NIST Update and Agenda Review

VCAT Meeting: June 7, 2016, Gaithersburg, MD

Willie E. May

Under Secretary of Commerce for Standards and Technology and NIST Director

Topics: NIST Update and Agenda Review

- Safety and Site Security
- Update on Director’s Priorities
- Budget Status
- Research and Program Highlights
- Agenda Review

Safety Update

Data shown is to June 1, 2016

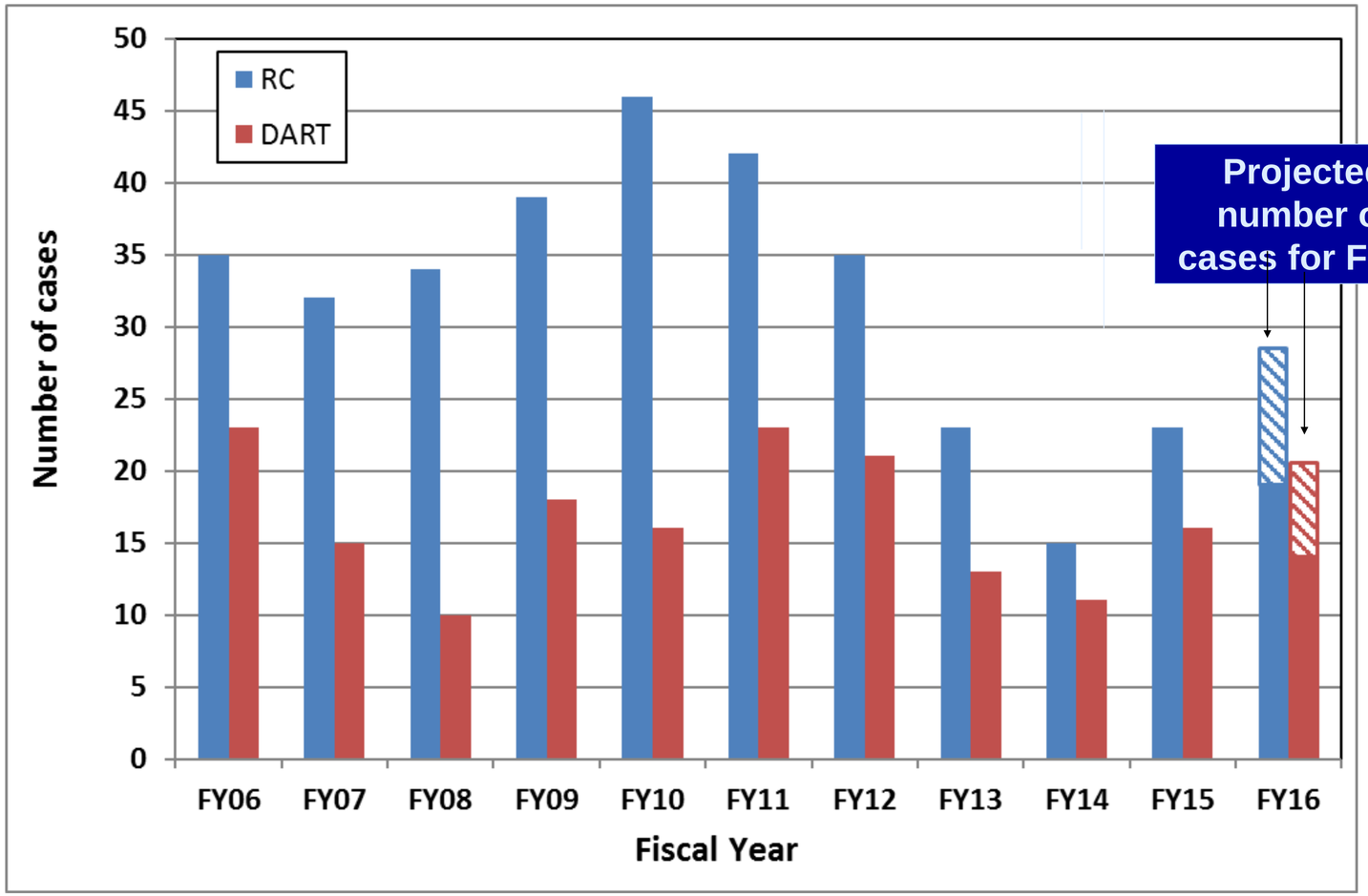
Recordable case (RC)

- To a first approximation, a work-related injury or illness that results in any of the following: death, days away from work, restricted duty, transfer to another job, medical treatment beyond first aid, loss of consciousness.

