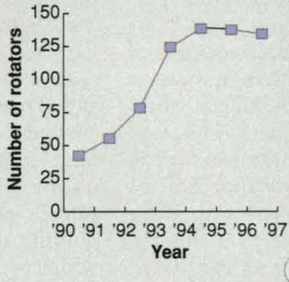
NATIONAL SCIENCE FOUNDATION

Revolving Door Brings in Scientists—at a Price

When Joe Bordogna visits universities, speaks at conferences, or testifies before Congress, he appears as a representative of the National Science Foundation (NSF). As acting deputy NSF director and the agency's chief operating officer under director Neal Lane, Bordogna oversees financial and management details that affect every aspect of the $3.5 billion agency. But despite his lofty title and important duties, Bordogna isn't an employee of NSF or of any other federal agency. The 64-year-old electrical engineer is actually on long-term leave from the University of Pennsylvania, as part of a little-known program that allows the government to tap into the country's intellectual capital.

SOURCE: NSF



NSF OPENS THE DOOR FOR IPAs

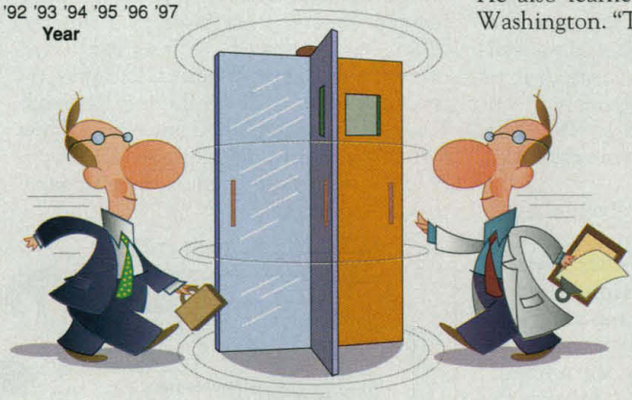


ILLUSTRATION: TERRY E. SMITH

The program has many advantages. It helps agencies obtain specialized talent, although at a price that may be higher than what federal workers would be paid for the same job. For NSF, it has also provided a way around limitations on government hiring, allowing the agency to bring on extra staff to handle a work load that has grown much faster than its operating budget. And faculty members who participate in the program can broaden their understanding of both research and policy issues—knowledge they can share when they return to their home institutions. But there are also downsides. The funding, roughly $16 million a year, comes out of money allocated for research grants, reducing the total available for bench science, and two recent incidents at NSF indicate that the program has a potential for abuse. Partly for these reasons, Congress is beginning to pay attention to the program and has asked NSF for a full accounting of its costs.

Bordogna's status—he came to NSF in 1991 but remains on Penn's payroll—is a familiar one at NSF. Some 137 administrators, representing nearly a quarter of its 575-person scientific staff, work under the terms of a 1970 law called the Intergovernmental Personnel Act (IPA). The IPA program was created to attract specialists who might otherwise not consider working for the federal government. These temporary workers—from all walks of academia and the nonprofit sector—keep their ties to their home institutions but are subject to the same rules that apply to federal employees. The appointment is usually for 2 years but can, in some cases, be extended to 4 years.

NSF, more than any other federal research agency, has made IPAs—commonly known as rotators—an integral part of the way it does business, from crafting budgets and launching new programs to handing out awards. "NSF has always had a strong spirit of trying new things and seeing what works," says Anne Petersen, who was deputy NSF director before joining the W. K. Kellogg Foundation last year. "And IPAs are definitely a good idea." Adds Bordogna: "We do it to get fresh thoughts into the agency and provide input on what the community is thinking."

In contrast, the National Institutes of Health (NIH) hosts a small number of IPAs in its intramural labs but does not place them in decision-making roles. "[NSF] builds its review structure around rotators, while we generally bring them in typically to coordinate a new initiative or part-time, to supplement a program activity," says Wendy Baldwin, deputy NIH director for extramural affairs. "We're not making a long-term commitment to them." A more common model is NASA, which has a few dozen IPAs, some in supervisory roles, who are recruited on a short-term basis for their expertise in a particular area.

A good deal. Aside from the benefit of bringing in new blood, NSF has a practical reason for making such extensive use of IPAs: They don't count against caps on employment levels or salaries and expenses. "For years, we tried to increase our FTE [full-time equivalency] levels to handle a growing work load," Petersen recalls, "but the trends were going in the other direction, and we had to work with what we were given." As a result, the number of IPAs at NSF more than tripled between 1990 and 1993 (see graph), and since then has held firm despite efforts by Congress and the Clinton Administration to shrink the size of the federal government.

