



Meeting of the BIO Advisory Committee Summary Minutes November 18-19, 2004

THURSDAY, NOVEMBER 18TH

Directorate Updates

Welcome and Approval of Minutes

Dr. James P. Collins, Chair of the Advisory Committee for Biological Sciences (BIOAC), convened the Fall 2004 meeting at 8:45 am with a welcome to members and guests. Dr. Collins noted members not in attendance – Chandler, Melillo, Vanderhoef, and Jelinski. Dr. Mary E. Clutter, Assistant Director for the Biological Sciences (BIO), greeted the BIOAC and introduced new BIO senior managers – Tom Brady, Division Director of Integrative Organismal Biology (IOB) and Jerry Cohen, Deputy Division Director of Molecular and Cellular Biosciences. The minutes for the April 2004 meeting were unanimously approved by the Committee.

Dr. Collins updated BIOAC members on the activities of the Advisory Committee for Environmental Research and Education (ACERE), including a new report and workshop in the spring focusing on water resources and sensing systems. The ACERE has been advising NSF on integrative and interdisciplinary programs and is interested in making connections with NEON.

Directorate Updates

Budget and Current Issues – Dr. Mary E. Clutter

Dr. Clutter updated the Committee on the status of the FY 2005 Budget Request including highlights of the House and Senate reports. She reviewed NSF budget history, noting that NSF had received increases every year except 1986 and that the increase from 1998 to 2004 was 65%. She predicted that NSF would be back on doubling track by 2007 and discussed BIO average award size, duration and the decrease in BIO success rates from 1999-2004. Federal government outlays were presented to the AC and discussion topics included the future of

social security, the increasing net interest, and the likelihood of a decrease in discretionary spending. Dr. Clutter noted that only \$18 billion of federal research and development money out of a total of \$85 billion is going to universities and colleges. She also reviewed NSF's strategic goals and priorities, including broadening participation, increasing the success rate, cyberinfrastructure, and organizational excellence.

The BIOAC discussed:

- A recent panel suggestion to cut BIO award size in order to spread the budget farther.
- How success rate decreases as proposal number increases.
- The fiscal risk involved in making mostly standard grants.
- The Emerging Frontiers Division as an innovative strategy for dealing with high risk, or bold, research.
- The impact of Criterion 2 as well as the tension caused by having a goal of broadening participation during years of flat budgets.

Reorganization - Division of Integrative Organismal Biology (IOB): Dr. Judith Verbeke, Deputy Division Director

Dr. Verbeke updated the Committee on the IOB reorganization plans that took effect on July 26, 2004. The overall goal of the reorganization is to support integrative research at the frontier of plant, animal, and neural biology. The four cluster descriptions – Behavioral Systems, Developmental Systems, Environmental and Structural Systems, Functional and Regulatory Systems – have been posted on the web (<https://www.nsf.gov/div/index.jsp?div=IOB> <<https://www.nsf.gov/div/index.jsp?div=IOB>>) and A Dear Colleague Letter (DCL) and Frequently Asked Questions (FAQs) will follow shortly. IOB Program directors have been given responsibilities in multiple clusters to encourage team-building and cross-talk. IOB is creating panels for proposals (not proposals for panels) to encourage fluidity and flexibility. Implementation plans include cluster descriptions and DCL/FAQ's posted on web and communicated at professional society meetings and to all advisory panels.

The BIOAC discussed:

- The marked enthusiasm seen in panels for this new focus on organismal biology.
- The fact that this reorganization opens doors and provides more flexibility and opportunities for plant and neuroscience biologists.
- Enthusiasm for greater interaction among Program Directors.
- How this IOB reorganization can serve as an example to academic institutions.
- The importance of IOB communicating the reorganization to the community, especially at meetings that are not normally attended by IOB researchers (e.g., cell biology).

