

**VISITING COMMITTEE ON ADVANCED TECHNOLOGY (VCAT or Committee)
MINUTES, March 27, 2026
Virtual Meeting**

ATTENDANCE:

**Visiting Committee
Members Attending**

Broz, Joseph
Cheung, Stanley
Fox, Glenn
Ghosh, Monisha
Holland, Michael (Chair)
Landry, Donald
Meszaros, Jacqueline (Jack)
Murray, Cherry (Vice Chair)
Pierpoint, Mark

Designated Federal Officer

Shaw, Stephanie

NIST Leadership Board

Adams, James (Jim)
Banovic, Stephen
Beers, Kathryn (Kate)
Boeckl, Kaitlin (Katie)
Boehm, Jason
Brown, Hannah
Burkhardt, Craig
Chin, Joannie
David, Lindra
Feldman, Ari
Folk, Alex
Kushmerick, James
Leaman, Dana
Lewis, Christine (Christy)
Lin, Eric
Madsen, Mark
Molnar, Michael (Mike)
Rao, G. Nagesh
Stine, Kevin
Szakal, Christopher
Vanek, Anita
Wright, Andrew

NIST Staff

Brunner, Zahraha (Zara)
Buchanan, Kerianne
Burdette, Carolyn
Butry, David
Chambers, Alicia
Chua, Julia
Cleveland, Megan

Coolbroth, Dana
Esch, Mandy
Fato, Hope
Gates, Thomas
Golmie, Nada
Heiserman, Blair
Heyman, Matthew (Mat)
Hildebrand, Jacqueline
Hill, Kevin
Howell, Gema
Huergo, Jennifer
Incognito, Christian
Ivy, Nahla
Johnson, Janelle
Jones, Ronald
Kane, Andrew
Kauffman, Leah
Kimball, Kevin
Kirby, Brian
Lambo, Jorge
Lloyd, Corrine
Loftin, Bethany
Madhavan, Rajmohan
Malhotra, Jyoti
Mingo, Monyelle
Newton, Thomas (Tom)
Polyakov, Sergey
Przybocki, Mark
Reidy, Kari
Rosa, Jennifer
Rudnitsky, Robert
Sager, Roby
Sberegaeva, Anna
Sofka, Holly
Tarlov, Michael (Mike)
Trello, Rachel
Van Den Berg, James
Wasil, Charles
Wong, Jacob
Zangmeister, Rebecca
Zhang, Jessie

Updyke, Craig – ASTM
International
Wai, Zoe – NASA Goddard
Institute for Space
Studies

Others

Fall, Chris – Department of
Commerce
Mulberry, Karen – IEEE
Subashe, April – Technology
Division, St. George
City of Utah

FRIDAY, MARCH 27, 2026

Video found [here](#).

SESSION I: DIRECTOR'S OFFICE UPDATES AND OUTLOOK

Call to Order – Dr. Michael Holland – Chair, VCAT

Dr. Michael Holland, the VCAT Chair, called the meeting to order at 10:00 a.m. ET. He began by highlighting meeting logistics, taking roll call, and then introduced Mr. Craig Burkhardt, the Acting Under Secretary of Commerce for Standards and Technology and Acting NIST Director, for his opening remarks and announcements.

NIST Announcements – Mr. Craig Burkhardt – Acting Under Secretary of Commerce for Standards and Technology and Acting NIST Director

Mr. Craig Burkhardt began by stating that he has served as Acting Director for the past 14 months. He announced that Dr. Arvind Raman, the current Dean of Engineering at Purdue, has been slated as the new NIST Director and is expected to start soon, pending final Senate approvals. He then noted that his focus as Acting Director was operational rather than setting the agency's long-term scientific agenda and will resume his role as Deputy Director once Dr. Raman arrives. Mr. Burkhardt welcomed two new members, Dr. Landry and Dr. Cheung, to the board and thanked two outgoing members, Dr. Pierpoint and Dr. Ghosh for their service.

