The SPEAKER pro tempore. The question was taken; and the conference report was agreed to.
Resolved. That at any time after the adoption of this resolution the Speaker may, pursuant to clause 2(b) of rule XVIII, declare the House in recess until a motion to recommit the bill, now pending, with or without amendments, or to recommit, with or without amendments, for further consideration, is agreed to. General debate shall be confined to the bill and shall not exceed one hour equally divided and controlled by the chairman and ranking minority member of the Committee on Science and Research. After general debate the bill shall be considered for amendment under the five-minute rule. It shall be in order to consider as an original bill for the purpose of amendment under the five-minute rule the amendment in the nature of a substitute recommended by the Committee on Science now printed in the bill. Each section of the committee amendment in the nature of a substitute shall be considered as read. During consideration of the bill for amendment, the Chairman of the Committee of the Whole shall have a point of order in recognition of the basis of whether the Member offering an amendment has caused it to be printed in the portion of the Congressional Record designated in clause 2 of rule XVIII. Amendments so printed shall be considered as read. At the conclusion of consideration of the bill for amendment the Committee of the Whole shall report the bill to the House with such amendments as may have been adopted. Any Member may demand a separate vote in the House on any amendment adopted in the Committee of the Whole to the bill or to the committee amendment in the nature of a substitute. The previous question shall be considered as ordered on the bill for passage without intervening motion except one motion to recommit with or without instructions.

The SPEAKER pro tempore (Mr. ISAKSON). The gentleman from New York (Mr. REYNOLDS) is recognized for 1 hour.

Mr. REYNOLDS. Mr. Speaker, for the purposes of debate only, I yield the customary 30 minutes to the gentleman from Massachusetts (Mr. McGovern) pending which I yield myself such time as I may consume. During consideration of this resolution, all time yielded is for the purposes of debate only.

(Mr. REYNOLDS asked and was given permission to revise and extend his remarks.)

Mr. REYNOLDS. Mr. Speaker, House Resolution 432 is a fair, open rule providing for consideration of H.R. 4664, the Investing of America’s Future Act. The purpose of this legislation is to authorize appropriations for fiscal years 2003, 2004 and 2005 for the National Science Foundation. The rule provides for 1 hour of general debate equally divided and controlled by the chairman and ranking minority member of the Committee on Science. The rule waives all points of order against consideration of the bill. Additionally, the rule provides that the amendment in the nature of a substitute recommended by the Committee on Science now printed in the bill be considered as an original bill for the purpose of amendment, and provides that the bill shall be considered for amendment by section. The Chairman of the Committee of the Whole has the authority to accord priority in recognition of Members who have preprinted their amendments in the Congressional Record. Finally, the rule provides for one motion to recommit, with or without instructions.

As an independent Federal agency, the National Science Foundation’s mission is to support science and engineer- ing among all disciplines. Currently, the NSF funds research and education activities at more than 2,000 universities, colleges, schools, businesses and other research institutions throughout the United States. Federal investment in educating America’s youth in the foundation areas of math, science and technology is the only way to maintain our competitive edge in a global economy and to create economic prosperity here at home and around the world. Science demands that the research behind it keep pace with the times. This legislation will provide a 15 percent annual increase for NSF through fiscal year 2005, providing critical financial support that will energize the Nation’s continued advancement in science, education and research. Much like this Republican-led Congress has kept its commitment to double funding for the National Institutes of Health, this legislation will initiate a plan to double NSF money over a 5-year period.

This kind of increase is consistent with President Bush’s focus on education improvements, such as the Math and Science Partnership Act and the Undergraduate Math and Science Education Improvement Act. This increase will also supply dollars for the countless major research equipment projects that have been approved but simply await funding.

Science, technology, and research are powerful components in our development of society. Continually advancing science and research will discover new cures for diseases, improve our quality of life and create jobs and economic growth across America. As someone who hails from a State and region that has fully embraced the value and potential this type of scientific research offers, I can attest to how important this investment is to our future.

The NSF-funded projects often bring national and even international attention to towns and cities across America, and sustained research efforts and collaborations have meant growth and new employment opportunities in those areas. NSF-funded activities at more than 2,000 universities and funded research institutions all across the country. For example, NSF has granted over $311 million to Massachusetts last year, including $3.3 million to the Worcester Polytechnic Institute, and $1.9 million to the University of Massachusetts at Dartmouth to support very important projects that are vital to our national security and our national defense.

In doing so, NSF has worked with and funded research institutions all across the country. The 21st century holds a great deal of promise, but there are also serious challenges ahead. Fortunately, the United States has some of the finest re- searchers and research institutions in the world. We must ensure that the scientific community in this country has the resources they need to meet our challenges.

Mr. SMITH of Michigan. Mr. Speaker, I urge my colleagues to support this fair and open rule and the underlying legislation.

Mr. Speaker, I reserve the balance of my time.

Mr. MCGOVERN. Mr. Speaker, I yield myself such time as I may consume.

I thank the gentleman from New York (Mr. REYNOLDS) for yielding me the customary 30 minutes.

Mr. Speaker, this is a fair and open rule for a noncontroversial bill. H.R. 4664, Investing in America’s Future Act, will reauthorize the National Science Foundation, including an increase.”
named the Investing in America’s Future Act because that is really what it is. Basic research is what is needed to develop new ideas for products that the world demands. It is how we develop new ideas for products that the public and, consequently, questions that often raises questions in the mind of the public and, consequently, questions in the minds of the Congress.

Basic research is that research which is done to understand the basic underpinnings of science, the basic underpinnings of the nature of our universe and how it operates. It is an effort to really learn more about the universe and how it and all its composite parts work.

That makes it very difficult to defend in the political process, but let me simply point out to my colleagues some of the results of basic research that we take for granted today.

In the 1930s, there was some research done on a very esoteric topic called stimulated coherent emission of radiation. This was theoretical work. It was very low cost work. The National Science Foundation did not exist. It was done by a professor and a few others working together, and they deduced that it was possible to have stimulated emission of light where one would have one photon, one particle of light, hitting an atom in an excited state and one would have another photon come out that was exactly like the one that came in, and yet the one that came in would be unaffected. So one obtains double the amount of light and the light was coherent; that is, the wavelength matched and the light was in phase.

This was essentially an unremarkable result in 1930 because no one had yet imagined a way in which it could be done, but after World War II, during which we learned a lot about more advanced physics, and researchers began investigating this with microwave radiation and discovered, in fact, it did work; this work was done by Charles Townes, my good friend from Notre Dame, a good physicist, who is now at Berkeley. He discovered that he could direct a microwave photon at an excited atom and get two microwave photons out that were coherent, traveling in exactly the same orbit in the same phase, and with identical frequencies.

He immediately recognized that this could also lead to light amplification by stimulated emission of radiation, and so the laser was developed about 1960, or in that time frame. It was a laboratory curiosity.

I remember the first time I saw a laser and played with it. It was almost a toy, and we had fun with it. What an amazing thing, that one could amplify light, play lights that are familiar with lasers; they have become ubiquitous. We use them for everything from lining up sewers to making certain that the tiles in the ceiling of a building are level, to conducting surgery of various types, on to many other uses, cutting metals and cutting cloth. Most likely the dresses and suits that are being worn here today were cut by laser initially before they were sewn together. All of this is based on the initial research work done in 1930.

Let me take another example, nuclear magnetic resonance, an esoteric bit of research which occurred while I was in graduate school. Who really cared about the nuclear spins and magnetic moments of hydrogen nuclei? Yet that nuclear magnetic resonance work which forms the basis for what we today call magnetic resonance imaging, a fantastic medical advance, diagnostic tool, the MRI, which look inside our bodies and tell us whether we have an aneurysm, a cancer or something else. Similarly, the CT scan came out of research in high-energy elementary particle physics, an esoteric topic as far removed from everyday life as we can imagine.

The question is, so what? The point is simply that during the past decade the marvelous economic expansion we enjoyed was also based on the work of Alan Greenspan and other experts, almost entirely based on the basic research that we funded some 30 to 50 years ago. If we want to continue to enjoy economic growth and expansion, if we want to continue to lead the world, we have to also continue leading the world in basic research.

That is what this bill is all about, continuing to lead the world in basic research so that our children and grandchildren are going to have to understand that we enjoy today, just as our parents and our grandparents invested in basic research so that we could enjoy the fruits of that today. That is what this bill is about.

That is why the Congress must pass this bill so that we adequately fund basic research and continue the economic base and growth that we enjoy today, and so that we can continue to expand our basic understanding of the universe and all it contains, and learn about the scientific processes that constantly occur.

Mr. MCGOVERN. Mr. Speaker, I yield 3 minutes to the gentlewoman from California (Ms. PELOSI). Ms. PELOSI. Mr. Speaker, I thank the gentleman for yielding me this time. And this is the first time I have had him yield to me in his capacity as a member of the Committee on Rules. We are all very proud of that accomplishment for him and thank him for his great leadership there and on this bill, which is a very important one.

Mr. Speaker, I rise in support of the rule and in support of the legislation, on the path to double the funding for Science for their excellent work on this authorization for the National Science Foundation funding. For a long time, our colleague, the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON), has sponsored a bill and given us all the opportunity to register our support for drastically increasing the funding of the National Science Foundation. I am so pleased now that the Committee on Science has taken up that leadership, and the considerable leadership of the chairman, et cetera, of the committee to make this a possibility; that we would be on a path to doubling the National Science Foundation budget.

Mr. Speaker, I serve as a member of the House Subcommittee on Labor, Health and Human Services, and Education of the Committee on Appropriations. A number of years ago, we set off on the path to double the funding for the National Institutes of Health. We are in our last year of that doubling effort. It was very important to the health of the American people. So, too, is the doubling of the National Science Foundation. Not only do we have to do this, but we should do more.

We had the Tech Talent Act, which encourages young people and mentors them in studying math and science so that we have the seed corn for us to have the scientists who will maintain and improve and enhance our technological base, and as well, the gentleman from Michigan (Mr. EHlers) said, our economic base as well.

Let me tell you that progress in the National Institutes of Health, the Human Genome Project and other progress, really spring from the improved instrumentation that came from the technology side of it, the hard sciences, physical science, the fulfillment of the spirit of medical science. So we all benefit across the board in terms of biomedical research, which is so important to the American people; the economic success, which is so important to our country; and also the fulfillment of the dream that we have the talent and should be encouraged to study math and science and become scientists.
So I am absolutely delighted today that in this bipartisan way we can come to the floor. I commend the distinguished chairman of the committee and the subcommittee, as well as the Members on both sides of the aisle, for making this a reality for the Congress to fund the things that make it a reality for our country; and I will do everything in my power working with them to ensure that this can be translated not only into an authorization but an appropriation as well.

Mr. REYNOLDS. Mr. Speaker, I yield 3 minutes to the gentlewoman from Illinois (Mrs. BIGGERT).

Mrs. BIGGERT. Mr. Speaker, I thank the gentleman for yielding me this time, and I rise today in support of the rule and as a cosponsor and strong supporter of H.R. 4664, the National Science Foundation Authorization Act, or Investing in America’s Future Act.

I want to commend the members of the Committee on Rules for this open rule, and the chairman of the Committee on Science, the gentleman from New York (Mr. BOEHLERT); and the ranking member, the gentleman from Texas (Mr. HALL) of the Committee on Science; as well as the chairman of the Subcommittee for Research and Science, the gentlewoman from Michigan (Mr. SMITH); and the ranking member, the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON), for expeditiously ushering this bill through that committee and to the floor.

Mr. Speaker, a distinguished committee, chaired by Senators Gary Hart and Warren Rudman, released a report on national security at the beginning of 2001. While it did not receive a lot of public attention at the time, the Hart-Rudman report has been revisited often since September 11. One aspect of the report with particular relevance to the bill we are considering today is its finding and recommendation on the importance of basic research. 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. Mr. Speaker, the bill we pass today takes an important step in the right direction.

In addition to supporting basic research at colleges and universities nationwide, the NSF works to ensure that American teachers and professors have the skills, training, and equipment to prepare future scientists and researchers. This is critical as science and technology become increasingly important to our economy, our health, our environment, and our national security.

