

# **Report to Congress on Cost Sharing Policies at the National Science Foundation**



February 7, 2008

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## **Process for Producing the Report**

The recommendations presented herein were informed by numerous public forums, including discussions on November 8, 2007 with all NSF EPSCoR Directors and related administrative personnel, on November 28, 2007 with all NSF ERC Directors and Industrial Liaison Officers, and on January 10, 2008 with all NSF I/UCRC Directors, at their respective annual meetings. Additionally, the Board held a public roundtable discussion at NSF in Arlington, Virginia involving experts in cost sharing (see Appendix B for details) and has consulted a considerable body of literature on cost sharing dating to the mid-1950s. Especially important was a Spring/Summer 2000 special issue of the National Council of University Research Administrators (NCURA) journal, *Research Management Review*, dedicated to the topic of cost sharing. Finally, the Board and NSF assembled a wide variety of quantitative data on cost sharing in NSF programs, and the NSF Engineering Directorate Advisory Subcommittee on University-Industry Partnerships provided valuable input from its independent examination of university-industry partnerships.

The Board's forthcoming, more comprehensive examination of key issues in cost sharing will be informed by subsequent roundtable discussions as well as by a national Web-based survey currently under preparation for distribution to a wide variety of stakeholders in academia, government, and industry.



# **Report to Congress on Cost Sharing Policies at the National Science Foundation**

## **Introduction**

On August 9, 2007, the America COMPETES Act<sup>1</sup> directed the National Science Board (Board) to “evaluate the impact of its [2004] policy to eliminate cost sharing for research grants and cooperative agreements for existing programs that were developed around industry partnerships and historically required industry cost sharing, such as the Engineering Research Centers [ERCs] and Industry/University Cooperative Research Centers [I/UCRCs].” The Act directed that the Board “also consider the impact that the cost sharing policy has on initiating new programs for which industry interest and participation are sought.”

In response to this Congressional directive, the Board’s Committee on Strategy and Budget (CSB) established a Task Force on Cost Sharing<sup>2</sup> in October 2007 to examine the issues raised by Congress with emphasis on the Board’s 2004 revision to National Science Foundation (NSF) cost sharing policy that eliminated NSF program-specific cost sharing requirements and that required only the statutory one percent of sharing. As is known to Congress, prior to 2004, specific NSF programs could set cost sharing requirements for solicited proposals in addition to the statutory one percent requirement.

The Board undertook an intensive study to accomplish the tasks described above and broadened the scope of its examination to include other capacity-building NSF programs such as the Experimental Program to Stimulate Competitive Research (EPSCoR).

In this first of two reports, the Board recommends a suite of targeted changes to NSF cost sharing policy for implementation as soon as is practicable. Owing to the need for examination of other key issues in cost sharing complementary to those raised by Congress, the Board will issue a more comprehensive report later this year that will include additional recommendations for NSF cost sharing policy. These key issues include, but are not limited to: voluntary cost sharing, auditing and compliance issues, evaluation of cost share during the proposal review process, the role of cost sharing in broadening the participation of traditionally underrepresented groups and institutions in Federally sponsored research, and the proportion of the costs of Federally sponsored basic research being borne by academia.

## **Overview of Cost Sharing**

For more than 50 years, the U.S. academic enterprise and Federal Government have enjoyed a fruitful partnership in the conduct of basic scientific and engineering research; NSF has been a centerpiece of this partnership since its founding in 1950. The mutual sharing by academia and government in the costs of Federally funded research,<sup>3</sup> and the strategic involvement of private industry, have resulted in scientific and technological advancements that have driven economic growth in all sectors of the U.S. economy and improved quality of life in the United States. The

funding that supports this shared enterprise, however, has been the subject of continuous debate since the late 1950s, when the Federal Government first mandated that recipients of Federal research grants share in the costs of that research. At that time, the first policies<sup>4</sup> governing so-called indirect cost recovery for research grants from Federal agencies were established. These policies represent the genesis of mandatory cost sharing, and un-reimbursed indirect costs remain a significant component of mandatory cost sharing today. Please see Appendix A for an abridged history of Federal and NSF cost sharing policy.

