Quo vadis, NIH? The new director plots a course

In April 1991, Bernadine P. Healy, MD, became director of the National Institutes of Health, the first woman to hold that position in the 100-year history of the NIH. The following is an edited version of Dr. Healy's speech before the Committee on Labor and Human Resources of the US Senate in March 1991.

THE NIH is a national treasure. The philosopher-essayist of modern medicine, Lewis Thomas, described it well: as institutions for human betterment go, NIH "is a standing proof that, at least once in a while, government possesses the capacity to do something unique, imaginative, useful, and altogether right."

The NIH has been driven these past 100 years by the mission to acquire new knowledge of human disease, and to do so for the betterment of all citizens of the United States. With that mandate the NIH has nourished a science base that reaches out to more than 1700 universities and research institutions, and enlists the labors of more than 100,000 people working at some level on the many NIH-funded activities. The strong federal support of biomedical research through the NIH system has enabled science to flourish largely unfettered, has promoted diversity of ideas, and has fostered healthy competition and necessary cooperation. This has been done mainly by allowing the many research institutions inside and outside government to develop their own systems and internal standards, to exercise their own good scientific taste in people, and to define their own scope and approaches to research in support of the health mission.

In my professional life I have been privileged to experience directly the strength of this great diversity nourished by NIH. I have been involved with Harvard, first as a medical student and presently as an overseer. For many years I was fortunate to be a part of Johns Hopkins as a scientist, a clinician, and a professor of medicine. Most recently, I have had the challenge of leading the expansion of the Research Institute of The Cleveland Clinic Foundation, which has included the development of successful new programs in molecular and cell biology, protein chemistry, and bioengineering, all targeted to major diseases. With these experiences I have seen how effectively the NIH can marshal the strengths and talents of many excellent but diverse institutions for a common goal.

This powerful national network performing biomedical research has been developed under the watchful eye of the President and the Congress. And this development comes with the full realization that the medical research we enjoy today has been built by public money and is fully accountable to the public. As the master craftsman of US science policy, Vannevar Bush, wrote over 40 years ago, science cannot live by and unto itself alone.

With this magnificent model of scientific pursuit, our biomedical research enterprise has become an unrivalled success, the envy of the world, and a source of hope for all Americans who have ever been touched themselves or through their loved ones by the starkness and pain of illness.

If you were to ask me what is the real secret to the great success of biomedicine, the answer would be very simple: namely, the gifted, talented, and creative people who have been attracted, nurtured, challenged, and rewarded by this uniquely American biomedical research enterprise.

But here too lies our vulnerability: "Nothing can fail like success." There is currently a widespread perception that biomedical research is at risk for failing, and failing in flames. You have heard these concerns in

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testimony this past year as never before. The science community is demoralized, and their moans are frightening off the young. There is discord on many university campuses where working scientists are pitted against administrators, basic scientists against clinical scientists, and even the Institute of Medicine is battling with the Federation of American Societies for Experimental Biology. Added to this discord, "scientist bashing" has become a favored pastime, and the public can only be dismayed by the reports of scientific misconduct, deceptions, conflicts of interest, and failure to deliver on time.

Things are so bad, some have said, that they couldn't even get a man to be NIH director.

With this state of affairs, it is with pride and humility that I assume the directorship of the National Institutes of Health. And, despite the problems, I come to this position with a tempered sense of optimism that this is not only a job enormously worth doing, but also one that can be done. But a lot needs to be done, and no one woman or man will be able to do it right without a lot of support from the Congress, the White House, the Secretary (who has a major commitment to NIH), research institutions, working scientists, and importantly, the public. The public has to rediscover the NIH in its splendor and not take what it brings to them for granted. The biomedical researchers must regain faith in a system in which excellent research will be supported. Our research institutions must thrive, yet recognize that they too must be fully accountable. And the federal government and its many participants, at either end of Pennsylvania Avenue and in Bethesda, must be wise and steady in their judgments on behalf of the NIH, now and in the future.

We must start with a framework, an articulation of principles that we all can agree on, as we plot a strategy for success of the NIH. Without going into great detail, and mindful of the magnitude of the issues that will not be served by oversimplification, let me list a few guideposts as I now see them.

CULTIVATING MOZARTS AND SALIERIS

The first and foremost priority for a successful NIH is its human talent base. The quality of our science is no better than the quality of our scientists. We have an obligation to nourish that talent base, not because they are entitled to it or because they always behave so well, but because it is the only way to fulfill our goals for a healthier world. There was a lesson for science in the play *Amadeus*. We saw the magical, brilliant, gifted Mozart creating masterpieces, his genius effortless; but we saw him also as difficult, childish, nasty, and unconventional. His rival, Antonio Salieri, was much easier-going, talented in a workmanlike way, and popular at court; he would likely have fared better than Mozart in today's equivalent of a peer review system. But if medicine is to succeed, the Mozarts must be allowed to flourish. Our talent base must be diverse. Energetic and irreverent youth must thrive along with the older and wiser heads. Since science is all about brainpower, not brawn or pedigree, it must attract gifted individuals of all types. Talented women and minorities should view careers in biomedical research as the essence of equal opportunity, not just because that is proper, moral, and legal, but because science needs their brains, their perspectives, and their contributions.