Mr. Speaker, I urge my colleagues to support this rule and this bill.

Mr. MCGOVERN. Mr. Speaker, I yield myself the balance of my time to say that this is a good rule. It is an open rule. It is nice to have an open rule. More importantly, this is a good bill and deserves the support of all our colleagues.

Mr. Speaker, I have no further requests for time, and I yield back the balance of my time.

Mr. REYNOLDS. Mr. Speaker, I yield myself the balance of my time.

Since the dawn of man, the human race has been inextricably linked with a fascination and need to slip beyond its boundaries and explore the unknown. From across the continents to the depths of the ocean and to the far reaches of space, that pioneer spirit continues to this day.

The National Science Foundation embraces that spirit with its record of excellence in research, education, technological advancement, and discovery. They make possible the pioneer spirit within us all.

I ask my colleagues to join me in supplying the necessary tools to the National Science Foundation so they can continue along the path of important contributions to America and mankind. Their programs are an important demonstration of how efficient government investment can return great dividends to society. There is no better time to invest in America’s future.

Mr. Speaker, I yield back the balance of my time, and I move the previous question on the resolution.

The previous question was ordered. The resolution was agreed to. A motion to reconsider was laid on the table.

The SPEAKER pro tempore (Mrs. BIGGERT), Pursuant to House Resolution 432 and rule XVIII, the Chair declares the House in the Committee of the Whole House on the State of the Union for the consideration of the bill, H.R. 4664.

IN THE COMMITTEE OF THE WHOLE

Accordingly, the House resolved itself into the Committee of the Whole House on the State of the Union for the consideration of the bill (H.R. 4664) to authorize appropriations for fiscal years 2003, 2004, and 2005 for the National Science Foundation, and for other purposes, with Mr. ISA akson in the chair.

The Clerk read the title of the bill.

The CHAIRMAN. Pursuant to the rule, the bill is considered as having been read the first time.

Under the rule, the gentleman from New York (Mr. BOEHLERT) and the gentleman from Tennessee (Mr. GORDON) each will control 30 minutes.

The Chair recognizes the gentleman from New York (Mr. BOEHLERT).

Mr. BOEHLERT. Mr. Chairman, I yield myself such time as I may consume.

(Mr. BOEHLERT asked and was given permission to revise and extend his remarks.)

Mr. BOEHLERT. Mr. Chairman, I am proud to bring to the floor today H.R. 4664, the Invest in America’s Future Act, which was approved unanimously by the Committee on Science. This landmark bill would put the National Science Foundation on a track to double its budget over the next 5 years, while, at the same time, imposing strict new management requirements to ensure that the National Science Foundation continues to spend our money wisely.

This Congress has already demonstrated its faith in and reliance on the National Science Foundation several times in recent months, and I hope and expect that we will continue to do so today. Earlier this year, by the overwhelming margin of 400 to 12, we passed a cybersecurity bill that relied on NSF to fund the research needed to protect our Nation’s systems and networks. At this time last year, we passed by voice vote a bill to initiate the President’s math and science education partnerships, a program that NSF is now beginning to carry out; and I can assure you that many of the projects that have included generous, if still insufficient, increases for the National Science Foundation.

So the 107th Congress is already on record as acknowledging the vital role played by NSF to ensure that our Nation’s future is bright. But what of the role played by NSF in our economy, our health, our environment, and our national security?

Mr. BOEHLERT. Mr. Chairman, I am proud to bring to the floor today H.R. 4664, the Invest in America’s Future Act, which was approved unanimously by the Committee on Science. This landmark bill would put the National Science Foundation on a track to double its budget over the next 5 years, while, at the same time, imposing strict new management requirements to ensure that the National Science Foundation continues to spend our money wisely.

This Congress has already demonstrated its faith in and reliance on the National Science Foundation several times in recent months, and I hope and expect that we will continue to do so today. Earlier this year, by the overwhelming margin of 400 to 12, we passed a cybersecurity bill that relied on NSF to fund the research needed to protect our Nation’s systems and networks. At this time last year, we passed by voice vote a bill to initiate the President’s math and science education partnerships, a program that NSF is now beginning to carry out; and I can assure you that many of the projects that have included generous, if still insufficient, increases for the National Science Foundation.

So the 107th Congress is already on record as acknowledging the vital role played by NSF to ensure that our Nation’s future is bright. But what of the role played by NSF in our economy, our health, our environment, and our national security?

So it is time to give NSF, a much smaller agency than NIH, a budget commensurate with its mission. When we look at the new fields of science and engineering that will boost our economy in this new century, fields like nanotechnology, where do we turn to ensure that our Nation’s researchers stay at the cutting edge? The National Science Foundation. When we look at the field of information technology, which facilitates every activity in today’s economy, where do we turn to ensure that the U.S. remains at the cutting edge? NSF. When we consider our even more urgent need for a highly skilled technologically-literate workforce, where do we turn to ensure that our education system, from kindergarten through postgraduate work, is preparing the people we need? You
Mr. Chairman, this is a responsible bill, it is a needed bill, it is a bill that sustains the important work of the National Science Foundation in science and engineering research and education.

I want to congratulate the chairman of the Subcommittee on Research, the gentleman from Texas (Mr. SMITH) and the ranking member, the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON) for their efforts to craft this bill. I also thank the chairman of the Committee on Science, the gentleman from New York (Mr. BOEMER) and the ranking member, the gentleman from California (Ms. NABORS) for working closely with this side of the aisle in developing the bill.

NSF is our premier agency for support of basic research at academic institutions in the physical sciences and the nonmedical biological sciences, in mathematics, and in engineering. Basic research discoveries launch new industries that bring returns to the economy far exceeding the original public investment. The Internet, which emerged from the research projects funding by DOD and NSF, strikingly illustrates the payoff potential of such research expenditures. In fact, over the past 50 years, half of U.S. economic productivity can be attributed to the technological innovation and the science that has supported it.

Unfortunately, the simple truth is that during the 1990s we underinvested in the fields that NSF supports. A recent report from the National Academy of Sciences provides specific examples that make this case. The report shows that between 1993 and 1999 Federal research support at academic institutions fell by 14 percent in mathematics, by 7 percent in physics, by 2 percent in chemistry, and by 12 percent in electrical engineering. Inadequate funding for basic research in such important fields imposes a price on society, because new ideas are lost that would otherwise underpin future technological advance.

Of even more importance, anemic funding of academic science and engineering research reduces the numbers of new young scientists and engineers who constitute the essential element necessary to ensure the nation’s future economic strength and security.

H.R. 4664 authorizes funding growth for NSF of 15 percent per year for 3 years, bringing the total authorization level to $7.3 billion by the third year. This follows a funding path to double NSF’s budget over 5 years, as was proposed by the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON) in the NSF authorization bill she introduced, and I cosponsored last year.

We were not alone in calling for substantial funding increases. Such prominent figures as Federal Reserve Chairman Greenspan, former House Speaker Gingrich, and former presidential science advisor Allan Bromley have pointed out the importance of increasing support for basic research in science and engineering.

The coalition for National Science Funding, a group of 80 scientific, engineering, and professional societies, universities, and corporations, specifically called for providing a 15 percent funding increase for the NSF this year as the next step in doubling the NSF budget.

The strong funding growth proposed by H.R. 4664 will enable the foundation to expand its investment in cutting-edge research initiatives and shore up its core research programs.

Equally important, the bill will increase efforts to improve the skills of K-12 science and math teachers, develop better science and math curricular materials, and attract more women and minorities to careers in science and engineering.

H.R. 4664 is an important bill that will help ensure the Nation maintains a vigorous basic research enterprise, which is an essential component for a strong economy for our national security.

Mr. Chairman, I commend this measure to my colleagues and ask for their support and its passage in the House.

Mr. Chairman, I ask unanimous consent to yield 3 minutes to the gentleman from Tennessee?

There was no objection. Mr. SMITH of Texas. Mr. Chairman, I yield 3 minutes to the gentleman from Texas (Mr. SMITH).

Mr. SMITH of Texas. Mr. Chairman, I support this legislation to increase the National Science Foundation budget by 15 percent for next year. This bill will put us on the path to double the NSF budget over the next 5 years.

Science inspires us to conquer the unknown, invent what does not exist, and improve what already exists. It all begins with research.

President Bush’s budget proposal recognized the importance of science funding with a 9 percent increase in science and technology spending. That is the
good news. But among the various science agencies, the increases in amounts varied greatly.

The National Institutes of Health, NIH, received the lion’s share of funding under the administration’s proposal, which has increased to a point where it is now larger than the rest of the budgets of the science agencies put together, and the proposed increase alone in NIH funding is larger than the research budget of the National Science Foundation.

Biomedical research is important and the NIH should receive adequate funding. The administration’s proposed budget rightly recognized the importance of our physical health. But, Mr. Chairman, our citizens’ economic health is just as important as their physical health.

The NSF funds the cutting edge research that allows the U.S. to dominate the high technology field. Our commitment to the funding in the bill ensures that technological preeminence will continue. Scientific research at the NSF has greatly enhanced our lives and has advanced science and technology. Consider the benefits of better weather forecasting, the saved lives that result from MRIs, the promise of faster semiconductors, and breakthroughs in nanotechnology that will drive our scientific efforts in the new century.

Mr. Chairman, H.R. 4664 improves the quality of math and science education with $200 million in funding for the Math and Science Partnerships Initiative, which encourages more students to enter graduate level science studies. In our technology-driven economy, math and science skills are essential. If we want to prepare the next generation with the skills they need for success, we must increase their knowledge of science. Either we continue to invest in the sciences, or risk losing the ability to lead the world in research. This legislation recognizes the priority of research and development, and I urge my colleagues to support it.

Ms. WOOLSEY. Mr. Chairman, I yield 3 minutes to the gentlewoman from California (Ms. LOFGREN).

Ms. LOFGREN. Mr. Chairman, I would like to take this opportunity to commend the gentleman from New York (Mr. BOEHLERT), the gentleman from Texas (Mr. HALL), the gentleman from California (Ms. EDDIE BERNICE JOHNSON), and the gentlewoman from California (Ms. WOOLSEY) for allowing me to share this time, and for their leadership and imagination in bringing H.R. 4664, the Investing in America’s Future Act of 2002 before us today for our consideration.

I am proud to be an original cosponsor of this important piece of legislation. I have long been a passionate advocate for the National Science Foundation and its mission. This bill work begins the laudable goal of doubling NSF’s budget over the next 5 years.

Competition for NSF grant funding is very intense. Every year NSF receives about 30,000 proposals for research in education projects. Of these, about one-third only are funded. These grants usually go to colleges, universities, academic consortia, nonprofit institutions, and museums. The NSF also supports collaborative projects between universities and industry, as well as U.S. participation in international cooperative research and education efforts.

By increasing the amount of money available for grants, the NSF will be able to greatly enhance opportunities for scientific inquiry, and will generate invaluable progress in a wide range of fields. The resulting discoveries will help drive economic growth and enhance the quality of life for all Americans.

NSF is the second largest source of federal funds for academic research. Students of mathematics, science, the engineering and science agencies when it comes to science education. They are one of only a few agencies to successfully comply with GPRA requirements. They have all the tools, and they know how to use them.
them. All they need are the resources. With this bill, they will have them.

I have been a consistent advocate of an increased science portfolio. This is the way to go. The NSF deserves our support. I urge my colleagues to support that bill today.

Ms. WOOLSEY. Mr. Chairman, I yield myself such time as I may consume.

Mr. Chairman, I rise in support of the NSF’s reauthorization. H.R. 4664 is a good bill, it is a bipartisan bill; and I want to commend Chairman BOEHLERT, Chairman SMITH, and the ranking members for closely working together so that both sides are well represented in this legislation. Even during these tight budget times, investing in basic research like that at NSF is a wise and fiscally-prudent decision. I strongly believe we must make significant long-term investments in this Nation’s sciences. This bill does just that.

