Testimony of
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The National Science Board (NSB) is the policy-making and governance board for the National Science Foundation and also is legislatively charged to recommend and encourage the pursuit of national policies to promote research and education in science and engineering. We undertook our report on *Reducing Investigators' Administrative Workload for Federally Funded Research* out of concern that U.S. scientists are dealing with heavy administrative workloads and that that these administrative burdens interfere with their research productivity.

I hasten to add that the NSB is absolutely committed to the principle that research must be conducted with integrity, safety, and full accountability. Administrative compliance requirements are extremely important to ensure adherence to these principles. However, it is equally important that regulations and compliance mechanisms are structured and implemented so as to achieve their intended purposes without creating unnecessary burdens. The costs should not outweigh the oversight benefits.

Our point of view in this undertaking was to consider the effects of administrative requirements on scientists per se rather than on the costs to their institutions. As you probably know, other organizations have taken a more institutional focus. As stewards for the health of the nation's scientific enterprise, the NSB felt it crucial that someone also examine how we may be hindering the productivity and creativity of the scientists themselves.

I have personally been concerned with these problems since the late 1990's when I served as the Associate Director for Science in the Office of Science and Technology Policy (OSTP). At that time, I oversaw a major effort to harmonize regulatory and administrative requirements across our federal research agencies in order to reduce the heavy administrative burden on scientists. We worked for three years with some success, but regulations have continued to proliferate and diverge since that time.

One of the lessons I learned while working on harmonization is that, given the number of agencies and stakeholders involved, it takes a lot of patience, persistence, and hard work to achieve even small successes. Each regulation and requirement was instituted to achieve some worthwhile purpose. Across

agencies and over time, though, the variations in requirements add up to mountains of overlapping-but-divergent forms, electronic systems, rules, and restrictions.

If we can free up researcher time by harmonizing and simplifying regulations, they will have more time and mental energy for scientific and educational undertakings and taxpayers will be able to support more and better research per dollar of investment. For example, when scientists know they will be following the same reporting formats for all their federal grants, thanks to the new uniform Research Performance Progress Report, they will spend less time reading reporting guidance and formatting requirements, learning to use agency software, and deciding what should be included and how best to present the relevant information. If they can more efficiently do these tasks, which are required at least annually for all federally supported projects, they will have more time for their substantive work.

To prepare our report, the NSB issued an open request for information to the U.S. research community. We received input from more than three thousand researchers and research administrators. This was analyzed and compared with other surveys and reports, such as those conducted by the Federal Demonstration Partnership. We also held three roundtables across the country to connect directly with scientists. And we consulted with the major organizations studying research administration and burden issues, including those who oversee human subject protection and animal subject protection accreditation.

Respondents were typically interested in reducing the tasks that take significant time without significant payoff or with unintended consequences, such as financial records that cost more to track than they can save or progress reports that are perceived to be little used by agencies. In this sense, scientists' concerns are consistent with those of the National Research Council, which has recommended that Federal agencies find ways to reduce those regulatory burdens that "increase administrative costs, impede research productivity, and deflect creative energy without substantially improving the research environment."

Based on our data gathering and deliberation processes, our report offers four overarching recommendations to protect research programs from counterproductive administrative requirements. If these can be addressed, we would expect a healthier, more productive research ecosystem, and agencies like the National Science Foundation would provide an even better return on scarce taxpayer dollars.

Our four overarching findings and recommendations are:

- Proposal requirements should **FOCUS ON THE SCIENCE**, on the scientific and potential social value of the project, deferring ancillary materials not critical to merit review. Supplementary and oversight materials could be submitted only once a project was in consideration for funding. Thousands of investigators and tens of thousands of reviewers could save significant time, for example, if they did not need to prepare and review data archiving plans until after a project was deemed potentially fundable.

- Eliminate or modify **REGULATIONS** that are **INEFFECTIVE OR INAPPROPRIATE** for scientific projects. A prime candidate for immediate action is the time-and-effort reporting systems that currently yield imprecise numbers when applied to university scientists yet are costly to administer. Every month our researchers are asked to partition their time into buckets --- for example, did the time I spent helping a graduate student solve a laboratory problem count as

teaching or research? These things are difficult to measure, the most common measures provide limited controls, and the systems are often costly to administer. Alternative approaches are being developed. The Federal Demonstration Project is testing a payroll certification pilot that may provide a viable approach for simplifying paperwork without reducing accountability.

Our investigations also led us to conclude that there can be improvements in oversight of human subjects protection, animal subject protection, conflict of interest tracking, and laboratory safety and security. Our report documents many suggestions for these topic areas. For example, allowing human subjects approval by a single institutional review board for projects that involve scientists from multiple universities. The National Science Board does not promote changes that reduce safety or scientific integrity, but we judge that scrutiny of these systems could yield changes that would enhance efficiency without degrading effectiveness.

- Intensified and continuing work to **HARMONIZE AND STREAMLINE** regulations, policies, guidelines, reporting requirements, forms and formatting, electronic systems, and training is needed. We believe that it would be especially valuable to develop uniform and consistent audit practices related to scientific grants and contracts. Perceived variation in audit requirements and in institutions' understandings about audits has produced, in many institutions, a culture of risk aversion and excessive documentation that interferes with both the content of science as well as the efficiency with which it is conducted. More uniformity would enable and encourage institutions to learn to comply with oversight needs without over-complying and creating an atmosphere of excessive documentation and risk aversion.

  A permanent high-level, inter-sector, inter-agency committee would be needed in order to achieve successful harmonization since at any time, even as one set of requirements is being harmonized, some agency or legislative body may propagate a new rule that would introduce a new source of variation. We recommend that such a committee should have stakeholder, Office of Management and Budget and OSTP membership. We are not alone in this recommendation. Similar language appears in both the House FIRST Act and the Senate America Competes 2014 reauthorization bill that are currently under discussion in Congress.

- Finally, there is work for our universities to do to increase their **EFFICIENCY AND EFFECTIVENESS** as stewards of research and as federal awardees. We recommend that federal agencies identify and disseminate model programs and best practices in order to help universities achieve enhanced performance. This may sound like a simple, straightforward recommendation but, in fact, agencies sometimes feel constrained from offering such assistance for a variety of reasons, including fear of reprisal if something goes wrong at an institution that has availed itself of informal agency guidance. We also believe that the bodies that oversee human subjects and animal subjects protections (respectively, the Association for the Accreditation of Human Research Protection Programs and the Association for Assessment and Accreditation of Laboratory Animal Care) can better partner with universities to achieve these crucial protections more efficiently. The NSB also recommends that institutions avoid adding unnecessary requirements to those already mandated unless compelling reasons exist to do so. Finally, the NSB recommends that universities review their Institutional Review Board (IRB) and

Institutional Animal Care and Use Committee (IACUC) processes and staff organization with the goal of achieving rapid approval of high-quality protocols that protect research subjects.

I have not covered all the recommendations in the report. The NSB suggested several specific actions in conjunction with each of our four overarching recommendations. We are prepared to provide additional background and justification on any topic of interest to you from this testimony or from the report itself.