

**COMMITTEE ON EQUAL OPPORTUNITIES IN
SCIENCE AND ENGINEERING (CEOSE)
National Science Foundation**

**MEETING MINUTES
February 11 - 12, 2014**

MEETING PARTICIPANTS

<p><u>CEOSE Members Present</u> Dr. Karl S. Booksh, University of Delaware, DE Dr. Ira Harkavy, University of Pennsylvania, Philadelphia, PA Dr. Evelyn Hammonds, Harvard University, Cambridge, MA Dr. Charles Isbell, Georgia Institute of Technology, GA Dr. Robert Jones, University at Albany, NY Dr. Alicia Knoedler, University of Oklahoma Dr. George Middendorf, Howard University, Washington, DC Dr. Alexander Ramírez, San Antonio, TX Dr. Wendy Raymond, Williams College, Williamstown, MA Dr. Keivan G. Stassun, Vanderbilt University, TN Dr. Joseph A. Whittaker, Morgan State University, MD</p>	<p><u>CEOSE Members Absent</u> Dr. Gregory Cajete, University of New Mexico, NM</p>
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<p><u>Federal Agency Liaisons Present</u> Dr. Katie E. Blanding, United States Department of Education Ms. Lisa Evans, J.D., National Institutes of Health Dr. Meldon Hollis, White House Initiative on Historically Black Colleges and Universities Dr. Shahin Nemazee, Smithsonian Institution Dr. Susan Heller-Zeisler, NIST/IAAO</p>
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<p><u>CEOSE Designated Federal Officer – Executive Liaison</u> Dr. Wanda E. Ward, Office Head, Office of International & Integrative Activities, National Science Foundation (NSF)</p> <p><u>CEOSE Executive Secretary</u> Dr. Bernice Anderson, Senior Advisor, Office of International & Integrative Activities, National Science Foundation (NSF)</p> <p><u>CEOSE Scientific/Technical/Administrative Staff</u> Dr. Joan Burrelli, Science Resource Analyst Mr. Steven Buhneing, IT Specialist, NSF Ms. Geri Farves, Program Specialist, NSF</p>

Day One
February 11, 2014

Welcome/Introductions/Opening Session

Dr. Wendy Raymond, CEOSE, called the meeting to order and began with the introduction of the CEOSE members. She acknowledged the work of Dr. Cecilia Conrad, the former CEOSE Chair whose term ended in January 2014, and indicated that Dr. Alexander Ramírez will continue as Vice Chair. In addition to new member Dr. Alicia Knoedler, the Chair stated that two new members, Dr. Robert Megginson and Dr. Louis Martin-Vega, will join the Committee in June 2014.

Dr. Raymond announced that the 2011-2012 biennial report was sent to Congress and would be used to frame the discussion with Dr. Cora Marrett, Acting Director of NSF. Members were also encouraged to think of other questions and topics for the discussion with the Acting Director. The Chair also reminded members that they have to prepare the upcoming 2013-2014 biennial report. She discussed the e-mail meeting with NSF leadership, calling attention to the status of the nomination of Dr. France Córdova as the next Director of NSF and the ground-breaking ceremony in Alexandria for the future location of NSF. The Chair provided an overview of the agenda and members raised several issues: diversity and adjunct professorships, the role of standardized tests in graduate education, the need for more complete demographic data from universities, and wider dissemination of CEOSE's visionary recommendation.

NSF Executive Liaison Report

Dr. Wanda E. Ward welcomed the CEOSE members and pointed out several agenda topics that were recent and/or high priority issues for the Foundation. She thanked Dr. Raymond for accepting the role of CEOSE Chair and acknowledged her leadership role in drafting the CEOSE report. Dr. Ward also had words of commendation for the outgoing members, Dr. Cecilia Conrad and Dr. Maria (Mia) Ong, and she provided background information about each of the three new CEOSE members. Her report included the following:

- an update on the EPSCoR Building Diverse Communities Track, reporting that EPSCoR received 48 proposals from 21 jurisdictions and made five awards in FY 13 with more awards to be processed in FY 14
- a review of the FY 14 budget table for programs to broaden participation by program categories
- supplemental funding to help Science and Technology Centers with integrating traditional ways of knowing in western science
- notable female representation in the first cohort of graduate fellows in the international Graduate Research Opportunities Worldwide (GROW) program
- BP presentations/meetings since last CEOSE meetings: convening a panel session at the 7th Annual Minority Serving Institutions Technical Assistance National Training Conference at NIST; meeting with new leadership of the WHI-HBCUs; presentation at Georgia Tech about NSF BP funding opportunities for inter-institutional research; webcast involving awardees of the Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring in honor of the National Mentoring Month

