

VISITING COMMITTEE ON ADVANCED TECHNOLOGY (VCAT or Committee)
MINUTES OF THE WEDNESDAY, FEBRUARY 9, 2022
WEBINAR MEETING

ATTENDANCE:

**Visiting Committee
Members Attending**

Cerf, Vinton
Fischer, George
Jackson, Keoki
Johnson, Anthony M.
Kaler, Eric
Khan, Mehmood
Ku, Katharine
Parker, Michelle
Vasko, David (Dave)
Wasserman, Gail

Designated Federal Officer

Shaw, Stephanie

NIST Leadership Board

Bahar, Mojdeh
Boehm, Jason
Brockett, Del
Brown, Essex
Chin, Joannie
Dimeo, Robert (Rob)
Dowell, Marla
Fangmeyer, Robert
Hooker, Stephanie
Jenkins, George E.
Kushmerick, James
Lin, Eric
Mackey, Elizabeth (Liz)
Molnar, Mike
Moon, Sesha
Olthoff, James K.
Raghavan, Pravina
Romine, Charles (Chuck)
Sastry, Chandan
Vaughn, Robert (Skip)
Wixon, Henry

NIST Staff

Acierto, Linda
Adams, James
Andrews, Anne
Averill, Jason
Barrett, Claire
Boeckl, Kaitlin (Katie)
Brown, Hannah
Cancino, Janet

Chang, Walter
Chukran, Melinda
Claussen, Monica
Corwin, Kristan
David, Lindra
Dohne, Kirk
Evans, Heather
Fasolka, Mike
Fato, Hope
Fetsko, Melissa
Folk, Alex
Forster, Amanda
Fung, Juan
Gayle, Frank
Gillerman, Gordon
Glenn, Rachel
Glick, Millie
Hanna, Nancy
Hardis, Jonathan
Hauk, Kandy
Healy, William (Bill)
Hickernell, Robert (Bob)
Hildebrand, Jacqueline
Hoehler, Matthew
Huergo, Jennifer
Ivester, Rob
Ivy, Nahla
Jahanmir, Said
Jones, Christina
Kelsey, Richard
Keys, Mirta-Marie
Kim, Yekyung
Kirby, Brian
Lyford, Chancy
Madsen, Mark
Mattson, Bruce
Mayton, Heather
McIntyre, Kevin
Meritis, Dimitrios
Mitrani-Reiser, Judith
Neumann, Dan
Newton, Thomas
Orji, Ndubuisi (George)
Pacelli, Mary Ann
Pollack, Charles
Porch, Susanne
Pritchett, Jeanita
Ramotowski, Robert
Reidy, Kari
Rogers, Kelley
Rudnitsky, Robert
Saundry, Claire

Sberegava, Anna
Schlatter, Katie M.
Schmit, Mark
Schufreider, Jim
Seiler, David (Dave)
Shyam-Sunder, Sivaraj
Snow, Heather
St. Pierre, James (Jim)
Strouse, Gregory
Sullivan, Suzanne
Szuchyt, April
Tabassi, Elham
Teske, Michael
Ufford, Donald
Vanek, Anita
Varadi, Laslo
Wavering, Al
Widdup, Joseph
Wilkinson, Richard
Yao, Jue
Yashar, David

Others

Ghaffari-Tabrizi, Omid –
Enterprise Cloud Coalition
Jensen, Matthew - Government
Relations and Public Policy
Locascio, Laurie – University
of Maryland College Park
Johns, Bethany – Association of
Public and Land-grant
Universities (APLU)
Sabuda, Mary - American
Chemical Society
Thomas, William – Science
Policy News American
Institute of Physics
Updyke, Craig – ASTM
International

Call to Order – Ms. Katharine Ku, VCAT Vice Chair

Ms. Ku called the meeting to order at 10:00 a.m., reviewed the meeting logistics and took roll call. Ms. Ku welcomed a new member to the VCAT, Dr. Michelle Parker, from Boeing.

Annual Ethics Briefing - Mr. Jeffrey Harrington – Senior Attorney in the Ethics Law and Programs Division, Office of the General Counsel, Department of Commerce (DOC)

Mr. Harrington provided the VCAT Members with their annual ethics briefing for the calendar year 2022, during which he reviewed changes in the interpretation of Federal Advisory Committee Act (FACA) regulations, conflict of interest rules, financial disclosures, and other issues.

For more information, see Mr. Harrington's [presentation](#).

Discussion. VCAT members discussed the following topics:

- Not using inside public information and possible restrictions on Initial Public Offerings, and
- Listing underlying investments of limited partnerships.

