

**Committee on Equal Opportunities in Science and Engineering (CEOSE)**  
**Meeting Minutes**  
**February 16-17, 2023**  
**National Science Foundation**  
**Alexandria, VA 22314**

**MEETING PARTICIPANTS**

**CEOSE Members Present**

**Dr. Jose D. Fuentes, CEOSE Chair**, Pennsylvania State University  
**Dr. Kaye Husbands-Fealing, CEOSE Vice-Chair**, Georgia Institute of Technology  
**Dr. John M. Anderson**, Howard University  
**Dr. Gilda Barabino**, Olin College of Engineering  
**Dr. Suzanne, Barbour**, University of North Carolina at Chapel Hill  
**Dr. Tabbetha Dobbins**, Rowan University  
**Dr. Ryan Emanuel**, North Carolina State University  
**Dr. Gabriel Lopez**, University of New Mexico  
**Dr. James R. Martin**, University of Pittsburgh  
**Dr. Vernon Morris**, Arizona State University  
**Dr. Timothy Pinkston**, University of Southern California  
**Dr. Susan Renoe**, University of Missouri-Columbia  
**Dr. Barbara Endemaño Walker**, University of California-Santa Barbara  
**Dr. Nai-Chang Yeh**, California Institute of Technology

**CEOSE Members Absent**

**Dr. Ann Gates**, The University of Texas - El Paso  
**Dr. Sandra Graham**, University of California-Los Angeles  
**Dr. Cynthia Lindquist**, Cankdeska Cikana Community College  
**Dr. David R. Wilson**, Morgan State University

**CEOSE Designated Federal Officer – Executive Liaison**

**Dr. Alicia Knoedler**, Office Head, OIA/OD/NSF

**CEOSE Executive Secretary**

**Dr. Bernice Anderson**, Senior Advisor, OIA/OD/NSF

**CEOSE Scientific/Technical/Administrative Staff**

**Ms. Una Alford**, Program Analyst, OIA/OD/NSF  
**Mr. Steven Buhneing**, Communications Specialist, OIA/OD/NSF  
**Ms. Jolaina Jeff-Cartier**, Staff Associate, OIA/OD/NSF  
**Ms. Stephanie Hill**, Program Analyst, OIA/OD/NSF

**CEOSE Advisory Committee Virtual Meeting  
National Science Foundation (NSF)  
February 16-17, 2023  
Meeting Minutes**

**Day 1: February 16, 2023**

**Opening, Welcome, Introductions – Dr. Jose D. Fuentes, CEOSE  
Chair and Professor of Atmospheric Science, The Pennsylvania State University**

CEOSE Chair Dr. Fuentes opened the meeting and welcomed members and other virtual attendees. Following the self-introduction of each CEOSE member, Dr. Fuentes provided some comments about the status of the 2021-2022 CEOSE report; his invitational speaking engagements to NSB about Subcommittee on the Future of EPSCoR and to the GEO Directorate about the work of CEOSE and forthcoming report; and the CEOSE Executive Meeting with NSF Senior Leadership that highlighted increase in funding to continue advancing NSF's broadening participation efforts, the hiring of a new Chief Diversity Inclusion Officer, and the GRANTED initiative.

**Discussion: 2021-2022 CEOSE Report  
Dr. Jose D. Fuentes, CEOSE Chair; Kaye Husbands-Fealing, CEOSE Vice-Chair and Dean  
of Ivan Allen College of Liberal Arts; Ivan Allen Jr. Chair, Georgia Institute of Technology**

CEOSE members were encouraged to review the Executive Summary, and the discussion focused on refining the two draft report recommendations to NSF: (1) utilize an intersectional analysis to remove barriers to participation in STEM, effectively meet the needs of society, and maximize our scientific investment; and (2) develop metrics and utilize an intersectional analytical framework in implementing the recommended actions for the NSF EPSCoR portfolio from the EPSCoR report. During the discussion members pointed out that the overlay of demographic data collected through the proposal submission process could lead to more interesting analyses of who receives grants. This requires that NSF invest in data collection and analysis strategies and programmatic interventions to report the intersectionality of its grantees, populations served, and agency leadership and scientific staff.

Using an intersectional lens is a fundamental part of the strategy for the second report of the trilogy, and it needs to be a fundamental part of NSF's broadening participation strategy. Leadership commitment is needed to assure institutional transformation that recognizes intersectionality. Additionally, it was emphasized that it is important to go beyond broadening participation to look at equity within the workplace, placing responsibility on the organization and holding organizations accountable. Future work will focus on the systems and organizations not just the individuals. (From the report: "Intersectionality can be used as a framework to analyze how systems of power and oppression impact individuals' lived experiences based on

their various social-group identities. These identities may include age, race, class, ethnicity, ability, sexuality and/or others.”)