The talent base for biomedical research must also be multidisciplinary. The clinical investigator is as important to our goals as is the basic scientist. The newly discovered molecule must have a meaning which is learned by the physiologist or pathologist and put to good use at the bedside by the clinical scientist. Epidemiology, biostatistics, bioengineering, and biobehavior are as important as biochemistry and molecular biology, and vice versa.

The hub of the research system is its scientists, but the support systems surrounding them must also be kept healthy. As in any enterprise, financial underpinnings must be reasonably stable. Financial stability means not just having money, but how wisely and well that money is spent. I believe the cost management plan being developed by NIH under Congressional mandate is extremely important and may need to go even further than what has been outlined so far.

Peer review is another support system that must be healthy. We have appropriately delegated to peer review most of the authority for the selection of the scientists who will succeed. We must be sure that peer review is above reproach, without conflict of interest, including competitor interest, always objective and fair, and also sufficiently wise so that the unconventional Mozarts fare as well as the journeymen Salieris.

About 95% of biomedical researchers work in nonfederal employment and are dispersed within the diverse and varied network of universities, colleges, research institutes, and industrial laboratories. The health of these institutions ultimately determines the health of scientists, the quality of their work, and the generation of future talent. Virtually all federal policies that affect the biomedical research enterprise, whether

dollars, directives, guidelines, or laws, have an impact on the institutions conducting research and teaching. These institutions must be partners in the policy-setting dialogue.

PUBLIC INTERESTS

I have focused on the scientific talent base, the human talent factor. But there is another human factor which is every bit as important—the public factor. Whatever we do in science is ultimately in the context of society; whatever we do in biomedical research must be in the interest of the public. With this perspective, we might list some public-interest principles.

The first is long-term planning. As a mature agency, NIH needs a long-term plan that lives beyond immediate interests. Its priorities must be identified, its attainable goals defined, and both must be sensitive to changing public need. NIH is as much about today as it is an investment in the patients of tomorrow. A long-term plan also imparts a needed stability and predictability to the enterprise.

A second public-interest principle is that the NIH be a leader in areas of public trust. We must be aggressive in promoting good scientific conduct and in dealing with problems of scientific misconduct. This emphasis is not because the problems are so widespread, but more because just a few visible problems can erode the public trust in the entire enterprise. The NIH must also vigorously lead in setting research priorities in the interest of the public. For the most part, NIH has done this well, often with some nudging from the Congress. One salient example of where NIH needs to be better is in the area of research on women's health. This is an area of particular interest to me and also, as you know, to Secretary Sullivan. Women's health research has been neglected in many areas and at times outright disregarded. That is changing, in part because it was truly embarrassing to many when it finally caught their attention, but mainly because it is the right thing to do scientifically and is in the public interest.

A third public interest principle is technology transfer. If we are ever to realize the mission of NIH, technology transfer must work. The discoveries of the laboratory must be carried to the bedside, and the development of new drugs, devices, and diagnostic tests needs to be done in partnership with industry. The federal government has developed a strong legislative portfolio over the past decade to foster that transfer. As in any new venture, the implementation has uncovered some real or perceived problems with the partnerships and their incentives. But those difficulties are not a reason to walk away from a principle of great social value; they provide an impetus to develop carefully crafted guidelines to help industry, academia, and government work together for the right reasons and not be tarnished by even the hint of wrong ones.

A final public interest principle concerns the interface of science and social policy. I firmly believe that much of the success of science in this country is that it has largely been nonpolitical and nonpartisan. It has been allowed to thrive by the objective pursuit of truth. That must continue. But circumstances arise where the moral or ethical concerns of the society may appear to collide with the pursuit of science. Sometimes this results in a "time-out," as we have seen with the fetal tissue research moratorium imposed by the Secretary, which I am prepared to support. History has shown us, however, that most often science proceeds, but within a certain framework defined by public interest. This is the history of recombinant DNA research and the oversight of the NIH Recombinant DNA Committees. This is the history of Institutional Review Boards for overseeing any medical research involving human subjects. This is the history of guidelines for the humane treatment of animals in research and the creation of Animal Care Committees. The same principle underlies the plans of the Human Genome Project to invest part of its resources into studies of the ethical implications of knowing a person's genetic makeup. As we move ahead, these approaches should serve as models for assuring the public that science indeed does not live by and unto itself alone, but in the service of man- and woman-kind.

I would like to close with a personal anecdote. I happen to be a student of taxicab driver wisdom. A few years ago I was in a cab from LaGuardia Airport en route to a cardiology meeting in New York. As we were coming to the Queensboro Bridge in Long Island City, I mentioned to the driver that I had grown up only a few blocks from that very bridge in a little Italian neighborhood. When I got off in downtown Manhattan near the meeting, the cab driver turned around and very sweetly said, "Hey doc, don't ever forget where ya come from." As I look to directing the NIH, I plan not to forget. I come from a world of hard-working biomedical scientists; men and women who are intent, dedicated, sometimes failing, often succeeding, but always caring very much about their life's work. But I also come from the bedside. I have shared the pain of disease, the struggle of recovery, and the finality of death with my patients and with their families. I hope never to forget that I am still working for them.