The need for increased funding at the NSF is clear. Recent data published by the Army of Sciences on Federal funding for basic research shows us that we are not meeting today’s challenges. Sadly, there is strong evidence of declining basic research funding in many of the physical science areas. Since NSF is the source of 36 percent of the Federal funding for basic research that is performed at universities and colleges in the physical sciences, we now have a chance to reverse course.

In 1995, the State of California, NSF partners with the University of California on numerous research proposals in the physical sciences. I know that this bill will continue to support those needed partnerships for our long-term science and research needs. It is clear that in this instance, the returns to the Federal Government far exceed our public investment. That is why I urge my colleagues to support this bill to increase the NSF budget.

Mr. Chairman, I reserve the balance of my time.

Mr. BOEHLERT. Mr. Chairman, I am pleased to yield 4 minutes to the distinguished gentleman from Michigan (Mr. EHlers).

(Mr. EHlers asked and was given permission to revise and extend his remarks.)

Mr. EHlers. Mr. Chairman, I thank the gentleman for yielding me this time. I would like to add to the comments made 1 year ago under the discussion for the rule but apply those comments specifically to the National Science Foundation.

Over the past decade, we have had some interesting trends in the funding of scientific research in the United States. However, we have failed to keep pace with that of other nations. At the moment, we are spending less on research compared to GDP in the United States than Japan does and the gap is increasing, not decreasing. Even worse, we are spending less compared to GDP than Germany does. Even worse, we are rapidly being overtaken by South Korea. We are losing ground. Yet we are supposed to be the superpower, the world’s leader, not only in military might but also in research and advancement. We have to change that trend. We made a good step in that direction a few years ago when we doubled the NSF budget over a period of 5 years. It is high time we do precisely the same for the National Science Foundation.

Just to illustrate the impact of what has happened and how things have gotten better here, let me point out a very small chart, which I hope my colleagues can see, and at least see the trend lines, which shows very clearly what has happened to NIH, as shown on the top line. A few years ago NIH was researched fairly closely to NASA and Department of Energy research. We decided to double it, and it has shot up exponentially as happens when you double things, whereas NASA is holding its own or slightly down, and DOE, the Department of Energy, has gone down.

We are spending less on research in the Department of Energy now than we did 10 years ago, in real dollars. The NIH budget, National Science Foundation, our most important basic research entity is struggling along at the bottom of the chart. It had slight increases over the past decade, but very slight. I maintain that that is out of balance. As the rate of growth in the NSF goes up, NIH should also go up, because when NIH goes up, NSF should also go up, it is essential that we proceed with the doubling that is proposed in this bill for the National Science Foundation. I commend Chairman BOEHLERT and Chairman SMITH for leading the charge in this effort. It is something that we must do and that we can do.

To those who are worried about budget busting, let me simply point out that this year’s increase in the National Institutes of Health is greater than doubling the NSF budget will be. In other words, this year’s increase in NIH is greater than the total current budget of the National Science Foundation. At the very least, we can easily afford to double the NSF budget; and by doing that over 5 years, we are spending one-fifth of what we have been spending each year to increase NIH.

This is a good bill. I urge that my colleagues vote for it. I urge that we pass this bill and put this doubling program into effect.

Ms. WOOLSEY. Mr. Chairman, I yield 3 minutes to the gentleman from North Carolina (Mr. ETHERIDGE).

(Mr. ETHERIDGE asked and was given permission to revise and extend his remarks.)

Mr. ETHERIDGE. Mr. Chairman, I thank the gentlewoman for yielding me this time and Chairman BOEHLERT and Ranking Member HALL and the gentleman from Texas (Mr. SMITH) and the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON) for their efforts in getting this bill. I am proud to be a co-sponsor as well.

I rise in strong support of H.R. 4664. Investing in America’s Future Act. This legislation, that will increase the funding for the National Science Foundation critical new criticality at this time more critical than anyone can imagine. I believe that maintaining our Nation’s global scientific and economic leadership provides the best justification for funding basic research, and that is really what we are talking about here. I also believe that a solid academic foundation in math and science education is critical to our success as a Nation in the 21st century. As the lead source of federal funding for basic research at colleges and universities, NSF supports research and educational programs that are crucial to technological advances in the private sector and for training our next generation of scientists and engineers. NSF funds cutting-edge research in science and technology that is critical in the United States. The research funded by the foundation has played a pivotal role in raising the standards of living in the United States as well as around the world.

As we have already heard from others, with a very small portion of Federal spending, the National Science Foundation has had a powerful impact on national scientific discovery. Every dollar invested in this agency returns manifold in its worth in economic growth. For example, over 25 percent of the Federal support for academic institutions for all research is provided through the National Science Foundation and almost 50 percent of the funding for nonmedical research at universities is provided through the National Science Foundation. NSF also supports 46 percent of academic research in engineering performed at colleges and universities and also helps train more than 25,000 graduate students each year. I am pleased with the accomplishments that NSF has made in research and education initiatives, and I strongly support the doubling of NSF’s budget by the proposed increase of 15 percent over the next 3 years in pursuit of this effort.

As the former Superintendent of schools of my home State of North Carolina, I have worked for many years to improve science and mathematics education in our schools. We need better science and mathematics education in the K-12 classrooms if we are going to compete in university settings. Quality instruction is the key to helping students learn in these critical fields. At a time when we are trying to improve the quality and quantity of science and mathematics in America, we must make significant investments in critical to enabling our students to compete in today’s knowledge-based economy. This increase in NSF budget will
help ensure that improving science and mathematics education remains a national priority. I urge the vote and signature by the President.

Mr. BOEHLERT. Mr. Chairman, I am pleased to yield 3 minutes to the distinguished gentleman from New York (Mr. GRUCCI).

(Mr. GRUCCI asked and was given permission to revise and extend his remarks.)

Mr. GRUCCI. Mr. Chairman, I rise today to express my support for H.R. 4664, the Investing in America’s Future Act. This bill would reauthorize the National Science Foundation at its highest level for the next 5 years, placing it in an unprecedented spending track. I thank Chairman SMITH and Chairman BOEHLERT for the time on the floor today to speak on this very important issue and for their leadership on this increasingly important issue.

I am proud to be a cosponsor of this important legislation. H.R. 4664 not only takes a decisive step to doubling the funding for the National Science Foundation but also is a clear example of the bipartisan efforts of this House to review and support scientific discovery and growth. Now more than ever science and technology are leading the way to not only expand America but to make it the best it can be, but also to protect our citizens and improve our homeland security. Technologies such as radiation detectors and highest-level X-ray are keeping our homes, our businesses, and our transportation systems safe every day. But these technologies originate from the same place, from the Federal laboratories and university research that benefit from the National Science Foundation. Basic research is key to generating these ground-breaking and important technologies that we utilize in our lives every day.

My district is the home to leaders in basic research, the Brookhaven National Laboratory and the State University of New York at Stony Brook. These institutions have benefited greatly from the support and funding from the National Science Foundation, advancing their endeavors and educational opportunities for students and scientists alike.

It is no surprise that the bill is entitled the Investing in America’s Future Act, because that is exactly what we will succeed in doing by passing this legislation. Educational programs funded by the National Science Foundation offer students opportunities for fruitful studies in innovative fields of learning. From as early as grade school through to the post-doctoral level, the National Science Foundation provides the much-needed support to those students striving to achieve in the science field.

Again, I am proud to be a cosponsor of this very important legislation and thank the gentleman from New York (Chairman BOEHLERT) for the time to speak here today. I look forward to the passage of this exciting bill and urge a “yes” vote from my colleagues.

Ms. WOOLSEY. Mr. Chairman, I yield 4 minutes to the gentleman from Washington (Mr. BARR).

Mr. BAIRD. Mr. Chairman, I thank the gentlewoman for yielding me time.

Mr. Chairman, I rise in support of H.R. 4664, to authorize funds for the National Science Foundation. As a proud cosponsor of this legislation, I want to thank the gentleman from New York (Chairman BOEHLERT) and the ranking members for their excellent work on this; but I also want to reinforce my strong support for the 50 million dollar funding for the Advanced Technological Education Program in FY 2002 and $55 million in 2003.

The Advanced Technological Education Program is an NSF program designed to help community colleges train high-tech workers. It is the only NSF program focused solely on community colleges. This program provides funds for both existing and new ATE programs.

These programs will become increasingly important as our economy becomes more dependent on technologically skilled workers. In fact, every single one of the top 10 fastest-growing occupations identified by the Department of Labor will require specialized knowledge in the fields of math and science. ATE programs will fund technologies, math and science programs that will directly contribute to student success in those fields.

A few weeks ago my colleague the gentleman from North Carolina (Mr. PRICE) and I introduced H.R. 4680, the Science Undergraduate Community Education Enhancement Act, or, as we call it, SUCCEED. This bill will further direct ATE money to important science, math and technology two-year education programs.

Almost half of all college students in America are enrolled in community colleges, but many of the core math and science programs at these institutions are now severely underfunded. This is unacceptable, especially at a time when our knowledge-based economy depends on a workforce with a solid grounding in math and science.

The SUCCEED Act will function in several areas. First of all, it will expand the scope of existing grant programs to not only focus on the advanced upper division courses, but on the basics in math and technology skills and science skills that are necessary for success in more advanced coursework.

In addition and importantly, it will expand partnerships between 2-year and 4-year institutions. Increasingly, our 2-year community colleges are partnering with 4-year institutions, and the SUCCEED Act will provide funding for integrated research between community and 4-year colleges.

This bill will also provide access to state-of-the-art equipment for our classrooms. We cannot ask our students in the community colleges to learn the kind of advanced skills they need if we do not have the fundamental infrastructure and equipment for them to learn those skills.

Importantly, this subcommittee will establish an external advisory committee to study how the effectiveness of this legislation is proceeding and to disseminate critical information to share that with other 2-year institutions.

Mr. Chairman, I want to thank the staff of the Committee on Science for their outstanding work, and my own staff member, Ms. Kate Sinner, for her work on this. Thanks again to the gentleman from New York (Chairman BOEHLERT), Mr. BOEHLERT. Mr. Chairman, I yield myself such time as I may consume.

Mr. Chairman, I want to thank everyone involved with this, but none more than the gentleman from Michigan (Mr. SMITH) for his leadership on this issue and for including this language in the bill.

The National Science Foundation represents the best in math and science education. In order for our Nation to remain a world leader in discovery and innovation, we must strive to educate our younger generation, engaging them in math and science activities.
Mr. Chairman, I feel privileged to be allowed to be the sponsor of this legislation, H.R. 4664. But, as we all know, we have a fantastic scientific community out there, and NSF is one of the lead agencies that has done such a tremendous job. This committee, it has been a bipartisan support, right from the get-go, with the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON), the ranking member of the Subcommittee on Research.

The National Science Foundation was authorized in 1950 as part of a 3-year bill that expired at the end of fiscal year 2000. That is why I think it is so important that we move ahead with this legislation today, to make sure that the House has the kind of oversight of all agencies of government, as it is destined to do.

Let me just say that it is so clear from every evaluation and every economic necessity and adequately fund investment in science and technology is about as good an investment as you can possibly make with the Americans' taxpayer money to make sure that we have the basic research for national security reasons and smart weapons and the technological ability of our economic security come from this kind of basic research.

It is also important for our economy, and we have been credited by Mr. Greenspan and many others that our economic strength is derived from the basic research that we have worked on over the last 50 years, and certainly not the least is the strength of the health in the United States.

I would like to use one quote that is very interesting, and that is from Harold Varmus, the former director of NIH. He said, "Congress is not addressing with significant vigor the compelling need for adequate funding of the National Science Foundation, which is the basis of a lot of the research and a lot of the tools they are using at NIH." This bill is the product of 2 years of hearings and examinations of NSF activities by the Committee on Science and our Subcommittee on Research; and during this time the committee received input from prominent scientists, economists, government officials, and from other experts with an interest in improving federally funded basic research.

In the end, we arrived at three principal conclusions. One, NSF is a model government agency with an exemplary record of supporting basic research within a peer-reviewed, competitive grant process that funds only the best cutting-edge research, and does so using under 5 percent of the total budget in overhead costs.