Members shared edits for the various sections of the 2021-2022 report and critiqued the value of suggested infographics. Ideas for the cover design were discussed to better reflect the overall goal of the report.

**Presentation: Technology, Innovation and Partnerships (TIP) Directorate – Dr. Erwin Gianchandani, Assistant Director, TIP/NSF**

Dr. Gianchandani provided an overview of the new TIP Directorate, highlighting its unique features in the context of a defining moment for the Foundation. He shared plans for engaging the full breadth of talent that exists across the US who could be inspired to engage in STEM/disciplines, fields, and jobs of the future. He emphasized that NSF needs to keep doing what it’s been doing while thinking about the users, the beneficiary, the consumers of research, and the practitioners; TIP aims to bring them to the table to help shape the research agenda earlier on and conduct that research alongside academic scholars and students, etc. CEOSE was encouraged to reflect on the following question: How do we catalyze those multi-sector and diverse teams that bring those diverse perspectives that can help us to spotlight the important societal or economic problems that drive our technological problems that contrive the research we are trying to pursue? TIP provides the opportunity to put a spotlight on use-inspired basic research as well as translation and innovation. TIP supports intentional collaborations between all other directorates and offices across the agency as well as beyond the agency, as well as serving as a bridge between NSF and other agencies and industry. The presentation included exemplary efforts of Convergence Accelerator (e.g., collaboration with DoD) and the Regional Innovation Engines (e.g., led by CEOs and a coalition of partners to develop new workforce capabilities and talent capabilities in addressing both technical and geographic innovations and to catalyze the regional growth and innovation ecosystem) and descriptions of new funding opportunities (e.g., Enabling Partnerships to Increase Innovation Capacity, Experiential Learning for Emerging and Novel Technologies, and Accelerating Research Translation). Dr. Gianchandani reiterated that TIP is accelerating technological development to address key societal challenges, all of which requires an intentional emphasis on how you engage the diverse demography that exists across the country.

CEOSE members discussed the importance of aligning communication efforts with the needs of the geographical location; the need for collecting diversity data at various level of engagement regarding entrepreneurship, innovation, and translational research; and the responsibility of holding all organizations in the partnerships accountable for sustaining cultures that ultimately support all individuals within the organizations/institutions.

**Presentation: Report of the CEOSE Executive Liaison – Alicia Knoedler, CEOSE Executive Liaison and Head of Office of Integrative Activities (OIA)/Office of Director (OD)/NSF**

Dr. Knoedler highlighted four presentations (Dr. Sean Jones of MPS, Dr. Sylvia Butterfield of SBE, Dr. James Moore of EDU, and Dr. Alicia Knoedler of OIA) given at the recent NSB

meeting on broadening participation, equity, diversity, and inclusion. These presentations covered: ensuring diversification in terms of STEM leadership; unleashing talents and ideas everywhere through robust research infrastructure; energizing STEM research capacity through enhanced access and opportunity; inspiring bold research to accelerate advances in diversity, equity inclusion; and promoting integrated equity-type approaches across the agency. She pointed out that in the context of bold leadership actions report, NSF has been able establish new programs across the directorates that not only address barriers in the workforce, in institutions, in the fabric and culture of the research communities, but also promote novel and innovative approached that really strive for increased accessibility, inclusivity, and equity in STEM. The NSB also had sessions focusing on K-12 STEM teachers and NSF's role in funding K-12 systems and holistic, inclusive STEM pathways.

She reported on senior leadership changes and appointment: Dr. Charles (Chuck) Barber as the Chief Diversity and Inclusion Officer, Dr. Sylvia Butterfield as Acting Director for SBE while Dr. Kelli Craig Henderson is on extended leave, and Dr. Jolene Jessie as Acting Deputy Director in EDU. She pointed out that one of the biggest challenges inside NSF is the sharing and management of knowledge about broadening participation, highlighting the importance of NSF's informal BP Knowledge Sharing Group. Other topics discussed during this session included navigating information about NSF funding opportunities; the research infrastructure needs that will be addressed by GRANTED; the 25% non-response to respondents' demographic background; the call for nominations for the National Medal of Science; the new HBCU Connect, an internal community interest group to increase knowledge across agencies about HBCUs and allow more outreach and coordination across agencies; and ProSPCT - Program Suitability and Proposal Concept Tool, a tool for prospective Principal Investigators (PIs) to contact National Science Foundation (NSF) to determine suitability of a project idea prior to submission of a proposal. Dr. Knoedler extended a note of appreciation to CEOSE Member, Dr. Gilda Barabino for serving as the Chair of the Alan T. Waterman Award committee this year.

