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Submitted via e-mail to nstc_rbm@ostp.eop.gov.

REF: National Science and Technology Council Subcommittee on Research Business Models

Dear Mr. Holland:

The University of Illinois at Urbana-Champaign is pleased to offer comments in response to NSTC's August 6, 2003 Federal Register notice. We very much hope that this effort will result in a greater standardization and coordination of the federally supported university research enterprise.

A. Accountability. What constitutes accountability for the Federally-supported research enterprise? How can performers best demonstrate results or return on Federal research investments? Please suggest mechanisms whereby research managers can more transparently demonstrate responsible use of public resources.

We believe that the results of Federally supported research are manifested in many ways.

- The body of scientific literature is fueled primarily by federal research funding.

- Many scientists and engineers are supported by federal funds, primarily assistantships and fellowships, during their training, and their early careers enhanced by notably successful career development programs.

- The transfer of Federally-supportedFederally supported university-developed technology to the commercial sector fuels innovation and economic growth.

The technical reporting required by many agencies provides an opportunity for performers to tabulate their contributions. If this reporting were standardized enough to enable the collection of information across agencies, some quantifiable information could be generated. There are existing techniques, including bibliographic searches and national patent and licensing data, such as that provided by the Association of University Technology Managers (AUTM), that could demonstrate part of the return on the Federal research investment. Many training grants require recipients to track the careers of trainees over a period of many years.

The *Implementation of the NSTC Presidential Review Directive-4: Renewing the Federal Government-University Research Partnership for the 21st Century* included an Operating Principle that stated: "Accountability and Accounting Are Not the Same." Audits are directed primarily towards financial accountability. Rather than focusing on transactions selected on the basis of "risk," auditors should try to assess the recipient organization's environment for effectively managing federal resources. A review of institutional systems, such as personnel and payroll, purchasing, recharge centers, and a review of approval processes would do more to characterize an institution's ability to provide effective stewardship of federal funds than does the current audit approach.

B. Inconsistency of policies and practices among Federal agencies.
Can you identify specific Federal policies and practices that if simplified would improve the efficiency and cost effectiveness of the research enterprise? Can the impact of inconsistent policies and practices among Federal agencies on the research environment be quantified? Among the variations in policies and practices, which practices appear to be the best? Why?

* Application forms and processes. The Federal Demonstration Partnership (FDP) response to the PL 106-107 draft plan provided a compendium of inconsistencies in application forms and processes, both across and within agencies. This response can be found at: http://www.thefdp.org/PL106-107/106-107%20common%20plan%20response-%203-19.pdf.

  The impact of these differences is that a great deal of scientific and administrative effort is misspent in learning and staying abreast of individual (and usually non-substantive) differences across application packages, even within the same agency.

  There is no current best practice in this area. An improvement over the current state of affairs would be the back-to-the-future approach now being developed in Grants.gov, wherein standard data is required for all applications, and can be rendered in standard forms.

* Terms and conditions. For something regulated by the same OMB circulars, terms and conditions vary considerably by agency, and even by program within agencies.

* Data ownership. At least one agency NSF and HHS require recipients to make their data available to other researchers, whereas most others agree that control of data resides with the recipient institutions.

* Cost allowability. PHS's cost allowability policy says that long distance calls are normally F&A Costs. A-21 says that monthly line charges should be F&A, but that toll calls can be charged directly.

- Interrelated projects. A-21 allows charging and transferring costs among interrelated Federal projects, but many agencies still require extensive up-front establishment of interrelatedness. It should be enough that institutions have the burden of demonstrating interrelationship when costs are questioned.

- Prior approvals for equipment. ARO continues to have a prior approval requirement for equipment items of $5000 or more, though A-110 gives agencies the latitude to waive this requirement on research projects.

- Prior approvals for foreign travel. ARO continues to have a prior approval requirement for foreign travel, despite the fact that this requirement was removed from A-21 more than 12 years ago.

- The DEd Office of Special Education issues some grants with a 10% rebudgeting restriction, while others have no such restriction

- Veterans Administration and Commerce/NIST intellectual property requirements are inconsistent with Bayh-Dole.

- At least one USDA program specifically states: "OMB Circular A-21 allows for time reporting less frequently than weekly; however, FNS policy requires weekly time reporting." (There is a provision for universities to use another means of effort reporting, but it requires HHS approval.)

- Many agencies and programs continue to require Drug Free Workplace certifications, even though the certification requirement was dropped years ago.

- A general problem in the area of terms and conditions is that an institution can be forced to adopt policies and procedures to settle an audit finding, even though there is no basis for the requirement in either regulation or statute. The accretion of these policies over time complicates efforts to comply with formal policies.

  Standardization of terms and conditions (where special situations and legislative mandates are not involved) would make it possible for researchers and research administrators to focus their efforts on making more substantive contributions to the research enterprise.

