

COMMITTEE ON EQUAL OPPORTUNITIES IN SCIENCE AND ENGINEERING

MEETING MINUTES

June 13-14, 2011

MEETING PARTICIPANTS

Members Present:

Ms. Sandra Begay-Campbell, Sandia National Laboratories, Albuquerque, NM
Dr. Cecilia Conrad, Pomona College, Claremont, CA
Dr. Evelyn Hammonds, Harvard University, Cambridge, MA
Dr. Richard E. Ladner, University of Washington, Seattle, WA
Dr. Marigold Linton, University of Kansas, Lawrence, KS
Dr. George Middendorf, Howard University, Washington, DC
Ms. Lueny Morell, Hewlett-Packard Company, Aguadilla, PR
Dr. Maria (Mia) Ong, TERC, Cambridge, MA
Dr. Eugenia Paulus, North Hennepin Community College, Brooklyn Park, MN
Dr. Muriel Poston (CEOSE Chair), Skidmore College, Saratoga Springs, NY
Dr. Alexander Ramírez
Dr. Wendy Raymond, Williams College, Williamstown, MA

Members Absent:

Dr. Joseph S. Francisco, Purdue University, West Lafayette, IN

CEOSE Executive Liaison/CEOSE/Executive Secretary:

Dr. Margaret E. M. Tolbert, Senior Advisor, Office of Integrative Activities, National Science Foundation (NSF)

OIA/NSF Primary Support Staff Members

Ms. Geraldine (Geri) Farvés, Program Specialist, Office of Integrative Activities, NSF

Non-Members Who Attended/Participated in Discussions/Made Presentations at the Meeting:

Dr. Laura Adolfe , U.S. Department of Defense Dr. Kelly Anderson , NSF/OD, University of Virginia Intern Ms. Gloria Anglon , NSF/OIRM/HRM, HACU Intern Ms. LaLynn Antell , NSF/GEO/EAR, WINS Intern Dr. Deborah Aruguete , NSF/GEO/EAR	Dr. Joan S. Burrelli , NSF/SBE/NCSES (Retired) Dr. Nikoosh Carlo , NSF/OD/OPP, AAAS Fellow Dr. Walter V. Collier , Beyond The Bottom Line, Inc. Ms. Laura-Lee Davidson Ms. Corinda Davis , Beyond The Bottom Line, Inc.
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<p>Ms. Jacqueline Banks, NSF/ENG/EEC, HACU Intern Dr. Robert Barnhill, SACNAS Dr. Katie E. Blanding, U.S. Department of Education Dr. Jonathan Braxton, ED Ms. Jessica Buck, NSF/BIO/DBI, WINS Intern Mr. Michael A. Bueno, NSF/BIO/MCB, HACU Intern</p> <p>Dr. Clifford Gabriel, NSF/OD/OIA Ms. Sandra Gartrell, The Reporter, Inc. Mr. Gregory E. Gershuny, Office of Science and Technology Policy Ms. Tracy Gorman, NSF/OD Ms. Kendra Haag, NSF/BIO/MCB, WINS Intern Dr. Catherine “Kathy” Hale, NSF/SBE/NCSES Dr. Susan Heller-Zeizler, National Institute of Standards and Technology Mr. Rodward Hewlin, NSF/ENG/CBET, QEM Intern Dr. Meldon Hollis, White House Initiative on Historically Black Colleges and Universities Dr. Nirmala Kannankutty, NSF/SBE/NCSES Ms. Evelyn Kent, U.S. Department of Defense Ms. Danielle Kittrell, NSF/EHR/HRD Dr. James (Jim) Lightbourne, NSF/EHR/DRL Ms. Merricka Livingstone, NSF/ENG/CBET, QEM Intern Ms. Jeremi London, NSF/EHR/DUE, QEM Intern Dr. Sue Lui, U.S. Department of Labor Dr. Cora B. Marrett, NSF/OD Dr. Krish Mathur, U.S. Department of Education Dr. Marcia McNutt, USGS/U.S. Department of Interior Dr. Lynn Milan, NSF/SBE/NCSES Ms. S. P. Mitchell, Enlightened Imagery Associates Dr. Tyrone D. Mitchell, NSF/MPS/CHE</p>	<p>Mr. Kevin Diodonet-Zapata, NSF/OD/OCI, HACU Intern Ms. Lisa Evans, National Institutes of Health (NIH Liaison to CEOSE) Dr. Jaquelina (Jaqui) Falkenheim, NSF/SBE/NCSES Ms. Caroline Fitz, NSF/EHR/OAD, QEM Intern Dr. Joan Frye, NSF/OD/OIA</p> <p>Dr. Lina Oliveros, NSF/BIO/DEB, HACU Intern Ms. Joeletta Patrick, NASA Dr. Willie Pearson, Jr., Georgia Institute of Technology (Former CEOSE Chair) Dr. Carl Person, NASA (NASA Liaison to CEOSE) Ms. Samantha Pikula, NSF/BIO/MCB, WINS Intern Ms. Julie Potter, NSF/OD/OPP, WINS Intern Dr. Irelene Ricks, Association of Public & Land Grant Universities Dr. Steven Robinson, U.S. Department of Education Dr. Philip Sadler, Smithsonian Institution Ms. Alison Samin, USCCR Dr. Victor Santiago, NSF/EHR/HRD Ms. Melissa Soto, NSF/EHR/HRD Dr. Malathi Srivatsan, NSF/ENG/IIP, AAAS Fellow Mr. Brandon Stephens, NSF/OD/OIA Ms. Marilyn Suiter, NSF/EHR/HRD Dr. Lawrence A. Tabak, National Institutes of Health Dr. Audrey A. Trotman, NOAA (NOAA Liaison to CEOSE) Ms. Monique Tulley, NSF/EHR/DUE, WINS Intern Dr. Carl Wieman, Office of Science and Technology Policy Dr. Catherine Woteki, U.S. Department of Agriculture</p>
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MONDAY, JUNE 13, 2011