### **Day 2: February 17, 2023**

**Opening Remarks – Dr. Jose D. Fuentes, CEOSE  
Chair and Professor of Atmospheric Science, The Pennsylvania State University  
Discussion: Reports of the CEOSE Liaisons – CEOSE Advisory Committee Liaisons**

The CEOSE Chair welcomed everyone to the second day of the meeting, reviewed the agenda, and asked members to share important points from the first day. Some of the takeaway messages were: place more emphasis on institutional transformation and culture of intersectionality and build on/expand the groundwork of the ADVANCE program, consider revisiting the CEOSE charge to include an emphasis on equity and inclusion; leverage the unique opportunity for TIP to engage members of various communities that have been historically excluded; focus on breaking down the barriers to address the Missing Millions topic; employ innovative data collection strategies that will support intersectionality analyses; and clearly communicate the importance of and need for systemic/culture change, emphasizing accessibility, support structures, networking, mentorship, etc.

Highlights from the CEOSE Liaison Reports were given including the dates of upcoming AC meetings. The GEO AC and the AC for OPP will be merging. The BOAC is paying close attention to hybrid workforce model at NSF via a hybrid workforce evaluation. EDU is having a Leveraging Partnerships to Reach the Missing Millions meeting. There will be a CEOSE panel/presentation at the upcoming MPS-AC meeting.

Additionally, during this session, CEOSE revisited the report recommendations for enacting change and solutions.

**NCSSES Briefing – Presenters: Dr. Amy Burke, Program Director; Dr. Elizabeth Grieco, Program Director; Mr. Steven Deitz, Interdisciplinary Science Analyst, NCSSES, Directorate for Social, Behavioral and Economic Sciences (SBE)/NSF**

Dr. Burke stated that the NCSSES Diversity and STEM report (released to the public January 2023) highlights the current standing of women, minorities, and persons with disabilities in STEM. This report is the federal government’s most comprehensive collection of data on diversity trends in STEM, covering a multitude of topics, including STEM workforce, degree levels, STEM median wage and salary earnings, STEM unemployment, higher education, graduate enrollment in SE coursework.

Dr. Grieco reported that the workforce grew between 2011 and 2020 for all sex, racial, ethnic and disability groups with men and white workers make up the largest share. However, she stated that the STEM workforce has been gradually diversifying with increasing representation of women and underrepresented minorities. Some of the results highlighted were:

- Two-thirds employed in S&E occupations are women and about one-quarter employed in middle skill occupations are Hispanics.
- Among racial and ethnic groups, Asian workers has the highest share employed in Stem at 39% whereas the lowest share was among black workers, 18%.
- Among workers with at least one disability, 21% work in STEM occupations.
- Over the 10-year period, the proportion of STEM workforce that were women increased three percentage points from 32% to 35% in 2021.
- Race and ethnicity data revealed that underrepresented minorities collectively represented about 24% of the STEM workforce in 2020, one up from 18% in 2011.
- Hispanics increased the most from 11% in 2011 to 15% in 2021.
- Little change in the share of persons with disabilities over the 10-year period.

Dr. Deitz presented data that showed that Hispanic, Black, and American Indian and Alaskan Native individuals remain underrepresented among S&E graduate students and degree recipients, especially at the doctorate level. One of the most important demographics shifts is the increasing representation of women and Hispanic students at the associate degree level. Women are in the highest share of degrees in social and behavioral sciences and lowest shares of degrees in mathematics, computer sciences and engineering. Additionally, Dr. Deitz stated that the collective growth and underrepresented minority enrollment is largely due to an increase in Hispanic students in 2017 – 2021; graduate student enrollment increased by 56% compared to a 36% increase for black students and 11% increase for American Indian and Alaskan Native

students.

The *Diversity in STEM* report and additional resources are available on the NCSSES website. CEOSE was encouraged to access the *Science Indicators* report to view tables of more disaggregated data.

### **Working Lunch: Topics/Advice to Share with NSF Leadership**

CEOSE members shared the following topics/issues for the later NSF leadership discussion or at future CEOSE meetings: the lack of or limited intersectional data analysis in NSF reports, the urgency of an institutional transformation approach to STEM equity, the spread of “TIP-like” thinking Foundation-wide, acknowledgement of Director’s leadership for infusing equity and inclusion across the agency, timeliness of the re-examination of Merit Review, and the two recommendations for the 2021-2022 CEOSE report.

