



December 19, 2013

The Honorable Lamar Smith  
Chairman  
House Committee on Science, Space, and Technology  
2321 Rayburn House Office Building  
Washington, DC 20515

Dear Chairman Smith:

Thank you for the opportunity to comment on the discussion draft of the Frontiers in Innovation, Research, Science, and Technology Act of 2013 (FIRST Act). The House Science, Space, and Technology Committee has historically spurred the development of a strong national science and technology enterprise by working with the scientific community to create a shared vision for the future and supporting strong and sustained funding to reach these goals. The America COMPETES Acts of 2007 and 2010, which passed with bipartisan support, demonstrate this commitment.

The undersigned organizations hope that, under your leadership, a strong reauthorization bill for the nation's science agencies will again set forth a robust vision to maintain our nation's leadership in science and technology. Simply put, it is vital to our nation's future.

Earlier this year, leading representatives of the business, higher education, and scientific and engineering communities, with support from numerous scientific societies and universities, shared with the House Science, Space, and Technology Committee "Guiding Principles" for reauthorizing key federal research agencies. We continue to support these principles as the best way to grow the nation's science and technology enterprise and welcome the opportunity to work with the Committee to incorporate them into the draft legislation.

Building upon the Guiding Principles as well as the Committee's interest in seeking input into the draft legislation, we offer the following comments. Note that many of the undersigned organizations may have additional comments on other aspects of the discussion draft.

Science Funding: As stated in the Guiding Principles, the scientific community supports "steady and sustained real growth in funding" for major federal research agencies. As an authorizing committee, it is our hope that the Committee will identify what the funding goals should be for a strong and robust research and development infrastructure in this country, recognizing that the appropriations committee will ultimately fulfill its role in setting spending levels based on fiscal necessity.

*The Coalition for National Science Funding (CNSF) is an alliance of over 120 professional societies, universities, and corporations advocating support for the National Science Foundation.*

We recognize that the Committee is operating within the larger context of efforts to reduce the debt and put the country on a sustainable fiscal path. However, the lack of sufficient and sustainable spending levels will jeopardize the growth of the nation's scientific and technology enterprise. Hence, we hope a bipartisan solution can be achieved that provides the critical investments in science and technology needed to support future discoveries and economic growth. To that end, we hope that a final FIRST Act will maintain sustainable and increasing levels of funding that can reflect a long-standing commitment to building a scientific infrastructure that will foster innovation and encourage the next generation to pursue science and engineering careers.

Support for All Science: The Guiding Principles call on this Committee to "make a strong statement that the United States sees funding across all disciplines of basic scientific research as a top national priority" and avoid offsets for any funding increases that could force "significant and potentially detrimental tradeoffs between one field of science and another." While the draft discussion bill states that "the Foundation carries out important functions in supporting basic research in all science and engineering disciplines," the bill also singles out particular areas of science—namely, the social and behavioral sciences—for different treatment under Section 105. The nation needs a foundation of basic science research across all scientific disciplines to remain internationally competitive. We firmly believe that to separate out any area of science -- whether to eliminate, cut funding, or impose restrictions -- undermines scientific progress and undercuts the resolution of important national concerns. We urge the Committee to recognize and make a commitment to supporting all scientific disciplines. As stated in the Guiding Principles, in order "to ensure our national competitiveness, we need to maintain a strong foundation of basic research across all scientific disciplines, from the physical, mathematical and life sciences, to engineering, to the social, economic, and behavioral sciences." The National Science Foundation's (NSF) continued support of the social and behavioral sciences are integral to the nation's overall scientific and research enterprise. Thus, we respectfully request that section 105 be removed.

Research Opportunity and Excellence: The Guiding Principles also note that our nation's research enterprise has been tremendously successful over the decades because: 1) unlike in many other countries, it has remained insulated from political pressures and interference; and 2) key areas of science have been determined by federal agencies and guided by the scientific community through a strong system of merit review and advisory committees. For these reasons, we would like to call to your attention a number of provisions within the discussion draft that may have unintended and detrimental impact to this system.

(a) We are concerned that the language as currently written in Section 104 is overly prescriptive, will add unnecessary burdens to the award process, and will not significantly increase public accountability and transparency beyond policies already being developed by the NSF. First, each member of Congress might, in fact, have their own view on how to define what "is in the national interest" and what is "worthy of Federal funding." Second, scientific progress is made by pursuing questions about the fundamental nature of things, and we are concerned that applying specific criteria at the level of the individual award will stifle the creativity that has led to some of this country's most significant innovations (e.g. knowledge that led to the creation of Google). We respectfully suggest that the Committee state these goals for the portfolio as a whole and allow NSF the flexibility to introduce and implement new processes in line with them. Indeed, NSF recently released Notice No. 135 that describes to Presidents of Universities and Colleges and other Awardee Organizations the agency's efforts to improve accountability and public communications.

The Committee's communications with NSF, the culture of continuous improvement at the science agency, and the outreach to the scientific community should lead to improved policies and processes. The goals laid out for funding grants in points Sec. 104(3)(b)(A) through (F) could support this important step taken by the agency. Specifically, we ask the Committee to state that research grants within portfolios of research are "in the national interest" and "worthy of funding" so long as they achieve any of the goals listed in (A) through (F). We think this will go a long way in achieving the Committee's goals of accountability, while nurturing excellent science.

Also, in Sec. 104, the language requires that NSF publish the justifications before the awards have been made. NSF currently shares funding decisions with the public by publishing summaries after the awards are made, a process that protects the integrity of the review and award process. We encourage the Committee to state that any such justification should be provided at the time of the public announcement of an NSF award.

We encourage the Committee to support this new effort by the NSF to involve the scientific community as the agency works to improve transparency and accountability for the public good.

