Advisory Committee for International Science and Engineering (AC-ISE)
Office of International Science and Engineering (OISE)

2020 June Meeting (Virtual)
June 18, 2020

Meeting Minutes

AC-ISE PARTICIPANTS

AC-ISE Members Present
Dr. Caroline Wagner, AC-ISE Chair, The Ohio State University
Rear Admiral Jay M. Cohen, The Chertoff Group
Dr. Martha Haynes, Cornell University
Dr. Shafiqul (Shafik) Islam, Tufts University
Dr. Holly Jones, Northern Illinois University
Dr. Bette Loiselle, University of Florida
Dr. Keith Marzullo, University of Maryland
Dr. Anne Petersen, University of Michigan
Dr. Nai-Chang Yeh, California Institute of Technology

AC-ISE Members Absent
Dr. Mary (Missy) Cummings, Duke University
Dr. Padma Raghavan, Vanderbilt University

Call to Order, Introductions and Opening Remarks

Dr. Caroline Wagner, AC-ISE Chair of the National Science Foundation (NSF) Advisory Committee for International Science and Engineering (AC-ISE), called the meeting to order and requested a motion for approval of the December 2019 AC-ISE meeting minutes. The committee voted unanimously to approve the meeting minutes. Dr. Wagner followed with an invitation for AC-ISE committee member introductions.

Remarks/Updates

Dr. Rebecca Keiser, OISE Office Head/AC-ISE Designated Federal Officer, welcomed participants and provided OISE staffing updates that included her new role as Chief of Research Security Strategy and Policy (CRSSP), and Roxanne Nikolaus' appointment to Acting Cluster Lead for the Countries and Regions (C&R) Cluster. Dr. Keiser also briefed the committee on OISE's upcoming recruitment plans

Dr. Keiser reported on NSF's participation in high level international activities that included the G7 Science and Technology Ministerial meeting – led by NSF's Acting Director, Kelvin Droegemeier – and NSF's work with the Global Research Council.

Lastly, Dr. Keiser's update included the nomination of Dr. Sethuraman Panchanathan as Director of NSF and provided OISE's strategy for highlighting NSF's contributions to global leadership, OISE's focus on global engagement for students, and OISE's emphasis on team science and funding network-to-network connections.

Countries & Regions

Ms. Roxanne Nikolaus, Acting Cluster Lead, provided updates on the C&R Cluster activities. Ms. Nikolaus briefly summarized categories of activities within the cluster's responsibility – representation, policy, and MULTIPLIERs.

Among the international highlights were meetings with the European Union's Deputy Director General for Research and Innovation, Principal Scientific Advisor of India, U.S.-Brazil Joint Commission, and Steering Committee for U.S.-Ireland R&D Partnership Program. Ms. Nikolaus also highlighted the Director's meetings with the Mexican Ambassador, the GRC Governing Board, and "Bridging Italy & the US in the fight against COVID-19." Ms. Nikolaus' highlights continues with the MOU renewal between NSF and German Research Foundation that led to an opportunity in electoral synthesis and electrocatalysis, the Dear Colleague Letter (DCL) on collaboration among NSF, Science Foundation Ireland, and the Department for the Economy of Northern Ireland.

Programs and Analysis

Ms. Anne Emig, Cluster Lead, provided updates for the Program & Analysis (P&A) Cluster. Ms. Emig began this briefing with OISE's programmatic strategic priorities that included the advancement of research, the development of the future STEM workforce, and leveraging resources through international collaboration.

Ms. Emig also shared OISE's interest in a learning agenda, which sets out to facilitate evidence-informed decision making to improve activities. OISE expects the learning agenda to prioritize AccelNet, MULTIPLIER, and BISO activities.

Science and Security

Dr. Keiser led the discussion on NSF's efforts to address science and security concerns related to the integrity of the global research enterprise. The concept of research integrity addresses conflicts of interests and commitments, confidentiality of the merit review process, and protection of pre-publication data. To address the integrity of research funded by federal resources, NSF created the Chief of Research Security Strategy and Policy (CRSSP) position, improved clarifications for disclosure, instituted changes to NSF employment requirements and mandated staff training on science and security, began work with JASON for risk assessment and analysis, engaged with science community partners, and coordinated with USG interagency partners.

To continue mitigation of risks to the research enterprises, NSF will Continue outreach and collaboration with the academic research community, federal science agencies, and the law enforcement/intelligence community, will consult with the research community on the type of guidance and tools that might be helpful for NSF reviewers, share and collect research community feedback on NSF's enhanced research security policies and procedures, leverage data and analytics to support research security, and release the revised Terms and Conditions for International Collaborations on Major Facilities

NSF's MULTIPLIER Updates, Czech Republic MULTIPLIER, and MULTIPLIER Moving Forward

Ms. Roxanne Nikolaus presented on OISE's MULTIPLIER program – the MULTIPLIER activity sets out to accelerate discover through strategic international missions. Ms. Nikolaus briefed the committee on the Czech Republic MULTIPLIER mission, led by Ms. Nikolaus and included representatives from NSF's SBE, CISE, and MPS directorates. The mission set out to gain insights on Czech investment, direction, and capabilities in artificial intelligence (AI) and nanotechnology, and to explore potential U.S.-Czech collaborative opportunities in areas of AI and nanotechnology research.

Ms. Nikolaus also briefed the committee on two additional exploratory missions on topics related to future of work and partnerships. The objectives of the future of work mission included improving the understanding of future of work activities at International Labour Organization (ILO) and Organisation for Economic Co-operation and Development (OECD), the exploration of collaboration opportunities with ILO and OECD, and potential collaborations with Swiss NSF. The Partnerships mission explored cooperation with Brazilian Federal, State, Academic, and Non-profit entities to develop new bilateral partnerships.