Cost sharing beyond that associated with indirect costs – or the contribution of quantifiable and auditable assistance from non-Federal sources to support Federally sponsored research, as defined in Office of Management and Budget (OMB) Circular A-110 (2 CFR Part 215)<sup>5</sup> – seems to be a straightforward concept. It is, however, exceedingly complex both in its philosophy and its practical implementation.<sup>6,7,8,9</sup> Fundamentally, cost sharing represents a mutuality of interest by those funding and those performing Federally sponsored research. Federally sponsored research is distinctly different from Federally contracted research, in which the Federal Government procures services for its sole interest and thus pays their full costs. Federally sponsored research benefits both the sponsoring Federal agency and the performing institution; the notion that both parties share in the benefits of such research has led to agreement that both should share in its costs. Cost sharing also brings additional financial resources to the research enterprise; serves as a means for leveraging state and local government as well as other support; provides incentives for strategic planning and buy-in by grantee institutions; promotes sustainability for large, multi-year activities initiated with Federal funding; and provides a means for creating meaningful partnerships with industry. However, cost sharing also brings with it notable challenges.

Cost sharing presents significant challenges to institutions both in terms of the availability of financial resources and the effort required in tracking and reporting cost-shared contributions. As academic institutions contribute roughly 20 percent of academic R&D funding (up from 10 percent in 1970),<sup>10</sup> sources of funds for cost sharing remain limited, principally to appropriations (endowments for private institutions), tuition and fees, and indirect cost recovery. Dollars directed toward cost sharing can be viewed as forced reallocations that hamper institutional strategic planning. Furthermore, efforts to broaden participation in Federally sponsored research are hindered by the fact that the financial vitality of grantee institutions may impact their success in Federal research grant opportunities because of the amount of cost sharing they can afford to offer. Institutions that are unable to provide cost sharing may be excluded from participating in certain research programs, and institutions that have significant resources may be able to “buy their way” into sponsored programs – a concern long articulated in the literature.<sup>11</sup> Because all cost sharing is auditable, grantee institutions and sponsoring Federal agencies must track and report institutional contributions, particularly non-cash or “in-kind” contributions. The financial costs of tracking and reporting responsibilities represent a type of implicit, mandatory cost sharing because the administrative component of the Federal indirect cost rate – which includes tracking and reporting of cost sharing information – has been capped at 26 percent reimbursement for 17 years.<sup>12</sup>

Cost sharing can take many forms, the most basic of which is that imposed by Federal law and thus known as *statutory cost sharing*. Various requirements for such sharing have been included



in NSF Congressional appropriations bills over the past few decades; most recently, the recipient of an NSF award resulting from an unsolicited proposal was required to cost share a minimum of one percent on the project or a minimum of one percent of the aggregate costs of all NSF-supported projects subject to the statutory requirement. This statutory cost sharing requirement was eliminated from NSF Congressional appropriations language in early 2007.<sup>13</sup> *Mandatory cost sharing* describes resources required by particular Federal agencies, usually with different requirements for different programs and solicitations. Such cost sharing may include unreimbursed indirect costs associated with otherwise Federally funded research activities that are necessarily borne by the grantee institution. *Voluntary cost sharing* describes resources made available to a given project solely at the discretion of the grantee institution performing the work; these resources can be *committed* (pledged formally in the proposal) or *uncommitted* (not formally pledged in the proposal or project plan and final budget, but subsequently made available to the project).

Adding to this complexity is the fact that cost sharing can impact indirect cost recovery rates when personnel time and effort actually expended on a project exceed that for which funding has been provided. Such voluntary work decreases indirect cost rates and decreases total indirect cost recovery, potentially penalizing institutions and researchers for work that benefits both the research and education enterprises. The problematic nature of effort reporting in academia – in which the divisions among research, teaching, and service are understandably and necessarily blurred – further complicates the definition and reporting of cost sharing.<sup>14,15</sup>

## **The Many Views on Cost Sharing**

Cost sharing has been the subject of debate for more than five decades, with many constituencies weighing in with widely differing views. Although few Federal agencies today impose mandatory cost sharing, the Federal Government generally favors the concept because it is perceived to leverage Federal funding, bringing more money to the research enterprise and creating a sense of partnership between the provider and the recipient. University presidents/chancellors and vice presidents/chancellors for research generally oppose cost sharing because it prescribes the use of resources and thus inhibits flexibility in strategic institutional investment. Faculty overwhelmingly tend to endorse cost sharing because it provides a means for them to individually obtain resources for building facilities or acquiring equipment; indeed, many faculty believe that their competitiveness in the proposal review process increases in proportion to the amount of cost sharing – both mandatory and voluntary – offered.