- an update of Career-Life Balance (CLB) activities, highlighting a web-based information module, the issuance of four Dear Colleague Letters with one DCL attracting 18 supplemental awards focused on dual career support through the ADVANCE Institutional Transformation Track
- an overview of the Gender Summit 3-North America and its forthcoming Roadmap document
- an announcement of the upcoming Broader Impacts Summit that will be held in the DC area in March 2014
- a call for nominations for the National Medal of Science Award

CEOSE commented positively about Gender Summit 3 and the roles of HBCUs in broadening participation. The Committee also discussed the pros and cons of online education.

Transparency and Accountability

NSF is committed to the principles that underlie transparency and excellence in management/accountability. Dr. Mark Weiss, Director, Division of Behavioral and Cognitive Sciences and Co-Chair of the Transparency and Accountability Working Group (TAWG), emphasized that NSF has a long-standing core value of *dedication to excellence* that has been embodied in the Foundation's strategic plans, investing optimally both the financial and human resources. He stated that it is critical that the Foundation continues to communicate with all stakeholders as to how and why funding decisions are made. In early December 2013, a notice was sent to Presidents of universities and other National Science Foundation awardees organizations, pointing out the dual goal of accountability and communication. The Acting Director has established the Transparency and Accountability Working Group and discussions have included two important areas: the abstracts as the public face of communication and the concept of developing portfolios.

Dr. Peter Arzberger, Senior Science Advisor and Co-Chair of TAWG, further discussed the importance of communication venues like the website and Highlights as well as the abstracts to share the value of the investment strategies to researchers, the general public and Congress. Additionally, the concept of portfolio is centered on placing an award in the context of a broader set of funding actions. Community buy-in was cited as essential as NSF moves forward in making the case for what science is funded and the value of that science. Principal Investigators (PIs) need to help people understand the value of basic research and why their projects are worth the investments. Two questions were posed: How can we engage the community in discussions about the value of research? Are there specific issues, from the CEOSE perspective, that should be considered as NSF moves forward on transparency and accountability?

The open discussion with CEOSE covered the following: text mining and graphic depiction of a portfolio to visualize linkages, the growing use of network analysis, raising awareness that NSF funds benefit the entire public and that institutions are committed to making clear that those benefits are equitably distributed, and support for various types of projects that lead to the production of new knowledge.

Updates from the Federal Liaisons

Representatives from other agencies shared insights about several of their broadening participation efforts. The Smithsonian Institute update, given by Dr. Shahin Nemazee, covered several K-12

opportunities including, Youth Engagement through Science, Smithsonian Science Education Center Laser i3 – Investing in Innovation. The National Institutes of Health (NIH) update was provided by Dr. Lisa Evans, who shared the recent announcement of Dr. Hannah Valentine as the first NIH Chief Officer for Scientific Workforce Diversity and discussed the recent NIH Building Infrastructure Leading to Diversity (BUILD) Initiative. The National Institute of Standards and Technology (NIST) update was given by Dr. Susan Heller-Zeisler focused on two long-standing programs—the Graduate Student Measurement Science and Engineering Fellowship Program and the Summer Undergraduate Research Fellowship Program, as well as the NIST Summer Institute for Middle School Science Teachers. Dr. Meldon Hollis of the White House Initiative on Historically Black Colleges and Universities (WHI-HBCU) focused on two issues—the need to balance ongoing and new research opportunities and the need to improve the cross-agency sharing of the impact and lessons learned of STEM programmatic efforts. He pointed out the call to coordinate federal efforts in workforce development, particularly in the areas of cybersecurity and national security. He also discussed the collaboration of the Brazilian government with HBCUs for the training of the Brazilian STEM workforce, noting that about 70% of these students are pursuing majors in engineering and computer sciences and further commented that similar international partnerships are under discussion with Columbia and Nicaragua. The Department of Education report given by Dr. Katie Blanding highlighted Title III and Title V programs. She provided the specific status of programs such as the TRIO Program, GEAR UP, and McNair Program and underscored the Department’s support for Hispanic Serving Institutions (HSI) and for the Alaska Natives and Hawaiian populations.