Organizational Updates – Ms. Kaitlin (Katie) Boeckl – Director, Program Coordination Office

Ms. Boeckl announced the following key leadership and committee appointments:

- **NIST Director Nominee:** Dr. Arvind Raman's nomination was advanced by the Senate Commerce Committee on March 12th. A full Senate confirmation vote is the final pending step.
- **Chief Counsel for NIST:** Christine Lewis, formerly of the Senate Commerce Committee, has officially joined NIST.
- **VCAT Leadership:** Dr. Mike Holland is the new VCAT Chair, and Dr. Cherry Murray is the new Vice Chair.
- **New VCAT Members:** Dr. Stanley Cheung (North Carolina State University) and Dr. Donald Landry (Interim President, University of Florida) have joined the committee.
- **Outgoing VCAT Members:** A special thanks were given to Dr. Mark Pierpoint (former Vice/Acting Chair) and Dr. Monisha Ghosh for their service.

Next, Ms. Boeckl announced the following internal NIST transitions:

- **Director's Office:** Christopher Szakal is now Acting Director for Policy, Programs, and Planning (a new role). Katie Boeckl has taken over as the Director of the Program Coordination Office.
- **Management Resources:** Anita Vanek is the Acting Associate Director, and Hannah Brown is the Acting Deputy Associate Director.
- **CHIPS Research and Development:** Eric Forsythe has stepped in as Acting Director following the departure of Briana Frisone.

Finally, Ms. Boeckl highlighted the topics on the agenda including artificial intelligence, advanced communications, and a working session on the VCAT's annual report.

For more information, see the presentation slides [here](#).

SESSION II: NIST PROGRAMMATIC UPDATES

Budget Updates and Discussion – Mr. Thomas Gates – Director, NIST Budget Office and Dr. Christopher Szakal – Acting Director for Policy, Programs, and Planning

Dr. Szakal and Mr. Gates focused on the current budget landscape, highlighting a complex transition between three fiscal year cycles (2026, 2027, and 2028). They stated that NIST is currently managing three overlapping budget phases.

- **FY 2026:** Appropriations were finalized in late January and NIST is currently awaiting Executive Branch approval of its Spend Plan.
- **FY 2027:** The President's Budget Request is expected in the coming weeks, followed by Congressional markups later this year.
- **FY 2028:** Planning is beginning now, with a focus on aligning with administration R&D priorities.

Next, the speakers covered the budget breakdown between NIST's three budget accounts. The total NIST budget appears to have grown to \$1.8 billion, but this number is overinflated due to the inclusion of Congressionally Directed Spending (CDS), also known as "Earmarks". Specifically:

- **Scientific and Technical Research and Services (STRS):** NIST is facing a \$13.25 million reduction in its core internal R&D budget. NIST is working closely with the Department of Commerce and the White House to ensure that internal funds are focused on Critical Emerging Technologies (CETs) and core mission services.
- **Construction of Research Facilities (CRF):** NIST received a \$40.2 million increase in CRF compared to FY 2025 enacted levels and will be used to address a massive backlog of maintenance, including structural repairs and utility plant issues at the Gaithersburg campus.
- **Industrial Technology Services (ITS):** Both the Hollings MEP (\$175M) and Manufacturing USA (\$37M) remain funded at the same level as FY 2025.
- **Congressionally Directed Spending (Earmarks):** Earmarks have increased to \$663 million (36% of the budget) and is pass-through funding for external recipients, not for NIST programmatic support.

Finally, they explained operational challenges including administrative burdens due to CRF earmarks allowing 1% to be used for administrative overhead, but not the STRS earmarks. This creates a workload strain as staff must manage hundreds of millions in external grants without additional funding for the personnel doing the work. In closing they stated while the overall budget looks larger due to earmarks, NIST's internal scientific funding is shrinking, forcing the agency to prioritize "must-have" technologies while using a boost in construction funds to repair aging infrastructure.

For more information, see the presentation slides [here](#).