University business officials tend to oppose cost sharing because of the associated tracking and reporting requirements as well as ambiguities in defining cost share, particularly non-cash or “in-kind” contributions. This sentiment continues to be strengthened by the fact that the administrative component of the Federal indirect cost rate has been capped at 26 percent for nearly 17 years, despite prodigious increases in institutional (and agency) compliance requirements.<sup>16</sup>

Not surprisingly, the views of these constituencies regarding Federal indirect cost rates tend to be the reverse. That is, university administrators typically favor large indirect cost recovery, while

individual faculty members see high indirect costs as unnecessary inflations of their already constrained grant budgets.

## **Recommendations**

Based upon our analysis, we offer the following recommendations for NSF cost sharing policy:

**Recommendation 1: NSF should define and communicate a set of overarching principles to guide the application of mandatory cost sharing, to include specific goals and expected outcomes of its application.**

*Owing to widely differing views on mandatory cost sharing and the equally wide variety of ways in which cost sharing can be applied to help achieve programmatic goals, NSF cost sharing policy should be guided by a set of principles that underpin more specific goals and expected outcomes. These principles should reflect the desire to minimize administrative workload while retaining appropriate accountability mechanisms and maintaining effective stewardship of Federal resources. This information should be communicated to all stakeholders and should be evaluated periodically.*

**Recommendation 2: NSF should continue to employ OMB Circular A-110 (2 CFR Part 215) to define cost sharing and should communicate all changes to NSF cost sharing policy to its stakeholders.**

*Numerous studies of cost sharing policy note confusion among constituent groups, especially grantee institutions, regarding definitions and agency implementations of cost sharing, as well as the types of commitment that may be used for each category of cost sharing. The 2004 Board policy change that eliminated mandatory cost sharing removed it as an issue for grantee institutions; consequently, with the reinstatement of mandatory cost sharing for certain programs, as recommended below, NSF should communicate cost sharing definitions, along with associated policy changes, to its stakeholders. NSF should, of course, continue to ensure that its policies and practices are consistent with OMB Circular A-110 (2 CFR Part 215).*

**Recommendation 3: NSF should enhance its training of program officers to avoid unintended implicit or explicit requests for voluntary cost sharing/institutional commitment during the budget negotiation process. Further, NSF should continue to emphasize that merit review is founded on the quality of the work to be performed, with cost sharing (where applicable) as an eligibility, not a merit review, requirement.**

*NSF program officers are exceptionally skilled in managing the merit review process to ensure that the research supported by NSF lies at the frontier of knowledge. They also, like the principal investigators with whom they negotiate, are resourceful and entrepreneurial to ensure maximum effectiveness of the*

*Federal dollars available. During the budget negotiation process, tradeoffs frequently are made between budget size and scope of work. In some instances, funding from institutions may be available to redress shortfalls in NSF funding to maintain the original work plan. However, such funding should not be sought, implicitly or explicitly, by NSF program officers during the merit review or budget negotiation processes. Enhancing program officer awareness also is important for avoiding the provision of inconsistent and inadvertent guidance.*

**Recommendation 4: NSF should reinstate mandatory cost sharing for the following programs for which cost sharing is foundational to strategic programmatic goals: the Engineering Research Centers (ERC) program, the Experimental Program to Stimulate Competitive Research (EPSCoR), and the Industry/University Cooperative Research Centers (I/UCRC) program. In addition, NSF should retain the successful industrial participation features that it has adopted in its implementation of the interagency Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, as established by Federal statute and over which the Small Business Administration (SBA) has statutory authority to develop Federal Government-wide guidelines. As appropriate, NSF should identify whether the actions undertaken by NSF in implementing these unique programs can be adapted as a model for industrial participation in other NSF-supported activities.**

*The programs named above achieve one or more of the following large-scale and/or long-term strategic goals: building regional, state, or institutional capacity; creating meaningful partnerships with industry; promoting the sustainability of projects beyond NSF funding; and encouraging technology transfer for local economic development. The Board's analysis found overwhelmingly that the 2004 removal of mandatory cost sharing hampered the ability of these programs to achieve their strategic goals and, in some cases, virtually eliminated the incentive for participation by industry.*

*The Board recognizes that for certain NSF programs, financial participation by industry more appropriately takes the form of fees, sometimes after the award has been made. The Board's analysis found that the acquisition of financial resources through industry participation fees (as an analogue to cost sharing) tends to provide greater strategic flexibility to principal investigators and, in some cases, may increase the incentive for industry participation. The use of such fees as cost sharing, as well as the percentage of cost sharing or fees, should be determined on a program-by-program basis relative to the specific goals to be achieved.*