MEETING SITE

Truman Room, White House Conference Center, 726 Jackson Place, Washington, DC 20006

MEETING NOTES

The Committee on Equal Opportunities in Science and Engineering (CEOSE) meeting was called to order at 9:29 a.m. by **Dr. Poston**. After welcoming everyone and apologizing for the delay in start time, Dr. Poston called for committee members to introduce themselves, which they did.

CONCURRENCE OF THE MINUTES OF THE FEBRUARY 8-9, 2011 MEETING

Dr. Poston called for approval of the minutes and concurrence by CEOSE members followed.

PRESENTATION OF KEY POINTS FROM THE JUNE 10, 2011 MEETING OF CEOSE OFFICERS WITH THE DIRECTOR OF NSF

Dr. Poston spoke of the face-to-face/teleconference call with NSF Director **Dr. Suresh**. Also present was **Dr. Gabriel**—Acting Director of the Office of Integrative Activities (OIA), **Dr. Marrett**—Deputy Director for NSF, **Dr. Dedric Carter**—Senior Advisor for Strategic Initiatives, and **Dr. Tolbert**. **Ms. Begay-Campbell** and **Dr. Ladner** participated telephonically. Topics of that meeting were: **Dr. Marrett's** confirmation by Congress as Deputy Director of NSF, Diversity of NSF Staff, the Need for More Emphasis on Metrics, Outreach, and Family Friendly Policies. **Dr. Suresh** stated that he is interested in issues of concern to CEOSE and that he has a particular interest in disability issues and veteran programs, the budget for FY 2011, and the status of facilities funds in FY 2012.

Dr. Suresh indicated that **Dr. Wanda Ward** who is his Senior Advisor, will have the role of broadening participation in his Office. Her attention is to be focused primarily on addressing women in the NSF workforce, the issue of underrepresented minorities especially those that have been associated with military service and are now entering STEM education, and persons in STEM with disabilities. The CEOSE Chair and Vice Chairs requested that **Dr. Ward**, in her new role, participate in CEOSE meetings on a regular basis.