Cyberinfrastructure in the Biological Sciences Working Group (CIBS): Dr. Michael Willig, Chair (Division Director, Environmental Biology)

Dr. Willig updated the Committee on activities of the CIBS working group and reviewed the charge to CIBS – to assess and update baseline data, review cyberinfrastructure programs, and develop a Strategic Five Year Plan. The first draft of the strategic plan is due in December. Recommendations for FY2005 include: workshops, workforce development, database development, and advanced computation and simulation. Other proposed activities include: interacting with CISE (Shared Cyberinfrastructure) and other directorates, BIO-wide

workshops, and Cyber-enabled Research Seminars. The Strategic Plan focuses on – workforce, data and information, access, interoperability, and advanced computation and simulation – and on creating cyber-savvy Program Officers to lead the development of cyberinfrastructure for biological research and education while at NSF and when they return to their home institutions.

The BIOAC discussed:

- The new role of libraries as interactive learning centers for students.
- The maintenance of long-lived data in the future.
- The need to develop a cadre of students who will be ready to use cyberinfrastructure, including development of interdisciplinary majors founded on informatics tools.
- Can BIO lead the way in making the connection from K-12 to cyberinfrastructure?
- How the CIBS Strategic Plan reflects diversity and targets the growing number of minority students, especially in its workforce issues.
- How cyberinfrastructure, by its very nature, creates a democratization of education.
- The constant tension between protecting the intellectual property rights of individuals while at same time protecting public access to data and information.
- How cyberinfrastructure is changing the culture of biosciences.

National Ecological Observatory Network (NEON): Dr. Elizabeth Blood, Division of Biological Infrastructure (DBI)

Dr. Blood briefed the Committee on NEON activities since the last AC meeting: science requirements workshops held during the summer of 2004; a \$6 million award to AIBS in September 2004 for the NEON Design Consortium and Project Office; an Interagency Working Group meeting; cross-observatory activities; and the new NEON website: www.neoninc.org <<https://www.nsf.gov/cgi-bin/good-bye?http://www.neoninc.org>>, which includes workshop reports and a calendar of all NEON activities. Dr. Blood explained the structure of the NEON project, which includes: the NEON Senior Management Team, the NEON Project Office at AIBS, Technical Services Contractors, and the NEON Advisory Board. NEON committees include the Science and Human Dimension Committee (SHDC), Education Committee (EC), Facilities and Infrastructure Committee (FIC), and National Network Design Committee (NNDC). Dr. Blood also discussed common issues, challenges, and interoperability among observatory systems.

The BIOAC discussed:

- Concern regarding the very tight and somewhat inflexible schedule for NEON.
- The importance of including the NSF large facilities office in the vetting of all committees memberships and reports.
- The reason for including professional firms (e.g., Technical Service Contractors).
- The 16 regional groups and the self-nominated members of committees (the “at large” group of advisors) who will receive proceedings of meetings to help refine the process and products along the way.

Emerging Frontiers (EF): Dr. Joann Roskoski, Executive Officer

Dr. Roskoski briefed the AC on the history, goals, and activities of the Emerging Frontiers Division and explained how EF incubates, grows, and then mainstreams innovative programs

into the BIO core. In FY 2005, EF includes Biocomplexity in the Environment (BE), Nanoscale Science and Engineering (NSE), Math Sciences, Human and Social Dynamics (HSD), and Frontiers in Integrative Biological Research (FIBR). BE includes Coupled and Natural Human Systems (CNH), Ecology of Infectious Diseases (EID) with NIH, Microbial Genome Sequencing with USDA, and Assembling the Tree of Life (AtoL). FIBR supports projects that address major biological questions, are multidisciplinary, and are larger and of longer duration than most BIO awards. In FY 2004, EF also included Research Coordination Networks (RCN) that support groups of investigators across disciplines, organizations, institutions, and geographical boundaries. Two examples/websites of RCNs were demonstrated – WallBioNet and Deep Time Project.

The BIOAC discussed:

- The administration of EF, including the ups and downs.
- The challenges of implementing the shared management of EF using the Electronic Jacket (EJ).
- How EF has given staff a better, clearer idea of what is going on with these programs.

