

National Science Foundation
Directorate for Biological Sciences

Advisory Committee Meeting
April 15-16, 2021
Virtual Meeting

Summary Minutes

BIO Advisory Committee Members in Attendance:

Dr. Carla Cáceres (Chair)	Dr. Michael Ibba	Dr. Diane Pataki
Dr. Suzanne Barbour	Dr. Richard Kuhn	Dr. Maria Pellegrini
Dr. Barbara Beltz	Dr. C. Robertson McClung	Dr. Paul Turner
Dr. Jeannine Cavender-Bares	Dr. Lucinda McDade	
Dr. Thomas Daniel	Dr. Gretchen North	

Thursday, April 15, 2021

Registration started at 10:00 AM EDT.

Dr. Joanne Tornow, National Science Foundation (NSF) Assistant Director for Biological Sciences (BIO), convened the meeting at 10:31 AM EDT by welcoming the Advisory Committee (AC) members, NSF staff, and guests.

Dr. Karen Cone, Science Advisor for the Office of the Assistant Director (OAD) for Biological Sciences, reminded the AC members of NSF virtual public meeting policies and provided an overview of the Federal Advisory Committee Act (FACA) rules.

Dr. Carla Cáceres, Advisory Committee Chair, provided virtual meeting instructions and led the introduction of the AC members and NSF staff present at the meeting.

The AC unanimously approved the October 2020 AC meeting minutes without changes.

BIO Update – *Dr. Joanne Tornow, Assistant Director for Biological Sciences*

Dr. Tornow provided an update on recent and planned BIO activities since the previous meeting. Topics covered included recent BIO staff changes; budgetary updates; programmatic activity updates and their relation to the Biden Administration's science priorities; and how BIO is responding to the effect of the pandemic on vulnerable groups within the academic and research communities. Dr. Tornow also answered questions from the AC Members on how racial equity is being addressed at NSF by referring to the concern expressed during the last BIO AC meeting about the importance of supporting students at critical career transitions, such as the postbaccalaureate stage and at the community college level, and the overlap between support for these groups and support for those underrepresented in STEM, especially in light of the pandemic. Dr. Tornow noted that BIO has continued its forward momentum despite the pandemic.

Update from Committee on Equal Opportunities in Science and Engineering (CEOSE) – Dr. Suzanne Barbour, BIO Advisory Committee Liaison to CEOSE

Dr. Suzanne Barbour provided an update on activities from CEOSE. She discussed underrepresented groups, making the invisible visible, and the three CEOSE thematic reports in development. She also noted that CEOSE had a discussion with the National Science Board (NSB) about the impacts of the COVID-19 pandemic on STEM workforce development with an emphasis on first-generation students, graduate students, and women. Dr. Barbour answered questions from BIO AC members about online resource accessibility and virtual capabilities at institutions, leveraging established mentoring programs as models, and the challenges associated with ensuring that smaller, less well-resourced institutions have access to results of publicly funded research.

Update from Advisory Committee for Environmental Research and Engineering (AC-ERE) – Dr. Diane Pataki, BIO Advisory Committee Liaison to AC-ERE

Dr. Diane Pataki provided an update from the AC-ERE. She discussed the completion of two advisory reports that detail environmental impacts on national security and human health and noted that the COVID-19 pandemic and its impact of infectious disease on national security is relevant to both reports. Recommendations of the reports included engaging in partnerships with other federal agencies and promoting public engagement. Dr. Pataki answered questions from AC members about the connection between environmental science and social justice, opportunities to engage in public health, and engaging with Long Term Ecological Research (LTER) sites that are already doing research within similar topic spaces.

Program Director Panel Discussion on Virtual Panels – Dr. Joanne Tornow, Assistant Director for Biological Sciences; Dr. Manju Hingorani, Program Officer, Division of Molecular and Cellular Biosciences (MCB); Dr. Sam Scheiner, Program Officer, Division of Environmental Biology (DEB); Dr. Michael Mishkind, Program Officer, Division of Integrative Organismal Systems (IOS)

Dr. Tornow set the context for the discussion by explaining that NSF transitioned to all-virtual panels because of the COVID-19 pandemic. She noted that analysis of panel make-up and diversity revealed no substantial change in representation across career stage, gender, and institution type in an all-virtual panel environment.

Dr. Hingorani provided a Program Officer perspective of how virtual panels have operated during the past year. Many panels have reviewed fewer proposals covering a wider range of topics. In general, panelists have had a lighter review load, and it has been possible to accommodate some of the panelists' prior commitments, such as class lectures. Dr. Hingorani noted feedback from panelists is largely positive, although many miss the interactions with program staff and fellow panelists they enjoyed during in-person panels. Dr. Hingorani, Dr. Scheiner, and Dr. Mishkind answered questions from AC members about panelist demographics, challenges of reviewing in a virtual setting, role of ad hoc reviews, and funding decisions.