Dr. Suresh also indicated that he met with the presidents of two large Hispanic-Serving Institutions and that they are beginning to gather information about Hispanic-Serving Institutions. They hope to make a recommendation to CEOSE in October 2011 about the challenges facing those institutes, particularly in the context of the American Competes Reauthorization Act and its requirements. He spoke about NSF funding and the National Science Board's study of the NSF merit review criteria. He said that the responses to the National Science Board's survey and the task force recommendations are key elements in a Dear Colleague Letter that has been distributed. **Dr. Suresh** indicated that the primary thread coming out of the responses that the National Science Board has collected in undergraduate education in STEM is pivotal to the Broader Impacts Criterion relative to broadening participation.

Dr. Suresh also said there will be a report that NSF will have to deliver in July 2011 in response to the congressional mandate presented in the America Competes Reauthorization Act, and this report will discuss the implementation of the requirements that were stipulated in the Broader Impacts Section of that Act. For example, the NSF Merit Review Criteria have been expanded to include additional areas. All of the areas under consideration follow: increased economic competitiveness of the United States; development of a globally competitive STEM workforce; increased participation of women, persons with disabilities, underrepresented minorities in STEM; increased partnerships between academia and industry; improved pre-K-12 STEM education and teacher development; improved undergraduate STEM education; increased public scientific literacy and public engagement with science and technology; increased national security; enhanced infrastructure for research and education, including facilities, instrumentation, networks, and partnerships.

DISCUSSION ON PLANS FOR MEETING WITH OSTP OFFICIALS AND REPRESENTATIVES OF FEDERAL AGENCIES

The Committee focused on the CEOSE draft report on the inter-agency collaboration study, which was developed in 2008. This draft report highlights a set of recommendations that would be useful relative to opportunities for NSF to interact with other federal agencies on the topic of broadening participation in Science, Technology, Engineering and Mathematics. Information on that draft report appears on pages v and 28-30 in the “2007-2008 CEOSE Biennial Report to Congress.” This 2007-2008 CEOSE report appears online at http://www.nsf.gov/od/oia/activities/ceose/reports/2008CEOSE_BiennialReport.pdf.

The Committee discussed the groundwork for the afternoon OSTP meeting, collaboration between federal agencies, and ways in which to look at broadening participation across federal agencies and leverage the opportunity to have a significant impact in that arena between the National Science Foundation and other federal agencies. Committee members, especially **Dr. Conrad, Hammonds, Dr. Middendorf, Dr. Poston, Dr. Ramirez, Dr. Raymond,** and **Dr. Trotman,** discussed establishing a common language and common metrics across all federal agencies. Having a pilot program concerning collaboration among a small number of agencies was proposed by **Ms. Morrell.** In her comments, **Ms. Begay-Campbell** stated that the Director is looking for metrics in measuring STEM and not just anecdotes. **Dr. Collier** suggested that CEOSE devote a meeting to interagency collaboration and also suggested getting the “CEOs” involved and stressed having important language defined. There was much discussion of CEOSE having a mini-symposium where its members and representatives of federal agencies would participate in forming common language among agencies.

Dr. Hollis commented that in his role at the White House Initiative on Historically Black Colleges and Universities he has obtained reports from approximately 30 to 40 components of the Federal government. Topics of these reports are similar to those of CEOSE. The observations are these: 1) Across the Federal agencies that have the same or similar functions, the way the functions and processes are defined is different; 2) The issue is huge; 3) You may find that the number of agencies with which you need to interact and that will have real impact will be much smaller than, perhaps, you anticipate; and 4) There is a need to be very focused in what you choose to do in reference to the inter-agency involvement.

Dr. Tolbert called to the attention to the fact that CEOSE meetings were hosted by NSF and OSTP in 2003, 2005, and 2008. Also she said that CEOSE officers have met with Congressional officials and with

the NSTC Committee on Education on different occasions to discuss its mandate, broadening participation activities, and reports.

