

National Science Foundation
Advisory Committee for Business and Operations
Summary Minutes and Recommendations for November 29-30, 2007

On behalf of the Advisory Committee for Business and Operations, this serves as our acceptance of the attached Summary Minutes and Recommendations for the fall Committee meeting held on November 29-30, 2007.

Potential topic areas to be addressed in the Spring 2008 meeting (funding permitting and as time permits) are as follows:

- What are institution's responsibilities and NSF's expectations for conduct of research under the Create Act/America Competes Act? This is an NSF policy development issue;
- Maintenance and Operations issues as related to MREFC projects and budgets;
- Updates on human resource issues including workforce and succession planning (mentioned by Dr. Bement in his remarks);
- Business Systems Review Subcommittee update; and
- FY 2008 budget implications on NSF operations and FY 2009 budget highlights.

The Committee appreciates this opportunity to provide advice and recommendations for NSF's business and operations.

Signed on February ?, 2008

Tom Kirk
Co-Chair

Mary Ellen Sheridan
Co-Chair

Committee members in attendance:

Jake Barkdoll	Consultant
Tom Dausch	Management Concepts, Inc.
Sharon Dawes	Center for Technology in Govt., SUNY, Albany
Philip Joyce	George Washington University
Tom Kirk	Brookhaven National Laboratory (retired)
Mort Rahimi	Northwestern University
Gloria Rogers	ABET, Inc.
Katy Schmoll	University Corporation for Atmospheric Research
Dick Seligman	California Institute of Technology
Mary Ellen Sheridan	University of Chicago (retired)
Don Worden	Training Consultant
Beverly Hartline*	Delaware State University

*Liaison from the Committee on Equal Opportunities in Science and Engineering

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Committee members absent:

Michael Gooden	Integrated Systems Analysts, Inc.
Mark Luker	EDUCAUSE
Sally Marshall	Human Resource Solutions, Inc.
Mildred Smalley	Southern University and A&M College (retired)
Carlos Vargas-Aburto	Kutztown University

Meeting commenced at 1:00 pm on Thursday, November 29, 2007

Office of Legislative and Public Affairs (OLPA) ~ Jeff Nesbit, OLPA Director

Jeff Nesbit was invited to present information on OLPA's current initiatives in response to the Committee's interest at the last meeting to hear more about the innovative projects and tools being used in OLPA.

Jeff noted the changing media landscape and the new NSF public affairs model that has been initiated since he began working at NSF just over one year and a half ago. Congress and the American public are increasingly demanding that researchers and science agencies effectively communicate the findings and work of the scientific enterprise. NSF's Office of Legislative and Public Affairs is responding to that need by creating new public affairs initiatives, products and partnerships to communicate science more broadly.

Several new initiatives in OLPA were reviewed, including:

- Enhancements in NSF.gov
- Partnership with the cable Research Channel
- Partnership with Live Science, a web-based science wire service
- Spots for music and on-line sites (like iTunes) focusing on advances in science and engineering
- New science website for kids (science360.org)

The Committee asked questions around the following issues:

- Dissemination of science information by non-science types through tools like blogs and Wikipedia. Jeff noted that NSF is very careful in what is sent out. He has had discussions with Google on a science video area.
- Outreach to teachers. Jeff noted that it is difficult to get content into the classrooms. He is talking with the National Science Teachers Association, looking into Discovery education partnerships and did a middle school experiment with Howard University.
- Concern that a major target is 9-12 year old children through television media. Jeff noted that these kids do want to hear about science and that a new wave is beginning.

The Committee summarized their comments on this topic with the following:

- NSF's program is powerful and targeted. OLPA is doing a great job.

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- Interest in real science is now going up. NSF has helped this surge.
- NSF should be commended for its work in the many partnerships in this area, even in this challenging environment.
- We should encourage the outreach activities to schools... don't just hope that it gets into the schools.