Second, the relatively small Federal agency responsible for just 4 percent of the total Federal research development expenditures, NSF-funded research has led to a myriad of discoveries that have improved our health, strengthened our economy, and enhanced our lives and well-being in many ways we could not have imagined 30 years ago.

Three, a number of areas within NSF programs require additional funding to assure continued advancements in the Nation's scientific enterprise. Among them are funding new education initiatives, alleviating grant pressure within a system that cannot fund over 30 percent of highly rated research proposals.

Again, of all of these highly rated research proposals, we only end up being able to fund 30 percent of the excellent ideas that are coming in from all of the universities and research facilities. It is laudable that the gentleman from New York (Chairman BOEHLERT), the gentleman from Texas (Mr. HALL), and I and every member of the Committee on Science called for significant increases in support for NSF in this legislation.

I say this as a true fiscal conservative that strongly supports the President's efforts to keep nondefense discretionary spending in check so we can fully focus our budget on the Federal Government's priority of defending our Nation, and basic research is part of that responsibility.

Mr. Chairman, I yield 2 minutes to the gentleman from Minnesota (Mr. GUTKNECHT).

Mr. GUTKNECHT. Mr. Chairman, I thank the gentleman for yielding me time.

Mr. Chairman, I rise in support of this bill today. Let me say this about research and what we do in the United States, that needs to be said. Research is a very important part of what we do here in the United States, and it is a very important part of our economic growth.

About half of the economic growth in the United States today is as a result of research which has been funded in the past. We represent about 4 percent of the world’s population, but we represent about 44 percent of the money that is spent on basic research. That is important, and there is a correlation.

I was fortunate to go and visit some of our national labs. They truly are national treasures. What they do through the National Science Foundation, not only through our labs but our universities around the country, makes a big, big difference.

A few years ago I was privileged to meet with a fellow by the name of Gene Fry. Now, Gene Fry is a researcher at a little company called 3M. Now, this probably doesn’t have much to do with 3M, but this is something very important that he said. He said if we knew what we were doing, it would not be research.

There is a lot of truth to that. A lot of the projects that we fund at the beginning it is hard to defend. But ultimately the reason that we live in the world we live in today is because brave legislators in the past and brave business people in the past have been willing to invest in projects that may not have made a lot of sense at the time.

I think we have to have the courage to stand up and say research is a very important responsibility to the Federal Government. We get a huge rate of return on the money that we invest in research, and we will determine today what kind of a world our children will live in. This is an important bill. I am happy to rise in support of it.

Ms. WOOLSEY. Mr. Chairman, I am honored to yield the balance of my time to the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON), the ranking member of the Subcommittee on Research.

Ms. EDDIE BERNICE JOHNSON of Texas. Mr. Chairman, I rise today in strong support of H.R. 4664, the National Science Foundation Authorization Act of 2002. I want to thank the gentlewoman from New York (Chairman BOEHLERT); the ranking member, the gentleman from Texas (Mr. HALL); and the gentleman from Michigan (Chairman SMITH) for working with me and the rest of the committee in a bipartisan manner on this important piece of legislation that makes a strong statement about our commitment to invest in America’s future.

H.R. 4664 places the National Science Foundation on the path to double its budget in 5 years, which was the goal of H.R. 1472, the NSF authorization bill that I introduced last April 2001. I introduced H.R. 1472 because I strongly believed that investing in basic research, math and engineering research is crucial to our economic prosperity and global competitiveness of our country. Even after September 11, what we are depending on most now will be the kinds of technology that the research from the National Science Foundation has brought to the forefront.

The National Science Foundation plays a leading role in educating our youth in math and sciences and training the scientists and engineers of tomorrow, and the agency is working to ensure that tomorrow’s high-tech workers reflect a diversity of America. It is my sincere hope that my colleagues will recognize the importance of basic research to our Nation’s future and will pass H.R. 4664.

The National Science Foundation expends only 3.8 percent of the Federal research and development funds, yet this relatively small amount belies the importance of the agency to our country. The National Science Foundation supports 23 percent of the basic research funding at academic institutions. For specific research areas, the National Science Foundation’s role at universities is even larger. It funds 36 percent of research in the physical sciences, 49 percent of research in the environmental sciences, 50 percent of research in engineering, 72 percent of research in mathematics, and 78 percent of research in computer science. So, clearly, the National Science Foundation plays a disproportionately important role in the most basic research areas that have implications far beyond their own academic area.
To give an idea of the quality and importance of the NSF-funded research to our Nation, consider the fact that over 100 Nobel prizes have been awarded to scientists supported by the National Science Foundation research in the fields of physics, chemistry, physiology and medicine, economics. In every field of science and engineering are examples of outstanding research supported by the National Science Foundation. This research leads to critical advances in the understanding of our world and in technology that improves our lives.

For example, the National Science Foundation support at the National Center for Supercomputing Applications at the University of Illinois developed the first Internet browser that led to the explosive growth of the World Wide Web. The National Science Foundation-funded research in atmospheric chemistry identified the ozone depletion over the Antarctic, the ozone hole, as it has come to be known. NSF-funded research on mathematics and solid modeling led to the widespread use of computer-aided design and computer-aided manufacturing that has revolutionized the manufacturing industry and enhanced workplace productivity. These are but a few examples of the scientific breakthroughs that have been funded by the NSF in recent years, and this and other research supported by NSF ultimately strengthens our economy. The connection between research funding and the strength of the economy has been expounded by such diverse sources as former presidential science advisor Allen Bromley, Federal Reserve Chairman Alan Greenspan, former Speaker of the House Newt Gingrich, and the Hart-Rudman Commission on National Security.

Yet despite the importance of basic research to the future economic health and wellbeing of our country, NSF now must decline more than 1 billion dollar’s worth of high quality research proposals each year. Why? Because NSF’s budget is insufficient to meet the demands of our Nation’s vibrant research sector.

In addition to funding basic research at our Nation’s laboratories, the National Science Foundation makes essential investments in training the scientists and engineers of tomorrow. NSF research awards and direct research fellowships support approximately 7500 graduate students each year, the future scientists and engineers essential to our high-tech economy.

The bill before us today seeks to strengthen NSF’s graduate research fellowships by funding more research grants and increasing the average grant size. NSF programs also help to improve science education for all students and to prepare them for citizenship in a world increasingly dominated by technology. Today we continue to have manpower shortages in many high technology fields, and many industries rely on the labor and brain power of foreign nationals.

The ideal way to alleviate the shortages is by ensuring that our Nation’s children of all races and both genders receive the basic grounding in science and mathematics that will prepare them to pursue careers as scientists, engineers, and technologists. Now, more than ever, we need to ensure that an adequate number of Americans choose careers in the sciences and engineering. We cannot allow inadequate funding to cripple NSF’s efforts in this area.

Fortunately, the Committee on Science accepted an amendment offered by my good friend, the gentleman from Washington (Mr. BAIRD) and I have introduced legislation to more broadly expand and strengthen the ATE program.

In fact, the gentleman from Washington (Mr. BAIRD) and I have introduced legislation to more broadly expand and strengthen the ATE program.

In addition to increasing funding for the program, the Science Undergraduate Community Colleges Education Enhancement Development Act, the SUCCESS Act, H.R. 4690, would give community colleges more flexibility to develop innovative core math...
and science curricula, and would provide more opportunities for community college students to have research experiences at 4-year institutions.

Our bill would also establish an advisory committee, comprised of representatives from industry and academia, to examine the effectiveness of the ATE program and to make recommendations on how it can be improved. Also, it would promote the dissemination of ATE results to community college systems across the Nation.

While the increased authorization level for the ATE program is included in the bill before us now, the gentleman from Washington (Mr. BAIRD) was successful in adding the remaining provisions of H.R. 4680 to the Undergraduate Science, Mathematics, Engineering, and Technology Improvement Act, which was also recently approved by the Committee on Science.

I again congratulate the Committee on Science and our colleagues on both sides of the aisle for the fine work they have done today in bringing H.R. 4664 to the House floor. I urge all of our colleagues to support it.

Ms. WOOLSEY. Mr. Chairman, I yield 2 minutes to the gentleman from New Jersey (Mr. HOEVEN), for yielding time to me.

Mr. HOEVEN. Mr. Chairman, I thank my friend, the gentlewoman from California (Ms. HARRIS), and the gentlewoman from Connecticut (Mrs. JOHNSON), has done an excellent job.

We heard that the National Science Foundation provides only a few percent of the total Federal research and development budget, but it provides a large fraction of the support for mathematics, biological sciences, earth sciences, social sciences, and engineering.

We have all heard about the many things that have come out of NSF research: the work in thin film technology, in genetics, in magnetic resonance imaging, CD players, printers, Taxol, and so forth.

It is also important to recognize the return on investment to this Federal investment in thin film technology, in genetics, in magnetic resonance imaging, CD players, printers, Taxol, and so forth. It is also important to recognize the return on investment to this Federal investment in this area.

Mr. CH冲, I am pleased to support this legislation. It is, I think, very important, and I think the committee, under the leadership of the gentleman from New York (Mr. BOEHLENT), and the gentlewoman from Connecticut (Mrs. JOHNSON), has done an excellent job.

We heard that the National Science Foundation is doing is the work in our schools, particularly in the pre-college setting. The members of the committee are to be commended for putting together such a good authorization bill.

Ms. WOOLSEY. Mr. Chairman, I thank the gentlewoman for yielding time to me. I would like to commend the chairman and the ranking member of the Committee on Science and the chairman and member of the Subcommittee on Research for their leadership on this issue.

Investment in research and development is one of the single largest contributing factors to the Nation's past, present, and future economic growth. The U.S. high technology industry spends more on R&D than on any other industry, but because corporations feel acute pressure to focus scarce research dollars on market-driven product development, the Federal Government must play an integral role in the longer-term basic research that leads to fundamental innovations.

Federal support for basic research has contributed to the development of the personal computer, the silicon chip, lasers, fiber optics, supercomputers, and magnetic resonance imaging. The first graphical web browser, high-speed networks, artificial intelligence, databases, and the graphical user interface all have their roots in government-sponsored research.

Over the past few years, funding for research in the physical sciences has declined as a fraction of overall R&D spending. The National Institutes of Health now makes up over half of all non-defense research, and the proposed research at NIH funding this year is as large as NSF's entire budget.

This funding imbalance threatens long-term research at a time when we are quickly approaching the physical limits to semiconductor performance. A new technological revolution is needed if we are going to continue improving computer performance. I believe we should strive to achieve this goal, and I recommend and urge my colleagues to support H.R. 4664.

Mr. SMITH of Michigan. Mr. Chairman, I yield myself the balance of my time.

Mr. Chairman, let me say that it would be nice just to include myself in the good remarks made by both sides of the aisle on the importance of basic research.

One area that we have not talked about that I think is so important in NSF is it keeps young, quality minds at that university staying in research, so it encourages the talented young people in our university systems to stay on, to get their Master's degrees and their Doctor's degree.

Just in terms of sort of proving that point, if we are looking at all the Nobel Laureates in physics, in chemistry, and in economics, most every one of those individuals at one point in their career had an NSF grant. So part of the tremendous success of the program is keeping these talented young people in that research arena to do what is necessary to strengthen our economy, to improve our public health, and certainly to add to our ability to defend ourselves and our national security.
move their careers through high school and into the college arena.

With that, Mr. Chairman, I would like to summarize by saying that I believe we have put together a strong piece of legislation that will allow Congress to demonstrate its commitment to continuing the economic and technological advances of recent years through support of fundamental basic research. The increase in this legislation is a sound investment and is brought by bipartisan support, was passed through both the Subcommittee on Research and the full Committee on Science by a unanimous vote.

Mr. Chairman, I urge all Members to support the bill.

I would like to point out that NSF-funded research has also directly benefited America’s effort in response to the events of 9/11—supporting emergency grants pioneering the use of genomics as a tool in forensic analysis of microbes after last October’s anthrax attacks. Also, an NSF-funded robotics grant led to development of guided robots that were used successfully to search the rubble and locate victims at the World Trade Center Disaster site.