DART case

- A work-related injury or illness that results in any of the following: **D**ays **A**way from work, **R**estricted duty, **T**ransfer to another job.

NIST Safety Incident Metrics



Goal = Zero

FY16 OSHA Recordable Cases that are Injuries by Event

Event that led to injury	Number of "injury" incidents reported in IRIS for this type of event	Number of "injury" incidents reported in IRIS for this type of event which are OSHA recordables	% of "injury" incidents reported in IRIS for this type of event which are OSHA recordables	% of all OSHA recordables which are due to this type of event
Slips, trips, and falls	22	6	27%	40%
Overexertion	6	4	67%	27%
Struck by	7	2	29%	13%
Vehicle-vehicle accident	1	1	100%	7%
Debris in eye	1	1	100%	7%
Struck against	3	1	33%	7%
Caught in or compressed	4	0	0%	0%
Bodily condition (ergonomics)	2	0	0%	0%
Chemical exposure	1	0	0%	0%
Contact with	1	0	0%	0%
Rubbed against	1	0	0%	0%
	49	15	31%	
		Does not include 4 illnesses that are OSHA recordables		

Data shown is to June 1, 2016

Security: Building 236 Incident

~7:00 pm Saturday, July 18, an explosion occurred in a laboratory room in Bldg. 236, Gaithersburg campus..

- A member of the NIST security force assigned to the Gaithersburg campus suffered non-life threatening injuries,
- The NIST Police and Fire Departments responded and due to the presence of what appeared to be meth manufacturing evidence requested the assistance of the Montgomery County Police and Fire Departments.
- The officer resigned from Federal Service, effective July 19.
- Former Officer pleaded guilty on Aug. 21, 2015 to attempting to manufacture amphetamine in a NIST laboratory

- **Former Officer Christopher Bartley was sentenced on January 8, 2016 in Federal Court to 41 months of prison time**

United States Attorney Rod J. Rosenstein commended the FBI, DEA and Montgomery County Police Department for their work in the investigation, and praised NIST for their assistance in the investigation.

Building 236 Incident: NIST Actions in Response

- **Immediately following the incident, open NIST Staff access to Building 236 was restricted until further notice and we began reviewing NIST security patrol procedures.**

- **Extended invitations to 3 external security experts with specific experience in protecting a research campus to conduct independent reviews of NIST's current security posture (both campuses).**
  - David S. Komendat, Boeing Senior VP and Chief Security Officer
  - William C. Cullen, NIH Associate Director for Security & Emergency Response
  - Nicholas M. Schnare, Department of Commerce Assistant Director for Security and Emergency Management

House Science Committee is continuing its investigation of this incident as well as NIST Security writ large

High Level Security Improvement Themes from External Security Experts

Authorities

- **There was no firm evidence found that clearly articulated NIST senior management's authority and responsibility** to assure the security of NIST facilities, people, property and assets

Culture

- **The NIST corporate culture is not amenable to strengthening security measures** at either location (Gaithersburg or Boulder) in any way that would further reduce the collegial atmosphere conducive to science. Security policies are seen as a hindrance to NIST's need to be open to industry and academia.

Risk

- **There is no designated official who is responsible for accepting risk on behalf of NIST in the security area.** The decision to accept risk is one that should not be taken lightly and subsequently is generally reserved for those officials with overall responsibility for an organization. NIST does not have a robust program for identifying and mitigating security risks

Organization

- **NIST's current organizational structure limits the effectiveness of the security program.** The security organization is bifurcated and located too low in the organizational structure for security leaders to carry out their mission effectively. The daily operational environment at NIST does not appear to warrant both a security and a law enforcement cadre.

Resources

- **Security resources at NIST (staffing, services, equipment and systems) are undersized for the breadth of responsibility of the program.** In many instances functional areas of security are only one deep, creating single points of failure.

Strategic Planning

- **There is no long term security management strategy/sustainment plan in place for NIST.** A comprehensive plan should identify key threats/risks and those capital investments necessary to sustain and improve the NIST security infrastructure.