Faculty members and their institutions—87% of NSF's cadre hail from colleges and universities—have welcomed this expansion of the program. A stint as an IPA gives academics a way to broaden their scientific vision and acquire new management skills without giving up their university posts and perks. "I came as a biologist and an oceanographer and left with experience in a whole range of disciplines and subjects," says Cornelius Sullivan, who in July completed a 4-year IPA stint as head of polar programs and became vice provost for research at the University of Southern California, where he has been a faculty member for 21 years. He also learned a bit about the ways of Washington. "The [controversy over building a new] South Pole station took a lot longer than I had thought. It was politics with a capital P."

"As a dean, I would certainly encourage people to do it," adds David Breneman, dean of education at the University of Virginia (UVa). "It's prestigious, and when they return I'd have a lot more sophisticated faculty." At the same time, UVa, like many universities, prefers to limit leaves to 2 years to prevent faculty members "from losing touch" with colleagues and programs, says Ray Nelson, former dean of arts and sciences.

The arrangement also has a financial plus for the universities: NSF foots the bill for salaries and benefits at the same levels paid by the universities. As a result, some IPAs are paid more than their federal counterparts. In fact, seven IPAs earn more than Lane's $133,500 salary, with one senior NSF administrator receiving $201,301. And Bordogna's remuneration, based on his past positions at Penn as dean and professor, is well above the $123,100 he would earn as Lane's deputy if he were a regular federal employee. NSF does request that institutions pay 15% of these costs, but it usually settles for less. "We never get 15%, but we keep trying," says Linda Allen Benton of NSF's human resources division. "About 30% of the time we get some level of support," she says. (NIH officials apparently drive a harder bargain: Human resources chief Steven Benowitz says that NIH

often gets as much as 50% back from a university for the privilege of having its scientist work, generally for a year or so, in an NIH lab. NASA, however, typically pays the entire bill.)

The downsides. Because IPA payments are technically grants, they come from an agency's program funds, not its administrative account. As a result, IPAs siphon money away from research grants. This caused some concern as the number of IPAs grew in the early 1990s, which led NSF officials to impose an unofficial agencywide cap on the number of IPAs and to force managers to make a compelling case to add an IPA slot.

The cost of the program is beginning to attract attention from Congress. The accounting rules allow NSF to tout the fact—to Congress and the White House—that its administrative account is a minuscule 4% of its overall budget. In reality, Bordogna admits, the figure rises by half, to nearly 6%, once activities by nonfederal staff members are included. Congress now wants a more complete accounting: This year's Senate appropriations bill for NSF asks the agency "to examine the key program area of administration and management" and to include in its 1999 budget request "the salaries and benefits to any person employed at NSF headquarters, including Intergovernmental Personnel Act persons."

Two recent incidents involving the program have also attracted the attention of NSF's own Office of Inspector General (IG). This spring, in its semiannual report, the IG's office says the two cases resulted in "improper hiring practices [leading] to increased cost and conflicts of interest." *Science* has learned that they involve the geosciences directorate and the University Corporation for Atmospheric Research (UCAR), which operates the National Center for Atmospheric Research (NCAR) in Boulder, Colorado.

The report says that when Lane ordered the directorate to reduce both overall staff and the number of IPAs, it arranged instead to have UCAR hire three persons and then reassign them to NSF as IPAs. UCAR's contract with NSF to support the U.S. Global Change Program was then amended to cover the higher costs. "As a result of these arrangements," the report states, "NSF pays about 71% more for the same services by the same individuals." In a separate incident, the inspector general reports, the geosciences directorate filled a staff position by asking UCAR to hire someone and then to transfer him to NSF as an IPA even though the person "had never worked at [UCAR] and had no prospect of returning [there] upon leaving NSF." The staffer reviewed a dozen proposals from UCAR and made eight awards without recusing himself, according to the report, because "he did not consider himself affiliated with the organization."

Bordogna says the matter is "under review and will be resolved shortly," adding that the situation "is not common." UCAR official Bill Rawson says that NSF has never contacted UCAR about either incident, but that "if NSF wants to change the arrangements we will do it."