Dr. Joseph Bordogna, Deputy Director, NSF

Dr. Bordogna discussed the contemporary scene in the federal government including Administration priorities, a continued emphasis on homeland security, growing opportunities for science and engineering communities to address national needs, growing sophistication of research tools as enablers, and workforce issues. Dr. Bordogna briefed the Committee on the NSB report, Fulfilling the Promise (NSB 03-151, Section 22), a response to legislation on doubling the NSF budget legislation. Priorities in the FY 2006 budget include accessible cyberinfrastructure, maintenance of organizational excellence, and a primary focus on broadening participation and diversity, even in times of tight budgets. Dr. Bordogna concluded by presenting examples of how diversity is woven throughout all speeches given by the OD (e.g., a regional HBCU student research conference and a ABET annual meeting).

The BIOAC and Dr. Bordogna discussed:

- How the Foundation can use its “green lights” to leverage resources.
- The need for NSF to take a leadership role in embracing diversity at the community college level.
- Strategies for increasing award size during static budget years including the importance of efficiency at all levels (e.g., rewriting open-ended solicitations that result in too many proposals).
- The importance of holistically bridging disciplines to create strategies for linking funds (e.g., Science and Technology Centers).
- Strategies for increasing public awareness of NSF’s mission, including the new NSF website and the need for more interaction between universities and local congressional representatives.
- The effect of an increasingly conservative and ideological government on efforts to “stay at the frontier,” and the need to keep NSF moving carefully ahead with force – NSF provides the infrastructure and grantees are the force.

Broadening Participation

Introduction: Dr. Mary Clutter

Dr. Clutter gave an overview of broadening participation at NSF, noting that every grant should be having an impact and that Criterion 2 is making a difference. She gave examples of activities (K-12 through faculty levels and institutional programs) and reviewed the 2003-2008 NSF Strategic Goals.

Background on NSF Diversity Programs

Legal Aspects – Mr. Lawrence Rudolph, NSF General Counsel

Mr. Rudolph briefly discussed legal aspects of broadening participation to increase the number of underrepresented minorities, women, and persons with disabilities in the S&E enterprise. He reminded the Committee that different lawyers have different levels of risk tolerance and encouraged NSF to think creatively and carefully consider when writing a solicitation.

The BIOAC discussed:

- Strategies for BIO to ensure diverse participation on panels and committees, e.g. you can insist that groups be diverse but you can't insist that groups be exclusive.
- The problems caused by the difficulty of collecting ethnic, racial and gender data. Mr. Rudolph reminded the AC that there are laws restricting data collection by federal agencies. You can't solicit data without an OMB approved form but you can talk to a handful of people. It might border on anecdotal evidence, but it should still be usable data.
- The many difficulties in evaluating NSF's minority programs and the relationship between inputs (how much we spend) and outputs (success of the programs).
- The significant effort but absolute need for NSF to collect information during a program's entire life cycle.

NSF Framework and Programs – Dr. Thomas Windham, Senior Advisor, OD

Dr. Windham reported to the Committee that NSF has made extraordinary strides in efforts to broaden participation but there is no denying the fact that it is extremely difficult to evaluate programs. He stressed that in order to truly measure progress, we need to use the Caucasian number of PhD's per bachelors (6 out of 100) as a benchmark and establish that same number as the goal for underrepresented minorities.

The BIOAC discussed:

- The fact that using a "quota" is forbidden but using a "goal" is not. You just have to be careful that your goal does not turn into a quota.
- Concerns that with more data, NSF could be more strategic in its investments.
- How universities can use creative ways to collect this data, e.g. survey alumni and provide feedback to NSF.

CEOSE Guidance to NSF – Dr. Margaret Tolbert, Executive Liaison

Dr. Tolbert discussed the history and goals of CEOSE – to review and provide advice to NSF about all of its programs, not just those for underrepresented groups. She reviewed the CEOSE Reports to Congress that are used to assess policies and trends and propose new

strategies. She concluded with a discussion of continuing challenges, including the role of the merit review system; access to education and employment for underrepresented populations; enhanced diversity among NSF staff; continued expansion of outreach efforts; better monitoring of Criterion 2 outcomes; greater attention to concerns of scientists with disabilities; addressing reviewer reluctance to report gender, race/ethnicity, and disability status; broaden participation in STEM; and the need for regular assessment and documentation.