### **Discussion with Dr. Sethuraman Panchanathan, NSF Director**

Chair Jose D. Fuentes welcomed the NSF Director and shared a few meeting highlights, including the two recommendations in the forthcoming 2021-2022 CEOSE report. Director Panchanathan applauded the work of CEOSE, underscoring the usefulness of the report on the Future of EPSCoR. The Director provided a brief overview of his recent outreach activities to various institutions in Mississippi, Pennsylvania, South Carolina, and Virginia. He pointed out the agency’s significant investment (intellectually and financially) in the new GRANTED initiative. This effort is viewed as a bold action to help “ensure that people and infrastructure in obscure states and emerging research institutions are going to be empowered so that we are able to get the kind of talent and ideas energized everywhere.” CEOSE applauded the Director for his emphasis on removing barriers and shifting thinking about progress to focus on speed and scale.

The open discussion covered the use of partnerships for increasing access and success, the CHIPS Act as a lever for transformative change, the building of innovation ecosystems that emphasize a culture of inclusion, the intersectionality focus of the forthcoming report, the new funding opportunity called Analytics for Equity, and the consideration of a third Merit Review criterion specifically focused on BP and institutional transformation.

### **Presentation: Growing Research Access for Nationally Transformative Equity and Diversity (GRANTED) – Dr. Alicia Knoedler, Office Head, OIA/NSF; Dr. Dina Stroud, Program Officer; Dr. M. Brandon Jones, Program Director, Directorate for Geosciences (GEO), OAD/NSF; Dr. Kim Littlefield, Program Director, OIA/NSF**

Growing Research Access for Nationally Transformative Equity and Diversity (GRANTED) is a new BP initiative designed to address barriers and challenges that can impact competitiveness for external funding and access for talented investigators at less research-intensive institutions of higher education to participate in NSF’s research funding programs. The presentation focused on the rationale for GRANTED and explaining the research enterprise, providing more insight within the following areas of the research infrastructure to connect and catalyze change from within these systems: human capital, practices and processes related to research development,

research administration, technology transfer and commercialization, corporate relation/public-private partnerships, research integrity, compliance and security, research policy, student research training, and research leadership. A Dear Colleague Letter for GRANTED was issued for conference proposal due March 15, 2023. The DCL (NSF 23-037) is a call for conferences, symposia, and workshops centered around one or more of the three primary themes of GRANTED: enhancing practices and processes within the research enterprise, strengthening the research enterprise workforce, and partnering with national and regional professional societies to translate effective practices into diverse institutional and organizational contexts. Additionally, proposals that focus on enhancing research support infrastructure at minority-serving institutions and/or emerging research institutions are strongly encouraged.

**Presentation: 10% Agency Priority Goal (APG) to Improve Representation in the Scientific Enterprise – APG Leads: Dr. Sylvia Butterfield, Acting Assistant Director, Directorate for Social, Behavioral and Economic Sciences (SBE)/NSF and Dr. Alicia Knoedler, Office Head, OIA/NSF**

Dr. Butterfield described the agency priority goal in the context of the “Missing Millions.” The priority goal is by September 30, 2023, NSF will increase both the number of proportion of proposals received 1) with the PIs from groups underrepresented in STEM, and 2) from underserved institutions by 10% over the FY 2020 baselines. She reported that for FY2021 the agency was on a path to achieve this goal in 2023, largely due to the supplemental COVID funding. However, in FY 2022, there has been a decline in proposals overall. Yet, the good news was that the proportion of proposals with PIs from groups underrepresented in STEM increased and hit the mark for 2023 already. While the PIs increased, there was a decrease in proposals from underserved institutions. NSF is increasing its efforts to engage with under-resourced institutions by focusing on policy, data analytics, external engagement, and internal engagement and capacity building of MSIs.

CEOSE expressed support for the goal and the activities underway. Members pointed out the importance of: PIs submitting to a place that matches their project to make the most of their submissions to increase proposal submissions and awards; communicating with institutions to understand why they have not been submitting proposals as well as encouraging proposals from their researchers; conducting a deeper qualitative examination of proposals that were not funded and working with the teams of unsuccessful proposals to help them identify the NSF resources that would be useful for re-submissions; and increasing community awareness of the goal and its mutual benefits for the agency and STEM communities.

**Announcements, Closing Remarks, Adjournment**

CEOSE leadership is anticipating that the 2021-22 CEOSE Report will be submitted to NSF in May 2023. The potential for dissemination efforts to include a report release video will be discussed at the June 2023 CEOSE meeting.

Members were reminded of the upcoming CEOSE panel/discussion for the MPS AC meeting. Also, a Senior NSF Leader encouraged the CEOSE membership to share with their communities that this is a great time to send in proposals. The Chair announced that the CEOSE meeting in

June will be a hybrid meeting, applauded the hard work of the members, and adjourned the meeting.