Administrative Update – Ms. Stephanie Shaw, Administrative Specialist, Program Coordination Office, and Designated Federal Officer, VCAT

Ms. Shaw also welcomed Dr. Parker to the VCAT and announced the VCAT elections for the next VCAT Chair, Dr. Mehmood Khan and the Vice Chair, Dr. Keoki Jackson. Their two-year terms will begin March 1, 2022, and go through February 29, 2024.

SESSION I: NIST UPDATE

NIST Update and Agenda Review – Dr. James K. Olthoff, Performing Non-exclusive Duties of the Under Secretary of Commerce for Standards and Technology and NIST Director

Dr. Olthoff began by acknowledging the impact the December 30, 2021, Boulder, Colorado fires had on the NIST community. Over a thousand homes were damaged or destroyed in the Boulder area. Twenty-nine NIST employees were directly impacted, and an estimated equal number of contractors and associates were affected. NIST is aware of five staff and three associates who lost their homes. NIST put in place several resources to help affected staff, and the Commerce Secretary personally reached out to people who were impacted to express the concerns of the Department.

Dr. Olthoff welcomed the VCAT's newest member, Dr. Michelle Parker of Boeing, and updated the membership of recent leadership changes at NIST as well as the status of Dr. Laurie Locascio's nomination to be the next Under Secretary of Commerce for Standards and Technology.

Dr. Olthoff reviewed the status of major pending legislation that would have a significant impact on NIST such as the America COMPETES Act of 2022, which provides for a full reauthorization of NIST, and as the House version of the Senate passed U.S. Innovation and Competitiveness Act (USICA) would also provide funding for the programs authorized as part of the Creating Helpful Incentives to Produce Semiconductors for America (CHIPS) Act.

Dr. Olthoff provided a review and update of NIST programs in areas including Artificial Intelligence (AI), cybersecurity highlighting NIST's efforts to carry out the requirements of Executive Order 14028, quantum information science and the efforts of the Quantum Economic Development Consortia, biotechnology, and

NIST's efforts in advanced communications.

Dr. Olthoff also reviewed NIST progress in ongoing construction activities including

More detail on these and other highlights can be found in Dr. Olthoff's [presentation](#).

Discussion. VCAT members discussed the following topics:

- Research reactor not included in Academy study of facilities,
- Member composition of the TTC (Trade and Technology Council),
- NIST involvement in potential interference of 5G with airline navigation,
- Funding and staff needed to accomplish deliverables for the Study to Advance a More Productive Tech Economy (American COMPETE Act) and CHIPS Act,
- More information needed on where funding is going and what is actually getting done,
- Summary of accomplishments related to new funding areas provided to VCAT,
- 5G and altitude detection, and
- Receiver design for aircraft detection system needs updating.

Safety Update – Keeping NIST Staff Safe During COVID - Dr. Elizabeth Mackey, Chief Safety Officer and Director of Office of Safety, Health, and Environment (OSHE)

Dr. Mackey provided a current NIST Safety update to VCAT members. Dr. Mackey provided an overview of NIST's annual safety management review and the FY2022 goals set by the NIST Executive Safety Committee.

FY22 will continue to be focused on COVID health and safety, which includes prevention protocols, case management, monitoring, and communication. The prevention protocols include things like vaccines, daily health and travel screening, and basic precautions with things like masks, distancing, and personal hygiene. Case management to identify and notify close contacts for work-related cases will continue, and instructions will be provided to everyone with return-to-work criteria. The challenge has been to keep up with the CDC (Centers for Disease Control and Prevention) guidance and scientific literature. Communication through town halls, all-staff emails are ongoing to ensure that NIST staff are prepared for a safe return to the office and labs.

Dr. Mackey provided an update of recent NIST and OSHE actions pertaining to the NIST Center for Neutron Research (NCNR) alert that occurred on February 3, 2021. The NIST-level Incident Response Team continues to meet once a week to ensure a coordinated NIST-level response. OSHE has assisted NCNR with a safety culture assessment. The NCNR director discussed what safety culture means at the Executive Safety Committee meetings. Two of the planned safety programs will be informed by NCNR lessons learned about change management and monitoring, measuring, and assessments. Better integration of OSHE-managed and NCNR-managed safety has been planned to have better integration. The NIST Director has engaged external subject-matter experts for an independent assessment of the NIST response to the event.

For more information, see Dr. Mackey's [presentation](#).