Dr. Bement's comments to the Committee with respect to the OLPA presentation:

- Indicated that NSF is a different agency with new OLPA initiatives—that we are no longer “flying below the radar” and are becoming a known quantity. (He noted our national and international awards for reaching the public).
- NSF works hard to engage young people in science and engineering. Outreach to young people in grades 4-8 is especially important.

Impact of Proposal Award and Management Mechanisms (IPAMM) ~ Joanne Tornow, Senior Staff Associate, Office of Integrative Activities (OIA)

NSF experienced a significant drop in funding rate between FY 2000 and 2005, which raised a variety of concerns within NSF, the National Science Board, and the science and engineering research and education communities that NSF serves. In March 2006, NSF charged the Impact of Proposal and Award Management Mechanisms (IPAMM) Working Group to perform a detailed study of the trends, impacts, and causal factors associated with the recent declines in proposal funding rates and the simultaneous growth in proposal submission rates.

The presentation provided a summary of the findings and recommendations contained in the IPAMM report, published in August 2007. Results of analyses to identify underlying causes driving the increase in proposal submissions, determination of impacts on the quality and nature of the research being submitted to NSF, various vulnerable groups (i.e., beginning investigators and underrepresented groups), and the merit review process were addressed.

As result of the survey, the IPAMM workgroup made the following recommendations to NSF:

- Focus on developing strategies that are appropriate within the context of each unit;
- Improve communications w/ internal and external communities;
- Update the IPAMM trends analyses annually, and periodically reassess the practices and policies of the directorates/research offices.

The IPAMM report was finalized in August and has been presented to NSF Senior Management and the NSB. Implementation has been initiated on some recommendations. The group is reaching out to NSF staff to discuss the findings, and reaching out to external communities to begin a dialogue on the implications of the report.

The Committee asked questions about some of the statistics presented in the report and speculated about some of the rationale behind the survey results. Overall, the Committee found the information to be very interesting.

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OIRM Updates ~ Anthony Arnolie, OIRM Director

Human Capital Initiatives

- Administrative Functions Study (AFS) Pilot: The pilot began in October 2007 and will last for one year. The pilot is being conducted in 14 Divisions within four directorates in order to test the viability of the new process and new positions. In addition, the AFS Pilot Learning program will help participants learn and apply new skills, build relationships and engage leaders in the AFS Pilot.
- NSF Academy: The former Academy Dean, Dr. Pius Egbulu, has left NSF and returned to his university. The Academy is now headed up by Branch Chief Paul Barsnica, under the Division of Human Resource Management.
- Merit Review Training: This is in development and will address key issues in the NSF merit review process and promote discussion and exchange of ideas among NSF staff.

Office Space Issues

- New Owners for both of NSF's buildings – Stafford I and II;
- NSF Child Development Center was enlarged; and
- Building lease ends in 2013. NSF will need to decide within the next year whether to stay in Ballston or look into other options.

CIO Updates ~ Andrea Norris, Division Director for Information Systems, OIRM, and Mary Santonastasso, Division Director for Institutional and Award Support, BFA

What is Research.gov? Research.gov is a web portal for research institutions to access a menu of grants management services and information in one place.

In August 2007, OMB issued GMLOB guidance requiring agencies to align with one of three Consortia leads. NSF is one of these leads, in research grants. NSF is partnering with USDA/ Cooperative State Research, Education, and Extension Service (CREES) and in discussion with Air Force Office of Scientific Research, NASA, Department of Energy Office of Science, Office of Naval Research, Army Research Office and Social Security Administration.

NSF's contribution to Research.gov is a tool that modernizes Fastlane. The upgraded Fastlane is

- Based on established policies and business processes that NSF employees, applicants, and awardees are familiar with;
- Provides the research community with access to tools for research-oriented agencies;
- Enables NSF to comply with recent government-wide mandates and guidelines; and
- Fulfills NSF's role as a Grants Management Line of Business (GMLOB) Consortium lead.
- Based

Services and information are currently available for NSF and USDA/CREES. Initial public release of the portal is planned for December 2007 and has gone live.