  The practice that works best for scientific research and other sponsored activities at universities is the FDP Terms and Conditions.

- Financial reporting and payment systems. This is an area where greater consistency could provide significant streamlining, both for recipients and funding agencies that will eventually make use of the grants.gov portal. Even agencies using the same payment system and standard forms can require quite different financial reporting, in terms of frequency, and which data to include in which section of the form. The ideal would be pooled payment systems, with frequent (preferably quarterly, but no more frequently than monthly) cash transaction reports. Only NSF and HHS allow letter-of-credit draws across an institutions portfolio of awards, instead of on an award-by-award basis. Standardizing the processes for cash advances and financial reporting would make it financially possible for recipient institutions to automate these processes, without having to automate a different process for each agency.

Quantifying the impact of having to operate many separate financial reporting and payment systems would be difficult to do. But if these processes could be automated, there should be some savings in post-award staffing.

The best practice is the NSF model for financial reporting and payment because the quarterly transaction report can be downloaded, completed off-line and then uploaded.

- The NSF follows different regulatory and compliance guidelines in the area of human subject research than does the NIH and a number of other federal agencies. This causes confusion at both the local and the national level. The standards set forth by the NIH are the most comprehensive and inclusive.

- Electronic processing. The lure of efficiencies has prompted many agencies to implement electronic processes for many functions related to research administration. The problem for the recipient institution is that the recipient has to staff, train, and equip itself to deal with numerous systems. FDP attempts to keep track of the various electronic processes in use by federal agencies on their website at http://www.thefdp.org/eRA/Agencies_Online_FEDS_04-03.pdf

Another problem with many of the electronic systems currently in use is that they violate one or more of the FDP Core Principles for electronic research administration systems, found at http://thefdp.org/PL106-107/Core_principles-Submission.pdf

Quantification of the costs associated with using these many systems would be difficult. Since staffing increases have been rare in university administration in recent years, it is reasonable to conclude that the cost of training and dedicating human and equipment resources to these systems comes at the expense of better quality control in proposal processing and award negotiation.

There is currently no best practice to point to in this area. Although NSF's FastLane has earned broad acceptance, recipient institutions are still left to enter information redundantly into their systems, and in most cases, retain paper copies of all electronic transactions.

- Cost-sharing requirements. The impetus for documenting cost sharing has been driven by the audit and costing community, who seek to save the Federal government money by driving down indirect cost rates by including institutional contributions in the F&A rate base. Most officials who make funding decisions in their agencies state that they neither have access to the accounting for institutions' contributions, nor any need to know about them. They concern themselves principally with the outcomes of the work. With certain exceptions, such as cooperative agreements, federal support for university research is understood to be financial assistance, and not the sole support of any given project. The current requirements to document cost sharing at a high level of specificity (greater specificity than direct expenditures, in some cases) places recipient organizations in a kind of double jeopardy. In addition to having to provide the resources in support of research, they have to assume the burden of precise documentation, and the risk of disallowances if the cost sharing documentation is found to be inadequate.

The cost of developing cost sharing documentation systems and procedures is, again, difficult to quantify. Illinois is developing such a system in-house, but an estimate of the cost is not available.

There is currently no best practice in this area, since enforcement of cost sharing documentation is often done as part of an audit, and the form of such enforcement can vary widely. The NSF policy is the clearest and fairest.

- F&A Rate Negotiations. Unilateral revocation of agreements related to accepted practices is costly and destabilizing to institutions, and should therefore be made only when mandated by changes in federal costing principles.

C. <u>Inconsistency of policies and practices among universities</u>. Can you identify specific university policies and practices that if simplified would improve the efficiency and cost effectiveness of the research enterprise?

- Institutions have adopted a number of <u>ad hoc</u> means of responding to the proliferation of agency electronic research administration systems. A relatively "stationary target" for electronic research administration would allow institutions to develop or acquire a single system.

- Better subaward management, including provisions for obtaining A-133 audit confirmation. Many institutions create unnecessary burdens on their subrecipients by incorporating unnecessary or conflicting provisions in their subaward agreements.

  This process could be improved for subawards on grants and cooperative agreements, by adopting the template agreements developed by FDP.

D. <u>State and Institutional requirements</u>. What is the prevalence and impact of state and institutional requirements that are added to Federal requirements for research funding?

The single example that we can offer is that the State of Illinois Procurement Code has lower bid thresholds than are established by the Federal government, necessitating more formal bid processes than would otherwise be required.

E. <u>Regulatory requirements</u>. Is there a more efficient approach to meeting the intent of the current suite of administrative requirements and regulations? Please provide examples.

- Something that has been talked about for a long time is institutional representations, assurances, and certifications.

- More consistent conflict of interest regulations and procedures across agencies would enable institutions to streamline the conflict of interest management systems

- Scientific integrity—common rule agreed to in principle by the major funding agencies is now about two years overdue.

