



American Society of Agronomy | Crop Science Society of America | Soil Science Society of America

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Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
H-310 Capitol Hill Building
United States House of Representatives
Washington, DC 20515

RE: FY10 Appropriations—Support for National Science Foundation

Dear Chairman Mollohan, Ranking Member Wolf and Members of the Subcommittee:

The **American Society of Agronomy, Crop Science Society of America, Soil Science Society of America (ASA-CSSA-SSSA)** are pleased to submit the following funding recommendations for FY 2010 (FY10). ASA-CSSA-SSSA thank Congress for the significant funding (\$3 billion) for NSF in Public Law 111-5, the American Recovery and Reinvestment Act of 2009. ASA-CSSA-SSSA understand the challenges the House Commerce, Justice, Science, and Related Agencies Appropriations Subcommittee faces with the tight science budget for FY10. We also recognize that the Commerce, Justice, and Science Appropriations bill has many valuable and necessary components, and we applaud the efforts of the Subcommittee to fund critical research through the National Science Foundation (NSF). ASA-CSSA-SSSA recommend the Subcommittee increase FY10 funding for NSF by 7.85% (\$509,496,400) over FY 2009 (FY09) enacted, bringing total funding to \$7.00 billion, the budget allocated to NSF in the President's FY10 Budget Request. This strong level of funding will enable NSF to continue to fund worthy projects that promote transformational and multidisciplinary research, provide needed scientific infrastructure, and contribute to preparing a globally engaged science, technology, engineering, and mathematics workforce.

With more than 25,000 members and practicing professionals, ASA-CSSA-SSSA are the largest life science professional societies in the United States dedicated to the agronomic, crop and soil sciences. ASA-CSSA-SSSA play a major role in promoting progress in these sciences through the publication of quality journals and books, convening meetings and workshops, developing educational, training, and public information programs,

providing scientific advice to inform public policy, and promoting ethical conduct among practitioners of agronomy and crop and soil sciences.

Biological Sciences Directorate

Molecular and Cellular Biosciences (MCB)

The Molecular and Cellular Biosciences division of NSF Biology directorate provides funding for critical research that contributes to the fundamental understanding of life processes at the molecular, subcellular, and cellular levels. Programs such as the ***Microbial Observatories and Microbial Interactions and Processes*** program increase the understanding of microbial distribution in a variety of ecosystems- the first step in evaluating microbial impact on ecosystem function. Furthermore, while we agree that considerable advances investigating interactions between microbial communities and plants have been made, critical gaps do remain requiring additional study to understand the complex, dynamic relationships existing between plant and microbial communities.

Biological Infrastructure (DBI)

The emergence of a bioeconomy requires greater reliance on plants and crops, further expanding their use into the energy sector. To meet the increased demands and develop more robust crops, additional fundamental understanding regarding the basic biology of these crops is needed. The ***Plant Genome Research Program*** (PGRP) accomplishes these objectives by supporting key NSF projects. The *Developing Country Collaborations in Plant Genome Research* program links US researchers with partners from developing countries to solve problems of mutual interest in agriculture and energy and the environment. Additionally, in collaboration with the U.S. Department of Energy and the U.S. Department of Agriculture, the ***Plant Genome Research Program*** has financed the *Maize Genome Sequencing Project* – a sequencing project for one of the most important crops grown globally. Finally, the *International Rice Genome Sequencing Project* published in 2005 the finished DNA blueprint for rice, a crop fundamental to populations worldwide. To continue the discovery of new innovative ways to enhance crop production for a growing population, sustained funding is needed for similar projects.

Geological Sciences Directorate

Atmospheric Sciences (ATM)

Changes in terrestrial systems will have great impact on biogeochemical cycling rates. The Atmospheric Sciences division funds critical programs, such as ***Atmospheric Chemistry***, that increase understanding of biogeochemical cycles. Soils and plants make up one of the largest sinks and sources for several environmentally important elements.

Earth Sciences (EAR)

The Earth Sciences division supports research emphasizing improved understanding of the structure, composition, and evolution of the Earth, the life it supports, and the processes that govern the formation behavior of the Earth's materials. EAR supports theoretical research, including the biological and geosciences, the hydrologic sciences, and the study of natural hazards. An important program funded within this division is the ***Critical Zone Observatories*** which focuses on watershed scale studies that advance

understanding of the integration and coupling of Earth surface processes as mediated by the presence and flux of fresh water.

Engineering Directorate

Chemical, Bioengineering, Environmental and Transport Systems (CBET)

The *Environmental Engineering and Sustainability* program and its *Energy for Sustainability* sub-program supports fundamental research and education in energy production, conversion, and storage and is focused on energy sources that are environmentally friendly and renewable. Most world energy needs are currently met through the combustion of fossil fuels. With projected increases in global energy needs, more sustainable methods for energy production will need to be developed, and production of greenhouse gases will need to be reduced.

Directorate for Education and Human Resources

Division of Graduate Education

ASA-CSSA-SSSA are dedicated to the enhancement of education, and concerned about recent declines in enrollment for many sciences. To remain competitive, scientific fields need to find new, innovative ways to reach students. The programs offered in the Education and Human Resource Directorate accomplish this goal. The *Graduate Teaching Fellows in K-12 Education* program offers graduate students interested in teaching an opportunity to get into the classroom and teach utilizing new innovative methods. Graduate students are the next crop of scientists. Therefore opportunities for study must be increased with the ever-increasing demands of science. Global problems rely on scientific discovery for their amelioration; it is critical that the U.S. continue to be a leader in graduate education. ASA-CSSA-SSSA recommend strong support for the *Integrative Graduate Education and Research Traineeships (IGERT)* program. Because education is the key for our future competitiveness, it is essential that sustainable, long-term support for these and other educational programs be made.

Division of Undergraduate Education

Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive our nation's economy. We support continued, strong funding for this program. The program involves partnerships between academic institutions and employers to promote improvement in the education of science and engineering technicians at the undergraduate and secondary school levels.

NSF-Wide Programs

Dynamics of Water Processes in the Environment

One of our greatest environmental challenges is to ensure an adequate supply and quality of water for human use while maintaining the integrity of natural ecosystems. The economic vitality of the Nation relies on fresh water for agriculture, energy, manufacturing, and other industries. Understanding water dynamics is essential to understanding climate and environmental change. At multiple scales of time and space, water connects physical, geochemical, biological, and ecological processes. Water also links and integrates natural systems with human social systems. ASA-CSSA-SSSA

support the multi-disciplinary, multi-scale research program, *Dynamics of Water Processes in the Environment*.

Climate Change Science Program

The Climate Change Science Program, initiated in 2002, provides the Nation and the world with the science-based knowledge to predict change, manage risk, and take advantage of opportunities resulting from climate change and climate variability. Biological systems are critical to mitigating the impacts and effects of climate change. Additional research is needed to examine potential crop systems, plant traits, wetland properties, and other ecosystem adaptations to help manage climate change. The basic sciences of agro-ecosystems, plant improvement, soils, and riparian and wetland ecology need support as well.

As you lead the Congress in deliberation on funding levels for the National Science Foundation, please consider **American Society of Agronomy, Crop Science Society of America, Soil Science Society of America** as supportive resources. We hope you will call on our membership and scientific expertise whenever the need arises.

Thank you for your thoughtful consideration of our requests. For additional information or to learn more about the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America (ASA-CSSA-SSSA), please visit www.agronomy.org, www.crops.org or www.soils.org or contact ASA-CSSA-SSSA Director of Science Policy Karl Glasener (kglasener@agronomy.org, kglasener@crops.org, or kglasener@soils.org).