The BIOAC discussed:

- BIO's excellent track record according to the CEOSE report score sheet.
- The problem with measuring success in different units.
- Concern about retention, i.e. student diversity is much greater than faculty diversity.
- The need for a personal approach to recruiting – find a small number of students and dedicated mentors each year and then have patience and watch numbers grow.
- The posse approach – using groups of students to support each other.

Education Plan: Drs. Penelope Firth, DEB, and Muriel Poston, DBI

Drs. Firth and Poston updated the AC members on the Education plan, concentrating on actions since the last AC meeting. They reviewed fundamental goals, priorities to build capacity, and big questions used to organize the plan's recommendations. Actions include a modest FY05 budget increase for LTER Schoolyard Science, a planned workshop regarding high school students in research settings, a Dear Colleague Letter for community college faculty (Research Opportunity Awards), and an assessment of the REU program. Future considerations include "bundling" of recommendations, closer attention to timing (e.g., how near term actions enable and constrain longer-range plans), partnering opportunities beyond BIO, and integration with objectives for broadening participation. Next steps include a BIO Senior Management Education and Strategy Retreat for Planning and Implementation.

The BIOAC recommended:

- Publishing the BIO Education Plan, possibly as an "occasional paper" much like the recent ACERE published papers.
- Add a disclaimer to the paper to address concerns that a published report equals dedicated funding.

Broadening Participation Working Group: Dr. Thomas Brady, Chair (Division Director, IOB)

Dr. Brady began his presentation by noting that this is a unique time in the history of the Foundation: the Director of NSF has a senior advisor on broadening participation, broadening participation is one of the Foundation's strategic goals, and BIO has a broadening participation working group. Dr. Brady introduced members of this working group and discussed its charge to develop an action plan for broadening participation of individuals and institutions underrepresented both within NSF and in the biological sciences community. A draft strategic plan will include recommendations for BIO that may be used for designing or updating an appropriate portfolio of activities, consistent with the BIO Education Strategy, the NSB Broadening Participation guidance, various activities within EHR, and across NSF. Dr. Brady discussed a recent Quality Education for Minorities (QEM) workshop organized by a MCB grantee and a not-for-profit organization that provides technical assistance to faculty members

at minority institutions and underrepresented minority faculty at other institutions. Dr. Brady concluded by reviewing details of potential research funding mechanisms, including a soon to be released Research Planning Grants and Career Advancement Awards request for proposals.

The BIOAC discussed:

- Strategies for increasing the pool of individuals from underrepresented groups to participate in workshops such the QEM Network Meeting.
- The strong connection that the QEM Network has with Minority Serving Institutions (MSI).
- The value of using the QEM list as a source of possible NSF reviewers.
- The importance of communicating to individuals from underrepresented groups, whose first proposals to NSF are declined, that persistence is essential.

Division Examples

Division of Biological Infrastructure: Dr. Muriel Poston, Deputy Division Director

Dr. Poston presented examples of projects that address broadening participation in the Division of Biological Infrastructure, including the following:

- Plant Genome Research Program Outreach Portal (PGROP) – an outreach portal for educational activities emphasizing resources integrated at all levels (<http://www.plantgdb.org/pgrop/> <<https://www.nsf.gov/cgi-bin/good-bye?http://www.plantgdb.org/pgrop/>>).
- An outreach activity to discover the origins of the Makah potato, including a public portal with information about potato genome research (<http://www.outreach.potatogenome.org> <<https://www.nsf.gov/cgi-bin/good-bye?http://www.outreach.potatogenome.org>>).
- Two UMEB projects – (1) one at the University of Hawaii targeting native Hawaiians, includes component to train faculty from community colleges in Micronesian and Polynesian Islands, and (2) a collaborative program targeting African American students at Hampton University and the College of William and Mary.
- REU, New Mexico State University – program targeting first generation college students whose parents or grandparents were migrant farm workers.
- Research Experiences for Teachers (RET), UTEP Indio Mountain Research Station – provides supplements to middle and high school science teachers for development of mini-courses to use in classrooms and field sites.
- Two IGERT programs – ISU (87 faculty, 11 departments, 5 interdepartmental programs) and NC State (118 faculty, 15 departments).

