

March 12, 2020

The Honorable Jerry Moran
Chairman
Subcommittee on Commerce, Justice,
Science, & Related Agencies
Senate Committee on Appropriations
521 Dirksen Senate Office Building
Washington, D.C. 20510

The Honorable Jeanne Shaheen
Ranking Member
Subcommittee on Commerce, Justice,
Science, & Related Agencies
Senate Committee on Appropriations
506 Hart Senate Office Building
Washington, D.C. 20510

The Honorable José Serrano
Chairman
Subcommittee on Commerce, Justice,
Science, & Related Agencies
House Committee on Appropriations
H-310 The Capitol
Washington, D.C. 20510

The Honorable Robert Aderholt
Ranking Member
Subcommittee on Commerce, Justice,
Science, & Related Agencies
House Committee on Appropriations
1016 Longworth House Office Building
Washington, D.C. 20510

Dear Chairman Moran, Ranking Member Shaheen, Chairman Serrano and Ranking Member Aderholt:

On behalf of the undersigned scientific and engineering societies, industry associations, companies and universities, we write to express our strong support for the National Institute of Standards and Technology (NIST), an agency vital to solving the technical challenges faced by U.S. businesses and academic researchers.

We urge you to provide robust funding support for NIST's Scientific and Technical Research and Services (STRS) programs and construction account within fiscal year 2021 (FY21) appropriations. We recommend that Congress **increase STRS funding at a minimum of \$45 million above FY20** to further advance research projects in key areas, including artificial intelligence, 5G, position navigation and timing (PNT), internet of things (IoT) and NIST measurement science programs more broadly. We also request STRS get an additional **increase of \$40 million for quantum science and technology activities** at NIST included in the bipartisan National Quantum Initiative Act. Finally, due to the ongoing need for repairs and maintenance at NIST facilities and its direct impact on NIST's ability to provide critical services to industry, we request **\$200 million for the NIST construction account** for FY21.

NIST works with our nation's businesses and universities to drive American economic growth and job creation. Companies, academic institutions and other federal agencies rely on STRS programs to provide foundational research and material development for their products and programs. NIST supports America's global competitiveness by aiding businesses to overcome technical obstacles—fulfilling a vital function that companies cannot do themselves. NIST's core measurement science programs, for example, provide calibrations and standards for industry broadly – from oil and gas to aerospace and medicine.

The agency also plays an essential role in emerging industries, such as quantum technology and artificial intelligence that require foundational measurements to enable U.S. dominance. The National Quantum Initiative Act, which passed with overwhelming bipartisan support in 2018, includes NIST as one of three key agencies that will help ensure the U.S. remains a global leader in quantum. The bill also authorizes the Quantum Economic Development Consortium (QED-C), a jointly funded government and private sector collaboration designed to tackle some of the challenges of moving quantum technologies from the lab to market. In the area of artificial intelligence (AI), NIST is researching the performance and reliability of AI systems to assist in the development of international standards, as well as increase public trust in these

systems making way for widespread adoption and innovation. We recommend including language that requires NIST to develop an AI accountability framework to ensure ethical, transparent, and accountable use of AI technologies across all sectors.

In addition to AI and quantum, NIST continues to be a leader in advanced communication research through their work on 5G, PNT and internet of things (IoT). The institutes work on 5G standards is critical to the success of widespread deployment. In regards to IoT, a term that describes any physical device that is connected to the internet, NIST draws on its long history of research on cybersecurity issues to provide recommendations on security standards for the community to mitigate risk and ensure the public trust in these devices. Additionally, NIST has announced plans to accelerate work to identify and promote responsible methods of using PNT services, including GPS, in direct coordination with industry.

Lastly, modern, functional facilities are required for NIST to remain the world-leader in measurement science. Currently, NIST's aging infrastructure cannot consistently support the temperature, humidity, and power requirements for world-class measurements. Recurring failures of these utility systems in recent years has resulted in lost work and costly damage to laboratory facilities. The over 50-year-old facilities in Maryland and Colorado currently have a backlog of \$774.4 million in deferred maintenance. The appropriation request of \$200 million would be divided between \$120 for maintenance and \$80 million for new construction. The new construction funding would be utilized to build new laboratory space at both NIST facilities so staff can be moved in and out of this new space in order to fully address the maintenance needs in the current labs.

For FY21 appropriations, we urge increased investment in NIST's core laboratory research programs in the STRS account at a minimum of \$839 million. Additionally, we urge Congress to appropriate \$200 million for NIST facilities and construction.

Thank you for your consideration, and we look forward to working with you as the appropriation process continues.

Sincerely,

American Association of Physics Teachers
(AAPT)

American Chemical Society (ACS)

American Institute of Physics (AIP)

Computing Technology Industry Association
(CompTIA)

Corning Incorporated

HRL Laboratories, LLC

HyTrust, Inc.

IBM

Keysight Technologies

Material Research Society (MRS)

M-7 Technologies

Microsoft

OSA – The Optical Society

Semiconductor Industry Association (SIA)

SPIE, the international society for optics and
photonics

Taskforce for American Innovation (TFAI)

University of Colorado Boulder

University of Maryland

U.S. Chamber Technology Engagement Center
(C_TEC)