An outcome of this session was the suggestion to have written documentation from the Federal Liaisons that may be expanded to having a PowerPoint for their updates. The suggested document would provide an overview of programs and data about successes and challenges, as well as dollar outlay. The open discussion also raised concerns about disturbing trends in funding for broadening participation such as some programs being zeroed out, especially before efforts can be institutionalized, and declines in agency funding in the aggregate for MSIs. Also, there was an expressed interest in learning more about support for persons with disabilities.

International Engagement

Dr. Graham Harrison, Acting Section Head of International Science and Engineering (ISE) provided an overview of the ISE section within OIIA, the focal point for international collaborative activities across the NSF. In addition to engagement with counterpart organizations in other countries, NSF has three overseas offices in Beijing, Paris and Tokyo. He discussed the catalytic role of ISE funding and support for early career scientists for international engagement. For example, the International Research Fellowship Program (IRFP) forges long-term relationships between US and foreign S&E researchers by providing grants for 9-24 month abroad to build research capacity and a global perspective. While underrepresented minorities (URMs) are not well represented as PIs in IRFP, between 1992 and 2012, approximately 34 percent of the PIs have been female S&E doctorate holders. The program East Asia & Pacific Summer Institutes (EAPSI) introduces graduate students to S&E research in seven countries in the region with approximately 200 students participating per cycle. Again, very few URMs have participated in EAPSI; approximately 38 percent of the EAPSI fellowships have been awarded to female students. Dr. Graham commented that excellent science is happening around the world and NSF must be intentional and strategic in enabling all US scientists to partner worldwide.

CEOSE was encouraged by the engagement for females and very concerned about the low participation rates for underrepresented minorities. CEOSE thanked Dr. Graham for presenting historical demographic data for three specific international programs discussed (e.g., IRFP, EAPSI, and PIRE). ISE was encouraged to increase its efforts to engage underrepresented students in research opportunities in Africa and South America. It was emphasized that URM students need to connect with countries, cultures, fellow researchers and students with which/whom they may have some affinity or cultural connection. Full engagement of all segments of society in international research collaborations was stated as essential for broadening participation in STEM for innovation and knowledge transfer. Other areas discussed were the pathway approach to international engagement, broadening participation across all fields, and financial barriers and perceptions about completion delays due to spending extra time studying abroad. Inclusion of possible broader impacts of broadening participation for both the US and the countries abroad should be considered and included in solicitations, as appropriate. Members agreed that more attention needs to be given to greater involvement of persons with disabilities in global research opportunities.

2011-2012 Biennial Report to NSF and Congress/Discussion Topics for the Acting Director

CEOSE agreed that the message of the recommendation would frame the discussion with Acting Director Cora Marrett. In discussing the recommendation, members shared and reinforced the following points:

- The bold initiative must not be just another incremental program. The call is for an integrative, multilevel approach to address broadening participation challenges that result in institutional transformation, including instructional practices in higher education for STEM students as well as STEM teacher development programs.
- Institutions need to identify some grand challenges and find a focus for the institution to be accountable in helping to move the needle for diversity in STEM. Additionally, it is important to use data to identify ways to move the needle and establish metrics for measuring progress and determining if desired goals are achieved.
- Institutional transformation requires a different course for higher education by encouraging a focus on preK-20 and finding the financial resources needed to support individuals from underrepresented groups in STEM. The national conversations about broadening participation should convey that diversity in STEM is not just a college issue; it is a preK-20 opportunity for large-scale change.
- National conversations need to emphasize the larger context of broadening participation in terms of the future workforce and the value of underrepresented groups to be fully engaged in the decision-making process.
- The paradigm shift in approach to diversity should become a national strategy for systemic change with global reach.

Members agreed to be proactive in making the recommendation known through, for example, preparing a statement/letter from the Committee to accompany the recommendation handout, writing an article, and working with national STEM associations. These and other efforts will be pulled together to develop a dissemination plan. NSF would also be asked to promote the message that diversity is required for better science and to take advantage of this marketing moment/opportunity for broadening participation. CEOSE is calling the Foundation to create a visionary large-scale

initiative that is a major financial investment that invites creativity and large-scale impact to address grand challenges. For example, use \$25 million or more to invite proposals that provide evidence that there is a compelling problem/grand challenge; indicate what partnerships are needed to solve the problem; and describe how to address, measure, assess and translate what was implemented to the broader society.

Day Two February 12, 2014

Opening Remarks

Dr. Raymond, CEOSE Chair, opened the meeting and welcomed everyone to the second day of the CEOSE meeting. She provided an overview of day two, noting changes to the schedule. She reviewed the plan for the discussion with Dr. Marrett, Acting Director. The CEOSE recommendation handout was distributed and members agreed to disseminate the document to peers, colleges and scientific societies.