Lastly, Ms. Nikolaus provided a forward look at the MULTIPLIER program and, OISE continued engagement with directorates to determine countries and regions of importance and/or interest, and the corresponding topics or research areas.

NSF's COVID-19 Response

NSF's Dr. Joanne Tornow, Associate Director for the Directorate for Biological Sciences, presented on NSF's activities in response to COVID-19. Dr. Tornow informed the committee of NSF's long history of funding research related to virus related phenomena.

Through programs like Ecology and Evolution of Infectious Diseases, NSF was able to respond to COVID-19 through the RAPIDs mechanism that was able to take advantage of all NSF programs to make awards quickly on the basis that without speed in funding, the data facilities or specialized equipment required to conduct the research might be unavailable or inaccessible. In March 2020 NSF released a DCL calling for proposals that focused on modeling the spread of COVID-19, understanding virus transmission and prevention, and to encourage the development of processes and actions to address the global challenge. Additional DCLs created access to advanced cyber infrastructure research and requested SBIR/STTR Phase I proposals.

Dr. Tornow also briefed the advisory committee on NSF's engagement with the research community on the disruption of the research enterprise's full capacity. NSF published a Coronavirus HUB that provided relevant information to awardees and partners. The main thrust of NSF guidance to awardees and proposers was maximum flexibility to support the research while emphasizing the health and safety of the community of researchers, post doctorates, and graduate students.

COVID-19 and International Collaboration

Dr. Caroline Wagner, AC-ISE Chair, presented her research on international collaboration trends during the time of COVID-19. Dr. Wagner's research, in collaboration with Caroline V. Fry, Xiaojing Cai, and Yi Zhang, examined fluctuations in coronavirus-related publications. Results from this research determined decreases in collaboration team sizes, fewer countries involved in coronavirus research publications, and the surge then decline of U.S.-China cooperation. The research also showed the U.S. at the center of pre-COVID-19 networks, with close connections with Canada, Saudi Arabia, China, the United Kingdom, and Germany; the COVID-19 networks showed intensity in U.S.-China connections, but diminished intensity among other countries.

Meeting with NSF Chief Operating Officer (COO)

Dr. Crim joined the AC-ISE meeting and shared updates related to NSF's 75th anniversary, the signing of the first collective bargaining unit agreement in 38 years, and staffing updates that included new Associate Directors for the CISE and MPS directorates.

Dr. Crim transitioned the discussion to the pandemic and acknowledged the need for significant resources to recover from COVID-19, while commending the NSF staff for continuing to meet the mission of the agency. Dr. Crim informed the committee of NSF's receipt of $75 million in CARES Act stimulus funding that supported more than 600 RAPID awards.

Dr. Crim welcomed the newest AC-ISE committee members and shared the important role each member plays in the success of NSF. Dr. Crim also thanked Caroline Wagner for chairing the committee, and Anne Petersen for her two-term service.

During the discussion with Dr. Crim, the AC-ISE committee members offered their thoughts on pressing topics and the future of OISE. Recommendations and discussions centered around:

- Impacts to human capital in international collaborations that included educational and professional uncertainties that result from researchers' inability to travel back to institutions, insufficient connection to the research enterprise, limited access to laboratories, research facilities, and vessels, and university closures.
- Science and integrity – openness in the research enterprise accelerated due to COVID-19. The community could benefit from larger conversations on concepts of open access, open sharing, open data, and open science. These concepts have different meanings, but all are related to security. The research community would benefit from the development of better guidelines and norms.
- Hybrid research models that include the allowance of mechanisms like the RAPID. Hybrid mechanisms have the potential to innovate in areas of research that support small investments to encourage thought around these areas of interest and impact.
- Leveraging uncommon partnerships to advance greater gain in international collaborations.

Discussion/Future Recommendations

Dr. Wagner led the discussion on future recommendations for OISE and NSF at large. The AC-ISE identified the following recommendations:

- In cases where collaborators and researchers do not have good connections, research progression stalls with special emphasis on international researchers who have limited access to research infrastructure. Dr. Wagner recommended funding partnerships that connect U.S. activities and scientists from developing countries.
- Dr. Islam acknowledged the environment of potential chaos and confusion with pandemic and changes in NSF and OISE leadership that creates possibility of opportunities. Dr. Islam recommended aligning research with specific outcomes that have societal benefits.
- COVID-19 accelerated the move towards openness, open data sharing, and open access. Dr. Wanger recommended more robust community conversations surrounding these ideas to facility broader meanings, guidelines, and norms around openness.
- Dr. Marzullo recommended the use of small investments in areas that facilitate innovation in hybrid and virtual research that result in big wins and outcomes for the agency and research community at large.
- Dr. Cohen raised points related to leveraging new connections and partnerships with entities that are heavily involved in support of the research enterprise (i.e., Bill Gates Foundation and Elon Musk).
- Dr. Cohen acknowledge the benefits of the RAPIDs initiative and recommended the marrying of SBIR-STTR mechanism with the RAPID process that may result in greater benefits for the resources invested.

- Dr. Jones recommended resources and supplements to promote collaborations by inviting international researchers into the U.S. to collaborate with U.S. researchers.
- Dr. Marzullo recommended the expansion and amplification of the PEER program with USAID.
- Dr. Islam recommended the inclusion of an international collaboration component embedded within each of the agency directorates that puts emphasis on the importance of international collaborations and allows directorates to maintain the benefits from institutional linkages.

Dr. Wagner thanked the committee participants and adjourned the meeting at 5:30 PM.