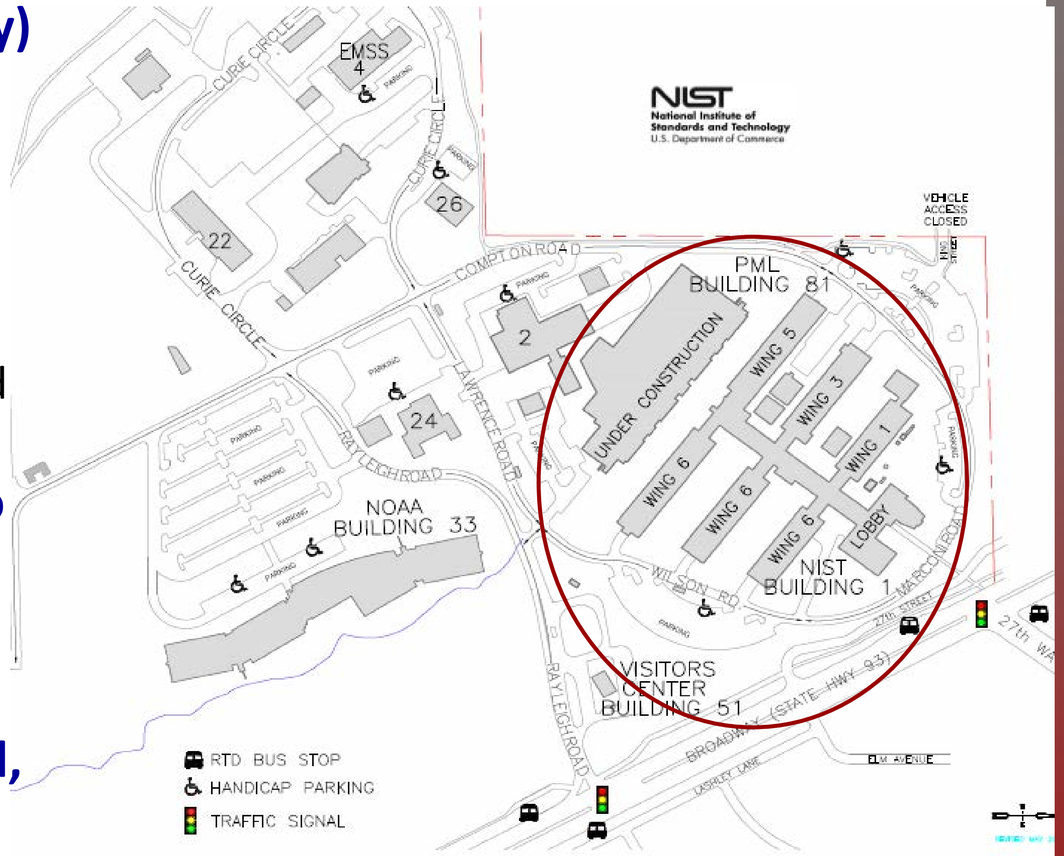
NIST was already planning critical steps to enhance security at its facilities

- **Physical Security Improvements include**:
  - providing expanded coverage of the sites via CCTV cameras
  - installation of cypher locks for individual labs within Lab Buildings
  - improvements to both visitor registration and associate systems;
  - improving visitor control points at key access points located in the Building 101 complex
- **IT Improvements include:**
  - critical IT network security equipment upgrades;
  - expanding staff and equipment resources for privileged access management at the system-to-system level;
  - inclusion of federal, contract, associate, and international associate indicators within the display name of all NIST email accounts (ex. john.doe (intlassoc)@nist.gov)
- **Foreign Guest Workers:**
  - NIST and the DoC Office of Security (OSY) are working with the DoC Office of the Inspector General to review NIST Foreign Guest Researcher program.