NSF research has also led to faster computer Magnetic Resonance Imaging the Internet. Discoveries of new polymers materials that are used in products ranging from clothing to automobiles; Doppler radar used in physics, chemistry, and economics. Since

Mr. Chairman, I strongly believe that investing in basic science, math, and engineering research is essential to the future economic prosperity and global competitiveness of our country and an important investment for the future. For these reasons, I support this legislation and urge my colleagues to do the same.

Mr. UDALL of Colorado. Mr. Chairman, as a cosponsor of H.R. 4664, I rise in support of this important bill that will put the National Science Foundation on a track to double its budget in five years.

The National Science Foundation’s innovative education programs work to ensure that every American student receives a solid foundation in science and math through support for the training and education of teachers, the public, and students of all ages and backgrounds, and by supporting research into new teaching tools, curricula, and methodologies.

Mr. WELDON of Pennsylvania. Mr. Chairman, I rise to voice my concern over this legislation that will double the National Science Foundation’s (NSF) budget in five years. I feel that while we have also used to support double NSF at the National Institutes of Health (NIH) and now NSF, this committee has neglected NASA. I am supportive of our commitment to NSF and have a history of such support. At this time, however, given the lack of attention this committee has given NASA, I cannot support this particular piece of legislation. NASA’s budget has been neglected for over a decade. When one considers inflation, the NASA budget is not keeping pace. This sends the wrong message. As a medical doctor and scientist, I very much appreciate the work that NASA has done. However, NASA out in the cold I feel is the wrong approach. No other agency has such a daring, exciting and public mission. It is time we treated NASA as a valued Federal agency instead of letting it wither on the vine.

Mr. COTTESTOLO. Mr. Chairman, I rise today in support of H.R. 4664, the Investing in America’s Future Act. Past investment in fundamental scientific research has fueled growth of our economy, trained our technological workforce, and provided the research needed for national security. It is time to ensure our future prosperity and security by recognizing the important work performed by the National Science Foundation (NSF), the only agency devoted to supporting basic science research in science, math, and engineering across all fields and science and math education at all levels.

This legislation will double the NSF’s budget over the next five years. Increasing funding for the NSF demonstrates the recognition of the lasting benefits that basic research provides to our economic and national security. The increase would also be used to expand current programs to fund highly ranked grant proposals, pursue new initiatives like nanotechnology and biocomplexity, and fully fund K–12 education programs that have been authorized by the House of Representatives. In addition, the bill provides greater transparency to the process through which major research and facilities construction projects are evaluated, prioritized, and selected for funding by requiring the Director to develop a research and facilities construction project list that identifies the priority of each for funding. This will allow Congress and NSF to expand its investments in cutting-edge research initiatives and to preserve its core research and education programs.

Mr. Chairman, I believe that investing in basic science, math, and engineering research is essential to the future economic prosperity and global competitiveness of our country and an important investment for the future.
H.R. 4664, the Investing in America's Future Act of 2002

I would like to take this opportunity today to voice my strong support for this legislation.

This legislation authorizes additional funding to a very important organization, the National Science Foundation. The bills directs NASA to jointly establish an Astronomy and Astrophysics Advisory Committee to assess and provide recommendations regarding the coordination of astronomy and astrophysics programs at each agency. This is one of the several provisions in this bill that would strengthen NASA. NASA plays a huge role in the 18th Congressional District, as many of my constituents are employed there.

The continued development of this nation's science program ought to be one of this nation's top priorities. By establishing a joint committee on astronomy to assess coordination of astronomy programs between the agencies and to assess the activities of the agencies relative to recommendations of the survey conducted by the National Academy of Sciences, this bill would further make the science program accountable to Congress.

As a member of the Science Committee, I can attest to the fact that we have held numerous hearings investigating and asking relevant questions on how to best fund the NSF and how to best make it accessible and accountable to Congress.

By focusing directly on the research initiatives such as information technology, nanoscale science and engineering, and mathematical sciences, as well as the Major Research Instrumentation program, H.R. 4664 further enhances the research and education departments of the National Science Foundation.

Let me also voice my strong support for the funding of minority institutions in science education. This provision will open the door for many future scientists to carry the torch for many years to come.

I urge my colleagues to support this legislation.

Mr. BALDWIN. Mr. Chairman, I rise in strong support of this legislation, which will reauthorize the National Science Foundation for the next three years. This bill is of the highest priority to me and to many colleges and universities in my district. I've already heard from students, professors and administrators from the University of Wisconsin who have told me that a lack of serious commitment to science funding and research would not only stunt the growth and education of many qualified students, but would also seriously cripple some of their most critical research efforts. This is why I'm delighted with the commitment in this legislation to increase NSF funding by 15 percent each year for the next three years. This commitment is similar to the highly successful funding commitment that doubled the National Institutes of Health budget over the past five years.

The NSF funds 25% of the basic research conducted in universities across the nation, and a considerably higher percentage in selected fields. The NSF funds 425 grants for well over $60 million at the University of Wisconsin-Madison alone, helping to make UW-Madison one of the top research universities in the country. NSF grants and fellowships also help train over 24,000 graduate students each year, many of whom go on to make major contributions in academia and industry.

University research funded by the NSF trains new generations of scientists and engineers, but without the type of funding increase outlined in this legislation, universities will be forced to limit the number of graduate students that they are able to admit to these programs.

One example of a thriving NSF project in my district is the IceCube Neutrino telescope, which is headed by UW-Madison. When completed, this groundbreaking new telescope will look deep into the universe in entirely new and innovative ways that traditional telescopes cannot. It is truly on the cutting edge of astronomical research and will allow us to view the universe in an entirely new and innovative manner. Furthermore, IceCube has been subjected to exhaustive peer review and is one of many shining examples of the sound science and basic research that the NSF successfully fosters.

It is my sincere hope that funding levels outlined in this legislation are met when it comes time to fund the NSF. Science funding for research should be and often is a result of bipartisanship. This is the case today. In that spirit, I urge a yes vote on this legislation and urge appropriators to fully fund the NSF at these new levels.

Mr. LARSON of Connecticut. Mr. Chairman, I rise today in strong support of a bill designed to ensure the continued well-being, and institutional sustainability and standard of living of all Americans, the Investing in America's Future Act, H.R. 4664. The bill accomplishes this by putting the nation’s premier science agency, the National Science Foundation, on track to double its budget in five years.

Mr. Chairman, it is no secret that America has long recognized that its long-term strength and security, and its ability to recover and sustain high levels of economic growth, depends on maintaining its edge in scientific achievement and technological innovation. Biomedical advances have permitted us to live longer, healthier, and more productively. Advances in agriculture technology have permitted us to be able to feed more people at a cheaper cost. The information revolution can be seen today in the advances that schools are using to instruct our children and in the vast information resources that are opened up as a result of the linkages created by a networked global society. Our children today can grow up to know, see, and read more, be more diverse, and have more options in their lives for learning and growing. Other emerging technologies—such as nanotechnology—have untold potential to make our lives more existing, secure, prosperous, and challenging.

Many companies also recognize this and they, in their own way, are investing in industrial, economic, and security policies on the nurturing and diffusion of technological advancement through all levels of society in a deliberate fashion. Countries that follow this path of nurturing innovation focus a lot of their efforts into recruiting and training the very best engineers and scientists, ensuring that a pipeline which pumps talented and imaginative minds and skills is connected to the needs of the country’s socio-economic and security enterprise.

It always pays to be mindful of the fact—especially in the wake of the September 11th events—that there is a strong and tight linkage between our national security and the level of science and technology proficiency in America. Our strength and leadership in the world is based on the might of our defense, strength of our economy, and the quality of our education system. Without any one of these three components the global preeminence of the nation suffers. These three components are, in turn, maintained on a foundation of strong research in the basic sciences and technological innovation, which keeps the engines of progress moving forward.

To remain a strong nation, we must ensure that the single most important element that keeps us dynamic, innovative, prosperous, and secure—and therefore strong—is there for us: our science and technology enterprise. In short, we need to support the NSF and we need to support this bill.

I am honored to be a sponsor of this important legislation in the United States House of Representatives and I urge my colleagues to support it.

Mr. SCHIFF. Mr. Chairman, I rise today in support of H.R. 4664, the “Investing in America's Future Act.” This bill reauthorizes the National Science Foundation (NSF) for three years, increasing its funding by 15% each year. Today we are taking an important step forward by enhancing our commitment to our nation’s science enterprise and setting a long- term goal of doubling the budget of NSF.

The National Science Foundation is the only Federal agency devoted to supporting basic research in science, math, and engineering across all fields and science and math education at all levels. In fact, NSF funds 25% of the basic research conducted in U.S. universities, and a considerably higher percentage in selected fields. NSF grants and fellowships help train over 24,000 graduate students each year, many of whom go on to make major contributions in academia and industry.

My district is home to one of our nation's premier scientific research institutions, the California Institute of Technology (Caltech), and one of the most prominent beneficiaries of NSF grant funding. In fiscal year 2001, Caltech received 31% of its federal agency research support from NSF, totaling near $44 million. And Caltech is not alone. In fiscal year 1999, NSF provided 16% of the total federal research and development funds provided to ALL California universities, an impressive sum of $367 million.

By increasing NSF funding, we will enable this fine institution to expand core science programs, fund highly ranked grant proposals that otherwise go unfunded, and pursue new initiatives such as nanotechnology and bio-complexity. We must continue to support the backbone of our new economy—fundamental scientific research and education—by supporting the National Science Foundation and its many groundbreaking endeavors.

I urge my colleagues to support H.R. 4664 and to remain steadfast in our commitment to our nation’s science enterprise.

Mr. Chairman, I yield back the balance of my time.

The CHAIRMAN pro tempore (Mr. BONILLA). All time for general debate has expired.

Pursuant to the rule, the committee amendment in the nature of a substitute printed in the bill shall be considered by sections as an original bill for the purpose of amendment and each section is considered read.

During consideration of the bill for amendment, the Chair may accord priority in recognition to a Member offering an amendment that he has printed
in the designated place in the Congressional Record. Those amendments will be considered read.

The Clerk will designate section 1. The text of section 1 is as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.
This Act may be cited as the ‘Investing in America’s Future Act of 2003’.

The CHAIRMAN pro tempore. There are any amendments to section 1?
Mr. EHLERS. Mr. Chairman, I ask unanimous consent that the remainder of the committee amendment in the nature of a substitute be printed in the Record and open to amendment at any point.

The CHAIRMAN pro tempore. Is there objection to the request of the gentleman from Michigan?
There is none.

The text of the remainder of the committee amendment in the nature of a substitute is as follows:

SEC. 2. DEFINITIONS.
In this Act:

(1) BOARD.—The term ‘Board’ means the National Science Board established under section 2 of the National Science Foundation Act of 1950 (42 U.S.C. 1862a).

(2) DIRECTOR.—The term ‘Director’ means the Director of the National Science Foundation.

(3) FOUNDATION.—The term ‘Foundation’ means the National Science Foundation.

(4) INSTITUTION OF HIGHER EDUCATION.—The term ‘institution of higher education’ has the meaning given that term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(5) NATIONAL RESEARCH FACILITY.—The term ‘national research facility’ means a research facility funded by the Foundation which is available, subject to appropriate policies allowing use, for use by all scientists and engineers affiliated with research institutions located in the United States.

(6) UNITED STATES.—The term ‘United States’ means the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other territory or possession of the United States.

SEC. 3. AUTHORIZATION OF APPROPRIATIONS.
(a) FISCAL YEAR 2003.—

(1) IN GENERAL.—There are authorized to be appropriated to the National Science Foundation $5,515,260,000 for fiscal year 2003.

(2) SPECIFIC ALLOCATIONS.—Of the amount appropriated under paragraph (1)—

(A) $210,360,000 shall be made available for Salaries and Expenses; and

(B) $8,060,000 shall be made available for the Office of Inspector General.