Dr. Poston summarized the discussion as follows:

Ways in which the Committee would like OSTP to help leverage the conversation that occurs among the federal agencies around broadening participation, in particular;
Development of a common language and definition of broadening participation;
Development of metrics that are clearly understood across the federal agencies; and
Ways of managing broadening participation through funding stream and opportunities to collaborate around particular issues and that may be as specific as broadening participation or in the context of other initiatives, whether they are grant challenges that arise through the scientific focus of shared interests at the agencies and ways the agency can continue to move that forward.

Ms. Evans added to the summary that the plan of action should be inclusive of the staff/career persons at the federal agencies in discussions regarding broadening participation. These persons have meaningful perspectives to add to broadening participation discussions.

CEOSE MEMBERSHIP NOMINATION AND APPOINTMENT STRATEGIES

CEOSE currently has three membership openings. Calls for nominations were announced in the *Federal Register*, on the NSF website, via e-mail messages, and word of mouth. As a result, 40 individuals were recommended for membership.

Members discussed the strategy being used to narrow the list of individuals recommended for membership and factors for consideration for maintaining a balanced membership: Demographic representation, discipline representation, geographic representation, race/ethnicity considerations, members with disabilities, and members from Hispanic Serving Institutions, Tribal Colleges and Universities, and Historically Black Colleges and Universities. Also, they discussed the need for more gender balance. **Dr. Ladner** volunteered to focus his review of nominations on those with disabilities.

Since the nomination process that was open to the public was closed on March 14, 2011, no new nominations are being accepted currently. The nominations received by that date will be kept on file for a year. It is from the pool of nominees that individuals will be drawn when additional membership vacancies arise.

It was suggested that in the future, a teacher, principal, or superintendent of a secondary school be appointed to CEOSE.

The current list of nominees is under consideration by CEOSE members and NSF senior managers. The resulting short list will be submitted to the NSF Director for consideration and action.

OSTP- AND NSF-SPONSORED COMMITTEE ON SCIENCE MEETING WITH THE COMMITTEE ON EQUAL OPPORTUNITIES IN SCIENCE AND ENGINEERING

Dr. Gabriel welcomed attendees, and in his opening statement, he stated that this meeting offers an opportunity to share common perspectives and to look for ways to join forces to do a better job of

achieving goals in broadening participation in science and engineering. He then invited attendees to introduce themselves, which they did.

Dr. Marrett discussed the importance of the efforts of OSTP and CEOSE in broadening participation in STEM fields. She mentioned the report "Land of Plenty" by the Commission on Advancement on Women and Minorities in Science, Engineering and Technology and stated that this report heightened our attention to the fact that we are seeing important demographic changes. The report suggested that this nation needs an aggressive and focused intervention program that targets women, underrepresented minorities, and disabled students at the high school level, at the transition in post secondary education, at the community college transition, and throughout the education continuum. She advised that there is a need for this nation to out-educate, out-innovate and out-compete the rest of the world. Mistakes should not be repeated, and there should be more focus on new, innovative ideas. In completing her commentary, **Dr. Marrett** thanked everybody in the room for their efforts and the members of CEOSE for their time in establishing the agenda that was being followed.

Dr. Wieman spoke about the importance of equal opportunity and STEM to **President Obama** and to him. He stated that OSTP is involved in several activities that are pertinent to the topics to be covered at this meeting. One is a detailed inventory of STEM education programs, diversity effort, and broadening participation across all the agencies. OSTP is collecting data so that the next steps can be taken toward optimizing the large suite of available programs. These programs can be better coordinated. Resources and interests can be shared, and duplication can be avoided. The results of the survey should be available by the end of this summer. The importance of the actions being taken rests with a number of factors, one of which is the fact that there have been improvements in broadening participation, but it's not yet a part of a general cultural shift.