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The Committee commends NSF for creating an excellent product in Research.gov and for providing an alternative/complementary tool to Grants.gov.

BFA Updates ~ Tom Cooley, BFA Director/CFO

Tom indicated that there have been several changes in NSF senior management positions – new Assistant Directors (AD) in MPS, EHR, and CISE, plus the AD position in GEO needs to be filled. With these changes in leadership, there will be new relationships and new avenues of emphasis, which may result in changes to the FY 2009 budget requests.

Tom presented budget information to the Committee that compared the FY 2008 budget request to the FY 2007 request to Congress, which illustrated an almost 7% increase in NSF's total budget. With respect to the FY 2008 budget priorities, Tom indicated that NSF received great support in House and Senate. The focus is on stewardship and meeting the needs of the research community.

Concerns were raised by the Committee regarding the budget and its effect on operations and the PMA, particularly in Human Capital, which went from Green to Yellow. NSF's operating budget (also known as AO&AM) is a high priority for the agency and in the meantime, the agency will need to prioritize activities to the best of its ability. The B&O Advisory Committee members, when informed that the NSF budget for internal staffing had been flat in FY 2007 from FY 2006 and that the increase projected at that time for FY 2008 was only 1.5%, commented that this development constituted a 'red flag' for the agency's functionality, especially in terms of ever-increasing staff workloads that the Committee had been apprised of and the serious understaffing that continues under these grave funding circumstances.

Tom Cooley discussed the Federal Funding Accountability and Transparency Act (FFATA), which requires a government-wide database that will show every government grant and contract in it. The intent of the Coburn-Obama Bill is to ensure that the government is transparent down to the lowest level to show where every taxpayer dollar is going. It requires the posting of all contract/grant information within 30 days.

Broadening Participation Working Group ~ Celeste Rohlfing, Program Director in the Chemistry Division, Directorate for Mathematical and Physical Sciences (CHE/MPS), and Victor Santiago, Deputy Division Director for Human Resource Development, Directorate for Education and Human Resources (HRD/EHR)

Broadening participation of underrepresented groups in the sciences and engineering has long been a priority at NSF and is repeatedly referenced in major policy documents. NSF's commitment to broadening participation is further manifested in its Strategic Plan through a variety of investment priorities related to the Learning and Stewardship strategic outcome goals.

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Guided by these strategic outcome goals, NSF established a more specific broadening participation goal -- to expand efforts to increase participation from underrepresented groups and diverse institutions throughout the United States in all NSF activities and programs. The Broadening Participation Working Group was charged in April 2007 to implement the two performance measures related to this goal for FY 2007:

- To develop a plan to increase participation in NSF programs from underrepresented groups, which includes defining existing baseline data, and
- To develop a plan to broaden the pool of reviewers for NSF proposals.

The group identified 59 programs that could contribute to Broadening Participation efforts; 28 were targeted directly to BP; 17 have a specific BP emphasis; and 14 have a high potential to affect BP. All of the engineering centers touch on this as well.

The co-chairs of the Broadening Participation Working Group have been addressing all of the major Advisory Committees to share the six work group recommendations:

- Recommendation 1: Maintain and update the current portfolio, and inform the portfolio through the incorporation of strong scholarship that takes into account difference among populations, fields, and levels of education.
- Recommendation 2: Diversify the reviewer pool by providing a searchable reviewer database, encouraging reviewers to supply demographic data, cultivating additional reviewer sources, and encouraging NSF staff to use a more diverse reviewer pool.
- Recommendation 3: Provide training to staff on NSF priorities and mechanisms, effective community outreach, and mitigation of implicit bias in the review process.
- Recommendation 4: Dissemination of information by communicating clearly BP and workforce development guidance and promising practices throughout the science, technology, engineering and mathematics (STEM) community. Also establish websites to facilitate broad dissemination and consultation -- one for the general public and one internal to NSF to facilitate broader dissemination.
- Recommendation 5: For accountability require PIs to report outcomes of BP activities, establish NSF-wide reference codes for all BP funded activities, and incorporate BP efforts as a performance indicator for program staff and management.
- Recommendation 6: Promote effectiveness and relevance of the NSF BP portfolio via periodic evaluations.