(b) FISCAL YEAR 2004.—

(1) IN GENERAL.—There are authorized to be appropriated to the National Science Foundation $6,342,590,000 for fiscal year 2004.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized under paragraph (1)—

(A) $4,735,600,000 shall be made available to carry out Research and Related Activities, of which—

(i) $774,000,000 shall be for networking and information technology research;

(ii) $286,140,000 shall be for the Nanoscale Science and Engineering Priority Area;

(iii) $90,090,000 shall be for the Mathematical Sciences Priority Area; and

(iv) $85,000,000 shall be for Major Research Instrumentation;

(B) $1,157,190,000 shall be made available for Education and Human Resources, of which $50,000,000 shall be for the Advanced Technological Education Program established under section 3 of the Scientific and Advanced-Technology Act of 1992 (42 U.S.C. 1862c);

(C) $225,000,000 shall be made available for Major Research Equipment and Facilities Construction;

(D) $216,460,000 shall be made available for Salaries and Expenses; and

(E) $8,300,000 shall be made available for the Office of Inspector General.

(c) FISCAL YEAR 2005.—

(1) IN GENERAL.—There are authorized to be appropriated to the National Science Foundation $7,293,930,000 for fiscal year 2005.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized under paragraph (1)—

(A) $5,445,940,000 shall be made available to carry out Research and Related Activities, of which—

(i) $774,000,000 shall be for networking and information technology research;

(ii) $286,140,000 shall be for the Nanoscale Science and Engineering Priority Area;

(iii) $90,090,000 shall be for the Mathematical Sciences Priority Area; and

(iv) $85,000,000 shall be for Major Research Instrumentation;

(B) $1,006,250,000 shall be made available for Education and Human Resources, of which—

(i) $774,000,000 shall be for networking and information technology research;

(ii) $286,140,000 shall be for the Nanoscale Science and Engineering Priority Area;

(iii) $90,090,000 shall be for the Mathematical Sciences Priority Area; and

(iv) $85,000,000 shall be for Major Research Instrumentation;

(C) $225,000,000 shall be made available for Major Research Equipment and Facilities Construction;

(D) $222,960,000 shall be made available for Salaries and Expenses; and

(E) $8,850,000 shall be made available for the Office of Inspector General.

SEC. 4. OBLIGATION OF MAJOR RESEARCH EQUIPMENT FUNDS.

(a) FISCAL YEAR 2003.—Of the funds authorized under section 3(a)(2)(C) may be obligated until 30 days after the first report required under section 7(a)(2) is transmitted to the Congress.

(b) FISCAL YEAR 2004.—None of the funds authorized under section 3(b)(2)(C) may be obligated until 30 days after the report required by June 15, 2003, under section 7(a)(2) is transmitted to the Congress.

(c) FISCAL YEAR 2005.—None of the funds authorized under section 3(c)(2)(C) may be obligated until 30 days after the report required by June 14, 2004, under section 7(a)(2) is transmitted to the Congress.

SEC. 5. ANNUAL PLAN FOR ALLOCATION OF FUNDS.

Not later than 60 days after the date of enactment of legislation providing for the annual appropriation of funds for the Foundation, the Director shall submit to the Committee on Science of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Health, Education, Labor, and Pensions of the Senate, a plan for the allocation of funds authorized by this Act for the corresponding fiscal year. The portion of the plan pertaining to Research and Related Activities shall include a description of how the allocation of funding—

1. will affect the average size and duration of research grants supported by the Foundation by field of science and engineering;

2. will affect trends in research support for major fields and subfields of science, mathematics, and engineering, including for emerging multidisciplinary research areas; and

3. is designed to achieve an appropriate balance among major fields and subfields of science, mathematics, and engineering.

SEC. 6. PROPORTIONAL REDUCTION.

(a) OVERALL AMOUNTS.—If the amount appropriated pursuant to section 3(a)(1), (b)(1), or (c)(1) is less than the amount authorized under that paragraph, the amount available under each subparagraph of paragraph (2) of that subsection shall be reduced by the same proportion.

(b) RESEARCH AND RELATED ACTIVITIES AMOUNTS.—If the amount appropriated pursuant to section 3(a)(2)(A) or (b)(2)(A) is less than the amount authorized under that subparagraph, the amount available under each clause of that subparagraph shall be reduced by the same proportion.

SEC. 7. NATIONAL RESEARCH FACILITIES.

(a) PRIORITIZATION OF PROPOSED MAJOR RESEARCH EQUIPMENT AND FACILITIES CONSTRUCTION.

(1) DEVELOPMENT OF PRIORITIES.—

(A) LIST.—The Director shall develop a list indicating by number the relative priority for funding under the Major Research Equipment and Facilities Construction account.

(B) UPDATES.—The Director shall update the list prepared under paragraph (1) each time the Board approves a new project that would receive funding under the Major Research Equipment and Facilities Construction account.

(2) ANNUAL REPORT.—Not later than 90 days after the date of enactment of this Act, and not later than each June 15th thereafter, the Director shall transmit to the Congress a report containing—

(A) the most recent Board-approved priority list developed under paragraph (1); and

(B) a description of the criteria used to develop such list; and

(C) a description of the major factors for each project that determined its ranking on the list, based on the application of the criteria described pursuant to subparagraph (B).

(3) CRITERIA.—The criteria described pursuant to paragraph (2)(B) shall include, at a minimum—

(A) scientific merit;

(B) broad societal need and probable impact;

(C) consideration of the results of formal prioritization efforts by the scientific community;

(D) readiness of plans for construction and operation;

(E) international and interagency commitments; and

(F) the order in which projects were approved by the Board for inclusion in a future budget request.

(b) FACILITIES PLAN.—

(1) IN GENERAL.—Section 261(a)(1) of the National Science Foundation Authorization Act of 1998 (42 U.S.C. 1862a(a)(1)) is amended to read as follows:

1. ‘‘(1) IN GENERAL.—The Director shall prepare, and include as part of the Foundation’s annual budget request to Congress, a plan for the prioritization of proposed construction of, and spending on, equipment and facilities, and for the construction and operation of, national research facilities, including full life-cycle cost information.’’;

(2) CONTENTS OF PLAN.—Section 261(a)(2) of the National Science Foundation Authorization Act of 1998 (42 U.S.C. 1862a(a)(2)) is amended—

(A) in subparagraph (A), by inserting ‘‘, including costs for instrumentation development’’ after ‘‘described in paragraph (1)’’;

(B) by striking ‘‘and at the end of subpara-
and the status of the activities of the Foundation and the National Aeronautics and Space Administration as they relate to the recommendations contained in the National Research Council’s 2001 report entitled “Astronomy and Astrophysics in the New Millennium”, and the recommendations contained in subsequent National Research Council reports of a similiar nature.

3. not later than March 15 of each year, transmit a report to the Director, the Administration as the term ‘full-life cycle cost’ means all costs of development, procurement, construction, operations and support, and shut down costs, without regard to funding source and without regard to what entity manages the project.”;

3. (c) PROJECT MANAGEMENT.—No national research facility project funded under the Major Research Instrumentation and Facilities Construction account shall be managed by an individual whose appointment to the Foundation is temporary.

SEC. 8. MAJOR RESEARCH INSTRUMENTATION.
The Foundation shall conduct a review and assessment of the Major Research Instrumentation Program and provide a report to Congress on its findings and recommendations within 1 year of the date of enactment of this Act. The report shall include—

1. estimates of the needs, by major field of science and engineering, of institutions of higher education for the types of research instrumentation that are eligible for funding under the guidelines of the Major Research Instrumentation Program;

2. the distribution of awards and funding levels by year and by major field of science and engineering for the Major Research Instrumentation Program, since the inception of the Program; and

3. an analysis of the impact of the Major Research Instrumentation Program on the research instrumentation needs that were documented in the Foundation’s 2004 survey of academic research instrumentation needs.

SEC. 9. ASTRONOMY AND ASTROPHYSICS ADVISORY COMMITTEE.
(a) ESTABLISHMENT.—The Foundation and the National Aeronautics and Space Administration shall jointly establish an Astronomy and Astrophysics Advisory Committee (in this section referred to as the Committee).

(b) DUTIES.—The Committee shall—

1. assess and make recommendations regarding the coordination of astronomy and astrophysics programs of the Foundation and the National Aeronautics and Space Administration;

2. assess and make recommendations regarding the status of the activities of the Foundation and the National Aeronautics and Space Administration as they relate to the recommendations contained in the National Research Council’s 2001 report entitled “Astronomy and Astrophysics in the New Millennium”, and the recommendations contained in subsequent National Research Council reports of a similar nature;

3. not later than March 15 of each year, transmit a report to the Director, the Administration as the term ‘full-life cycle cost’ means all costs of development, procurement, construction, operations and support, and shut down costs, without regard to funding source and without regard to what entity manages the project.”;

4. (c) PROJECT MANAGEMENT.—No national research facility project funded under the Major Research Instrumentation and Facilities Construction account shall be managed by an individual whose appointment to the Foundation is temporary.

SEC. 8. MAJOR RESEARCH INSTRUMENTATION.
The Foundation shall conduct a review and assessment of the Major Research Instrumentation Program and provide a report to Congress on its findings and recommendations within 1 year of the date of enactment of this Act. The report shall include—

1. estimates of the needs, by major field of science and engineering, of institutions of higher education for the types of research instrumentation that are eligible for funding under the guidelines of the Major Research Instrumentation Program;

2. the distribution of awards and funding levels by year and by major field of science and engineering for the Major Research Instrumentation Program, since the inception of the Program; and

3. an analysis of the impact of the Major Research Instrumentation Program on the research instrumentation needs that were documented in the Foundation’s 2004 survey of academic research instrumentation needs.

SEC. 9. ASTRONOMY AND ASTROPHYSICS ADVISORY COMMITTEE.
(a) ESTABLISHMENT.—The Foundation and the National Aeronautics and Space Administration shall jointly establish an Astronomy and Astrophysics Advisory Committee (in this section referred to as the Committee).

(b) DUTIES.—The Committee shall—

1. assess and make recommendations regarding the coordination of astronomy and astrophysics programs of the Foundation and the National Aeronautics and Space Administration;

2. assess and make recommendations regarding the status of the activities of the Foundation and the National Aeronautics and Space Administration as they relate to the recommendations contained in the National Research Council’s 2001 report entitled “Astronomy and Astrophysics in the New Millennium”, and the recommendations contained in subsequent National Research Council reports of a similar nature;

3. not later than March 15 of each year, transmit a report to the Director, the Administration as the term ‘full-life cycle cost’ means all costs of development, procurement, construction, operations and support, and shut down costs, without regard to funding source and without regard to what entity manages the project.”;

4. (c) PROJECT MANAGEMENT.—No national research facility project funded under the Major Research Instrumentation and Facilities Construction account shall be managed by an individual whose appointment to the Foundation is temporary.

SEC. 8. MAJOR RESEARCH INSTRUMENTATION.
The Foundation shall conduct a review and assessment of the Major Research Instrumentation Program and provide a report to Congress on its findings and recommendations within 1 year of the date of enactment of this Act. The report shall include—

1. estimates of the needs, by major field of science and engineering, of institutions of higher education for the types of research instrumentation that are eligible for funding under the guidelines of the Major Research Instrumentation Program;

2. the distribution of awards and funding levels by year and by major field of science and engineering for the Major Research Instrumentation Program, since the inception of the Program; and

3. an analysis of the impact of the Major Research Instrumentation Program on the research instrumentation needs that were documented in the Foundation’s 2004 survey of academic research instrumentation needs.

SEC. 9. ASTRONOMY AND ASTROPHYSICS ADVISORY COMMITTEE.
(a) ESTABLISHMENT.—The Foundation and the National Aeronautics and Space Administration shall jointly establish an Astronomy and Astrophysics Advisory Committee (in this section referred to as the Committee).

(b) DUTIES.—The Committee shall—

1. assess and make recommendations regarding the coordination of astronomy and astrophysics programs of the Foundation and the National Aeronautics and Space Administration;

2. assess and make recommendations regarding the status of the activities of the Foundation and the National Aeronautics and Space Administration as they relate to the recommendations contained in the National Research Council’s 2001 report entitled “Astronomy and Astrophysics in the New Millennium”, and the recommendations contained in subsequent National Research Council reports of a similar nature;

3. not later than March 15 of each year, transmit a report to the Director, the Administration as the term ‘full-life cycle cost’ means all costs of development, procurement, construction, operations and support, and shut down costs, without regard to funding source and without regard to what entity manages the project.”;
Mr. SMITH of Michigan. Mr. Chairman, I rise in support of my colleague from Michigan. Ms. WOOLSEY. Mr. Chairman, I offer an amendment.