Discussion with NSF Acting Director

Dr. Marrett provided greetings to the Committee and others attending the meeting. She gave special thanks to Dr. Raymond for accepting the role of CEOSE Chair and to Dr. Ramírez for continued service as Vice Chair. She also acknowledged the contributions of Drs. Cecilia Conrad and Mia Ong, noting that they will receive certificates of appreciation. She welcomed Dr. Knoedler to CEOSE and reported that two new members, Drs. Robert Megginson and Louis Martin-Vega, would join the Committee in June 2014.

Her update included: the status of the confirmation of Dr. France Córdova as the next Director of the Foundation; an overview of the budget activities (e.g., 4% increase for FY 14, finalizing the budget request for FY 15, and developing the budget request for FY 16); an appreciation of the input that CEOSE provided for the new strategic plan; the Foundation's emphasis on transparency and accountability, underscoring the importance of the abstracts for conveying both technical and general information; and the recent release of the *Science and Engineering Indicators*.

Then the discussion centered on the recommendation in the 2011-2012 CEOSE biennial report. The Chair provided the context for the bold new initiative and members shared specific insights and perspectives about scale and scope of the initiative. It was stressed that this report pulled together previous recommendations for a singular focused recommendation to help NSF gain traction with broadening participation. In acknowledging NSF's catalytic work in broadening participation, it was pointed out that there have been a lot of initiatives but no accountability for sustainability and transformation. Members' remarks included the following:

- NSF has a long and impressive track record of moving the needle when it comes to grand challenge problems in science and engineering. For example, the Science and Technology Centers program was established to mount an innovative interdisciplinary campaign of research and training activities to discover and disseminate approaches. Similarly, the Committee is calling for a large-scale and long-term initiative that invites the community to identify what the specific grand challenge problems are in broadening participation, the

evidence behind the best and most promising approaches, and the important partnerships that have been leveraged across institutions including interactions with industry and other federal agencies. The key is not to duplicate the STC program or to limit the new initiative to the Centers mechanism but to use it as a model for decades of investment that will rally the community to identify and solve broadening participation problems, advancing simultaneously our understanding of the problems and success of underrepresented groups in the STEM workforce.

- It is important for NSF to take a lead in sharing best practices and building the knowledge base within NSF so that the researchers and program officers have a place to learn about what really works and what does not work.
- NSF was encouraged to have an active role in promoting various levels of engagement, including dissemination of knowledge and evidence that efforts are making a difference and collaborations with professional associations and coordinating groups to address leadership issues.

Dr. Marrett applauded CEOSE for a single recommendation for a comprehensive approach and stressed the importance of shared responsibility across the Foundation and the need for two levels of engagement to move forward (e.g., working with policymakers and working with the research and education communities). She stated that there has been some progress and that it is timely to build on these advances while realizing that there are important differences across fields and education levels for the different underrepresented groups. She invited three senior leaders (Drs. Joan Ferrini-Mundy, Roger Wakimoto, and Wanda E. Ward) to join her in responding to CEOSE's comments and questions. Each senior leader expressed support of the recommendation and a willingness to work with CEOSE to advance NSF's broadening participation agenda. Other comments from NSF included the following:

- Partnering with CEOSE can be leveraged to advance the broadening participation discussion with stakeholders, reinforcing the emphasis on data, institutional capacity building, and learning from our investments in order to know what is working and why and for which audiences and in which context in which kinds of institutions.
- Broadening participation must continue to be a high priority for the various units and it is critical to advance from a few success stories about a couple of students to being more inclusive such that impact is on a national level.
- There was appreciation for recommending a bold initiative to foster the sense of the urgency for national competitiveness and for the development of talent as opposed to a bold established program of centers. The observation about the collaborative work within and across units in the Foundation will help facilitate near-term movement in responding to the recommendation as a seamless continuum.
- The report can be a catalyst for a number of discussion/dissemination efforts, such as a Congressional hearing, town halls, and annual PI meetings, directorates' internal BP working groups and AC BP subcommittees.
- There was agreement with the Committee that institutional transformation is a critical strategy going forward in which leadership commitment must be operationalized to bring about required expectations. The historical development of the ADVANCE program was cited as an

example of successful effort in addressing broadening participation issues at both the individual and institutional levels. The transformative vision of the bold initiative will move from individual efforts of diversity advocates to recognizing the need for a multi-agency business partnership to broaden participation. The integrity and stability of such an investment will be invaluable for societal benefits and national economic impact.