Next Steps:

- Feedback;
- Public comment period;
- Implementation with allocation of personnel and funding;

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- On-going assessment.

The Committee asked questions of the presenters and commented around the following topics:

- Measurability of the outcomes: Victor noted that this year the goal was to develop the plan. For next year the measures should be quantifiable.
- Why more programs were not included in the baseline: While all programs do address the issue somehow, it is difficult to capture it specifically in all of them. For some it is not the main priority. Progress reports could detail outcomes related to BP.
- If the Advisory Committee members would get the final report recommendations for comment: Victor noted that the dissemination would be done by OLPA and the Advisory Committee could certainly receive a copy and provide feedback.
- Highlighting BP: That NSF should find ways to bring this more to the attention of all programs -- find a way to highlight it and have it built into the review criteria. With investigator-initiated efforts, make the PIs highlight it. Per Celeste many divisions have sent out Dear Colleague letters that offer ideas for showing BP efforts.
- Regarding accountability: As part of the reporting requirements NSF could require a statement as to how the PIs accomplish their BP goals. NSF should give PIs the tools to do it. Maybe associate it with renewal of funding.
- Baseline issues, how to develop the baseline data to show increases in BP: Celeste noted that the working group is recommending that all divisions have an annual report to capture some of the BP data. This would be posted on the external website.
- Committee of Visitors should look at BP for each division: Celeste noted the COVs meet every three years, but there would be an annual data collection to review.

Total Business System Review Subcommittee Update ~ Mark Coles, NSF Deputy Director for Large Facility Projects, and Dick Seligman, Senior Director, Office of Sponsored Research, California Institute of Technology

Marks Coles discussed the name change from “Total” Business System Review (TBSR) to just “Business System Review” (BSR) because the scope of the review cannot actually encompass everything. He also discussed the history of BSRs, which were developed in response to the 2004 NSF audit, although the concept for BSRs had originated 10 years ago. The purpose of the BSR is to assess the business practices of the awardee institution hosting a large facility with NSF expectations for best practices and to identify potential concerns that could arise in the event of an audit. NSF plans to conduct a BSR at least once during the five-year award cycle of the large facility. Since 2004, the first BSRs were conducted and a guide developed with input and expert advice from the Subcommittee.

Final Recommendations to NSF from the TBSR Subcommittee:

1. Incorporate a Scoping Activity, prior to each TBSR, that matches the general goals of the TBSR with the nature of the reviewed facility and the oversight needs of the NSF.

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2. The focus and agenda of all TBSRs be matched clearly to the nature of the reviewed facility and whether it is managed within a research university or by a dedicated not-for-profit corporation.
3. TBSRs be generally set at 5 year intervals but allows for a review as soon as 3 years later if driven by important, relevant changes in the facility.
4. Eliminate Subrecipient Monitoring from the TBSR core functional areas and incorporate any subrecipient monitoring aspects of the review within the other core functional areas.
5. Add appropriate non-NSF subject matter experts to the TBSR review teams.
6. Eliminate the redundancy of elements cited as “areas of concern” among the core functional areas.
7. That all documents requested from the reviewed organization be listed together in a separate section.
8. Re-title Section 10 of the Guide from “Procurement and Acquisition System” to “Procurement System”.
9. Change the title, “Total Business Systems Review”, to the more accurate and appropriate, “Business Systems Review”.