Mr. SMITH. The amendment is as follows: Amendment offered by Ms. WOOLSEY:

At the end of section 3, add the following new subsection:

(d) Biosafety Research—Of the amount authorized under subsection (a)(2)(A), $15,000,000, and of the amount authorized under subsection (b)(2)(A), $20,000,000, shall be available to conduct fundamental research in areas related to assessing bio-safety. For purposes of this subsection, the term ‘biosafety’ means safety with respect to the effects of biological research on organisms and the environment.

Ms. WOOLSEY. Mr. Chairman, my amendment seeks to expand educational opportunities for working Americans in the sciences, mathematics, and engineering.

Ms. WOOLSEY. Mr. Chairman, I ask unanimous consent that the amendment be considered as read and printed in the RECORD.

Mr. SMITH. Mr. Chairman, I ask unanimous consent that the amendment be considered as read and printed in the RECORD.

Mr. SMITH. Mr. Chairman, I ask unanimous consent that the amendment be considered as read and printed in the RECORD.

Ms. WOOLSEY. Mr. Chairman, my amendment establishes a research program within the National Science Foundation to address a significant gap of knowledge on biosafety, a gap of knowledge that must be filled. The amendment establishes the Biosafety Research Program, so we can understand in scientific terms the effects of altering biological systems. It funds the basic science needed to understand the effects of introducing new plant and animal varieties through both traditional breeding techniques and through new methods of biotechnology in our agriculture, horticulture and aquaculture systems.

For thousands of years we have experimented with plants, animals, microbes, and ecological systems in an effort to improve the human condition. But through the development of food and fiber, medicines and other materials essential to our well-being.

Essentially, we have been moving our biological system around, sometimes intentionally, sometimes not intentionally.

Here I use the term “biological systems” in the broadest sense. A biological system could be a set of genes, a whole organism, an ecosystem, or a group of ecosystems that co-exist in the landscape. It is no secret, Mr. Chairman, that a contentious debate has surrounded the introduction of biotechnology products. The debate has been characterized more by statements of hope by the advocates and fear from opponents than by science-based information. It is time we replace the rhetoric, the rhetoric on both sides, with a firm understanding of how these varieties are likely to operate in the real world.

With the adoption of my amendment, the Biosafety Research Program will provide an identifiable pool of research funds for scientists to ask the basic research questions that could prevent unintended scenarios. I want my colleagues to know that this program will not fund risk assessment. It will not fund monitoring or the evaluation of risk-management strategies. The activities that are authorized by the program are not within the NSF mission. They are and should be supported by programs at USDA, EPA, and FDA, the entities charged with reviewing and regulating products being introduced into the market.

The program my amendment creates in NSF is not a substitute for increased funding in these other agencies; however, I do believe that the applied research programs of these agencies need to be increased also to address the questions the public is asking about these new products.

Before I close, Mr. Chairman, I want to call attention to several recent reports from the National Academy of Sciences on invasive species and community ecology of the target pests should be conducted, so that more ecologically and evolutionary sustainable approaches to pest control with pest-resistant plants can be developed. Knowledge of pests’ roles in the larger biological community (for example, their role as food sources for non-target organisms or their roles as predators of other agriculturally relevant pests) will allow us to anticipate better the indirect effects of declines in the pests due to both conventional and transgenic pest-protected plants. Knowledge of the pest population biology will enable prediction of the types of pest-protection mechanisms that would most effectively reduce the threat to host plants and help us to design more accurate resistance management plans.

Research to assess gene flow and its potential consequences should be conducted... more ecological and agricultural research is needed on the following: weed distribution and abundance (past and present), key factors that regulate weed population dynamics in managed and unmanaged areas, the likely impact of specific, novel resistance traits on weed abundance in managed and unmanaged areas, and rates at which resistance genes from the crop would be likely to spread among weed populations.” (p. 140–141 NAS 2000)

RECOMMENDATIONS

“...In cases where crucial scientific data are lacking about the potential impacts of gene
flow on wild or weedy relatives, the committee recommends delaying approval of regulation pending sufficient data, establishing a scientifically rigorous monitoring program, and checking for undesirable effects of resistance transgenes after the transgenic pest-protected plant is commercialized, or restricting the initial areas where the plants can be grown.” (p. 141–142 NAS 2000)

“APHIS jurisdiction has been restricted to the U.S. borders. However, in an era of global environmental effects of transgenic crops on the ecosystems of developing countries will be an important component of the debate. As through the effects of the Green Revolution varieties of wheat and rice, novel crops often have indirect effects on the environment. These indirect effects can occur because the new crop traits enable changes in other agricultural practices and technologies that impact the environment. They also can indirectly affect vertical integration of agriculture and the equal access to food. Society cannot ignore the fact that people who lack food security often cause major effects on both agricultural and environmental environments, so in a broad context the positive or negative effects of transgenes on human well-being can be seen as an environmental effect.

Environmental impacts raised by some of the first transgenic crops (e.g., gene flow, disruption of the genome, non-target effects) could be ameliorated by expanding our knowledge of specific areas of molecular biology, ecology, and socioeconomic. Furthermore, such an expanded knowledge base could lead to the production of transgenic crops that would improve the environment. To increase knowledge in relevant areas the committee recommends substantial increases in public-sector investment in research areas such as improved methods in precommercialization testing; (2) improvement in transgenic methods that will minimize risks; (3) research to identify transgenic plants traits that would provide environmental benefits; (4) research to develop transgenic plants with such traits; (5) research to improve the environmental risk characterization processes; and (6) research on the social, economic, and value-based issues affecting environmental impacts of transgenic crops.” (p. 16 NAS 2002)

“The committee cannot presently judge whether extensive commercialization of transgenic—ants, weeds, or other agriculturally important traits—will significantly perturb agroecosystems or neighboring ecosystems because of major gaps in our knowledge of these systems.” (p. 22 NAS 2002)

“The committee finds, . . . that specific types of transgenic and conventional crops can pose unique environmental hazards. Also, the committee finds that there are good arguments for regulating all transgenic crops. To be effective such a regulatory system must have an efficient and accurate method for identifying the unregulated transgenic crops to separate those that require additional regulatory oversight from those that do not.” (p. 52 NAS 2002)

“Perhaps more than anything else, the experience with commercialization of transgenic crops has revealed gaps in the knowledge base for understanding and measuring the real risks of transgenic crop traits. The impact or effect of a gene trait, irrespective of whether recombinant DNA technologies have been applied.” (p. 215 NAS 2002)

“Funding research support in the United States for the study of environmental impacts of transgenic plants has been sparse. p. 255 NAS 2002

In reference to USDA’s Biotechnology Risk Assessment Research Grants program:

“. . . The program has allocated no more than a few million dollars for research each year. Recently, the USDA’s Initiative for Future Agriculture and Food Systems (IFAPS) program provided funding for research, education, and extension on the management of environmental risks of agricultural biotechnology. Both funding limited to short-term, small-scale projects and BRAGP because its focus is only on assessment and because the total amount of funding is so limited.” (p. 23 NAS 2002)

“Recommendation 7.3: Significant public-sector investment in the following research areas: improvement in risk analysis methodologies and protocols; improvement in transgenic methods that will reduce risks and improve benefits to the environment; research to develop and improve monitoring for effects in the environment; and research on the social, economic, and value-based issues affecting environmental impacts of transgenic crops.” (p. 259 NAS 2002)

Mr. Chairman, we all live in a world in which we move things around with increasing frequency and speed. So we must make at least a modest investment in understanding how those movements are likely to affect our world. As the chairman and I have discussed, this committee but to bring it as an amendment to the floor, and I was asked by the majority party to do that. So please be clear, this is not something I did not want to bring to the committee but to bring it as an amendment to the House floor. We are poised now to pass a bill that can move swiftly through both the House and the other body, and I think many of us do not want to add anything that has even the potential to slow our progress.

We have worked on this bill in a bipartisan manner for almost 2 years. The bill passed unanimously in committee because of those bi-partisan discussions. I am not eager to add new issues on the House floor. We are poised now to pass a bill that can move swiftly through both the House and the other body, and I think many of us do not want to add anything that has even the potential to slow our progress. So I urge my colleagues to oppose this amendment. It is unnecessary and could slow passage of an important measure, and I will work with the gentleman from California to ensure that the idea of science she is seeking to protect continues to receive its due from the National Science Foundation.

Ms. WOOLSEY. Mr. Chairman, will the gentleman yield?

Mr. SMITH of Michigan. I yield to the gentlewoman from California.

Ms. WOOLSEY. Mr. Chairman, two things. First, this would have been part of the debate in the committee had I not been asked not to bring it up in committee but to bring it as an amendment to the floor, and I was asked by the majority party to do that. So please be clear, this is not something I did not want to bring to the committee.

Second of all, when my colleague talks about the funding being arbitrary, our decision on this funding came from the same place that our whole committee’s decision to double the funding for NSF came from. We did not know how much money we need. We know we need more, and I know with my amendment we need something. So I want to get started and the
Ms. EDIE BERNICE JOHNSON of Texas. Mr. Chairman, I move to strike the requisite number of words.

I rise in support of this particular amendment, but I would like to ask a specific question relative to an area of research that might be related to this program, and so I offer to the sponsor this question. Is it the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON) and myself does not say we are going in one area or the other. It says do more research. Let us leave that up to the scientific community in deciding how much money should be spent in any particular area of this biological research.

Ms. RIVERS. Mr. Chairman, I move to strike the requisite number of words.

Ms. WOOLSEY. Mr. Chairman, will the gentlewoman yield?

Ms. RIVERS. I yield to the gentlewoman from California.

Ms. WOOLSEY. Mr. Chairman, that is exactly my intention.

Ms. RIVERS. Mr. Chairman, I thank the gentlewoman for her response.

I note that the National Academy of Sciences recently released a report called Biological Invasions of Indigenous Plants and Plant Pests. In that document they state, "In spite of a long history of interest in biological invasion, scientific inquiry in invasion is still nascent. Progress in understanding and predicting invasions will depend on how well the insights of investigators with diverse training can be coalesced and directed to decipher the myriad combinations of immigrant species, new ranges, and novel circumstances that produce a biological invasion. The last 10 years has seen the emergence of a broad consensus that the prediction of biological invasion is a field presenting national need. It will take some time, however, to generate the predictive principles on which policy-makers, regulators, the scientific community, and the public can have confidence."

They go on to say that, "The challenge of constructing a scientific basis for predicting the risk associated with nonindigenous species needs to be met by a significant national effort, including other agencies within the USDA, other branches of the Federal Government responsible for research and land management, agricultural and natural resource agencies of State governments and the scientific community at large."

I am very pleased to support this bill, with some concern or trepidation, be cause in Michigan we have a terrible problem. When the zebras mussels hitched a ride in ship ballast water and were introduced to the Great Lakes and other bodies of water, their populations exploded. These animals are causing widespread ecological and economic damage in my region, and I believe we need much more research to understand the basic biology and ecology of this organism if we are ever to hope to control it.

I also believe that we need much more information to help us identify potentially invasive species before they are introduced to new ecosystems. We could avoid a great deal of harm and expense if we were able to devise means to evaluate the invasiveness of new plants and animals.

I believe that the gentlewoman from California's Ms. WOOLSEY proposal is a sound one that will bring us forward in the debate around invasive species and in general in getting an answer. I urge Members to support this amendment.

Mr. GUTKNECHT. Mr. Chairman, I move to strike the requisite number of words.

Mr. SMITH of Michigan. Mr. Chairman, the gentleman from Michigan (Mr. SMITH) might also be relating to this, but in the biotechnology bill that we passed a couple of weeks ago, we did include over $190 million to USDA, additional funding to the Department of Energy, specifically for this purpose. So that biotechnology bill included a lot of the goals that I hear some of my colleagues on the other side of the aisle suggest we need.