He also stated that OSTP has the formidable task of trying to work out a five-year strategic plan for STEM education across the federal government. He expects the strategic plan to be available next calendar year.

Dr. Wieman then spoke on what he termed "controversial" and a different way to look at broadening participation. He said that there are certain factors that place underrepresented groups at a disadvantage in their success in every single STEM course they take and that there are different ways to teach to change those factors. Among other things, success comes from being highly motivated and wanting to learn. He noted that students with parents who are scientists or engineers and have higher education hear things differently in the classroom and are more successful. He mentioned that other keys to student success are putting in the right kind of effort and feedback.

Dr. Wieman stated that his research group developed a survey on the perception of physics. It was generalized to chemistry and biology and physics. The results of which were: "If you are going to be a successful physics major, you need to start college with the belief systems of a physics faculty member. The students are only going to be successful if they have the incoming experience." He also said that there is NSF sponsored research results on teaching practices that are more effective, and they address the kinds of factors that make students more successful. The research indicates that if teaching is improved in all classes and addresses these issues, factors that are critically important and ensuring are that we make teaching effective and independent of background, experience, and culture. The results would substantial impact on the challenges of broader participation.

The discussion that followed **Dr. Wieman's** presentation was focused on the pros and cons regarding the efficacy of this study. There were many comments by members regarding their opposition to this type of study and also how it was contrary to their experiences.

Dr. Marrett added that her interpretation of what OSTP wants are specific ways that the various federal agencies come into the larger arena of broadening participation with more precise input from CEOSE.

Dr. Poston talked about the need to have conversation about the definition of common language among agencies and metrics for measuring achievements. She surmised that this would be helpful in respect to OSTP's strategic planning. **Dr. Marrett** enquired of how the different agency data would be assimilated.

Dr. Wieman stated that that would be up to members of the Committee on Science. In response to **Dr. Poston's** question about whether the Committee on Science would take best practices already within agencies and facilitate common languages and metrics, **Dr. Wieman** said that he would take that information to the Committee on Science.

After several additional minutes of discussion, **Dr. Poston** thanked **Dr. Wieman** for speaking to CEOSE and relayed that CEOSE was eager to have OSTP focus more on the issue of broadening participation in science and engineering.

In response to **Dr. Poston's** request of agency representatives to advise on what their agencies are doing regarding broadening participation, the following was learned:

National Institutes of Health (NIH) – Engaged in post-college and beyond; online program called “Life Works”; SEPA, Science Education Partnership Awards; posters and programs showcasing minorities in sciences; Being Me Program focusing on fourth graders and medical topics that interest them; “Would You Like to be a Scientist?” program targeting inner-city youths. **Dr. Poston** acknowledged that NIH is actually doing more than there was time to present; her comment was directed at non-education programs and activities.

Environmental Protection Agency (EPA) – People, “Prosperity and Planet” program; “Nifty-Fifty” program where 50 scientists speak at local schools.

U.S. Department of Interior (DOI) – The use of DOI public lands as natural laboratories for informal education for public as well as summer and after school programs and mentoring.

U.S. Department of Defense (DOD) – DOD is Gathering diversity data on its employees and their areas of expertise. It currently has information regarding students in higher education. Also, DOD has a strategic plan that is on target.

Smithsonian Institution (SI) – School Programs/Family Programs; Emphasis of promoting sciences with persons with disabilities; online courses with science teachers; study the decisions that teachers make that increase the probability that students won't pass their college courses; study of informal science experiments, museums and after school programs that attracts student to careers.

U.S. Department of Labor (DOL) – DOL is focusing on upgrading the skills of workers, persons who are unemployed, young adults, and high school students or dropouts; making sure skills translate to employment; Workforce Investment Act; focus on industry recognized credentials.

U.S. Department of Agriculture (USDA) – Contributed 93 million dollars in 2010 to STEM education programs; provides fellowships, undergraduate, internship opportunities; provides grants for faculty to develop curriculum in the agricultural science, both at the K-12 and

university levels; offers programs that stimulate student interests in science; 4-H; consultations with Historically Black Colleges and Universities, Tribal Colleges, etc.