SESSION II: NIST PROGRAMMATIC AND OPERATIONAL UPDATES

Forward Looking Plan for MEP – Ms. Pravina Raghavan – Director, Hollings Manufacturing Extension Partnership (MEP)

Ms. Pravina Raghavan, the new Director of MEP provided the VCAT members with an overview of her background, which includes work in finance and technology, with a focus on strategic planning and executing growth strategies for both private sector and government programs. She used to be a small business owner which gave her a perspective on how to harness the power of government programs to assist small businesses to succeed.

Ms. Raghavan highlighted the ongoing success of the MEP program, where despite the impacts of COVID-19 in FY21 the MEP national network interacted with over 34,307 U.S. manufacturers from nearly all

manufacturing industries. There were 125,745 jobs created or retained, which is up nearly 20,000 jobs from FY20. Manufacturing clients also achieved \$5.2 billion total investment, with \$1.5 billion in cost savings because of the efforts of the MEP national network.

Ms. Raghavan gave an overview of NIST's success in implementing the funding NIST received through the 2020 CARES (Coronavirus Aid, Relief, and Economic Security) Act. NIST MEP received \$50 million in CARES Act funding, which funded all 51 centers. MEP centers served over 5,221 companies with 7,187 CARES Act-funded projects. CARES Act funding also expanded the MEP national network to interact with 2,266 new companies for the first time. As a result of its efforts the MEP was awarded the DOC Organizational Gold Medal for its timely implementation of the CARES Act funding, providing critical support to the nation's small and medium manufacturers.

Ms. Raghavan reviewed MEP's priorities for 2022 which included expanded efforts in: supply chain, workforce, and technology and innovation, as well as the development of a new MEP national network 5-year strategic planning for FY23 to FY28.

For more information, see Ms. Raghavan's [presentation](#).

Discussion. VCAT members discussed the following topics:

- Better leveraging of virtual tools and technologies to small and medium businesses,
- Manufacturing USA could help disseminate best practices through demos at centers,
- Strategic elements of the strategic plan used in competitive awards for funding,
- Partnering with community colleges in training to create workforces for small companies,
- Using virtual technology and training to accelerate hands-on process learning,
- NSF and MEP collaboration to reach 2-year colleges and 4-year research institutions, and
- Possible MEP involvement with specific cryogenic design or fabrication capability.

NCNR Situation Update – Dr. Robert Dimeo, Director, NIST Center for Neutron Research (NCNR)

Dr. Dimeo provided an overview of ongoing efforts to deal with the NCNR contamination issue and subsequent shut down. NIST has recently submitted a request to the Nuclear Regulatory Commission (NRC) to restart the reactor. including efforts looking at operational readiness, and correction actions.

Significant progress on implementing corrective actions have taken place. Visual verification of latching fuel elements in the reactor core is a major corrective action that is being implemented. This requires a change to the reactor license. In December, a license amendment request was sent to the NRC. Dr. Dimeo stated he had two briefing sessions with the user community in town halls since the last VCAT meeting.

A major milestone achieved was the bulk debris cleanup. A contractor for nuclear plants, came in and executed debris removal. They have been working with the health physics staff and reactor operations staff in this effort and were successful in removing debris from the reactor vessel.

The next major remediation target is the primary coolant system, which needs to be filtered to remove debris and contamination.

The next phase will be to inspect the removed fuel elements and put them through a cleaning to ensure they are okay to be reused. The hope is they will be effective in their reuse after being reinstalled. The plan for the remainder of the time until the reactor is restarted is to implement all corrective actions, some of which still depend on funding availability. Eventually, the NRC will close out the special inspection and issue their special inspection report. If NCNR gets the go-ahead to restart the reactor after being restored to its operational readiness, user experiments can be scheduled.

Dr. Olthoff convened an external review by Julie Phillips from the National Science Board, VCAT member Eric Kaler from Case Western Reserve University, Thom Mason from Los Alamos, and Alexander Adams who has retired from Nuclear Regulatory Commission. A report detailing a NIST-wide response to the incident is expected by March 2nd.

There are uncertainties potentially affecting a 2022 restart, which has a no-earlier-than date to restart the reactor in April. The potential impact of risk items preventing this are the following:

- Cleanup of reactor vessel and primary does not go as planned – medium risk high impact,
- Fuel elements cannot be reused – low risk high impact,
- Procedure revisions required for startup delayed – medium risk low impact,
- Additional corrective actions from external review impacts restart – medium risk medium impact,
- Thermal column survey impacts restart – medium risk low impact,
- Insufficient funds to implement corrective action – low risk high impact,
- Protracted license amendment disposition – medium risk medium impact, and
- NRC not satisfied with corrective actions and progress – medium risk high impact.

