# A Nursing Institute for NIH?

## *A House measure to create a National Institute of Nursing faces opposition from the Senate and the Administration*

During the past several months, a hard-fought battle over legislation for the National Institutes of Health (NIH) has been waged in the House of Representatives. On one side, Representative Henry A. Waxman (D–Calif.), chairman of a subcommittee that has jurisdiction over the institutes, pressed for a bill that would have given Congress considerably more influence over the day-to-day operation of NIH than it has ever had. On the other side, Representatives Edward R. Madigan (R–Ill.) and James T. Broyhill (R–N.C.) offered competing legislation that, in general terms, was philosophically more in tune with the idea that certain scientific decisions are better made by NIH officials than by members of Congress (*Science*, 19 August, p. 726).

In the waning hours of the session of Congress that ended on 18 November, the House passed a compromise bill that looked a lot more like the Madigan-Broyhill proposal than the Waxman bill and NIH leaders declared themselves pleased with the outcome (*Science*, 2 December, p. 992). More or less pleased, that is, because there is one provision in the new bill—a provision engineered largely by Madigan—that they clearly oppose. As part of the compromise, the House-passed bill creates within NIH an Institute of Nursing at a time when the last thing NIH officials want is another institute. The fact that nursing research itself is not exactly at the heart of the kind of research NIH feels most comfortable about only makes matters worse.

But in Washington, most things have a price and part of the price of the compromise bill was a gift of recognition to nurses. The battle has now shifted to the Senate which has yet to pass its version of an NIH bill. Senate enthusiasm for a new institute at this time is imperceptible. The story of how the National Institute of Nursing made its way through the House says a lot about how things sometimes work on Capitol Hill. It is timing and politics that count.

Last spring, when it looked as if Waxman was going to get his bill through the House after years of trying, Madigan and Broyhill were prevailed upon to offer substitute legislation. But it was not easy for them to drum up support among their colleagues. The question of the relative autonomy of NIH is not one most congressmen find riveting. Furthermore, Waxman's bill contained provisions to satisfy the demands of a host of special interest health groups and all the voters they represent. To build support, Madigan and Broyhill needed something valuable to offer.

At the time, Leonard E. Heller was in Washington as one of the Institute of Medicine's Robert Wood Johnson health policy fellows. He was assigned to Madigan's staff. Heller, now associate dean for educational development at the College of Medicine, University of Kentucky, recalls the efforts to garner support for the Madigan-Broyhill substitute. "We were reviewing what was going on in the science world," says Heller who read an Institute of Medicine (IOM) study on nursing and nursing education*. The study cited the need for more resources for the education of nurses at the graduate level and said, in its 18th recommendation, that "The federal government should establish an organizational entity to place nursing research in the mainstream of scientific investigation." Heller brought the IOM study to Madigan's attention; the idea of a nursing institute within NIH grew.

Nurses constitute the largest single group of health professionals. According to the IOM study, there are 1.3 million of them employed today. Capitol Hill staffers report that nurses are more dedicated voters than many groups. Thus, it is estimated that one of every 40 voters is a nurse. Many are thought to vote Republican. Most are women. At a time when the Republican party is concerned about the so-called "gender gap," the idea of doing something to appeal to a large block of female voters has a lot going for it. Besides, a good case can be made for increased attention to nursing on the merits. With the backing of the American Nurses Association, the Association of American Colleges of Nursing, and the National League of Nursing, Madigan advocated an NIH institute for nurses. He was joined in this particularly by Representative George M. O'Brien (R–Ill.) who argues that nurses "have not been given credit for the high quality of research they have done." According to an aide, O'Brien thinks of NIH's traditional biomedical research as "cure research," while nursing research can be thought of as "care research." Within NIH they ought to "complement" each other, he believes.

The lure of a nursing institute helped draw support among House members for the Madigan-Broyhill version of the NIH bill, a legislative dark horse that gained ground during late summer and early fall. In November, the two sides sat down to draft the compromise bill that recently passed. The National Institute of Nursing was added on as an amendment which Madigan offered from the floor of the House on the night of the vote. Among others, Waxman spoke in favor of Madigan's amendment, indicating its bipartisan support. The amendment passed by a voice vote.

One of the principal justifications for a nursing institute within the NIH is the belief that it will provide nurses with unprecedented visibility, prestige, and esteem. As Madigan said during floor debate, "This is a straightforward amendment that seeks to put nursing research into the mainstream of scientific investigation." At present, nursing research receives only $5 million a year—$1.4 million of it from NIH. Under Madigan's proposal, the figure would rise to $9 million, but a good portion of the added funds would go to administration of the new institute. Of the 1.3 million nurses in the country, fewer than 3000 have a doctoral degree. Within the nursing community itself, questions are raised about the wisdom of creating an institute with so small a base and there is some feeling that stronger education programs should come first. One nursing school dean calls the institute "premature." The counter argument is that nurses cannot be enticed into advanced degree programs if they cannot anticipate money to support research.