*The Board also recognizes that some NSF programs (e.g. EPSCoR, ERC, and I/UCRC) involve multiple sub-awards or organizations that collaborate in partnerships. For these named programs, mandatory cost sharing requirements can be met by the prime awardee, sub-awardees, and/or participating organizations in aggregate across the array of activities funded by a particular award. Each individual sub-awardee or participating organization need not meet*

*the specific percentage or a proportionate amount of mandatory cost sharing, as long as the total percentage or amount required by NSF is met in aggregate by all the organizations involved in the particular funded project or activity.*

**Recommendation 5: NSF should continue to communicate the requirements of tracking and reporting mandatory cost sharing to all institutions to which it provides funding.**

*NSF has been exemplary in communicating to its grantee institutions the legal and auditing requirements for cost sharing. With the end of mandatory cost sharing in late 2004, NSF was able to focus its training efforts with grantee institutions on other, more pressing topics. Discussion of cost sharing, however, continued to be an important part of outreach sessions conducted by NSF with proposers and grantees. As cost sharing is reinstated for certain NSF programs, cost sharing should once again become a prominent topic of NSF's outreach activities.*

**Recommendation 6: NSF should periodically and systematically review its cost sharing policies and their impacts and report its findings to the Board.**

*Consonant with its periodic review of other policies and procedures, NSF should periodically and systematically review cost sharing policies and, wherever possible, use quantitative data to understand impacts and inform future changes.*

**Conclusion**

The Board intends for the recommendations presented herein, when implemented by NSF, to mitigate some of the unintended consequences of its 2004 policy to eliminate mandatory cost sharing for all NSF programs. As it continues its examination of NSF cost sharing policies, the Board will elucidate other key issues and challenges and use its findings to formulate a comprehensive set of recommendations on NSF cost sharing policy.

## Endnotes

<sup>1</sup> Section 7014 (a) of Public Law 110-69 (America COMPETES Act).

<sup>2</sup> National Science Board, Committee on Strategy and Budget, Charge to the Task Force on Cost Sharing, October 9, 2007 ([NSB-07-110](#)).

<sup>3</sup> Hardy, R.B., 2000: "Cost Sharing: Past, Present and Future." National Council of University Research Administrators, *Research Management Review*, Vol. 11, Spring/Summer 2000, 9-19.

<sup>4</sup> Bureau of the Budget Circular A-21, September 10, 1958.

<sup>5</sup> Office of Management and Budget Circular A-110, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations."

<sup>6</sup> Seligman, R.P., 2000: "An Introduction to Cost Sharing: Why Good Deeds Do Not Go Unpunished." National Council of University Research Administrators, *Research Management Review*, Vol. 11, Spring/Summer 2000, 1-4.

<sup>7</sup> Bienenstock, A., 2000: "Some Thoughts on Cost Sharing." National Council of University Research Administrators, *Research Management Review*, Vol. 11, Spring/Summer 2000, 5-8.

<sup>8</sup> Paoletti, C.R., 2000: "Cost Sharing: Just When I Thought I Knew All the Answers." National Council of University Research Administrators, *Research Management Review*, Vol. 11, Spring/Summer 2000, 21-29.

<sup>9</sup> Feller, I., 2000: "The Remainder of the Cost Sharing Policy Agenda." National Council of University Research Administrators, *Research Management Review*, Vol. 11, Spring/Summer 2000, 31-39.

<sup>10</sup> National Science Foundation, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 2006, 2007. Presented by the American Association for the Advancement of Science (See <http://www.aaas.org/spp/rd/aaca08p.pdf>).

<sup>11</sup> Seligman, R.P., 2000: "An Introduction to Cost Sharing: Why Good Deeds Do Not Go Unpunished." National Council of University Research Administrators, *Research Management Review*, Vol. 11, Spring/Summer 2000, 1-4.

<sup>12</sup> Office of Management and Budget Circular A-21, "Principles for Determining Costs Applicable to Grants, Contracts, and Other Agreements with Educational Institutions."

<sup>13</sup> National Science Foundation, "Revision of the National Science Foundation (NSF) Grant General Conditions (GC-1), June 1, 2007 (See [http://www.nsf.gov/pubs/policydocs/gc1sigchanges\\_607.pdf](http://www.nsf.gov/pubs/policydocs/gc1sigchanges_607.pdf)).