Division of Environmental Biology: Drs. Alan Tessier and Charles Nilon

Dr. Tessier discussed the Interdisciplinary Training for Undergraduates in Biological and Mathematical Sciences (UBM) program, an alternate form of broadening participation focusing on the interface of biology and math. The first UBM award went to the College of William & Mary and Thomas Nelson Community College (40% minorities) and involves changes in curriculum and multiple-year joint mentoring by biology and math faculty. Dr. Tessier also discussed the NCEAS K-12 Science Outreach effort – Kids Do Ecology – a website designed to attract kids to ecology, where teachers can work with NCEAS postdocs and scientists

throughout the school year. Dr. Nilon presented two examples of broadening participation through LTER programs: (1) the Schoolyard LTER at Niwot Ridge focusing on biosphere literacy, and (2) the Baltimore LTER focusing on urban ecosystems. Dr. Nilon also discussed the Cicada Conference, the largest press event ever held at NSF, which included an outreach effort to reach the public in new ways.

Division of Integrative Organismal Biology: Dr. Thomas Brady, Division Director

Dr. Brady presented examples of broadening participation in the Division of Integrative Organismal Biology, including the following:

- CAREER award at the University of Chicago – awardee created a video to communicate science to the public and incorporates outreach to “Sisters4Science” program targeting girls during a crucial decision-making time of their lives (middle school).
- C-RUI award at Towson University – studies the impact of urbanization and uses problems to which students can relate, an important factor in recruiting a broad array of students to science; awardee serves as a mentor and involves students at all levels of the project.
- C-RUI award at Pomona College and Elizabethtown College – very successful results of a minority awardee serving as a mentor and inspiration to minority students.

Division of Molecular and Cellular Biosciences: Dr Maryanna Henkart, Division Director

Dr. Henkart presented examples of broadening participation in the Division of Molecular and Cellular Biosciences, including the following:

- CAREER award at the University of Tennessee – education outreach to develop functional genomics tools for the community; PI developed relationship with HBCU to host workshop for undergraduates, graduate students, and faculty.
- CAREER award at James Madison University – integrated research and education outreach to develop laboratory experiences for undergraduates and high school teachers in research; activities expanded to include deaf and hard of hearing undergraduates, high school students and their interpreters in the labs; results are being published in education journals as another source of outreach.

The BIOAC discussed:

- Details of the RET program, including participation of Native American teachers and dissemination of the Dear Colleague letter to the community via the web and a list of activities sent to all BIO awardees.
- How much higher education uses IGERT’s successes and even declines as excellent examples of broadening participation.
- The short and long-term impacts of attracting kids to science and engineering.
- The importance of explaining science to the public.
- The importance of choosing the right problem and the right time to intervene if you wish to engage students in S&E.

Challenges and Impact of NSF Activities

Dr. Norine Noonan, College of Charleston

Representing Predominantly Undergraduate Institutions (PUIs), Dr. Noonan shared success

stories from the College of Charleston: (1) A statewide program (NIH/EPSCoR) through which 11 faculty mentored 75 students (15% of which were African American) over three years. All graduated African American students are now working in their field or are in graduate/professional school. (2) Integration of REU and South Carolina Alliance for Minority Participation (SCAMP) programs, including a deaf student whose mentor learned sign language. (3) SCAMP students in summer bridge program involving parents as well. Dr. Noonan also discussed challenges in hiring minority faculty; the unique requirements of students with physical disabilities; and Standing Our Ground, the new AAAS publication dealing with underrepresented minority recruitment and retention in the post-Michigan era. Dr. Noonan proposed that NSF should reconsider its current organizational structure, which separates EHR's K-12 programs from the rest of the Foundation's programs, if we are truly to integrate research and education and broaden participation at all levels.

The BIOAC discussed:

- The need for more SCAMP funding and the challenges faced by SCAMP students.
- Outreach activities needed at the K-14 level.
- The critical importance of developing metrics to evaluate programs.
- The role that peer groups and parents are playing in retention of students.