Altogether, the idea of a new institute poses another central question: Just what is nursing research? The short answer is "ill-defined." It spans a wide range of activities that include the prevention of bed sores, the education of patients with special dietary needs, and the emotional support of the chronically ill and their families.

Among the priorities for nursing research set by the American Nursing As-

*"Nursing and Nursing Education: Public Policies and Private Actions," Institute of Medicine, 1983 (National Academy Press, 2101 Constitution Avenue NW. Washington, D.C. 20418). $12.50.

sociation are these two: "Preventing health problems throughout the life-span that have the potential to reduce productivity and satisfaction" and "Designing and developing health care systems that are cost-effective. . . ." Some studies indicate that length of hospital stay (and, therefore, cost) can be related to quality of nursing care and the educational level of nurses. An example of nursing research with a clearly biomedical side to it is a study of premature infants to determine criteria for early hospital discharge. But by and large, it is hard to pin nursing research down in a way that makes it obvious that it belongs at NIH. However, those who actively support the new institute argue that the very fact nursing research is difficult to define can be traced to the fact it has lacked a place in the NIH mainstream. "If you look at the other institutes, you see that having an institute in itself helps develop research," Heller says.

NIH officials, for their part, are against the nursing institute, just as they have been opposed to the creation of other new institutes. NIH director James B. Wyngaarden is unhappy that the House held no public hearings on the proposal and that the Administration's views were not sought. Furthermore, he is not sure that NIH is the best place for the bulk of research projects nurses have in mind. "Those who want to conduct biomedically related studies can apply

# Broad Public Support Found for R & D

Scientists who complain about lack of public support for science and technology will be surprised to know that 68 percent of the American public believes that government funds for basic research should be increased by a sizable amount—even in this era of tight federal budgets and soaring deficits. They may be even more surprised to learn that 70 percent of members of Congress and their top aides apparently agree.

This public enthusiasm for basic research was revealed in an opinion survey, conducted by Louis Harris and Associates, which provides one of the most comprehensive pictures yet painted of public attitudes toward science and technology.

In general, the picture is rosy. An overwhelming majority of Americans believes that recent developments, such as computers, genetic engineering, and lasers will improve the quality of their lives. Seventy percent of those polled even said they thought permanent space stations would benefit them personally, but they did not say how.

But, as might be expected, this enthusiasm is tinged with a great deal of apprehension. "Lying in wait out there as people contemplate the future in the information age are a whole series of wrenches, apprehensions, dislocations, and downright potential horrors that they feel are part and parcel of the baggage of the new times that are fast coming upon us as a society," said Harris when he released the findings at a press conference on 7 December.

The poll, paid for by Southern New England Telephone, was in part an attempt to see whether, on the eve of 1984, the American public believes we are heading toward the society conjured up by novelist George Orwell. The answer is a qualified "yes." Sixty-nine percent of those questioned said they believe society is at least "somewhat close" to Orwell's 1984, and threats to privacy figured most prominently among public concerns about the spread of computers.

In addition to surveying a random sample of 1256 people, the Harris poll also sought the opinions of members of four "leadership" groups—members of Congress and their top aides, corporate executives, science editors of newspapers and magazines, and superintendents of schools. It found a surprisingly large gap in attitudes toward science and technology between the American public and its leaders.

For example, although 77 percent of the respondents said they were concerned about threats to privacy, only 59 percent of corporate executives shared those fears. Similarly, only 38 percent of congressional leaders and 26 percent of corporate executives feel Orwell's 1984 is close, compared with 69 percent of the general public. "Not for the first time, the American public may be ahead of its leaders," suggested Harris.

Among the survey's other findings were the following:

- By a margin of 83 to 14 percent, Americans believe that science and technology in the past has done more good than harm.
- A startling 45 percent of those surveyed said they know how to use a computer, and one in ten said they own a personal computer.

**Louis Harris**

*"The American public may be ahead of its leaders."*

- Eighty-six percent of the general public—and 75 percent of corporate executives—said corporations should increase their donations to higher education for basic research.
- The American public appears to be virtually unanimous in believing that computerization will improve office work. But a bare majority (51 percent) said that the use of robots will make factory work worse. In contrast, 99 percent of corporate executives said they believe robots will improve factory work.
- Eighty-two percent of those polled said that even if it brings no immediate benefits, scientific research is an endeavor worth supporting.—**COLIN NORMAN**

to NIH now," he says. Very few do.

Opposition to the nursing institute in the Senate also focuses on the procedural issue of whether major legislation ought to be passed, with no hearings, by a floor amendment and voice vote. According to congressional aides, neither Senator Orrin G. Hatch (R–Utah), chairman of the Senate's health committee, nor Senator Edward M. Kennedy (D–Mass.), the ranking committee Democrat, is likely to go along with the nursing institute now.