U.S. Department of Education (ED) – “Race to the Top” program, including initiatives to improve STEM education and a host of additional programs that support broadening participation. Office of Post Secondary Education - applied international education; minority programs with the improvement of science, Hispanic Serving Institution programs and Historically Black Colleges and Universities program designed to advance the institutions capability to compete on the national and international levels in science and engineering; Minority Science Engineering and Improvement Program.

National Aeronautics and Space Administration (NASA) – “Summer of Innovation” program geared towards K-12 in STEM activities; Science, Engineering and Math Academy (SEMA); The University Research Center where 25 percent of the funding is used for direct support of students; One-Stop Shopping Initiative where students have a single portal to apply for up to 15 different internships or scholarships or fellowships; broker facilitators to assist students in completing college applications; working with Hispanic Serving Institutions, AHADs, Tribal Colleges to diversify internship, scholarship and fellowship applicants and recipients; Harry G. Jenkins pre-doctoral program extraordinarily effective in producing underrepresented and underserved students with Ph.D.'s; 2010 level of funding for STEM education is \$209 million.

National Institute of Standards and Technology (NIST) – Effective strides made in post-doctoral programs with outreach to candidates from underrepresented populations; Summer Institute for Middle School Science Teachers; program for undergraduate summer fellowships where the students have a research projects.

Once the agency reports were completed, a discussion took place regarding what disciplines should be included in the definition of “STEM”, which is science, technology, engineering, and mathematics. Some agencies include fields such as psychology, economics, anthropology, medicine, veterinary science. Various facets of broadening participation were discussed, as well as how to bring broadening participation to a national level for rewards and recognition.

When the discussions ended, **Dr. Marrett** presented to **Ms. Sandra Begay-Campbell** a Certificate of Appreciation for her service as First Vice Chair and member of CEOSE. This presentation was made on behalf of NSF and Director Suresh. **Ms. Begay-Campbell's** initial CEOSE membership term began on June 30, 2005. She was appointed to a second term in 2008, and her current term will end on June 29, 2011. In 2010, she began her service as First Vice Chair of CEOSE; this will end when her membership ends.

ADJOURNMENT

At 4:05 p.m., the meeting was adjourned.

TUESDAY, JUNE 14, 2011

MEETING SITE

Board Conference Room 1235, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230

MEETING NOTES

OPENING REMARKS AND BRIEFING ON THE JUNE 13TH SESSION OF THE CEOSE MEETING

At 9:03 a.m., **Dr. Poston** opened the meeting with a summary of the previous day's session, which included a wide ranging discussion with OSTP around broadening participation and potential collaboration of CEOSE and NSF with other federal agencies. It was noted that it is desirable to hold a meeting to develop common language and a conceptual framework to pull broadening participation initiatives and programs together. It was suggested that the CEOSE mini-symposium to be held in 2012 address those points. The thrust of the mini-symposium is to bring representatives from a variety of agencies and other sectors together to explore the science of broadening participation. Topics of discussion could include definitions of broadening participation as those agencies view them, definitions of STEM, and the ramifications of how goals of those agencies might affect the kinds of metrics and evaluation and assessment mechanisms that need to be utilized by all.

Dr. Poston recognized the NSF interns who were attending the meeting and each introduced himself/herself. **Dr. Poston** also recognized the presence of a former CEOSE President, **Dr. Willie Pearson**.