Despite its flaws, say NSF officials, the IPA program is a valuable tool in the support of academic research. Officials at Bordogna's home institution apparently agree. In 1995, when his 4 years were up, University of Pennsylvania officials agreed to pay Bordogna's salary and benefits for a full year so that he could again be eligible for another 2-year tour of duty as an IPA.

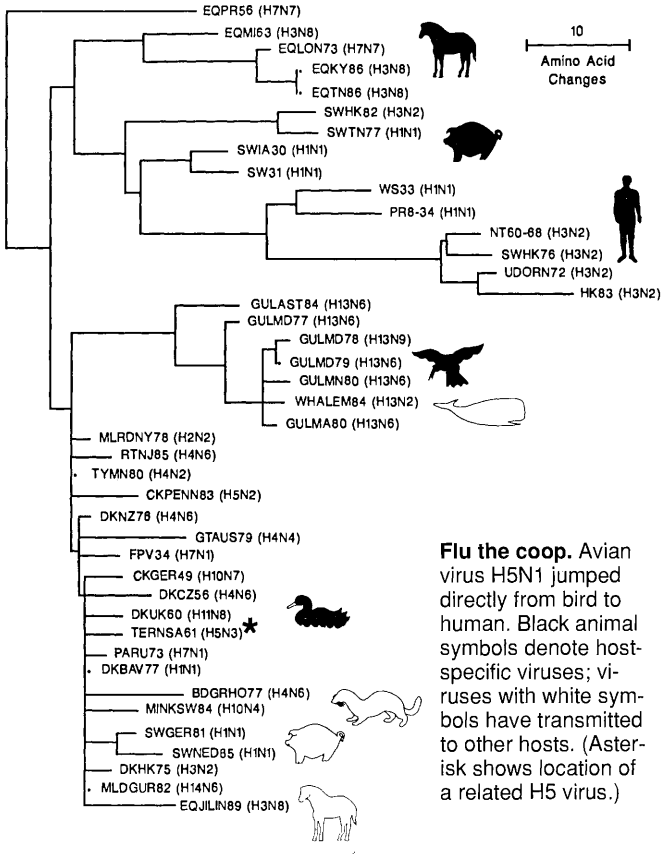
–Jeffrey Mervis

INFECTIOUS DISEASE

The Flu Pandemic That Might Have Been

The influenza virus is a nasty piece of work that frequently changes its looks to dodge immune attack. But its evasions aren't perfect: Each new strain of the virus bears some resemblance to its predecessors, which means that most people's immune systems will provide some defense against whatever form of influenza they meet. This summer, however, a flu strain known as Type A H5N1, which is unlike any that has infected humans before, appears to have jumped directly from birds to a human, killing a Hong Kong boy. "It's a significant event," says Robert Webster, an influenza specialist at St. Jude Children's Research Hospital in Memphis, Tennessee. "How many people have immunity to H5? Zippo. And if it was transmitted to other humans, that would be scary."

Fortunately, the transmission appears so far to have been an isolated event, but it is drawing intense scientific interest. On 20 August, the U.S. Centers for Disease Control and Prevention (CDC) sent researchers to Hong Kong to join an international team of scientists now conducting an "extensive investigation" there and in mainland China. To date, says CDC epidemiologist Nancy Arden, no other human cases of infection with H5N1 ("H" stands for hemagglutinin and "N" for neuraminidase, both of which are surface proteins of the virus) have been found. But, she notes, the researchers still have their guard up, and they are trying to figure out why this particular virus crossed the species barrier. "When you have a virus that's so easily transmissible and the entire world population is susceptible to it, that's a recipe for a pandemic," says Arden.



Flu the coop. Avian virus H5N1 jumped directly from bird to human. Black animal symbols denote host-specific viruses; viruses with white symbols have transmitted to other hosts. (Asterisk shows location of a related H5 virus.)

ROBERT G. WEBSTER/ST. JUDE CHILDREN'S RESEARCH HOSPITAL

The episode began in May, when a 3-year-old boy died in Hong Kong from an acute respiratory illness and Reye syndrome, a condition characterized by high fever that has been linked to aspirin use. Scientists at Hong Kong's Department of Health isolated an influenza virus from the boy's trachea, but could not identify the strain, so they sent samples to World Health Organization reference labs in three different countries. All three reported that the virus was H5N1. This strain was first isolated by the Department of Agriculture and Fisheries in Hong Kong after it killed 4500 chickens on three farms between March and early May, says the University of Hong Kong's Kennedy