific purposes. In addition, the rule no longer requires separate forms for getting informed consent and authorization to use a patient's data, and it no longer sets an expiration date for using data for a particular study. "We're encouraged that they made many of the changes we proposed," says Jennifer Kulynych of the Association of American Medical Colleges (AAMC), one of 160 scientific societies and universities that complained about the earlier version (*Science*, 7 December, p. 2070).

At the same time, AAMC is worried that because HHS is requiring a very detailed, binding data use agreement for the limited data set, a health care provider may have to review each agreement and research could be delayed. "The intent was a streamlined alternative" to a waiver from an ethics re-

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