PRESENTATION: "WALKING IN BEAUTY ON AN EVER-CHANGING PATH – A NATIVE WOMAN ENGINEER'S PERSPECTIVE"

Ms. Begay-Campbell gave a presentation titled "*Walking in Beauty on an Ever-Changing Path – A Native Woman Engineer's Perspective.*" With the use of a video about her life and her presentation skill, she held the full attention of the audience with her oratory style. The video was produced by Dragon Fly TV, a program funded by NSF. **Ms. Begay-Campbell** spoke of her background, having been born into the Navajo Nation of loving parents who lived in Gallop, New Mexico. Her mother who died 20 years ago taught her lessons on how to overcome adversity. She received her undergraduate engineering degree from the University of New Mexico and her Master of Science degree in Structural Engineering from Stanford University. Her degree from Stanford was received around the same time as the death of her mother. **Ms. Begay-Campbell** stated that when we list degrees and academic achievements, it's important also to list milestones and struggles that complete your wholeness. She emphasized that life is dimensional, encompassing the spiritual, physical and emotional and how it can become unbalanced. She spoke of her career in engineering. After receiving her Bachelor of Science degree, she worked at Lawrence Livermore National Laboratories. Later, she began working at Sandia National Laboratories. She told of her early life and how she developed bad habits from being in hostile settings and how she worked diligently to undo those bad habits. Before ending her presentation, **Ms. Begay-Campbell** provided details on her current career at the U.S. Department of Energy's Sandia National Laboratories. Her's is a career that includes supporting tribes in their goals of economic development, quality of life,

and jobs for the people on the reservations. She is able to do this as she leads Sandia's technical efforts to assist Native American tribes in a diversity of ways. She spoke of her community service as a part of her success story as she recalled being on the New Mexico Board of Regents.

Ms. Begay-Campbell also spoke of the importance of programs such as the MITE Program in which she was involved. This program and those like it enable students to interact with and see where engineers work. It teaches them life lessons and the importance of a career in engineering. She spoke of her own experience of how seeing engineers at work early in her life helped her to visualize what she wanted to do in the future. In closing remarks, she thanked her CEOSE colleagues, and she concluded by stating the purpose of CEOSE being here is to recruit more underrepresented minorities into STEM fields.

Following the completion of **Ms. Begay-Campbell's** presentation, **Dr. Poston** presented her with a parting gift from CEOSE and thanked her for her years of excellent service to CEOSE and, therefore, to NSF.

PRESENTATION: THE SCIENCE AND ENGINEERING EQUAL OPPORTUNITIES ACT: A PROGRESS REPORT

Dr. Burrelli gave a presentation that covered data from 1981 through 2009. She reported that as of 2009 there is an upward trend in the number of women in science and engineering who receive doctorate degrees. For this, she credits the Science and Engineering Equal Opportunities Act and CEOSE, along with other organizations for this. Of the scientific and engineering disciplines reported, she advised that the number of degrees earned by women in engineers, computer scientists, and physicists were very small. Also, they are not well represented in management in industry and academia. This indicates that there is more work to do. Even though the data look reasonable in some categories, challenges still remain to be addressed.

Dr. Burrelli reported that Blacks and Hispanics, groups that are underrepresented in science and engineering based on their percentages in the population, are also making progress over a 30-year period, and this has resulted in an upward trend. Black males have made the least amount of progress in the receipt of degrees. The problem seems to be primarily in getting them into college and completing degrees.

In discussing degrees received by persons with disabilities, she noted that progress is hard to see. The percent of persons with disabilities in the population varies, and different surveys result in different data reports. In the younger population, 6% to 7% have learning disabilities.

Upon completion of the report, **Dr. Poston** presented to **Dr. Burrelli**, who retired five weeks prior, a Certificate of Appreciation and a small gift for her contributions to CEOSE to wish her farewell as one on NSF's premiere researchers and to help celebrate her achievements. Dr. Poston said "...[**Dr. Burrelli**] is someone who dedicated her analytic and research skills to the problem of underrepresentation in science and engineering. We thank **Dr. Burrelli** for her contributions to our work, especially her contributions to the development of CEOSE reports to Congress. We wish her well in the newest stage of her life." Before ending the ceremony, **Dr. Poston** read to the audience the wording on the certificate of appreciation and the inscription on the gift from CEOSE.