<sup>14</sup> Kameron, J. and S. Wasserman, 2000: "Cost Sharing and Effort Reporting: Breaking the Juggernaut." National Council of University Research Administrators, *Research Management Review*, Vol. 11, Spring/Summer 2000, 41-44.

<sup>15</sup> Council on Government Relations, "Policies and Practices in Compensation, Effort Commitments, and Certification." March 2007, 49 pp.

<sup>16</sup> Office of Management and Budget Circular A-21, "Principles for Determining Costs Applicable to Grants, Contracts, and Other Agreements with Educational Institutions."



## **Appendices**





## **Appendix A**

### **Abridged History of Federal and NSF Cost Sharing Policies**



Cost sharing has been an important issue for the National Science Foundation (NSF) since the Bureau of the Budget (predecessor of the Office of Management and Budget [OMB]) requested on September 15, 1954 assistance in setting uniform policies for indirect cost reimbursement for research grants from Federal agencies. At its May 1955 meeting, the National Science Board (Board) unanimously approved a recommendation that “in supporting research conducted in institutions of higher learning, agencies of the Federal government, if requested, reimburse these institutions for accountable indirect costs associated with those direct costs of research supported.” When grantee institutions are not permitted a full reimbursement of indirect expenses associated with otherwise funded Federal research activities, their un-recovered costs constitute cost sharing. The Comptroller General issued an opinion on January 27, 1956 disallowing the “payment of overhead based on a stipulated percentage of direct labor or other costs . . . in lieu of reimbursement of the actual costs of overhead” for military research grants because the Armed Services Procurement Act prohibited a cost-plus-a-percentage-of-cost system. On June 29, 1957, the first statutory limitations on indirect costs for research grants were approved as part of the Labor-Health, Education, and Welfare-related agencies FY 1958 appropriations act. This act stated that “none of the funds provided . . . shall be used to pay a recipient of a grant for the conduct of a research project an amount for indirect expenses in connection with such project in excess of 15 per centum of the direct costs.” On September 10, 1958, the Bureau of the Budget issued Circular A-21, which described the first government-wide principles for determining operation and maintenance expenses for research grants.

On September 5, 1962, Congress approved Public Law 87-638, allowing the payment of predetermined fixed percentage rates for the calculation of indirect costs in research and development contracts (including grants) with educational institutions. This law overcame the Comptroller General’s 1956 opinion disallowing cost-plus-a-percentage-of-cost systems. On October 3, 1962, the Independent Offices Appropriations Act, 1963 imposed the first statutory cap on the amount of indirect costs associated with NSF research grants that could be reimbursed by the agency. Indirect costs incurred in excess of the cap – set at a flat 20 percent – would constitute a cost share to be borne by the research funding recipient.

Concerns about the indirect cost reimbursement ceiling led Congress to revisit the issue in 1965. On August 16, 1965, a new provision of the Independent Offices Act, 1966 superseded the 20 percent indirect cost reimbursement cap with more general language indicating that “none of the funds provided herein shall be used to pay any recipient of a grant for the conduct of a research project an amount equal to as much as the entire cost of the project.” NSF continued to be subject to a provision of this nature through FY 2005. On September 22, 1965, NSF clarified the meaning of the legislative change in an Important Notice to the heads of colleges and universities. This Important Notice indicated that in most cases, educational institutions would be required to contribute at least five percent of the NSF contribution to a sponsored research project’s cost. One method of fulfilling this requirement would be the payment of faculty salaries. The notice indicated that the requirement could be satisfied with contributions of any cost elements of the project, “but should be more than a token contribution.” Solidifying the new policy, NSF issued Important Notice No. 11 on January 24, 1966, specifying that cost sharing obligations would be considered satisfied by the payment of all or part of faculty academic year salaries, provided that the payment came from non-Federal funding and constituted more than a token contribution. The Bureau of the Budget’s Circular A-74, effective on March 1, 1966,

clarified the change for all Federal agencies and indicated that “applicable institution[s] must share in . . . research costs on more than a token basis.”

At its May 1966 meeting, the Board was briefed by the NSF Deputy Director on the implementation of the Circular A-74 cost sharing requirements. Concern was expressed that there was no clear set of uniform cost sharing principles, no reporting requirements, and no uniform Federal practices. The issue was assigned to the Board’s Committee II for further study; in September 1966, that committee reported that cost sharing and indirect cost policies were being administered satisfactorily. On May 18, 1967, the NSF Director presented a proposal to the Board to simplify the cost sharing system by allowing institutions to choose between the present cost sharing system (participation in costs on more than a token basis) and a new system with a set floor of five percent of total costs for cost share of all funded projects at the institution for a given time period, with a one percent floor on individual projects. The Board unanimously authorized the Director to proceed with this proposal.