Security Turnstiles for access control to lab buildings adjacent to Bldg. 101 in Gaithersburg

Unauthorized Access Incident in Boulder, April 16, 2016

- **At approximately 5:30 a.m. Mountain Time Saturday April 16, 2016 a white male in his mid 30's was found wandering in Bldg. 81 in Boulder (the Katharine Blodgett Gebbie Laboratory) by a DOC Police officer responding to a fire alarm.**
  - The individual had no identification and was not an authorized user of the laboratory.
  - As he was being questioned, the individual stated that he was feeling ill and started to become incoherent.
  - An ambulance was requested and the individual was transported to the hospital.
- **An initial review of the toxic gas monitoring system and video system recordings in the Bldg. 81 cleanroom did not indicate any release of or exposure to chemicals.**
- **DOC Police (and Federal Protective Service) have investigated, charged the intruder with trespassing on Federal Property. The charge is still open.**
  - Trespasser likely gained entrance from an open 5th story window and had access to Buildings 1 and 81 for 5-6 hours.



Planned Steps to Enhance Security at the Boulder Campus

Short Term

- Immediately dispatched the Associate Director for Laboratory Programs to Boulder to meet with Division Chiefs to discuss plans for enhancing building and site security there
- Explore options for improving perimeter security, including but not limited to erecting perimeter fence
- Shore up surveillance around the site—especially construction site scaffolding
- Require staff vigilance with respect to keeping doors and windows closed during off hours
- Require PIV Card use for entrance to buildings (not just PIN)

Longer Term

- Execute Enhanced NIST Site Security Plan

Overall NIST Security Improvement Actions to Date

- **Authorities**
  - o Initial steps taken to define the scope of NIST/DOC security functions and clarify reporting lines
- **Culture**
  - o The NIST Director is leading the needed security culture change at NIST
- **Risk Reviews**
  - o High level review of external security assessment and recent ATRA reports completed, with recommendations for action
- **Organization**
  - o NIST security function realigned to the same level as safety in the NIST reporting structure
  - o Efforts underway to improve communication/coordination among NIST security, emergency management and safety functions
- **Resources**
  - o $1.62M of additional investments in security staffing and equipment/system upgrades allocated for FY16
- **Strategic Planning**
  - o NIST and OSY collaborating on both short term and longer term security program changes

Topics: NIST Update and Agenda Review

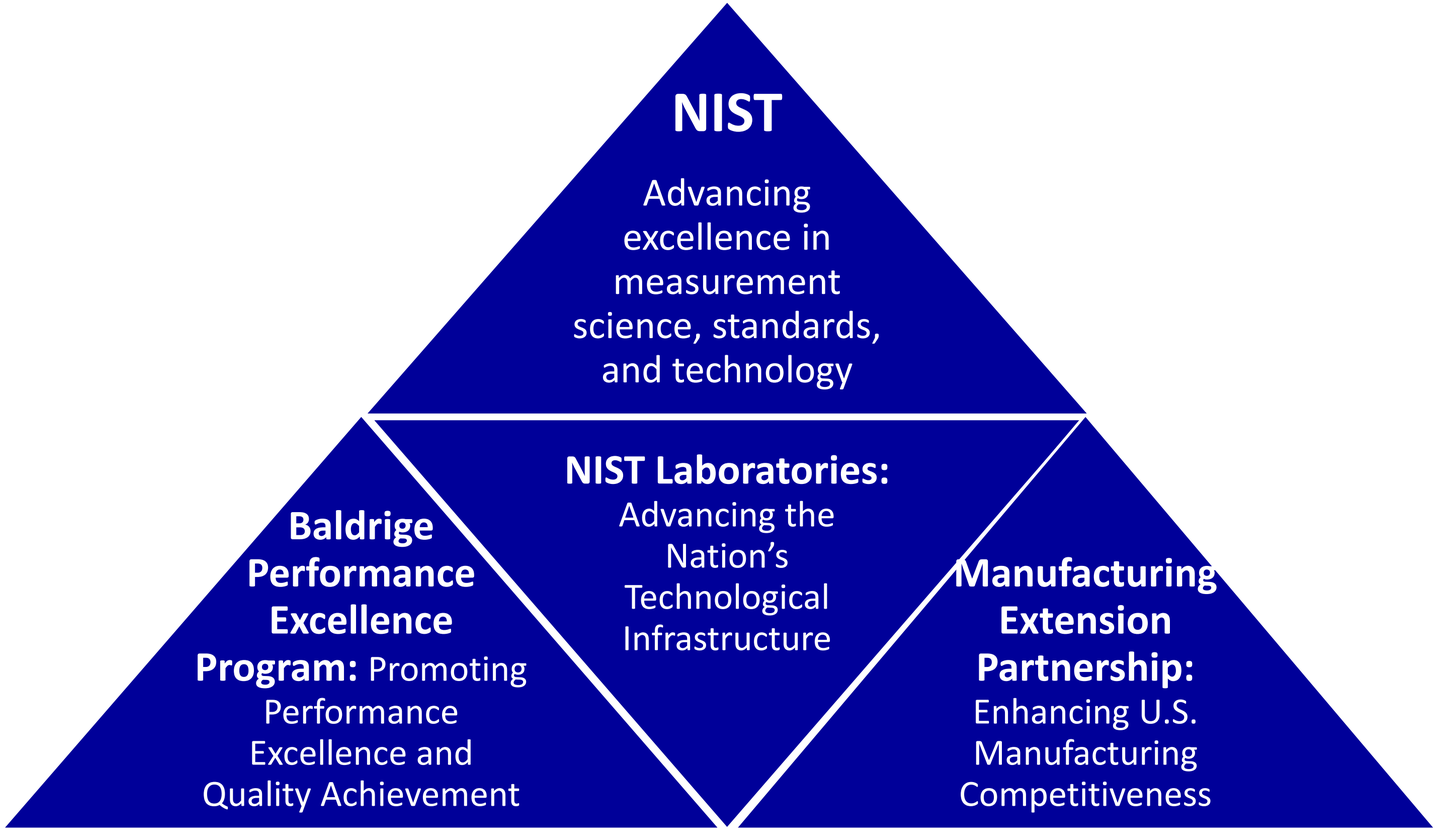
- Safety and Site Security
- Update on Director's Priorities
- Budget Status
- Research and Program Highlights
- Agenda Review