Overall, the discussion began by emphasizing that the recommendation was “articulating the case for something big, impactful and lasting.” It closed with excitement for the idea of stimulating interagency collaborations for institutional partnerships to contribute to a “collective impact model” to achieve broadening participation goals and outcomes. Additionally, CEOSE applauded NSF leadership over the past several years, acknowledging Dr. Marrett’s support and guidance in helping the Committee to move to a partnership role with NSF and other federal agencies to diversify the STEM enterprise. It is anticipated that the discussion about the CEOSE recommendation will continue at the next meeting with a larger group of the Assistant Directors.

Interdisciplinarity and Inclusion

Dr. Stephanie Pfirman, Professor in Environmental Science and Applied Sciences at Barnard College, has been involved in research on interdisciplinary hiring and career development, as well as disciplinary and interdisciplinary stereotypes. She pointed out that interdisciplinary research bridges many different disciplinary areas and it is front and center as a mechanism for addressing pressing issues today with direct connections to societal needs. She presented data that showed that more women than men engaged in interdisciplinary research. Additionally, interdisciplinary scholars were much more likely to work in part-time employment. Research also indicated that the non-majority faculty members were about 1.2 times as likely to be engaged in non-mainstream research. Dr. Pfirman offered the following institutional recommendations:

- Institutions have responsibilities to the people we hire and teach. Create a culture, implement procedures, and allocate resources that will allow interdisciplinary scholars and students to thrive and prosper.
- If women and minorities are indeed more attracted by interdisciplinarity:
 - Institutions interested in increasing interdisciplinary research and teaching may have a greater chance for success if they involve women and minorities.
 - Institutions interested in increasing their diversity may have a greater chance for success if they value interdisciplinary scholarship and teaching.

CEOSE members discussed with Dr. Pfirman the career challenges related to professional support including networking opportunities and identification with a professional association, isolation and fit, changes in teaching approaches, and tenure criteria. She shared how a 5% bias over several promotional steps resulted in the weeding out of the individuals or had serious implications for career advancement (e.g., getting a grant, getting published in a premier journal, giving invited presentations, etc.). Questions for continued discussion included: What are the infrastructure needs to ensure a successful interdisciplinary career in science and engineering? How should the metrics differ for the assessment of disciplinary and interdisciplinary research, especially for promotion criteria? How do you define excellence in interdisciplinary scholarship?

NCSES Data Sources

Dr. John R. Gawalt, Director of the National Center for Science and Engineering Statistics (NCSES), indicated that NCSES is a division within NSF's Directorate for Social, Behavioral and Economic Sciences and one of 13 federal statistical agencies with the following core functions:

- the collection, acquisition, analysis, reporting, and dissemination of statistical data related to the US and other nations;
- development and production of congressionally mandated reports: *Science and Engineering Indicators*, and *Women, Minorities, and Persons with Disabilities in Science and Engineering*;
- support of research that uses NCSES data;
- support of methodological research in areas related to NCSES's work; and
- education and training of researchers in the use of large-scale nationally representative data sets.

The presentation included an overview of the following surveys, highlighting topics of special interest to CEOSE: Survey of Earned Doctorates (e.g., fields with high/low representation of minorities and women); Scientists and Engineers Statistical Data System comprised of the National Survey of College Graduates, National Survey of Recent College Graduates, and Survey of Doctoral Recipients (e.g., employment trends and salaries for men and women by degree level and field); Survey of Graduate Students and Postdoctorates in Science and Engineering (e.g., limited demographic information on graduate students and postdocs); and Higher Education R&D Survey (e.g., data reported for Historically Black Colleges and Universities and for High-Hispanic enrollment institutions).

CEOSE asked several questions about the online resources (e.g., interactive reports and the data and tools). Other issues raised were changes in questions about reporting disabilities and the potential to integrate NCSES data with NSF administrative records. Interagency collaboration was also discussed.

New Directions in STEM Graduate Education

Dr. James Lightbourne, Acting Deputy Assistant Director in the Directorate for Education and Human Resources(EHR) and Director, Division of Graduate Education, began his discussion with CEOSE by commenting on the CEOSE recommendation in the context of graduate education. For example, he noted the need for institutional transformation in graduate education and how his division is working with NCSES to develop a longitudinal data collection for the Graduate Research Fellows. He agreed that the identification of clear benchmarks for success in all aspects of broadening participation is very challenging as well as expansion or replication of successfully strategies from campus to campus with or without NSF funding. His presentation covered the national state of graduate education, noting two recurring themes across national reports: the professional development of graduate students and pathways into and through graduate education. At the federal level he emphasized increased cooperation among the agencies in the area of graduate fellowships and the need to coordinate policies about federal support. He highlighted several NSF fellowship and traineeship programs that have an emphasis on broadening participation. Dr. Lightbourne pointed out that broadening participation is not a stated goal for research assistantship (RA) support, and emphasized that this is a key area for systemic impact in graduate education since most of NSF's support for graduate students is through research assistantships.