Discussion. The group discussed the following topics:

- Facilities and construction backlog focusing on the condition index, impact, and strategic success,
- Staffing and budget reductions including no forced reductions in staff instead reductions will be managed through natural attrition, slowing down hiring in non-priority areas as well as cutting back on grants and contracts,
- Earmark tax and the administrative burden – CRF versus STRS, and
- Strategic opportunities with university partnerships and external coordination

NIST Strategy Overview and Discussion – Dr. Christopher Szakal – Acting Director for Policy, Programs, and Planning

Dr. Szakal stated that the NIST strategy aligns agency goals with national economic and security priorities and is designed to unify its unique roles in research, measurement science (metrology), and manufacturing across four primary areas:

1. Accelerate Innovation in Critical Emerging Technologies (CETs), including:
 - a. Accelerating the buildout and scale-up of the U.S. quantum industrial base
 - b. Solidifying American dominance in AI innovation:
 - c. Harnessing the power of biotechnology
 - d. Growing U.S. leadership in semiconductors
2. Bolster American Leadership in Standards, including:
 - a. Acting as the President's advisor on standards policy to coordinate efforts across the federal government.

- b. Identifying "pain points" for industry and engaging in international bodies to ensure U.S. innovations become global benchmarks.
 - c. Focusing on pre-standardization research to prepare emerging technologies for the market.
3. Accelerate Commercial Adoption, including:
 - a. Technology transfer and helping commercialize federally funded discoveries across the government.
 - b. Manufacturing outreach, including using programs like the Manufacturing Extension Partnership (MEP) to help small and medium-sized manufacturers adopt new technology.
 - c. Removing barriers by working with the private sector to identify policy incentives that speed up the move from "bench to business."
4. Build 21st-Century Research Infrastructure
 - a. The strategy acknowledges that aging facilities are a bottleneck for innovation and CETs like AI and Quantum require high power, precise temperature and humidity control, and vibration-isolated environments.
 - b. Infrastructure must be modernized in parallel with research goals, as infrastructure should not limit the ambition of the science.

For more information, see the presentation slides [here](#).

Discussion. The group discussed the following topics:

- Interagency collaboration,
- The challenges of funding, and
- The balance between applied and fundamental research.

Artificial Intelligence Update – Dr. Kerriane Buchanan – Senior Program Analyst, Program Coordination Office, Mr. Mark Przybocki – Chief, Information Access Division, Information Technology Laboratory, Mr. Andrew Kane – Chief of Staff, Center for AI Standards and Innovation (CAISI), and Ms. Hannah Brown – Acting Deputy Associate Director for Management Resources

All four speakers spoke on NIST's Artificial Intelligence Programs particularly on how internal and external initiatives align with the U.S. AI Action plan. The three pillars that encompass NIST AI initiatives are:

- Center for AI Standards and Innovation (CAISI), formerly the AI Safety Institute: Focuses on evaluating frontier models for national security risks like cyberattacks and chemical/biological threats.
- Information Technology Laboratory (ITL): Focuses on the measurement science of AI—developing technical findings, common datasets, and metrics to measure system trustworthiness, performance, and human perception.
- Enterprise AI: An internal-facing program led by the Chief Information Office (CIO) to integrate AI into NIST's own operations, empowering researchers with "fit-for-purpose" tools while maintaining strict governance.

Through these three programs, NIST highlighted key initiatives, efforts, and impacts, including:

- CAISI has unique agreements (MOUs) with top developers to test AI models before they are released to the public.
- NIST tracks the gaps between U.S. and Chinese AI.
- As part of the TRAINS Task Force, NIST provides the infrastructure for agencies like the NSA, DHS, and DOE to probe AI models for specific national security vulnerabilities.
- ITL's GenAI program evaluates text, video, and image generators. A specific project called "Guardians" is developing forensic guidelines to help courts and examiners identify deepfakes with scientific rigor.
- NIST is developing new technical standards specifically for AI data centers, which have unique security needs compared to traditional servers.
- Following a public Request for Information (RFI), NIST is developing best practices to prevent hijacking and distillation.
- NIST is piloting AI internally, including through an AI Sandbox.

- NIST is addressing the urgent need to defend against AI-enabled cyberattacks while securing the AI systems that organizations are now adopting.
- To accelerate the creation of global standards, NIST launched the AI Standards Zero Draft Pilot Project. These are science-backed preliminary drafts intended to serve as a thorough starting point for formal standards bodies.
- NIST ITL is leading efforts in Cybersecurity and Manufacturing, leveraging long-standing relationships to launch pilot projects and proof-of-concept tests, while CAISI is targeting earlier-stage sectors (such as Healthcare/HHS and others) by co-hosting roundtables with the White House OSTP to identify specific barriers to AI adoption.
- NIST has seen massive engagement in its new webinar series, with over 1,700 registrants for the session on international standards and high interest in an upcoming technical deep dive on Agentic AI.