REPORTS BY CEOSE LIAISONS TO NSF ADVISORY COMMITTEES (ATTACHED)

CEOSE members who serve as liaisons to NSF advisory committees gave brief presentations on the meetings of those committees. The presenters were **Ms. Begay-Campbell**, CEOSE Liaison to the Advisory Committee on Environmental Research and Education (ACERE); **Dr. Hammonds**, CEOSE Liaison to the Education and Human Resources Advisory Committee (EHR AC); **Dr. Ladner**, CEOSE Liaison to the Directorate for Directorate for Computer and Information Science and Engineering Advisory Committee (CISE AC); **Dr. Linton**, CEOSE Liaison to the Office of Polar Programs Advisory Committee (OPP AC); **Dr. Middendorf**, CEOSE Liaison to the International Science and Engineering Advisory Committee (ISE AC); **Ms. Morell**, CEOSE Liaison to the Directorate for Engineering Advisory Committee (ENG AC); **Dr. Poston**, CEOSE Liaison to the Directorate for Biological Sciences Advisory Committee (BIO AC); **Dr. Ramírez**, CEOSE Liaison to the Advisory Committee on Cyberinfrastructure (ACCI); **Dr. Raymond**, CEOSE Liaison to the Advisory Committee for GPRA Performance Assessment (ACGPA).

Reports by CEOSE members, other than **Dr. Raymond**, are attached to this document. **Dr. Raymond** reported that the ACGPA has held no meetings since her appointment; therefore, she has not had the opportunity to meet with this group.

NEW BUSINESS

ACTION ITEM: Dr. Tolbert is to contact CEOSE members in an effort to identify CEOSE meeting dates in 2012 and distribute notices as appropriate.

Dr. Gabriel distributed key points in the “Dear Colleague” letter on the NSF Merit Review Criteria. He explained that the “Dear Colleague” letter has not yet been approved by the National Science Board (NSB); therefore, the letter is released in its current form as a draft for comments. Once the letter is official, the system will be open 30 days for the receipt of comments. The expectation is that CEOSE will respond as a committee.

Following comments by **Dr. Gabriel**, CEOSE members had an in depth discussion regarding the letter, and **Dr. Poston** summarized the discussion points as shown below:

CEOSE is concerned that broadening participation is simply one of nine items as presented in the NSB letter.

Principles of broader impacts being achieved through research or activities directly related to research projects is important to disaggregate because it helps individuals approach broader impacts as a principle.

The fact that the review criteria are much more comparable to that of Intellectual Merit may, in fact, give additional weight to the overall process, but as NSF begins to think about implementation, Broader Impacts and Intellectual Merit ought to be weighted equally as an explicit part of the review criteria.

Whether the “NSF Grant Proposal Guide”, which is online at the following web address, www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg, references the values of NSF around diversity is important to acknowledge, but also it is important to acknowledge that this may or may not have direct impact on the review process of proposals.

Dr. Middendorf and **Dr. Ramírez** commented further that with the addition of other criteria, advancing underrepresented minority issues become diluted. There seemed to be a consensus that broadening participation, which currently appears in the Broader Impacts Criterion, should be set apart from the other criteria.

ACTION ITEM: Dr. Poston requested that CEOSE members make individual comments on the letter using the electronic system provided.

ACTION ITEM: A letter is to be sent to each federal agency that had a representative in attendance at the June 2011 CEOSE meeting to request that each identify an official liaison to CEOSE. **Dr. Tolbert** is to explore the possibility of this letter being sent to the appropriate agency official by the NSF Director.

ADJOURNMENT:

At 12:22 p.m., **Dr. Poston** adjourned the meeting.

**CERTIFICATION OF THE ACCURACY OF
THE CEOSE MEETING MINUTES**

On August 15, 2011, **Dr. Richard Ladner**, Chair of the Committee on Equal Opportunities in Science and Engineering, approved the minutes of the June 13-14, 2011 meeting via e-mail to **Dr. Margaret E.M. Tolbert**, CEOSE Executive Liaison.