

Testimony of
Richard B. Marchase, Ph.D, President
Federation of American Societies for Experimental Biology

On
FY 2010 Appropriations for the National Science Foundation

Before the
House Committee on Appropriations
Subcommittee on Commerce, Justice, Science, and Related Agencies
Congressman Alan B. Mollohan, Chair
Congressman Frank R. Wolf, Ranking Member

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Mr. Chairman, Mr. Wolf and members of the Subcommittee, thank you for the opportunity to testify before you today, and thank you for your ongoing commitment to science. I am Richard Marchase, President of the Federation of American Societies for Experimental Biology. Also testifying before this committee today are representatives from the American Mathematical Society, American Chemical Society and American Physical Society. **These organizations together represent more than 300,000 scientists, engineers and mathematicians in a diversity of fields, and we are united in our request for an FY 2010 budget for the National Science Foundation (NSF) of \$7 billion.** As you know, NSF is the only federal research agency dedicated to supporting all of fundamental science and engineering, and is the principal source of federal research support in fields such as mathematics, computer science and social science.

NSF also plays a significant role in improving health by advancing medical research: forty-one Nobel Prizes have been awarded to NSF-funded scientists for contributions in physiology or medicine, including the groundbreaking work that lead to the development of magnetic resonance imaging or MRI's. The innovative research projects supported by NSF cover a broad spectrum, and I would like to share a few exciting examples.

In the areas of organ transplant technology, researchers discovered that certain frogs produce an "anti-freeze" that prevents their cells from being damaged by the chemical changes that occur when they are frozen. As a result, these frogs can survive for months in freezing weather even though their major organs have come almost to a halt. Research in this area may lead to technologies that enable human organs to be preserved longer, resulting in improved transplantation success rates.

NSF researchers are also investigating another area of concern for many Americans, the safety of materials used in cars and airplanes. Materials scientists and engineers have invented a super-strong and lightweight metal foam that significantly reduces the force of collisions by absorbing much of the energy of the impact. At a fraction of the weight of bulk steel, this foam has an array of life-saving applications in the automobile, aerospace and health care industries.

Still, NSF's mission is not limited to advancing scientific research: the agency is also committed to achieving excellence in science, technology, engineering, and math education at all levels. NSF supports a wide variety of initiatives aimed at preparing science teachers, developing innovative curricula, and engaging students in the process of scientific discovery. Each year, NSF funding results in grants to more than 200,000 scientists, teachers, and student researchers for cutting-edge projects at thousands of institutions across the country.

Since its creation in 1950, NSF support for research projects across the country has fueled innovation, energized the economy, and improved health and quality of life for all Americans. NSF's strategic plan for the future will ensure that, even as the global science and engineering landscape changes, the U.S. remains at the forefront of the enterprise. In the years ahead, funding for NSF will allow the agency to enhance support that scientists need to advance discovery, promote transformational, interdisciplinary research projects, and foster innovative approaches to science education and training at all levels.

Thank you for the opportunity to offer my support for NSF. I would be pleased to answer any questions the committee has.