The presentation made by Mark Coles and Dick Seligman and the Subcommittee’s Report and findings were opened to the Committee for discussion. Mark and Dick provided feedback on the review of property (government owned versus awardee) and reliance on cognizant agency reviews and audits. Ultimately, “it depends” on the situation and the level of quality of the other agency reviews. Although this review is not an “audit”, it still looks and feels like an audit to the awardee. This is one of the reasons why defining the scope prior to the visit is essential. It also gives NSF an opportunity to explain how the BSR differs from an audit and how they will provide assistance.

There was also discussion on the significant impact on NSF staff and resources it takes to conduct these reviews. NSF needs to be appropriately staffed to handle not only the visit, but also the pre-visit preparation and post-visit report and follow up. Dick pointed out that all of the people involved on the BSR were employees of NSF. The Committee discussed participation of non-NSF reviewers and recommended that non-NSF participants be added to provide outside technical expertise, similar to the peer review process.

The Committee was impressed with the work of NSF. Tom Kirk emphasized that the Committee needed to **endorse** the Subcommittee report in order for it to have meaningful impact. There was also discussion about the Subcommittee continuing in order to review the final Report for the most recent BSR at Caltech and to review the final revision of the BSR Guide.

The Committee accepted and endorsed the Subcommittee report and its recommendations by a unanimous vote.

The Committee also approved the Subcommittee to reconvene for one more meeting.

Stewardship Goals and Measures ~ Pat Tsuchitani, Senior Advisor for Performance Assessment, Budget Division, BFA

Michael Sieverts, Deputy Director, Budget Division, gave an overview of the evolution of Stewardship and Pat Tsuchitani proceeded to present on the subject.

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Long-Term Strategic Outcome Goals for NSF

- Discovery, Learning, Research Infrastructure are the goals
- Outcomes of investments are evaluated annually by the Advisory Committee for GPRA Performance Assessment (AC/GPA)
- AC/GPA 2007 report will be included in the performance chapter of the FY 2009 Budget Request to Congress; also available on the NSF website

Annual Goals

- Stewardship is measured every year
- Other annual performance goals -- PART goals (OMB's Program Assessment Rating Tool) from 2003-2006

Stewardship is defined as "supporting excellence in science and engineering research and education through a capable and responsive organization."

Annual Stewardship goals for FY 2007

- Maintain the Time to Decision Standard (70% for all proposals to the Foundation)
- Improve the Quality and Transparency of the Merit Review Process
- Conduct a Survey of Proposers (IPAMM Study)
- Broaden Participation in NSF Activities/Programs
- Improve the Management of Large Facilities
- Monitor Post-Award Financial Transactions
- Establish an E-Government Implementation Plan
- Conduct a Successful Federal Information Security Management Act (FISMA) IT Program Review

All of these goals were achieved except for part of the Large Facilities goal (construction goal).

Development of FY 2008 Stewardship Goals

- Some of the FY 2007 goals will continue, although the performance measures may be revised or expanded.
- Some new goals for FY 2008 will be established based on the results of the FY 2007 goals, ongoing management challenges, and cross-Foundation activities.
- GPRA Working Group has the responsibility for goal development.

The question put to the Committee was "What constitutes the threshold for achieving success under Stewardship? In FY 2007, there were 8 Stewardship goals and 7 (one might argue 7.5) were achieved.

The overall feeling of the Committee was that the Foundation had achieved success in Stewardship in FY 2007, and, in fact, is being too hard on itself. NSF has achieved multiple accomplishments in the Stewardship arena, and the Committee urges NSF to take credit for these many accomplishments.

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The Committee urges NSF to think about future Stewardship goals in terms of strategies and what those strategies will achieve for NSF. The Committee also recognizes that in the challenging budget environment where resources are constrained, certain goals may not be met.

Committee Discussion (end of day 1)

The Committee members discussed in general how they might best comment on the various presentations and future updates. Comments back to NSF may be handled at the meeting, in writing, or email any of the B&O meeting coordinators. Tom Cooley assured the Committee that any and all comments would be taken seriously. He noted that this Advisory Committee is unique in that NSF is the only agency that has such an advisory group for its administrative activities. This particular Committee has a track record of significant impact on how NSF does business. When NSF first started to develop the Strategic Plan, it dealt with everything except how administration and management would help guide the investment. This Committee guided NSF toward integration of the goal which developed into the concept of stewardship, highlighted in the current NSF strategic plan.