FRIDAY, NOVEMBER 19TH

CAREER: Dr. Joanne Tornow, Chair, NSF CAREER Coordinating Committee

Dr. Tornow reviewed the history and goals of CAREER; the decline in NSF CAREER success rates over the last five years, noting a 30% increase in number of proposals over the same period of time; BIO success rates by division and total increase in BIO funding for CAREER; and CAREER demographics – increasing females and minorities, 16% from EPSCoR states and 4% from MSI's. Future activities include a COV review in FY 2005, an external evaluation, and a PECASE award colloquium focusing on building bridges between PECASE, CAREER and other NSF programs.

The BIOAC discussed:

- The need for data to examine the change in success rate for the increased number of minorities submitting CAREER proposals.
- The challenges facing CAREER awardees as they try to balance research and education at the beginning of their career – activities need to be integrated not competing for time.
- The recent trend in institutions using CAREER as a measure for tenure and promotion.
- An example of a CAREER award in which the research failed but the education component was a huge success.
- The multiple implementation strategies of CAREER at NSF – Leader model vs Critical Mass model – resulting in differences in how CAREER is implemented across the foundation.

Challenges and Impact of NSF Activities (continued)

Dr. Norma Allewell, University of Maryland, College Park

Dr. Allewell reviewed NSF support at the University of Maryland, an extremely diverse university (e.g., 32% of 25,000 undergraduates are from underrepresented groups), and presented the following successful examples: (1) vertically integrated K-16 partnerships, including summer institutes and school year collaborations creating professional learning communities; (2) a CAREER award enabling first year students to engage in independent research; (3) Materials Research Science and Engineering Center supporting service-learning-based K-12 education outreach; (4) an IGERT in Biology of Small Populations supporting 42 students and 16 postdocs; and (5) an IGERT in Human Evolutionary Biology incorporating outreach in Africa.

The BIOAC discussed:

- The excitement that diversity brings to an institution.
- The paradox that those doing a good job don't have the external stimulus to push them harder (e.g., the legacy of exclusion of women in geosciences vs. the legacy of inclusion in biosciences resulting in difficulties recruiting women to the biosciences as compared to the geosciences).

Dr. George Liggins, Bacton Assay – Partnerships

Dr. Liggins discussed examples of positive impacts he's seen in the private sector and while serving on advisory boards of academic institutions. Most noticeable are the increased number of relationships between community colleges (higher level of diversity) and larger institutions (increased opportunities). He noted that UCSD has been more successful recruiting underrepresented groups to the faculty than to the student body; the role that private sector executives can play in encouraging students to continue their education; and NSF has become more approachable to institutions like his alma mater, Hampton University.

The BIOAC discussed:

- The need for colleges and universities to invite business men and women from underrepresented groups to interact with and encourage students.
- The possibility that more BIO PhDs are employed in the private sector because of issues of job insecurity and low salaries in academic careers.

Dr. Cassandra Manuelito-Kerkvliet, Tribal Colleges

Dr. Manuelito-Kerkvliet briefed AC members on the status of the nation's 35 Tribal Colleges and distributed copies of Tribal College Journal and an NSF-produced publication on profiles of all Tribal Colleges. Dr. Manuelito-Kerkvliet discussed the following:

- Federal funding is not growing at the same rate as Tribal Colleges.
- The need for NSF to focus on newer, smaller schools that need the most help – site visits are most advantageous.
- A key problem with outreach to Tribal Colleges is that information does not reach the right people.
- Challenges of delivering educational resources to remote areas.

- The umbrella organizations – American Indian Higher Education Consortium (AIHEC) and White House Initiative on Tribal Colleges and Universities (WHITCU).
- Sustainability of grants at Tribal Colleges – the lack of resources and communication causing problems with efficiency and management of awards.
- The weak commitment of native faculty to Tribal Colleges and students when salaries and opportunities are higher at mainstream institutions.
- High student retention rates at Tribal Colleges – 90% compared to 50% in mainstream schools.