(b) We are concerned that Section 114(4) requires NSF to establish procedures to ensure that investigators who have received more than five years of NSF funding are only awarded additional grants if they will be contributing "substantial original research." Terminology such as "substantial" and "original" places a greater emphasis on the potential outcome of a research proposal and does not recognize the incremental contribution that specific research results may make to a field of science or the serendipitous nature of unexpected results. While we recognize that the committee is interested in ensuring that innovative ideas are supported during fiscally constrained times, we are concerned that many areas of long-term research that may take decades to reach fruition would not be supported if section 114(4) were to become statute.

(c) Within Section 114(1), Research Grant Conditions, the draft requires NSF to establish procedures to ensure that it does not make awards that duplicate those made to the same investigator by other Federal agencies. We encourage the Committee to make clear that agencies and divisions within agencies may co-fund projects that meet their respective missions. This is especially important as the nature of science is increasingly multidisciplinary and may be relevant to the missions of multiple agencies.

Reducing and Harmonizing Regulations: We applaud the inclusion of language in Section 301 that calls upon OSTP to strive for regulatory efficiency by reviewing and making recommendations on how to harmonize, streamline, and eliminate duplicative Federal regulations and reporting requirements relating to the conduct of scientific research. This language is consistent with the principle outlined in the Guiding Principles calling for the reduction or elimination of unnecessary and duplicative federal regulations and reporting requirements.

In keeping with the principle of harmonization of duplicative regulations across all federal agencies, we would like to express concern about the language included in Section 112 of the draft bill concerning "Misrepresentation of Research Results." Our concern is that the draft bill sets forth new statutory requirements for how NSF deals with issues relating to scientific misconduct. We question the need for these new statutory requirements given that NSF and the NSF Inspector General already have in place a

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very strong policy for dealing with scientific misconduct (45 CFR part 689). The existing policy contains definitions already accepted and broadly understood by the scientific community. These definitions were established based upon an extensive effort previously undertaken by the National Science and Technology Council (NSTC) to establish a uniform and consistent federal policy for dealing with scientific misconduct across all federal agencies (Federal Register, December 6, 2000, Volume 65, Number 235).

We do not feel that Congress should put in statute new and superfluous requirements that deviate from already existing federal policies that harmonize and create uniform rules and related definitions for scientific misconduct across all federal agencies.

STEM Education: The discussion draft is strong in seeking to foster coordination of STEM education programs and ensuring stakeholder input. We thank and applaud the Committee for recognizing the importance of seeking stakeholder input before implementing proposed changes that involve consolidation and/or elimination of existing federal STEM programs. We encourage the Committee to also consider support for efforts to broaden the participation of women and minorities in STEM education.

The discussion draft refers to the creation of a STEM Education Coordinating Office within NSF's Educational and Human Resources Directorate. While coordinating STEM Education programs across the federal government is a laudable goal, we would encourage the committee to authorize such funding as necessary in the final bill to enable this new office to effectively conduct its work.

Both the 2007 and 2010 America COMPETES Acts passed with bipartisan support and we hope that this bill will also have bipartisan support. We welcome the opportunity to work with the Committee in building a strong framework that supports the development of knowledge that will lead to discovery and innovation and keep this country competitive.

Sincerely,

American Anthropological Association  
American Association for the Advancement of Science  
American Educational Research Association  
American Geophysical Union  
American Geosciences Institute  
American Institute of Biological Sciences  
American Mathematical Society  
American Physical Society  
American Physiological Society  
American Political Science Association  
American Psychological Association  
American Rock Mechanics Association  
American Society for Microbiology  
American Society of Agronomy  
American Society of Civil Engineers

American Society of Plant Biologists  
American Sociological Association  
American Statistical Association  
ASME  
Association for Psychological Science  
Association for the Sciences of Limnology and Oceanography  
Association for Women in Mathematics  
Association of American Geographers  
Association of American Universities  
Association of Environmental & Engineering Geologists  
Association of Independent Research Institutes  
Association of Population Centers  
Association of Public and Land-grant Universities  
Association of Research Libraries  
Association of Universities for Research in Astronomy  
Computing Research Association  
Consortium for Ocean Leadership  
Consortium of Social Science Associations  
Cornell University  
Council on Government Relations  
Crop Science Society of America  
Duke University  
Ecological Society of America  
Entomological Society of America  
Federation of Associations in Behavioral & Brain Sciences  
Geological Society of America  
Incorporated Research Institutions for Seismology  
Indiana University  
Linguistic Society of America  
Mathematical Association of America  
Michigan State University  
Michigan Technological University  
National Association of Marine Laboratories  
National Association of State Boards of Geology  
National Cave and Karst Research Institute  
National Ecological Observatory Network (NEON) Inc.  
National Ground Water Association  
National Postdoctoral Association  
National Society of Professional Engineers  
Natural Science Collections Alliance  
New York University  
Paleontological Society  
Penn State University  
Population Association of America  
Society for Industrial and Applied Mathematics  
Society for Neuroscience  
Soil Science Society of America  
SPIE, The International Society for Optics and Photonics

Stanford University  
State University of New York  
Stony Brook University  
The Ohio State University  
The Optical Society  
The Society of Organic Petrology  
The Society of Vertebrate Paleontology  
University of California System  
University of California, Davis  
University of California, Irvine  
University of California, Riverside  
University of California, Santa Barbara  
University of Colorado, Boulder  
University of Illinois  
University of Illinois at Chicago  
University of Illinois at Urbana-Champaign  
University of Kansas  
University of Kentucky  
University of Michigan  
University of Oregon  
University of Pennsylvania  
University of Washington  
University of Wisconsin - Madison  
Vanderbilt University  
West Virginia University  
Woods Hole Oceanographic Institution

cc: Members of the House Committee on Science, Space, and Technology