For more information, see the presentation slides [here](#).

Discussion. The group discussed the following topics:

- The internal coordination between laboratories,
- The implementation of AI within NIST, and
- The evolution of the NIST AI Consortium.

SESSION III: NIST OPERATIONAL AND PROGRAMMATIC UPDATES

Facilities Update – Ms. Anita Vanek – Acting Associate Director for Management Resources, and Dr. James Adams – Director, NIST Center for Neutron Research

Ms. Vanek presentation focused on the agency's critical infrastructure challenges and wildfire preparedness on the Boulder campus.

She stated that NIST manages two major campuses (Gaithersburg, MD, and Boulder, CO) encompassing 100 buildings and 4 million square feet and mentioned the following challenge:

- Most facilities are over 50 years old and significantly deteriorating.
- On the Facility Condition Index (FCI), NIST scores 72 out of 100. While 90+ is considered "excellent," NIST's score indicates many buildings are in poor condition (well below 70).
- NIST faces a \$5 billion modernization gap, which is 50 times its average annual facilities budget. The current maintenance backlog stands at \$1.7 billion.
- With increased FY 2026 appropriations, a portion of these funds will be used to start the Gaithersburg Central Utility Plant (CUP) renovation in phases, as the plant is past its end-of-life.

Regarding the Boulder campus, it is a "Wildland-Urban Interface" (WUI), where the built environment meets natural vegetation, making it a high-risk zone for destructive wildfires. The "ESCAPE" (Evacuation and Sheltering Consideration – Assessment, Planning, and Execution) Methodology was developed by the NIST Engineering Laboratory and the campus is implementing the ESCAPE research-based evacuation methodology. The challenge is that in a "no-notice" event, staff might have only 15 minutes to reach safety. However, because only one road serves the campus and two neighboring communities, gridlock could make evacuation take hours.

There is multi-pronged response strategy since full evacuation may be impossible, NIST is moving toward a "Shelter-In-Place" philosophy:

- Risk Reduction: Mandating telework or closing the campus on high-risk fire days.
- Early Evacuation: Leaving the site before mandatory orders are issued to avoid traffic surges.
- Shelter-on-Site (SoS): Identifying and hardening specific internal building areas where staff can safely wait for a fire to pass. Improvements include HVAC systems that can seal off exterior embers.
- Temporary Fire Refuge (TFR): Identifying outdoor "fuel-free" zones (like cleared parking lots) if buildings become compromised.

Ms. Vanek also highlighted increased interagency collaborations, laboratory shutdown procedures, and fuel mitigations.

- Inter-Agency Collaboration: NIST shares the Boulder campus with NOAA and NTIA; wildfire safety is being managed as a unified campus-wide effort,
- Laboratory Shutdown Procedures: Unlike standard offices, NIST laboratories contain hazardous research equipment. The agency is developing "rapid shutdown" protocols so researchers can put equipment in a safe state in minutes without delaying their own evacuation, and

- Fuel Mitigation: NIST is clearing vegetation near buildings and ensuring new plantings are fire-resistant local species.

Dr. Adams reported on the facility's recovery from a 2021 fuel incident, infrastructure upgrades, and a significant regulatory victory. He stated the NCNR is one of only two major neutron science centers in the U.S. and is powered by a 20-megawatt heavy-water moderated reactor. Despite its small size, the NCNR accounts for 40% of U.S. scientific productivity in neutron science. It typically hosts 3,000 researchers and 50 companies annually, operating 29 beam instruments. Neutrons are cooled to cryogenic temperatures via a "cold source" to feed instruments. Since the incident, the NCNR has undergone an extensive cleaning and safety culture overhaul along with many repairs and upgrades, including increasing instrument performance by a factor of 4–10. The NCNR is planned to shortly return to service with a very deliberate plan including refueling, startup, ascension to higher power, and staffing. NIST has also successfully lobbied the NRC to reclassify the NCNR as a research reactor.

