



Meeting of the BIO Advisory Committee Summary Minutes November 7-8, 1996

THURSDAY, NOVEMBER 7 - MORNING SESSION

Welcome and Approval of Minutes

Dr. Nina Fedoroff, Chair of the Advisory Committee for Biological Sciences (BIOAC), convened the meeting at 8:55 am with a welcome to members and guests. Dr. Mary Clutter, Assistant Director for the Biological Sciences (BIO) then greeted the BIOAC and welcomed new members. Dr. Clutter discussed changes in AD staff positions and stated that Dr. Joseph Bordogna is Acting Deputy Director for NSF. The minutes for the April 1996 meeting were unanimously approved by the BIOAC.

Status of the FY 1997 Budget and Outcomes of BIO AC Recommendations

Dr. Clutter reviewed the current status of the FY 1997 Budget for NSF. Dr. Clutter then reviewed follow-on actions from items discussed by the BIOAC and recommendations made by them at the April 1996 BIOAC meeting. In particular she discussed the BIOAC Home Page, current status of the Recognition Awards for Integrating Research and Education (RAIRE) competition, outcomes of the FY 1996 NSF-EPA Partnership competition, and the status of the STC program review.

The BIOAC discussed:

- The distribution of biology projects throughout NSF
- the efficacy of the Water and Watersheds competition, given its 4% success rate

Dr. Joseph Bordogna, Acting Deputy Director, NSF

Dr. Joseph Bordogna discussed the Government Performance and Results Act (GPRA) and NSF's responsibilities in meeting its requirements. In particular, he discussed the use of objective and subjective measures ("measurables" and "observables") and the need for both visionary and functional strategic plans, as well as the need to submit performance plans with "observables" with each budget. Dr. Bordogna also discussed the outcomes of the Advisory

Committee Chairs Meeting (9/13/96). He stated that the Advisory Committees and Committees of Visitors will be critical to our evaluation process under GPRA and mentioned possible roles they can play. Dr. Bordogna briefly discussed interdisciplinary research and risk taking with the BIOAC.

The BIOAC discussed how to determine when the cost to run a program outweighs the benefits provided to the scientific community, especially given flat or declining budgets.

Other Agencies I- FY 1997 Budget

U.S. Department of Energy- Dr. Aristotle Patrinos

Dr. Patrinos reviewed the FY 1997 appropriation for DOE's Office of Health and Environmental Research. In particular, he noted that the increase received in FY 1997 was most likely an aberration and that budgets are likely to decline in the out-years. Dr. Patrinos went on to discuss specific appropriation language that directs how the budget is to be allocated and the major issues and challenges his office faces, including those related to their human genome program, microbial genome program, computational biology, and bioremediation.

The BIOAC briefly discussed the proposed "virtual center" (Human Genome Joint Institute) that DOE is developing to streamline their activities in the Human Genome Project and promote collaboration.

Report on the BIO Senior Staff Retreat- Dr. James Edwards

Dr. Edwards reviewed the outcomes of the Fall 1996 BIO Senior Staff Retreat. The topics Dr. Edwards covered included:

- The status of FastLane
- The importance of attracting visiting scientists to NSF to serve as program officers
- Mechanisms for supporting infrastructure in the biological sciences
- Making priorities in the current budget environment
- Special competitions in the biological sciences
- Issues regarding NSF's review of interdisciplinary research proposals
- New working groups established within BIO
- Difficult questions BIO faces in light of these other issues

The BIOAC discussed:

- The possibility that FastLane could disenfranchise smaller institutions that may not have access to the Internet.
- The difficulty of attracting visiting scientists to NSF to serve as program officers, given the increased pressure to do more research and the current university system reward structure.
- Developing mechanisms to promote self-sufficiency for infrastructural resources in the biological sciences
- The repercussions of diminishing proposal success rates

THURSDAY, NOVEMBER 7 - AFTERNOON SESSION

Discussion on Risk Taking

The BIOAC discussed the efficacy of the SGER program and the promotion of risk taking by NSF in general.

Recommendations made by some members of the BIOAC included:

- Do not increase award size and duration of SGERs (or increase only modestly).
- Examine possible current under-utilization of the SGER program.
- Develop a mechanism for tracking the success of SGERs and other high risk, high potential impact proposals.
- Increase the capability of young researchers to do innovative research through postdoctoral fellowship programs, where the research is planned by the postdoc and carried out independently from the mentor/sponsor.
- Send a clear message to the scientific community that encourages innovation and creativity.

The BIOAC also felt that in some cases PIs may not be submitting risky, but potentially high-impact proposals because they perceive that the review system is risk averse or that their ideas may be stolen. They also noted that PIs may still be conducting the riskier research by piggy-backing it onto "regular" grants.

NSB-NSF Merit Review Task Force- Mr. Paul Herer

Mr. Paul Herer, Executive Secretary of the Merit Review Task Force, made a presentation on the report of the Task Force. He reviewed the history of the NSF merit review criteria currently in place and discussed the proposed changes. He stated that the proposed shift from four criteria to two does not necessarily reflect a dramatic change in the criteria, but rather a "repackaging" to ensure that PIs and reviewers consider all criteria. Mr. Herer noted that these changes would be reflected both in the Grant Proposal Guide and the review forms.

Mr. Herer and the BIOAC discussed the need to get input from within NSF and the scientific community on these proposed changes.