Mr. GUTKNECHT. Mr. Chairman, re claiming my time, I rise in opposition to the amendment, and I know that the author and the supporters of this amendment are very sincere. They feel very strongly about the issues, but I want to clarify something here for the rest of the Members.

We are really not talking about zebra mussels in this amendment, and we are not talking about purple loosestrife. What are we really talking about is whether or not we are going to take actions on the floor of the House of Representatives to limit the amount of research that can be done on biology and new plant species and things that are happening in biotechnology. What that says is we are not spending enough on that area now, and the truth of the matter is there is nothing in this authorization today that would limit the amount that the National Science Foundation could spend on these kinds of programs, but it is, in fact, a way of tinkering. So this is redundant. It is unneeded and, worse than that, it is politicizing what I think has been a very nonpolitical markup and as we have worked through this process.

Historically, we in Congress, I think, have done a very good job of not trying to appropriate our findings into these kinds of decisions. We have had an awful lot of research about biology and new biotechnology, and all of it has come to this same conclusion, and that is, that the work that is being done in both the government-funded labs as well as in both labs, is both safe and has no detrimental impact on the environment.

We have had all kinds of scares. What the authors are trying to do really is they are once again introducing the idea that we can somehow improve the negative. They know that that cannot happen, and this is a toe in the door for some of these researchers to say, well, the answer, of course, is we have to have more money, but understand that in particular our researchers, attempting to disprove a negative which cannot be disproved, when they take more money, it comes at the expense of other important research.

I believe this research is so go forward. I think the USDA, the National Science Foundation, other groups that are doing this kind of research, they are doing it with very good scientists who understand that there are consequences, but more importantly, if we try to limit the work that is done in biotechnology, what we are working on today is developing plant species that can actually cure diseases.

That is amazing. It is wonderful. We should not try to stymie that kind of research. We are developing new plant species which are much more resistant to pests and other problems they might encounter so we can use less in terms of pesticides on those plants. That again is a wonderful discovery.

I also understand the value of the food that we eat today is a result of biotechnology. The Native Americans did a wonderful job in creating what we now know is corn. They actually developed that from what was formerly known as maize. The potato was something that was actually crossbred and developed by the American Indian. All that we enjoy, much of what we enjoy today in terms of things that we take for granted, were developed with biotechnology.

This is a thinly veiled attempt to politicize what has been a very nonpolitical markup and the way that the Congress has dealt with it, I think it is a bad idea. It sets a very bad precedent because if this amendment is adopted, I promise my colleagues we will see more and more amendments by Members attempting to advance a political cause they believe in. I think it is a very big mistake, and I hope the Members will join me in opposing this amendment.

Ms. EDDIE BERNICE JOHNSON of Texas. Mr. Chairman, I move to strike the requisite number of words.
Mr. Chairman. I yield to the gentlewoman from California (Ms. WOOLSEY).

Ms. WOOLSEY. Mr. Chairman, I thank the gentlewoman from Texas for yielding to me. I have two responses to the gentleman from Michigan (Mr. SMITH) on my amendment to his bill.

First in talking about the changes that differed from what my amendment was in committee and to what we have brought to the floor, my changes were based on the committee's objections. So I was prepared to improve upon what we had already talked about.

In the amendment in committee, we had the funding come from a small account in the plant genome program, and now my amendment would allow the NSF director to decide where within in an $11 billion research account my $35 million program could be funded. That is not a lot of money within a large account, and so I wanted to make sure my colleague knew why that had changed.

It was $15 million in the first year of the bill, $20 million in the second year of the bill, and nothing specified in the third year because we have required a report from the NSF with their recommended levels for future years. So we are not assuming beyond the first 2 years.

The gentleman from Michigan (Mr. SMITH) has said that his bill already covers this, his bill that I voted for, H.R. 2051, to establish plant genome research centers which also authorizes research on basic research and dissemination of information on the ecological and other consequences of genetically engineered plants. His does that. My amendment expands upon the gentleman's bill, and my program covers plants and animals that would not be restricted to research on genetically engineered plants and animals. So it expands his good ideas but makes it larger.

Mr. EHLERS of Michigan. Mr. Chairman, I yield the gentleman from Michigan.

Ms. EDDIE BERNICE JOHNSON of Texas. I yield to the gentleman from Michigan.

Mr. SMITH of Michigan. Mr. Chairman, a couple of reactions, one supporting this concept. I am informed that the language of the gentlewoman's amendment limits the amount that can be spent on this effort, and who is to say it should be more, and that the politicians deciding, let us let the scientific community make that decision, not limit it or pre-guess what is the right amount.

I thank the gentlewoman for yielding.

Ms. WOOLSEY. Mr. Chairman. I would like to respond that I think I am sitting on the wrong side of the aisle when it is this side of the aisle who would limit a budget, and it is the gentleman's side of the aisle challenging that.

So this is the beginning of something that the public wants us to do, and I think we are making a great mistake if we do not vote for this because it is the right thing to do, and it is the environmentally friendly thing to do, and it would help our public know what is safe and what is not safe by having scientific studies, not emotional rhetoric, about what is going on with these programs.

Ms. JACKSON-LEE of Texas. Mr. Chairman, I move to strike the requisite number of words.

I rise reluctantly to oppose it, because I think it is ill advised.

Mr. EHLERS. Mr. Chairman, I move to strike the requisite number of words.

Mr. EHLERS. Mr. Chairman, I rise to oppose this amendment. I do not even rise reluctantly to oppose it, because I think it is ill advised.
Mr. CARDIN. I yield to the gentleman from Michigan.

Mr. EHRLERS. Mr. Chairman, will the gentleman continue to yield?

Mr. CARDIN. I yield once again to the gentlewoman from California.

Ms. WOOLSEY. Mr. Chairman, I respond that they are still in NSF, and that is what we are saying. The gentleman is saying we do not identify programs that we invest money in other than just general funds. We do decide what is important under NSF when we choose to.

Mr. ROHRABACHER. Mr. Chairman, I move to strike the requisite number of words.

Mr. Chairman, I rise to oppose the amendment, and let me just say that I have a great deal of fear that the money that is going into science is going to projects that are not the priority. There is evidence of that around. I think the amendment that the gentlewoman is suggesting would lead in that direction and we should be very wary of these earmarks.

What this amendment actually would do is create a situation where money was earmarked for this particular biotechnology type of research and the word would go out that if any one wants to create scares about biotechnology they should come and get their grant because this is what this money is for.

We have seen the same sort of thing happen before. We saw it happen with global warming. My good colleague and friend, the gentlewoman from Texas (Ms. JACKSON-LEE), suggested there has been a"change in administration policy on global warming. Well, I am not sure what that change in policy is, but it is very clear that that issue has been so politicized by the introduction of tax dollars through the various National Science Foundation, NASA, et cetera, that the public has not been getting pure science, but it has been getting politicized science. In the early 1980s, there was a consensus, and in fact there were hearings in this Congress, in our committee, reaffirming the great threat that the global climate change posed to human kind. In the hearings in which the Democratic leaders of the committees at that time, because the Democrats controlled the House, they controlled the committees, made statements about the horrible threat of this global climate change. The only trouble was that they were not talking about and the scientists they brought in to verify it were warning us of global cooling.

Some of those scientists, I might add, are now on the payroll advocating that we have to fear global warming. Now, all of that in a 20-year time period. They reversed themselves on this important issue in a 20-year period. Now, supposedly the global warming trend around the world, the global atmospheric data is, has been going on for thousands and thousands of years, yet they reversed themselves in a 20-year period as to what the government had to emphasize in order to save humankind.

If we had taken their prescriptions, obviously we would have been going in exactly the wrong direction. And I would predict in about 5 years from now there will be some other major revelation to the scientific community, but not grants are given in this way or that way; and we might find that it is neither global warming nor global cooling, but something to do with the Earth on its axis or something going towards the Moon or the sun, or something else we could bill billions of dollars and direct it towards the scientists who will be able to warn us about it.

Let me just note that we have seen the glaciers in our country and other countries receding over 50,000 years now. There has been climate change in the world, and it has been getting warmer for hundreds of thousands of years. Yet in order to prove that humankind in the last 5,000, or actually the last 500 years has caused this global climate change, we are spending billions and billions of science dollars.

We have got to quit politicizing science. This amendment, I believe, goes in exactly the wrong direction. But let me note this. Politicized science is probably the worst threat that we have right now to understanding the actual perils that might face us in the future.

I still remember the "Global 2000 Report" I would recommend that my colleagues read the "Global 2000 Report" that was put out in 1980, financed by course by tax dollars. The "Global 2000 Report," I believe, warned us against global cooling, but my colleagues can check into that. I do not remember that precisely, but do remember they said we would be totally out of oil by the year 2000 and that gasoline would cost about $150 a gallon, or something like that, and all of our nations would be divided. In other words, there was this great threat, this great scare that was put out in the "Global 2000 Report," and every one of their conclusions were wrong, now that we have passed the year 2000. Do my colleagues know why it was wrong? It is because it was politicized science.

I think that we have to, and we are dealing with this committee and we are dealing with our expenditures, we have to go out of our way, bend over backwards, to make sure that we are not politicizing science; that we are not taking up a trendy issue and asking the scientific community to verify it in order...
to get government grants. That is why I would oppose the Woolsey amendment.

Mr. FRANK. Mr. Chairman, I move to strike the requisite number of words.

Ms. WOOLSEY. Mr. Chairman, will the gentleman yield?

Mr. FRANK. I yield to the gentlewoman from California.

Ms. WOOLSEY. Mr. Chairman, I thank the gentleman for yielding to me, and I would like to respond to the gentleman from California when he talks about biotechnology research and global climate reports that our President and his administration put forth a report this weekend to the U.N. acknowledging global climate change, and telling the world to adapt, just get used to it.

Mr. Chairman, what are we going to tell the monarch butterflies when they are having to adapt to genetically modified corn? They cannot adapt. They are dying. We have to look into what this amendment is about. It is rather interesting precedent being set not voting 10, as follows:

The CHAIRMAN pro tempore (Mr. Boehlert). The question is on the amendment as above recorded.

The CHAIRMAN pro tempore. A recorded vote was ordered.

The vote was taken by electronic device, and there were—aye...—aye 259, not voting 10, as follows:

[Roll No. 211]

The CHAIRMAN pro tempore. The gentlewoman withdraws her point of order.

The vote was taken by electronic device, and there were—aye165, not voting 29, as follows:

[Roll No. 211]

The CHAIRMAN pro tempore. The gentlewoman withdraws her point of order.
The SPEAKER pro tempore. The question was taken; and the bill was passed.

So the bill was passed. The result of the vote was announced as not voting.

PERSONAL EXPLANATION

Mr. ORTIZ. Mr. Speaker, on final passage of H.R. 4664, Investing in America's Future Act, I was on the House Floor and cast an "aye" vote for H.R. 4664. I later learned my vote was not recorded. I wanted to advise the House that had my vote been recorded, I would have voted "aye" on final passage for H.R. 4664.

GENERAL LEAVE

Mr. HASTINGS of Washington, Mr. Speaker, I ask unanimous consent that all Members may have 5 legislative days within which to revise and extend their remarks and include extraneous material on H.R. 4664, the bill just passed.

The SPEAKER pro tempore (Mr. SIMPSON). Is there objection to the request of the gentleman from Washington?

There was no objection.

REPORT ON RESOLUTION NO. 218, PERMANENT DEATH TAX REPEAL ACT OF 2001

Mr. HASTINGS of Washington, from the Committee on Rules, submitted a privileged report (Rept. No. 107-494) on the resolution (H. Res. 435) providing for consideration of the bill (H.R. 2143) to make the repeal of the estate tax permanent, which was referred to the House Calendar and ordered to be printed.

ANNOUNCEMENT OF INTENTION TO OFFER RESOLUTION RAISING QUESTION OF PRIVILEGES OF THE HOUSE

Mr. KUCINICH. Mr. Speaker, I give notice of my intention to raise a question of the privileges of the House under rule IX of the rules of the House. The form of the resolution is as follows:

Whereas the President's constitutional duty is to faithfully execute the laws of the United States, and

[Resolution text]

[Resolution text]

[Resolution text]

[Resolution text]