Federal News Service

FEBRUARY 2, 1995, THURSDAY

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BEFORE THE HOUSE OF REPRESENTATIVES
LABOR/HHS/EDUCATION APPROPRIATIONS SUBCOMMITTEE

SECTION: IN THE NEWS

LENGTH: 1348 words

[1] Mr. Chairman and members of the Subcommittee, thank you for inviting my testimony on behalf of the FY'96 budget for the National Institutes of Health. My name is Eric Lander, and I am here representing five scientific societies, the American Society for Cell Biology, the American Society for Biochemistry & Molecular Biology, the Biophysical Society, the Genetics Society of America and the American Association of Anatomists. Together, these societies represent over 20,000 biomedical scientists at every major biomedical research institution in the country. For my own part, I work in the field of human molecular genetics--as a member of the Whitehead Institute for Biomedical Research, a Professor of Biology at the Massachusetts Institute of Technology, and Director of the Human Genome Center at these institutions.

[2] Mr. Chairman, as citizens, we appreciate the tremendous fiscal pressures facing our nation. Now more than ever, Congress must choose carefully where to spend limited funds. In making these hard choices, it is important to remember that some programs represent not spending, but rather investment--investment that pays real, measureable economic returns.

The nation's investment in basic biomedical research falls into this category. It pays for itself in real dividends: lives saved and dollars saved. Casual observers sometimes imagine that basic biomedical research actually drives health care costs up, by inventing expensive and exotic therapies. The record tells a different story. Let me cite a few examples:

o NIH-funded basic research led to the use of potassium citrate to prevent the reccurence of kidneystones. The NIH invested $1 million. As a result, our country saves an estimated $600 million per year. In economic terms, this is an annuity--with a discounted present value worth $9B to the US, nearly equal to the cost of the NIH budget for one year.

o Or, take the exciting discovery that stomach ulcers actually result from a bacterium. Whereas previously, ulcers were previously treated with expensive interventions such as surgery, simpler antibiotics can now be used--at a savings of about $700 million. The discounted present value again pays for the NIH budget for a year.

o NIH research also led to a cheap diagnosis and treatment of hypothyroidism in newborns. Without treatment, these infants faced a lifetime of mental retardation. Now, 97% of cases are caught and prevented--for a savings of $200-400 million every year. The discounted present value pays for the NIH budget for 4 months.

o Just Tuesday, an NIH-funded study yielded the first drug ever to treat sickle cell anemia. A by-product of cancer research, the drug cuts in the number of painful crises requiring hospitalization and expensive treatment. This breakthrough is so new that its economic impact has not been fully reckoned, but it is staggering.

o To cite a last example: In the last 2 years, NIH-funded Human Genome Project research has led to our finally understanding the causes of three major diseases that extract an intolerable toll on our health: breast cancer, colon cancer, Alzheimer's disease. For the first time, it is becoming possible to target cancer screening to those at the highest genetic risk--saving money by focusing our resources and by preventing disease. For the first time, it is possible to develop therapies aimed at the real causes.

When you consider the NIH budget, we urge you to weigh the returns on the investment in basic research into the mechanisms of disease--an annuity of measurable gains in decreased medical costs and increased productivity; an annuity of immeasurable gains in saved and improved lives. In current budget parlance, weighing both costs and returns is known as "dynamic scoring." In plain language, it is also known as common sense. In the big picture, basic research is a net revenue generater for society. We stand ready to help Congress reckon the true returns, so as to justify the investment even in these tight times.

[3] I'd like to briefly turn to two other topics: one popular, the other unpopular.

The popular topic is young people. Fundamental biomedical research is currently undergoing the most dramatic revolution in history. With the tools of molecular biology, the prospects for understanding disease are breathtaking. There is a generation of young scientists today who see the future and want to devote their lives to it.

As you know, prospective investigators compete for NIH funding through a rigorous peer review mechanism--highly respected by other federal agencies and resulting in very high productivity. Competition is healthy. But, if the odds of winning a grant are so long, our best and brightest young people leave the field or are discouraged from ever approaching biomedical research as a career. Today, the NIH can fund only 15% of meritorious applications--down from 25% some years ago. A recent study by the National Academy of Sciences indicates that young scientists--who typically have the most creative ideas and greatest energy--are not applying for grant support. The NIH budget sends a clear signal to the young people about our nation's priorities; it is a message to the future.

The second subject is less popular: indirect costs. As you know, over 70% of the NIH budget supports science at universities and research institutes throughout the country. The NIH support covers both direct costs such as test tubes and chemicals and indirect costs, which includes the heating, lighting, waste disposal, and security, as well as the construction and maintenance of the facilities in which research is performed. With this system, the federal government has been a partner with public and private institutions to create and maintain the infrastructure for cutting edge research.

Of late, there is a misconception that indirect costs are not real costs, that they are bloated, that universities could simply absorb, that capping indirect costs would not hurt science or scientists. This is simply not true.

I realize that simply capping indirect costs at some arbitrary level sounds like an easy solution. But, the consequences to the research enterprise would be devastating--leading to a contraction in the research infrastructure of this nation, in an indiscriminate, unplanned and inefficient way. If you have concerns about waste in indirect costs, we urge you to address them directly by modifying the guidelines to ensure that the government pays only for the true indirect costs associated with research. We stand ready to work with you to design changes that impact scientific productivity as little as possible, and are as fair as possible.

[4] I wish that I had a way to tell you how to get the same research for less money. I wish one could fund just the research leading to breakthroughs, just the research that would save society costs. Unfortunately, that's just not the way fundamental basic research works. Solutions come from unexpected directions, they come from understanding systems so thoroughly that we find the unsuspected Achilles' heel in a disease. The importance of any particular scientific discovery is usually not immediately apparent.

- In the 1970s, Congress declared a War on Cancer. Unforeseeably, that war gave us precisely the tools to identify the AIDs virus when it came along and has given us our best tools to fight it.
- In the 1980s, the NIH funded research into the arcane topic of DNA repair systems. Only last year, we found out that this turns out to be the key to colon cancer.

[5] In closing, we urge you to uphold the great American tradition of investing in basic biomedical research. It is an investment that reaps real, measurable financial returns to society. In particular, we urge you to support the recommendation of the Federation of American Societies for Experimental Biology's recommendation to appropriate $12.46 billion to the NIH for FY96.

Thank you once again for inviting me to appear before the committee. I'd be glad to answer any questions.
END

LOAD-DATE: February 4, 1995

LANGUAGE: ENGLISH