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Statement before the House Budget Committee on the Fiscal Year 2002 Budget
March 8, 2001

Mr. Chairman, Members of the Budget Committee, I appreciate this opportunity to testify on the fiscal year 2002 budget.

I am here today to urge you to maintain the federal government's commitment to scientific research and development by increasing funding for the Department of Energy's (DOE) Office of Science. Scientific research may not be as politically popular as health care and education right now, but science is as important to progress in these two areas as it is to America's continued economic growth and national security. I hope my testimony today can shed some light on this fact.

Economic experts maintain that today's unprecedented economic growth would not have been possible were it not for the substantial investment in research made by the public and private sectors over the past several decades. For America to continue to benefit from this kind of investment, we must provide strong financial support for basic research across all of the scientific disciplines – including the DOE's Office of Science.

The Office of Science is the nation's primary supporter of the physical sciences, providing an important partner and key user facilities in the areas of physics, mathematics and advanced computing, chemistry, geology, biology, environmental sciences, and engineering. The Office of Science supports a unique system of programs based on large-scale, specialized user facilities and large teams of scientists focused on national priorities.

This makes the Office of Science unique among, and complementary to, the scientific programs of many other federal science agencies, including the National Institutes of Health (NIH) and the National Science Foundation (NSF). I applaud the strong support shown by Congress in recent years for research conducted within the NIH and NSF, and I commend President Bush for supporting efforts to double NIH funding by 2003.

This level of support should be extended to DOE's Office of Science because future medical breakthroughs depend on fundamental advances in the physical sciences and other research conducted by the Office of Science. One recent example is the Human Genome Project, which progressed so rapidly because of advanced computing technology and biological technology pioneered by the DOE Office of Science. Harold Varmus, former director of the NIH, said, and I quote, "Medical advances may seem like wizardry. But pull back the curtain, and sitting at the lever is a high-energy physicist, a combinational chemist, or an engineer."

Unfortunately, the reality of the situation is that while federally supported medical research like that conducted by NIH has skyrocketed, funding for research in the physical sciences has remained stagnant. During the past decade, funding in constant dollars for the DOE Office of Science was reduced by approximately 13 percent.

It is the research itself that has been most significantly impacted, since the costs of maintaining existing facilities and their associated staffs continue to rise with inflation. This has prevented the Office of Science from fully participating in technical areas important to DOE's statutory mission, such as high performance computing and nanotechnology.

This erosion of resources has also reduced the number of scientists and students conducting physical science research at DOE's national user facilities and America's colleges and universities. This aspect alone could have a disastrous long-term effect.

Already, doctoral candidates are choosing life sciences over physical sciences. In 1999, the number of doctorates awarded in science and engineering was the lowest figure in six years. This trend is reflected in undergraduate degrees as well, which over the past decade have declined significantly.

Doubtless this exacerbates a shortage of highly skilled labor, posing a serious dilemma for academia, business, and government leaders alike because of the potential effect it could have on America's continued economic growth.

This shift in human capital and resources to the life sciences has had a dramatic impact on America's ability to engage in cutting edge physical sciences research. It also poses a threat to our national security, but you don't have to take my word for it.

According to the Hart-Rudman Report on National Security, and I quote "...the U.S. government has seriously underfunded basic scientific research in recent years. The quality of the U.S. education system, too, has fallen well behind those of scores of other nations. **...the inadequacies of our systems of research and education pose a greater threat to U.S. national security over the next quarter century than any potential conventional war that we might imagine.**"

The report goes on to recommend doubling the federal government's investment in science and technology research and development by 2010. While I understand that it may not be practical to double the federal research and development budget this year, I believe Congress should take the necessary steps to move in that direction. One of the first steps should be to increase federal funding for the research and development conducted by the DOE Office of Science.

This Committee is the key to taking that first step forward. By recommending that the Office of Science receive a substantial FY 2002 budget increase, this Committee can begin to reverse this troubling situation and help the DOE attract the best minds, support the maintenance and construction of modern facilities, and continue to provide the quality of scientific research that has been its trademark for so many years. As Congress continues to work through the budget process, I encourage you to support the research that has been crucial to America's economic success and national security.

Thank you again for this opportunity to testify.