At the Board’s May 1970 meeting, the NSF Director presented a plan to the Board to modify NSF cost sharing policy by discontinuing the mandatory faculty salary matching requirement and by permitting an averaging cost sharing procedure as an optional accounting mechanism. Under this procedure, the percentage of cost sharing could be averaged over several projects, provided that each project had at least a “token” cost share. The Board unanimously authorized the Director to proceed with this proposal, and NSF subsequently issued Important Notice No. 31 describing the new policy on September 3, 1970. On March 31, 1971, Bureau of the Budget Circular A-100 (subsequently designated Federal Management Circular [FMC] 73-3) was issued to replace the seemingly vague cost sharing requirements of Circular A-74. Circular A-100 required that for educational institutions, cost sharing should “normally” be at least one percent of the total project costs and in “many cases” should be less than five percent. In “some cases,” such as for the payment of faculty salaries or when equipment acquired through the research project added significant value to the institution for educational activities, higher cost sharing requirements would be appropriate. The Circular allowed for the amount of cost sharing by an institution to be determined by the aggregate of all of a Federal agency’s projects at that institution, with relatively high contributions on some research projects offset by relatively low contributions on others. Additionally, the Circular required recipients of Federal research grants to maintain records of research project costs paid by the Federal Government and contributed as cost sharing by the grantee institution.

In 1976, OMB issued Circular A-110 (2 CFR Part 215.23), setting forth uniform administrative requirements for grants and agreements between the Federal Government and institutions of higher education, hospitals, and other non-profit organizations. Section 215 of the CFR defines types of allowable cost sharing and the method by which in-kind cost shared contributions must be valued, but provides no guidance as to appropriate circumstances for or levels of cost sharing. NSF cost sharing policies have historically been and remain today consistent with Circular A-110.

On February 27, 1980, NSF issued Important Notice No. 81, indicating that cost sharing would be satisfied by a contribution of one percent on each and every project at a grantee institution or on the aggregate total costs of all projects requiring cost sharing. At its September 1980

meeting, the Board was advised that OMB was considering changes to cost sharing requirements because universities were facing difficulties in documenting faculty costs. On June 23, 1981, OMB rescinded FMC 73-3, removing the Federal requirement for cost sharing at least one percent of total project costs in most cases. NSF continued to consider the one percent level of cost sharing mandated by FMC 73-3 a statutory requirement until NSF Congressional appropriations language ceased to include that requirement in early 2007.

During the 1990s and early 2000s, discussion on cost sharing focused on ambiguities in the application of NSF cost sharing policy, the indirect cost rate cap, financial constraints on Federal agencies and grantee institutions, and the burden of tracking and auditing cost shared resources. On June 11, 1999, the Board approved a new NSF cost sharing policy; NSF subsequently issued Important Notice No. 124 entitled “Implementation of the New NSF Cost Sharing Policy.” Important Notice No. 124 listed the following key aspects of the new policy: (1) Cost sharing is an eligibility, not a review, criterion; (2) NSF cost sharing requirements beyond the statutory one percent requirement will be clearly stated in the program solicitation; and (3) only statutory cost sharing will be required for unsolicited proposals.

At its November 2002 meeting, the Board revisited its 1999 policy. That meeting addressed audit concerns related to documentation and satisfaction of cost sharing obligations, undue burdens placed on institutions, inequities among institutions, and friction among administrators and researchers. At the conclusion of its discussion, the Board approved a resolution (NSB-02-188) to change the language in NSF cost sharing policy to specify that cost sharing was to be implemented only as required by law (e.g. the one percent statutory requirement). Following this change, specific programs were still permitted to set cost sharing requirements for solicited proposals in addition to the statutory one percent requirement.

At the request of NSF, the Board again revisited NSF cost sharing policy at its October 2004 meeting. On October 14, 2004, the Board approved its most recent cost sharing policy revision, eliminating NSF program-specific cost sharing requirements and requiring only the statutory one percent of sharing. This revision eliminated cost sharing as an eligibility requirement for grant proposals. On June 1, 2007, the statutory one percent requirement for cost sharing was eliminated for NSF grant proposals because the FY 2007 Congressional appropriations bill providing funds to NSF no longer contained language requiring grant awardees to share in the cost of research projects resulting from unsolicited proposals. This most recent revision to NSF cost sharing policy effectively eliminated cost sharing NSF-wide and for all NSF grants.