Dr. Dimeo stated funding is required for all items in FY22 to best position NIST to restart the reactor in 2022, but without additional funds, the reactor cannot start in 2022. The repercussions are many, some of which are the U.S. would be underserved in neutron measurements, which will create backlogs of experiments at NIST. The NCNR impacts 40 percent of scientific productivity, more than 3,000 scientists and approximately 50 companies per year.

For more information, see Dr. Dimeo's [presentation](#).

Discussion. VCAT members discussed the following topics:

- Having two reactors in case one is down for servicing or other reasons,
- Drop-dead date needed to receive funding to enable a restart of reactor, and
- Enactment of FY22 budget needed because Continuing Resolution has constraints.

[Diversity, Equity, Inclusion, and Accessibility \(DEIA\) at NIST – Dr. Sesha Moon, Director, Diversity, Equity, and Inclusion \(DEI\)](#)

Dr. Moon provided an update on what has transpired in the last 6 months since she began as Director of Diversity, Equity, and Inclusion (DEI) at NIST. Two Executive Orders, (EO) 13985 and 14035 relating to DEIA across the Federal landscape affect the internal efforts to ensure NIST has a diverse, equitable, inclusive, and accessible workforce. Dr. Moon conducted over 50 listening and learning sessions and discovered over 30 individual groups are working on next steps to ensure the DEIA across the agency. Newly renamed, Equal Employment Opportunity and Accessibility Office is working in connection with DEIA to address the EO's and presidential memorandums.

Dr. Moon introduced Dr. Jeanita Pritchett, currently detailed as a senior DEI strategist, who provided an overview of the EO's. Dr. Pritchett explained EO 13985 which is driving an inclusive economy through equitable service delivery and EO 14305 looks at ensuring that NIST is becoming a model agency for employment experience and ensuring that DEIA is embedded throughout NIST.

The Department established the DEIA council also known as the DOC Equity Council which consists of seven subcommittees that are leading the development of different strategies and plans to respond to the EO's. Dr. Moon and Dr. Pritchett co-chair the Race and Ethnicity Committee which is charged with developing an equity action plan associated with EO 13985. The equity action plan was submitted January 20, 2022, to the Office of Management and Budget (OMB), and NIST is awaiting guidance on how the public release of the information will happen later in the spring. The plan is to track progress through bi-annual equity assessments.

In October 2021, the National Strategy Gender Equity and Equality was released. NIST is exploring how it can use and leverage this in the areas of valuing women's paid and unpaid work and expanding innovation. Subcommittees have been stood up to develop sets of principles to align with these themes based on gender and intersectionality, pathways and success, and culture change.

Dr. Moon said a short list of potential high-impact areas of opportunities were created to start the strategic planning process, with over 30 potential areas of focus, some of which are recruitment, promotion, and culture. Another activity is that Dr. Moon and the NIST Executive Board along with key stakeholders attended Cornell

University DEI certification training as a team. Priorities will be supported by short and long-term goals, including a set of tactical action items. This will help to identify a set of manageable, measurable, and feasible milestones between now and 5 years. NIST is tasked to develop and submit a subcomponent-level DEIA strategic plan to OMB by March 23rd, therefore, working groups were set up to create a draft plan by March 1st.

Dr. Moon will provide a detailed update at the June VCAT meeting on the finalized strategic plan and DEIA updates with the workforce.

For more information, see Dr. Moon's [presentation](#).

Discussion. VCAT members discussed the following topics:

- Is support to DEIA enough to incorporate changes needed,
- Effecting change from the bottom up, engaging the organization, and
- Harnessing information from 30-plus employee resource groups to drive DEIA and the mission.

SESSION III: WORKING SESSION

Review and Discuss Recommendations for VCAT Annual Report – Ms. Katharine Ku, Vice Chair, VCAT

Dr. Boehm and Ms. Ku opened the working session with a request for discussion on the draft Annual Report. It was decided the VCAT would go through it in a section-by-section format and finalize the report by email which will then be submitted to Congress through the Secretary of Commerce.

Meeting Wrap-up

There were no public comments. In closing, Dr. Olthoff mentioned when Dr. Locascio does get confirmed in the future, NIST will look at the possibility of having a call with Dr. Locascio and the VCAT to one bring her up to date on current activities as well as to discuss her priorities and seek her guidance on a set of directions moving forward.

Adjournment

The meeting was adjourned at 3:44 PM.

I hereby certify that to the best of my knowledge; the forgoing minutes are accurate and complete.

Stephanie Shaw, Designated Federal Officer, NIST Visiting Committee on Advanced Technology

Dr. Mehmood Khan, Chair, NIST Visiting Committee on Advanced Technology