House staffers argue that the Institute of Medicine's nursing study obviated the need for public hearings. As one told *Science*, "It made the case." Seldom is a single study accorded such clout. In fact, the IOM report explicitly notes that its committee was divided on the question of a nursing institute at NIH. Because the IOM at present is conducting a major study of the organizational structure of NIH itself (*Science*, 21 October, p. 306), the final decision was not to recommend another institute at NIH.

In truth, the nursing institute moved through the House with remarkable alacrity by political standards. Despite the fact that some nursing groups have been pushing for greater status in the federal government for some time, the institute's passage took people by surprise.

Equal success in the Senate appears unlikely right now. As one aide said, "We're willing to hold hearings but not to have this thing sail through on the wings of the gender gap."

Whatever the outcome this round, thanks to Madigan, nurses have won Congress's attention as never before.

—**BARBARA J. CULLITON**

# Math Genius May Have Hormonal Basis

During the past several years, Norman Geschwind, a neurologist at Harvard Medical School, has proposed that left-handedness and immune system disorders might occur together and that they will frequently be linked either to serious abnormalities such as autism, dyslexia, or stuttering or to certain kinds of giftedness, particularly artistic, musical, or mathematical talent (*Science*, 9 July 1982, p. 141). "There's been—understandably—an enormous degree of skepticism," says Geschwind, but his idea has also stimulated some scientists to look again at their own data.

The most recent researchers to look again are Camilla Benbow and Julian Stanley of Johns Hopkins University who study mathematically precocious youth. To their surprise and delight, they find that Geschwind's predictions hold up beautifully in their group. Moreover, they believe that Geschwind's proposal might explain why the most mathematically gifted students are almost entirely male.

Geschwind proposes that excess testosterone or unusual sensitivity to testosterone during fetal life can alter brain anatomy so that the right hemisphere of the brain becomes dominant for language-related abilities and the person is left-handed. The association with the immune system arises, Geschwind suggests, because testosterone production, sensitivity to testosterone, and the activity of the immune system are genetically linked.

The link with mathematical genius occurs because mathematical ability is generally thought to be a right brain function. "If you get the mechanism adjusted just right you get superior right hemisphere talents, such as artistic, musical, or mathematical talent. But the mechanism is a bit treacherous. If you overdo it, you're going to get into trouble," Geschwind says. "It's a funny mechanism. At first, it looks like you have to deliberately produce damage to produce giftedness."

When Benbow and Stanley at Johns Hopkins learned of Geschwind's hypothesis they were intrigued. They had data from nationwide talent searches for mathematically gifted seventh graders (*Science*, 2 December, p. 1031). To find these students, they looked at scores on the mathematics section of the Scholastic Aptitude Test, a test designed for 11th and 12th graders. The very best students are those who score above 700. Benbow and Stanley estimate that these seventh graders are the top one in 10,000 in their age group. They decided to contact these students to see if they are left-handed and have immune system disorders.

Twenty percent of these mathematically talented students, Benbow reports, are left-handed, making them more than twice as likely to be left-handed than the general population. Sixty percent of them have immune system disorders, which is five times the incidence in the general population. These disorders, Benbow says, are generally "symptomatic atopic disease," better known as allergies and asthma. They also asked about myopia and learned that 70 percent of the high scorers are nearsighted. (Geschwind says that there is a correlation between intelligence and myopia, which he is now investigating.)

When the Hopkins researchers moved down the list of high scorers to students who were not so gifted, they found that the students were less likely to be left-handed, have immune disorders, or to be myopic. When they got down to the students who scored not much better than chance on the SAT math test, they found that the incidence of these conditions is about the same as those in the general population.

If testosterone during fetal life does all that Geschwind believes it does, it might be expected that boys, who are exposed to more testosterone in utero, would be more likely than girls to be affected. Males are more likely than females to be left-handed, to have immune system disorders, to stutter, to be dyslectic, to have autism, and, according to Benbow and Stanley's work, to have high scores on the math portion of the SAT. Among the nearly 50,000 seventh graders who took the test, they found 260 boys but only 20 girls who scored over 700—a ratio of 13 to 1. But in a similar search for verbally talented youth, there were equal numbers of boys and girls among the high scorers. Once again, Geschwind is not surprised, saying that his theories do not provide "a mechanism for giftedness in verbal areas."

But if Geschwind is correct in his predictions and if the Johns Hopkins group really is detecting inborn mathematical precociousness, boys are going to be a very variable group. They can be geniuses or they can have severe learning problems. "I think that if you look at the group of people who are very bad in math there will be an excess of males there too," says Geschwind. But the data so far on the precocious students, he remarks, "Fit in perfectly, to put it bluntly."—**GINA KOLATA**