Priorities Shared with VCAT in June 2014

- **Fill key senior leadership vacancies** (Directors of: PML, EL, MEP, SCO, AMNPO, and ADLP)

- **Work with the Senior Leadership Team in:**
  - Continuing to strengthen the NIST Safety (and Security) Culture
  - Completing the successful implementation of new NIST Technical programs initiated in response to pressing national needs
  - Enhancing current and developing new capabilities needed to enhance mission delivery
  - **Strengthening the MEP Program**
  - **Addressing long-term sustainability of the Baldrige Program**
  - Supporting the Secretary by leading the Innovation Goal Activities within the Department's Strategic Plan
  - Improving the efficiency and effectiveness of our internal operations
  - Increasing staff engagement in the direction and implementation of NIST programs and priorities

Manufacturing Extension Partnership: Why Hosted by NIST?



☑ Legislation: Original authorizing legislation for the MEP program emphasized the transfer of advanced technologies developed within NIST and other federal laboratories

☑ To enhance the productivity and technological performance of U.S. Manufacturing

☑ Expertise in utilizing a national network to work directly with smaller manufacturers

Strengthening and Increasing the Value of the MEP

- Increasing efforts to expose MEP network to cutting edge research ongoing at NIST and other National Laboratories.

- Embedding MEP center personnel in existing Institutes within the NNMI network to facilitate tech transfer

- Working with NIST Technology Partnerships Office to create five regional Technology Collaboratives positioned to identify and assess technologies resulting from federal R&D investments for small and mid-sized manufacturers

MEP State Competitions Update

In 2014, NIST initiated a carefully planned, systematic, multi-year recompetition of the national system of Centers.

- **Objective:** Optimize the impact of the Federal investment on U.S. manufacturing and to allocate additional funds to areas with higher concentrations of manufacturers.
- **Goal**: Complete competition of the entire 50 State (plus Puerto Rico) national network over three years (by end of 2017)

Round 1 Competition in 10 states (COMPLETED):

- Awards announced February 23, 2015; Start date July 1, 2015
  - CO, CT, IN, MI, NH, NC, OR, TN, TX, VA
- Award Kick-Off Meeting – conducted July 28-30, 2015

Round 2 Competition in 12 states (COMPLETED)

- Competition announced March 2, 2015
- **Awards announced September 21, 2015 and November 13, 2015**; Start date January 1, 2016
  - AK, ID, IL, MN, NJ, NY,OK, WA, WV, WI
  - OH/UT did not result in a successful award (being competed in Round 3)
- Award Kick-Off Meeting – conducted January 20-21, 2016