At the Board’s annual retreat in February 2007, the Chairman of the Committee on Strategy and Budget (CSB) questioned the impacts of the Board’s 2004 cost sharing policy revision after hearing concerns from some Board Members about possible unintended consequences of the change. In response, an *ad hoc* Task Group on Cost Sharing was formed; the Task Group was engaging in a timely study of the issue when the America COMPETES Act formally directed the Board to evaluate NSF cost sharing policy.



## **Appendix B**

### **December 7, 2007 Roundtable Discussion on Cost Sharing: Agenda and List of Participants**





**NATIONAL SCIENCE BOARD WORKSHOP**

**Committee on Strategy and Budget  
Task Force on Cost Sharing**

**Roundtable Discussion on Cost Sharing**

**National Science Foundation  
4201 Wilson Boulevard  
Room 1235  
Arlington, Virginia  
December 7, 2007**

**AGENDA**

- 8:00 a.m. **Welcoming Remarks**
- Dr. Kelvin K. Droegemeier, Member, National Science Board and Chair, Board Task Force on Cost Sharing
- 8:05 a.m. **Motivation, Purpose and Goals**
- Dr. Droegemeier
- 8:15 a.m. **Process and Logistics for Board Workshops**
- Dr. Michael P. Crosby, Executive Director, National Science Board
- 8:25 a.m. **Introduction of Participants**
- 8:35 a.m. **Remarks: History of Cost Sharing in Federally Funded Research and Key Issues in Cost Sharing**
- Speakers: Robert Hardy, Director, Contracts and Intellectual Property Management, Council on Governmental Relations (COGR) and Anthony DeCrappeo, President, Council on Governmental Relations (COGR)
- 9:20 a.m. **Direct and Indirect Impacts of Cost Sharing on the University Research Enterprise**
- Discussion Moderator: Howard Gobstein, Vice President for Research and Science Policy, National Association of State Universities and Land-Grant Colleges (NASULGC) and Robert McGrath, Senior Vice President for Research, The Ohio State University and Chair, Council on Research Policy and Graduate Education (CRPGE), National Association of State Universities and Land-Grant Colleges (NASULGC)

*Discussion Item: The Board is examining the effects of cost sharing requirements on the academic R&D enterprise and the extent to which cost sharing impedes or promotes strategic financial investments in research by colleges and universities. Of further interest is the impact of cost sharing on the overall costs of academic R&D borne by universities and colleges.*

- 10:10 a.m. Break
- 10:25 a.m. **The Nature and Role of Cost Sharing in the Proposal Decision Process**  
 Discussion Moderator: Arthur Bienenstock, Special Assistant to the President for SLAC and Federal Research Policy, Stanford University
- Discussion Item: The Board is examining the fundamental philosophy of mandated and voluntary cost sharing in Federally funded research. Regarding voluntary cost sharing (or institutional commitment), the Board is specifically examining the extent to which these resources should be regulated and monitored, and the extent to which they should be considered as part of the peer review or agency decision processes if they bear on the investigator's or institution's ability to complete the proposed work.*
- 11:15 a.m. Lunch
- 12:30 p.m. **Impacts of Cost Sharing on University-Industry Research Partnerships**  
 Discussion Moderator: C.D. (Dan) Mote, Jr., President, University of Maryland at College Park and Co-Chair, Government-University-Industry Research Roundtable (GUIRR)
- Discussion Item: The Board is examining whether cost sharing policies can be tailored for effective application to specific types of programs (such as those involving industry), and whether the elimination of non-statutory cost sharing has had a positive or negative impact on those specific types of programs.*
- 1:20 p.m. **Reporting and Auditing of Cost Sharing: Agency and Institutional Perspectives**  
 Discussion Moderator: Sarah Wasserman, former Assistant Vice Chancellor for Research, University of Illinois at Urbana-Champaign
- Discussion Item: The Board is examining the nature and magnitude of the challenges for both Federal agencies and grantee institutions in tracking and reporting both mandatory and voluntary cost sharing.*
- 2:10 p.m. Break
- 2:25 p.m. **Preventing the “Have”/“Have Not” Gap in University Competition for Federal Research Grants**  
 Discussion Moderator: Irwin Feller, Professor Emeritus of Economics, Pennsylvania State University
- Discussion Item: The Board is examining the extent to which cost sharing impacts participation in Federal research funding opportunities.*
- 3:15 p.m. **Roundtable Discussion: Options for Revision to Board Cost Sharing Policy for NSF**  
 Discussion Moderator: Dr. Droegemeier
- 4:15 p.m. **Summary and Next Steps**
- 4:30 p.m. **Adjourn**