Joint Session with Directorate for Geosciences (GEO) Advisory Committee – Dr. Joanne Tornow, Assistant Director for Biological Sciences; Dr. Bill Easterling, Assistant Director for Geosciences; Dr. Brent Miller, Acting Deputy Division Director, Molecular and Cellular Biosciences; Dr. Carla

Cáceres and Dr. Rob McClung, BIO Advisory Committee Members; Dr. Kip Hodges and Dr. Tammi Richardson, GEO Advisory Committee Members

Dr. Tornow began the joint session by welcoming the GEO AC members and outlining the vision of the session: to share perspectives on science priorities and research needs relative to climate change, including the potential for cross-disciplinary engagement by NSF. She briefly summarized the findings of the National Academies of Science Engineering and Medicine Global Change Research Needs and Opportunities consensus study report from 2021 and their relation to the already established collaborative programs between BIO and GEO. Dr. Easterling emphasized the Administration's climate change priorities and reinforced the need for more collaboration between the directorates to meet these goals. Dr. Brent Miller presented an analysis of each directorate's award portfolio related to climate change and noted overlapping topic areas.

Dr. Cáceres and Dr. Hodges started the discussion by asking about what research areas would benefit from more synergy between BIO and GEO to speed discovery. Members of both ACs discussed areas that have traditionally been supported by one directorate or the other. There is possibility for synergy in several areas, such as large-scale modeling, sensor networks to measure environmental change, and engineering biological systems to mitigate effects of climate change. There was discussion on joint workshops, ideas labs, and citizen science programs as opportunities to involve investigators from both the BIO and GEO research communities.

Around the Table – Dr. Carla Cáceres, Advisory Committee Chair

Dr. Tornow requested the AC members consider key points and priorities from the earlier conversations for discussion with the NSF Director on the following day. Dr. Cáceres created a draft agenda that focused on future BIO engagement opportunities and assigned AC members to lead each discussion topic. The AC members indicated the discussion topics of interest, which included building a diverse future workforce, engaging with minority-serving institutions (MSIs), discussing the new urban LTER site in Minnesota, creating larger multi-investigator opportunities, maintaining the merit review process in a virtual environment, and building partnerships with other directorates.

Dr. Tornow adjourned the meeting at 4:39 PM EDT.

Friday, April 16, 2021

Registration started at 10:00 AM EDT.

Dr. Tornow reconvened the meeting at 10:30 AM EDT.

Division of Biological Infrastructure (DBI) Committee of Visitors (COV) Report – Dr. Tom Daniel, BIO Advisory Committee Liaison to COV; Dr. Carla Cáceres, Advisory Committee Chair

Dr. Cáceres provided background on the COV timeline, noting that the DBI COV took place in December 2020. Dr. Daniel summarized the main findings of the COV report and highlighted the strong communications efforts, improved organizational structure, and smooth functioning operations during

the pandemic. He touched on areas for development, which will be the subject of a written response from BIO to be presented at the next BIO AC meeting. The AC unanimously approved the COV report.

Finalize talking points for Director's visit – *Dr. Carla Cáceres, Advisory Committee Chair*

The AC members reviewed the draft agenda document prepared based on the previous day's last session and confirmed assignments to lead the discussion on each topic. Additional topics of focus included digital resources access and availability, workforce retention, and underrepresented groups inclusivity.

Visit with NSF Director Sethuraman Panchanathan and Chief Operating Officer Fleming Crim – *Dr. Sethuraman Panchanathan, Director of NSF; Dr. Fleming Crim, Chief Operating Officer, Office of the Director; Dr. Carla Cáceres, Advisory Committee Chair; Dr. Suzanne Barbour, Advisory Committee Member; Dr. Paul Turner, Advisory Committee Member; Dr. Diane Pataki, Advisory Committee Member; Dr. Lucinda McDade, Advisory Committee Member*

Dr. Sethuraman Panchanathan expressed his gratitude to the AC and excitement for the Administration's science priorities and touched on the progress NSF has made in response to the impact on the academic and research communities by the COVID-19 pandemic. Dr. Cáceres presented a summary of the AC discussion and highlighted the conversation with the GEO AC on expanding partnerships.

Dr. Barbour highlighted the CEOSE report that focused on hearing diverse voices in the research community. She described discussions on other topics, including leveraging existing mentoring programs as models for NSF, increasing access to digital resources at institutions, and promoting the new urban LTER site in Minnesota, which has a focus on climate change and social justice. Dr. Turner reiterated the need for access to online journal resources, especially with the widening gap under the current publishing model and noted that these resources are becoming more expensive. Dr. Pataki elaborated on the discussion about new partnerships with the GEO AC and noted that many of the themes that emerged aligned with NSF's pillars. Dr. McDade noted there is a community college representative on the GEO AC and highlighted the importance of this new perspective.

Dr. Panchanathan reiterated the importance of mentorship training, inclusion and diversity within the academic and research communities, and broadband access, and noted the new LTER site will be used as a model for the future. He also recognized that virtual panels act as an opportunity to enhance panelist inclusion in terms of talent and geography. Dr. Cáceres and Dr. Tornow concluded the session by thanking Dr. Panchanathan for his energy and leadership.

AC Summary, Future action items, Wrap-up – *Dr. Joanne Tornow, Assistant Director for Biological Sciences; Dr. Carla Cáceres, Advisory Committee Chair*

Dr. Tornow requested the AC members consider topics of interest for the next AC meeting. The AC indicated they would be interested in discussing equity in a digital world, obstacles faced by post-baccalaureate and undergraduate students, global biodiversity networks, and virtual conference best practices. The AC reiterated its enthusiasm for meeting with ACs advising other directorates, especially on topics of mutual interest to BIO.

Dr. Tornow adjourned the meeting at 12:33 PM EDT.