Committee Discussion with NSF Director, Dr. Arden Bement (day 2)

Dr. Bement began with introductions all around. He is pleased with the diversity of the Committee and thanked everyone for their oversight on NSF's behalf. He applauded NSF staff quality and dedication as well. Some of the most important issues noted include:

- HR succession planning, given the increase in retirements with more to come
- Balancing the research culture with the management culture
- A stressed workforce related to resource issues as well as complexity of the work -- that the numbers alone don't tell the story
- Uniqueness of NSF projects (risk assessments)
- IT systems reliance and budget constraints -- working with a tired infrastructure
- Audit issues
- Stewardship risk vs. funding more transformative research
- More accountability required by Congress -- no tolerance for cost over-runs with regard to project management; funding transparency goals

The Committee thanked all of the presenters and commented on how informative they were, indicating NSF could be proud of the efforts made by OLPA in the last year and should be pleased with NSF's relationships to its various audiences. The Committee noted the importance of the BSR subcommittee and indicated its acceptance and endorsement of the subcommittee report which it hopes to see posted on the B&O website. The members also want to be updated on the Broadening Participation goals and IPAMM's progress.

The Committee offered congratulations on meeting so many OMB requirements while noting that in context of flat resources NSF must recognize that certain goals may not be met. Committee members expressed concern about the following:

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- Budget situation is of concern to committee, especially lack of growth in Agency Operations and Award Management (AOAM) budget which could be heading toward real disaster
- 2008 Budget: not happy with the reality; that a lack of IT emphasis will impact efficiency and eventually NSF's reputation
- Hybrid workforce: full-time vs. part-time, rotators vs. permanent staff, and understanding how well this mix is working
- Asked about space challenges and if we are teleworking, office-sharing? While NSF currently offers telework opportunities to all staff members; not everyone has chosen to participate. No office-sharing to date.
- More transparency may be needed with regard to information sharing with the grantee community; be clear how things really happen vs. rumors of how they happen
- Broadening Participation must be accepted throughout NSF and the community

Final Discussion/Committee Wrap-up

The Committee commended NSF staff for their dedication especially given the current stresses related to budget and human resource issues discussed earlier.

The Committee discussed a potential future topic related to computer centers. Concerns revolve around the lack of energy efficient computing centers and the way they are funded at individual universities, where there might be a mechanism to work together to be more efficient. Mort Rahimi will take the action to define the topic more clearly, so that the Committee and NSF may determine an appropriate discussion venue.

The Committee had questions related to institutional responsibility with regard to conduct and research under the Create Act (part of America Competes Act). It's unclear to the grantee community what NSF expects from the institutions; grantees are unsure how to address compliance concerns and managing conflicts of interest.

Tom Cooley responded that there's a process being followed with regard to the Act, and there are NSF working groups reviewing the issues involved. He agreed that this could be a topic for discussion at the next meeting, that Mary Santonastasso and Jean Feldman could discuss the implications for our grantees. He noted there are a whole host of policy issues being looked at by various NSF working groups and it will take some time to sort it out.

The Committee raised the issue of angst in the research community re: major research equipment (MRE) projects with regard to maintenance and operations. The facility maintenance and operations budgets must be accounted for at the beginning of an MRE project. Maintenance and Operations are taking considerable dollars from program funds, hurting the AOAM resources. Tom responded that Dr. Bement has already charged individuals with this task and NSF will be looking at this.

With regard to HR issues, the Committee noted a need to consider the following:

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- Pride of a well managed agency
- Employee burnout
- Human capital needs
- Restricted resources
- Morale

The Committee does not want to lose sight of the stewardship goal.

Meeting adjourned at 12:00 pm on Friday, November 30, 2007