- CAS—updates should be a part of the F&A rate submission, and not a separate process

- Misguided efforts related to cost principles (Putting them in the CFR, combining them, etc.) should be avoided.

F. <u>Research support</u>. How can public funding mechanisms and policies encourage or discourage innovative approaches to research? Does the current process for research funding encourage or discourage innovative research? How do support mechanisms influence the mix of investigators supported (e.g., principal investigators, research scientists, postdoctoral scholars, graduate students, or technicians)? How can changes in the conduct of science and engineering necessitate modified funding models? Are data available to help decide these questions?

- Increasing demand for sophisticated instrumentation necessitates funding models that can provide such instrumentation, along with staff needed to support its use.

- Increased reliance on analysis software and databases creates a need for funding of computer equipment, software, and database/IT support staff.

- When innovative research brings a need for increased attention to regulatory compliance (e.g. transgenic animals or plants, pathogenic organisms), the demand created for regulatory services and oversight may exceed the permitted indirect cost stream to the institution.

- Innovative research may create a need for specialized facilities, but there are few opportunities to fund such facilities through federal agencies.

- Requirements for matching funds may create a disincentive to submit grant proposals.

- Data are available from the publication *Science and Engineering Indicators*, published by NSF and available online at http://www.nsf.gov/sbe/srs/seind/start.htm

G. <u>Multidisciplinary/collaborative research</u>. Are any funding organizations, either inside or outside of government, employing funding mechanisms or strategies that are particularly effective in encouraging multidisciplinary work, collaborative activities, and other innovative approaches? Are there any data available relevant to these questions?

- Programs designed to fund multidisciplinary centers and programs, such as the National Science Foundation's NIRT, CISE, STC, ERC, IGERT, PFI, URC, MSP, MRSEC, MURI, and NSEC, are effective in encouraging multidisciplinary work and collaborative activities. Innovative approaches are encouraged by NSF's NER, IMR-MIP, HPNC and MRI. Data are available from the funding agencies on grants awarded in these areas, and resulting publications and technology disclosures could be tracked.

H. <u>Research Infrastructure</u>. What information is available to examine policies at the Federal, State, local or institutional level that affect research infrastructure and the costs of building, maintaining and/or operating the research infrastructure' What factors influence performers' investments in research infrastructure? What data are available to demonstrate that? What information is available on the mix of sources used to finance research infrastructure?

- Much of this information is generated as part of the F&A rate calculations, where the cost of funding of major research infrastructure projects are described and defended. A desk audit of rate proposals could yield a fair amount of detailed information on this topic.

I. Information Technology. How has information technolo gy impacted the efficiency, performance, or costs of research management? Are there data to demonstrate any effect?

- Any efficiencies that could have been gained thus far have been negated by the proliferation of systems. Until there is much more uniformity in electronic research administration processes, efficiency, performance, and cost improvements will not be achievable.

- An impediment to standardization is some agencies' insistence on non-standard data elements. Rather than pushing Grants.gov off into the future until these things can be resolved, agencies that want non-standard data should consider whether their needs couldn't be met by have this information transmitted as part of the proposal, and entered into their back-office systems as needed.

- Some of the designs being contemplated by federal agencies (like the NIH requirement for PI's to maintain complete and up -to-date bios on the NIH system) need to be reconsidered in light of what PI's are willing to do. Many already maintain such informatio n on their own computers, on institutional systems, and or on third-party systems, such as Community of Science. They may find that duplicating this information on yet another system might not be time-effective.

- The new standard funding opportunity format fell short of its full potential, because there is permissible variation in the order in which information is found. Therefore, databases can't parse these announcements and automate their input into comprehensive funding opportunity databases that include non-federal opportunities, as well.

- Also, having grants on one database and contract opportunities in another is inefficient for university-based researchers.

- Costs are in increased or redirected staffing and equipment, but short of a survey, these costs would be difficult to capture.

J. Technology transfer optimization. Are data available to examine whether intellectual property and patent agreements have changed relationships among universities, industry, and the government?

- Data on licensing of University intellectual property (IP) is available from the Association of University Technology Managers.

- Data on grants and contracts funded by the federal government is available from the funding agencies.

- Data on grants and contracts funded by industry would need to be obtained from the individual university.

- It would be difficult to link federal grants directly with specific IP licenses, although some data would be available through examination of technology disclosures at a given University, and so me data on disclosures might be available through review of progress reports to the funding agency.

- It would be possible to look for correlations between funding from industry and licensing of IP to the industries providing the funding.

Thank you for providing the opportunity to comment on these issues, which are critical to the success of our research enterprise.   Please let me know if I may provide additional information or assistance.

Sincerely yours,

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Vice Chancellor for Research

c: Jack Kamerer, Director Grant and Contract Administration