The BIOAC discussed:

- The advantages of Tribal Colleges making connections with mainstream schools and EPSCoR programs.
- The tension between Tribal Councils and overarching organizations such as AIHEC and WHITCU.

Activities of Other NSF Directorates

Directorate for Geosciences (GEO): Dr. Jacqueline Huntoon, Office of the Assistant Director

Dr. Huntoon reviewed demographics in the geosciences, which has the lowest percent minorities at the bachelors and masters levels and one of lowest for PhD's and women. She presented programs in GEO used to broaden participation: (1) Opportunities for Enhancing Diversity in the Geosciences (OEDG), which provides support for individuals, communities and institutions by developing collaborations or using existing networks (e.g. LSAMP) and encourages research universities to develop partnerships with minority serving institutions (MSIs). (2) REU sites encouraging PI's to recruit from LSAMP institutions and other MSI's. (3) Annual reporting procedures in GEO and strategies to make STC's more effective in broadening participation.

The BIOAC discussed:

- The importance of putting dollars in places where the student body pool is diverse, e.g. make site visit before making award to ensure diversity.
- The role of the AD/GEO in making broadening participation a high priority in GEO.
- Engaging students at the interface between (BIO) and (GEO).
- GEO's loss of students to engineering professions and the historical connection between geosciences and the petroleum industry.

Directorate for Mathematical and Physical Sciences (MPS): Dr. Janice Hicks, Division of Chemistry

Dr. Hicks presented new activities in MPS, including an REU-LSAMP partnership (67 sites with 600 students) and Undergraduate Research Centers (URC) targeting first and second year students and community colleges. The first URC award went to Purdue, the Center for Authentic Practice in Science Education (CASPiE), and includes distribution of planning grants to partner institutions. Future activities include cyber-enabled chemistry, partnering REU sites with the URC planning grant sites, and Discovery Corps Fellowships – service-oriented projects that leverage research expertise of postdocs or senior fellows.

The BIOAC discussed:

- The importance of including community colleges in all efforts to broaden participation.
- Foreign REU sites – getting students to think globally.

A General Broadening Participation Discussion Centered On the Following Topics:

- Outcomes from these AC discussions – will NSF be making changes?
- Concerns regarding lack of data and development of metrics.
- The effect Criterion 2 is having on institutions.
- IGERT accountability and sustainability issues.
- NSF should increase the number of workshops to make the community more aware of these broadening participation programs.
- Focus on “pressure points” (e.g., sixth-seventh grade) to efficiently leverage resources.

Committee of Visitors Reports

Dr. Burt Ensley briefed the Committee on recommendations from the PGR COV report: (1) the management of legacy databases, (2) attention to plants of economic importance outside the US, (3) concern for the low level of attention paid to Criterion 2 by reviewers, and (4) the low level of participation by underrepresented groups in PGR. Dr. Cassandra Manuelito-Kerkvliet briefed the Committee on recommendations from the DBI COV report: (1) FastLane and Electronic Jacket should be relieving Program Officer workload, not adding to it, (2) decrease feedback time to PI's, (3) reference broader impacts in all documents, and (4) increase outreach efforts to MSI's. The BIOAC unanimously agreed to accept both PGR and DBI COV reports.

Future Business

- FY 2005 COVS: MCB – Mary Lou Guerinot and IOB – Susan Stafford.
- Spring dates: April 7-8 or April 28-29, 2005

Around the Table Comments Included:

- Enthusiasm for IOB's reorganization, especially unique panels to meet needs of proposals.
- Emphasis on community colleges and their role in educating minorities – encourage continuing partnerships with research institutions.
- The curve is still flat. BIO is doing great things but it's the outcomes that really matter.
- Excitement seeing NSF pulling together as an agency – Criterion 2 is really making a difference.
- NEON as the beginning of a whole new era and way of doing business for biologists.

The Fall BIO Advisory Committee meeting was adjourned at 1:20 pm.

APPROVED

/S/ Susan Stafford *04/08/05*

Susan Stafford, Chair Date

[Back to Meeting Agendas and Minutes Page \(.../advisory.jsp\)](#)

National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749