The discussion also focused on coordination across investment strategies (e.g., Innovation through Institutional Integration), bridging between programs and leveraging successful practices for widespread replication and adaptation. Questions were addressed regarding privacy issues and access to the Graduate Research Fellowship Program (GRFP) data, the use of Graduate Record Examinations (GRE) scores and the impact on diversity in graduate education (e.g., increased use resulted in admitting dramatically more male than female graduate students and more White and Asian than African American, Hispanic and American Indian graduate students). CEOSE members commented that who gets to do science is largely based on who gets into graduate school and provided cases of the value of using non-cognitive metrics as a best practice in the admission process. It was also pointed out that in the GRFP, applicants are not allowed to submit their GRE scores and that lessons learned are being compiled about GRFP going totally virtual for the most recent review process, allowing a much larger and broader group of reviewers.

Significance of Financial Support for Increasing Opportunities for Underrepresented Groups in STEM

Dr. Rita Kirshstein, Managing Director, and Dr. Kristina Zeiser, Researcher of the American Institutes for Research presented their research on the price and cost of a STEM degree. They provided the context that the demand for more STEM workers is requiring the participation of underrepresented groups who are often low income and face rising tuitions for degrees in STEM. Based on data from the National Postsecondary Student Aid Study 2007-08, they reported that non-underrepresented minority males had the lowest median undergraduate debt in STEM (\$6,130), compared to underrepresented groups (i.e., URM males, \$14,830; URM females, \$13,500; and non-URM females, \$14,000). The data analyzed from the 2010 Survey of Earned Doctorates were more alarming: 58% of African American PhD recipients in SBE; 25% of African American STEM PhD; 44% of Hispanic PhD recipients in SBE; and 14% of Hispanic STEM PhDs accrued more than \$30,000 in graduate student debt.

The presenters engaged the Committee in a discussion of several questions related to the significance of financial support in broadening participation: To what extent is debt a deterrent to majoring in STEM or to pursuing a graduate degree? What is the cost of not attracting and retaining minority students in STEM? What are MSI costs to produce STEM and SBE degrees? What is the price of developmental education for students? When does online STEM education work and how much does it cost for whom? CEOSE agreed with the presenters that solutions to increase the number of STEM degrees must give consideration to the price for the student (tuition, financial aid, debt), cost to institutions, and cost to society, particularly if demand for STEM workers is not met.

Announcements and Final Remarks

The Committee reviewed major discussion points related to the bold BP initiative as well as offered suggestions for the June meeting:

- Continue to stress the importance of data/evidence in support of a much broader vision requiring a much larger role for NSF.
- Build upon the report by outlining strategic steps and measures for assessing progress for PK-20+ partnering.
- Widely disseminate the report to national associations with a common orientation/letter.

- Encourage the community to identify BP problems and to rally together to solve them in a large-scale way.
- Develop a plan for a presence at convening opportunities in order to position the current situation as an emergency and as an opportunity to advance BP conversations for large-scale change.
- Work with Federal Liaisons across agency lines to help remove barriers and push systemic change.
- Submit an article to *Science* or *Nature*.
- Shift the paradigm from individual efforts to Foundation-wide efforts to multi-agency and business partnerships to broaden participation for societal impacts. The transformative vision moves from moral persuasion to a vision that incorporates economic and leadership benefits for the nation.
- Work quickly to develop a dissemination plan that is sensitive to stakeholder groups and timely for agency budget development for 2016.

Specific suggestions for the next meeting were:

- Consider inviting congressional staffers to discuss the next biennial report, 2013-2014.
- Have a session involving all the ADs responding to a few guiding questions.
- Have a panel session on HSIs.
- Have a panel session on Science of Broadening Participation (SBP) and/or report on the related DCLs.
- Have time to work in small groups.

The Vice Chair indicated that the reports from the CEOSE Liaisons will be posted on Members' website. After reminding the Committee that the next meeting will be in June 2014, the Vice Chair adjourned the meeting.