For more information, see the presentation slides [here](#).

Discussion. The group discussed the following topics:

- Find a way to quantify how substandard facilities impact the core mission,
- Wildfire strategy refinements - the "ESCAPE" methodology and the reality of the Boulder topography,
- Workforce retention - regarding the retention of reactor operators, who are leaving for much higher-paying private-sector roles, and
- Buildings that should be demolished versus repaired.

Advanced Communications Update – Dr. Ari Feldman – Acting Director, Communications Technology Laboratory

Dr. Feldman provided an update focusing on highlights on, and impacts of, CTL's strategic roadmaps, including 6G Communications, RF Metrology and Calibration Services, Quantum Communications, Public Safety Communications, Spectrum Science, and the new Space Communications. He stated CTL has spent the last 18 months developing internal R&D roadmaps to prioritize technical objectives over the next 3–5 years. Highlights and impacts included:

- Currently, CTL is curating high-value RF datasets to help industry and standards bodies (like 3GPP) train AI models for network optimization.
- NIST hosts a repository for wide dissemination of measurement-based, multi-modal datasets for digital replicas and AI/ML training on at nextg.nist.gov with over 1,000 datasets used by 470+ industry and academic partners.
- CTL continues to reinvent how uncertainty analysis is handled for high-frequency systems, bridging the gap between classical and quantum phenomena.
- In collaboration with the Physical Measurement Laboratory (PML), CTL developed a method using Rydberg atoms to measure temperature, offering a factory-calibration-free, SI-traceable standard.
- A new version of the Josephson voltage system has been developed that plugs into a standard 120V wall outlet and requires no cryogenics, acting as a portable transfer standard for inter-laboratory comparisons.
- NIST is releasing a new Standard Reference Material (SRM) for dielectric permittivity to help semiconductor companies achieve traceable measurements in their own laboratories.
- Following the FCC's auction of the CBRS band, NIST sensors on the East Coast identified interference between the Navy and commercial carriers, leading to critical operational adjustments.
- CTL adapted its wireless coexistence framework for the mining industry to ensure emergency communications remain reliable in harsh underground environments.
- CTL published two *Nature* articles demonstrating optical time transfer between Hawaiian Islands—a 10,000x improvement over microwave techniques—paving the way for space-based global clock networks.

Lastly, Dr. Feldman identified recent highlights including the establishment of a new Quantum Communications Division within CTL that will focus on scaling quantum circuits to operate at higher temperatures and frequencies.

For more information, see the presentation slides [here](#).

Discussion. The group discussed the following topics:

- Roadmap timelines,
- Quantum network strategy, and
- The mechanics of technology transfer.

SESSION IV: CLOSING SESSION

Discussion of VCAT Annual Report Approach and Topics for June 2026 Meeting – Dr. Michael Holland – Chair, VCAT

Dr. Holland opened the working session to discuss the VCAT Annual Report. The Committee members focused on the budget and congressional earmarks to include recommendations, monetizing NIST services, interagency coordination, and CET convergence. Dr. Holland assigned specific leads to draft sections of the annual report.

The committee is focused on helping NIST navigate a complex budget environment by advocating for more flexible administrative fees for earmarks and exploring self-sustaining revenue models for NIST's high-value industrial datasets and calibration services.

Public Comment – Ms. April Subashe – Technology Support Intern, Technology Division, City of St. George, Utah

Ms. Subashe provided her perspective as an individual with extensive experience across federal, state, and municipal sectors, highlighting the implementation gap between NIST's technical guidance and the practical realities of local government operations. She urged NIST to move beyond research and into the practical elements of implementation, suggesting that local government collaborations could serve as a vital feedback loop to ensure NIST standards are survivable in resource-constrained environments.

Wrap-up

In closing for the day, Dr. Holland thanked all of the people who supported the meeting, the VCAT members for their participation, and reminded the members of their tasks regarding the annual report.

Adjournment

The meeting was adjourned at 3:45 PM.

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

Ms. Stephanie Shaw, Designated Federal Officer, NIST Visiting Committee on Advanced Technology
Dr. Michael Holland, Chair, NIST Visiting Committee on Advanced Technology