Interdisciplinary Research- Dr. Bruce Umminger

Dr. Umminger reviewed the outcomes of the Workshop on Multidisciplinarity in Biological Research, and noted that this workshop developed out of the perception that NSF has a problem in reviewing multidisciplinary proposals. In particular, he discussed the recommendation that BIO conduct an experiment on multidisciplinary proposal review. This experiment would involve reviewing a set of multidisciplinary proposals in both the disciplinary panels and a separate multidisciplinary panel and comparing the results.

Breakout Groups: Interdisciplinary Research and Merit Review

Dr. Fedoroff asked the BIOAC to meet in two breakout groups, one on interdisciplinary research and the other on merit review. Dr. Magee led the interdisciplinary research breakout group and Dr. Fedoroff led the merit review breakout group.

BIO AC Workshop Discussion

Dr. Frank Harris reviewed the overall themes that emerged from the five workshops convened by BIOAC members at their home universities:

- Teacher-Scholar as an "Endangered Species"
- Importance of Mentor Relationship
- Research Excellence does not Equal Training Excellence
- Collaboration Among Students
- Training Across Disciplines
- Small Group Activities
- Focus on "Real World"
- Science Literacy
- Training for Industry
- Role of Graduate Students and Postdocs in Research-Centered Education
- Access to Technology
- Partnerships (K-12, Industry, 2 year and 4 year Institutions)

The leaders of each of the BIOAC workshops gave an overview of the major outcomes of the workshops. Recommendations to NSF and academic institutions discussed by the BIOAC included:

- Develop a C-RUI-like program for non-RUI institutions.
- Promote the recognition of the importance of undergraduate research opportunities.
- Provide mentor-researchers who can promote undergraduate research and facilitate relationships between faculty and undergraduate students.
- Support interdisciplinary training, particularly by establishing stronger ties between industry and academia.
- Stimulate interaction between two and four year schools.

FRIDAY, NOVEMBER 8 - MORNING SESSION

Committee of Visitors- Reports and Relation to the Government Performance and Results Act (GPRA)- Dr. James Edwards

Dr. Edwards stated that NSF is looking into ways to use the COVs to assist with GPRA assessment activities and that experiments will be conducted over the next year to see if this is possible. These experiments include a division-wide COV to be held in IBN.

The BIOAC then discussed the three most recent COVs. The BIOAC members of the COVs that examined the Systematics and Population Biology Cluster, the Developmental Mechanisms Cluster, and the Biochemistry and Molecular Structure and Function Cluster summarized the reports of these COVs.

The BIOAC discussed:

- How COVs could be overburdened if assessment responsibilities were added to their charge and some possible mechanisms to alleviate this.
- The importance of balanced representation on the COVs if they are to undertake assessment activities.

- The need to attract more minority program officers and increase the number of minorities submitting proposals to NSF.

The BIOAC approved all of the COV reports.

Other Agencies II- FY 1997 Budget- Dr. Robert Huggett

Dr. Huggett gave the BIOAC an overview of the FY 1997 budget for the Office of Research and Development at EPA. In particular, he discussed EPA's graduate fellowship program, the establishment of a peer review process at EPA, and the FY 1997 research grant programs.

Dr. Huggett and the BIOAC discussed mechanisms to catalyze interactions among scientists at EPA and in academia, particularly through postdoctoral fellowships.

Reports from Breakout Groups and Discussion of Action Agenda for BIO

Interdisciplinary Research: Dr. Barbara Webster reported for the interdisciplinary research breakout group. Their major recommendations include:

- Agreed that the proposed BIO experiment on interdisciplinary proposal review was a good idea, but suggested that it be repeated.
- The multidisciplinary panel should be composed of individuals who are not only expert in a single discipline, but also have multidisciplinary expertise and outlook.
- What is meant by a multidisciplinary proposal must be defined.
- No PI should be penalized by having a proposal chosen for the experiment.
- PIs should be informed by letter that their proposal has been chosen for this experiment.
- PIs should be surveyed following the experiment to compare the strengths and weaknesses of the two review processes.

Merit Review: Dr. Burt Ensley reported for the merit review breakout group and reviewed their concerns and recommendations regarding the proposals of the Merit Review Task Force. The major recommendations of the breakout group include:

- They agreed with the idea of adopting the two proposed criteria, but had some concerns over how they will be presented both on the review forms and in the Grant Proposal Guide.
- PIs should be required to explicitly address the new criterion #2 in their proposals, either in the body of the proposal or in a separate section.
- Some were concerned about the presentation of Criterion #2 on the draft reviewer form. They felt that the proposed format might not be an effective means to get both PIs and reviewers to consider seriously this criterion and provide thoughtful responses to NSF.
- There was also concern among some BIOAC members that Criterion #2 would place an added burden on both the reviewers and PIs, and might make it more difficult to get ad hoc reviews.
- Some members of the BIOAC felt that the proposed review form suggested that both criteria should be considered equally, and disagreed with such equality. Other members strongly favored equal weight for both criteria, noting that Criterion #2 topics have heretofore mostly been ignored.

Future Business

The BIOAC members will consider March 17-18 and April 9-10 as possible dates for the Spring

1997 BIOAC Meeting. Dr. Clutter thanked the BIOAC members and asked those members who have not held workshops to consider holding one. She asked that any member interested in holding a workshop contact the Directorate for Biological Sciences.

HARDCOPY MINUTES APPROVED by Nina Fedoroff, Chair

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