**National Science Board  
Task Force on Cost Sharing  
Roundtable Discussion  
December 7, 2007**

**List of Participants**

**National Science Board Members**

|                                                   |                                                                                                                                                                                                                            |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Steven C. Beering, Chairman                   | President Emeritus, Purdue University, West Lafayette                                                                                                                                                                      |
| Dr. Mark R. Abbott,<br>Task Force Member          | Dean and Professor, College of Oceanic and Atmospheric<br>Sciences, Oregon State University                                                                                                                                |
| Dr. Ray M. Bowen                                  | President Emeritus, Texas A&M University, College Station                                                                                                                                                                  |
| Dr. Kelvin K. Droegemeier,<br>Task Force Chairman | Associate Vice President for Research, Regents' Professor of<br>Meteorology and Weathernews Chair, University of Oklahoma,<br>Norman                                                                                       |
| Dr. Jon C. Strauss,<br>Task Force Member          | President Emeritus, Harvey Mudd College                                                                                                                                                                                    |
| Dr. Thomas N. Taylor,<br>Task Force Member        | Roy A. Roberts Distinguished Professor, Department of Ecology<br>and Evolutionary Biology, Curator of Paleobotany in the Natural<br>History Museum and Biodiversity Research Center, The<br>University of Kansas, Lawrence |
| Dr. Richard F. Thompson,<br>Task Force Member     | Keck Professor of Psychology and Biological Sciences,<br>University of Southern California                                                                                                                                 |
| Dr. Michael P. Crosby                             | Executive Officer, National Science Board                                                                                                                                                                                  |

**National Science Foundation Participants**

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| Dr. Arden Bement      | Director, National Science Foundation                                                                           |
| Dr. Christine Boesz   | Inspector General, National Science Foundation                                                                  |
| Dr. Richard Buckius   | Assistant Director, Directorate for Engineering, National<br>Science Foundation                                 |
| Dr. Michael Reischman | Deputy Assistant Director, Directorate for Engineering, National<br>Science Foundation                          |
| Mr. Henry Blount      | Head, Office of Experimental Program to Stimulate Competitive<br>Research (EPSCoR), National Science Foundation |

## **Participants from Outside the National Science Foundation**

|                          |                                                                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Robert Berdahl       | President, Association of American Universities (AAU)                                                                                                  |
| Dr. Arthur Bienenstock   | Special Assistant to the President for Federal Research Policy, Stanford University                                                                    |
| Dr. Elizabeth Curtler    | Assistant Vice President, Foundation, Corporate and Government Relations, University of Richmond                                                       |
| Mr. Anthony DeCrappeo    | President, Council on Governmental Relations (COGR)                                                                                                    |
| Dr. Irwin Feller         | Senior Visiting Scientist, American Association for the Advancement of Science (AAAS) and Professor Emeritus, Economics, Pennsylvania State University |
| Mr. Howard Gobstein      | Vice President, Research and Science Policy, National Association of State Universities and Land-Grant Colleges (NASULGC)                              |
| Mr. David Goldston       | Visiting Lecturer and Practitioner-in-Residence, Woodrow Wilson School of Public and International Affairs, Princeton University                       |
| Mr. Robert Hardy         | Director, Contracts and Intellectual Property Management, Council on Governmental Relations (COGR)                                                     |
| Mr. Jack Kamerer         | Retired Director of Grants and Contract Administration, University of Illinois at Urbana-Champaign                                                     |
| Dr. Robert McGrath       | Senior Vice President for Research, The Ohio State University                                                                                          |
| Dr. C.D. (Dan) Mote, Jr. | President, University of Maryland at College Park and Co-Chair, Government-University-Industry Research Roundtable (GUIRR)                             |
| Dr. Richard Seligman     | Associate Vice President for Research Administration, California Institute of Technology                                                               |
| Mr. John Walda           | President and Chief Executive Officer, National Association of College and University Business Officers (NACUBO)                                       |
| Ms. Sarah Wasserman      | Former Assistant Vice Chancellor for Research, University of Illinois at Urbana-Champaign                                                              |