Round 3 Competition in 12 States and Puerto Rico (In Progress):

- Publication of FFO – January 27, 2016 (Closed April 25, 2016)
  - AL, AR, CA, GA, LA, MA, MO, MT, OH, PA, PR, UT and VT
- Anticipated Start Date of Awards – October 2016
- Award Kick-Off Meeting – targeted for late October 2016

Round 4 Competition for 11 States:

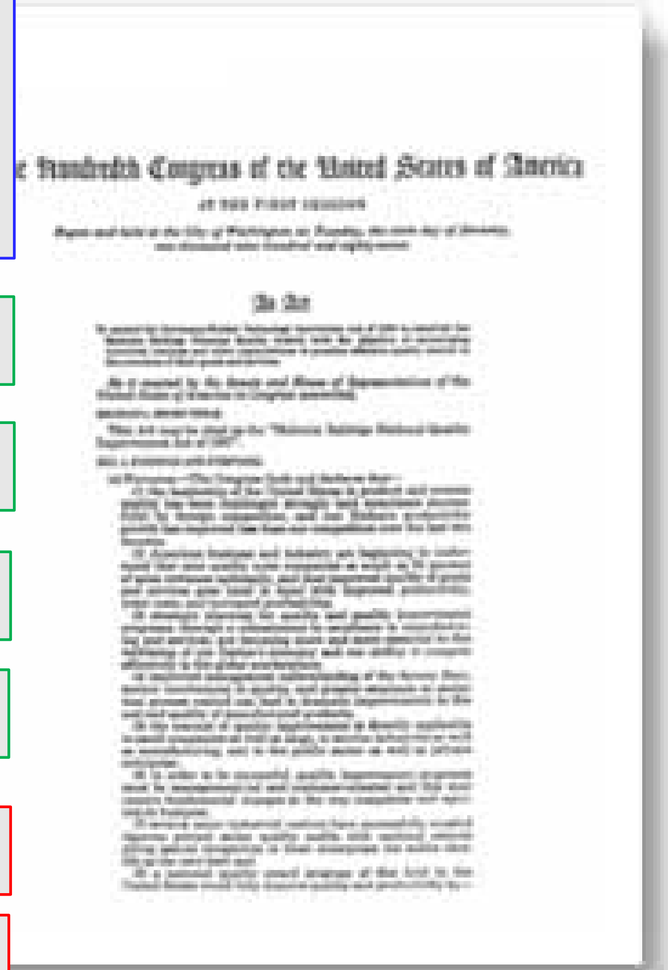
- Anticipated publication of FFO – July 2016
  - DE, HI, IA, KS, ME, MS, NV, NM, ND, SC, and WY
- Anticipated Start Date of Awards – April 2017
- Award Kick-Off Meeting – targeted for late April 2017

16

Baldrige Performance Excellence Program

Purpose

A 28 year old public-private partnership to improve the performance and competitiveness of organizations in the US.



Legacy Functions

- Establish the standard of excellence: Baldrige Criteria
- Identify role model organizations: Baldrige Award
- Foster use of the standard and share best practices
  - Provide educational conferences

New Initiatives

- Executive development: Baldrige Fellows Program
- Non-Award based assessments and tools
- Social media, training programs, and workshops
- Broaden scope: Cybersecurity and Communities

Addressing long-term sustainability of the Baldrige Program

Baldrige Program:

- No longer supported by congressionally-appropriated funds.
- Currently supported by:
  - Funds from the Baldrige Foundation
  - Funds received for services rendered to external customers
    - Consultations with individual customers
    - Sale of criteria documents etc.
- Discussions with industry, OMB, and NIST's Applied Cybersecurity Division concerning development of a Baldrige-based cybersecurity assessment tool/program

- We are investigating the possibility of restoring appropriation for the program

Topics: NIST Update and Agenda Review

- Safety and Site Security
- Update on Director’s Priorities
- Budget Status
- Research and Program Highlights
- Agenda Review

NIST (NBS) established in 1901

Organic Act of 1901; Updated in 2008

Functions and activities of the Institute include:

- **custody and dissemination of national standards**
  - **comparison of US national standards with those of other nations**
- **determination of physical constants and the properties of materials,**
- **solutions to measurement and standards problems of other government agencies**
- **providing (Innovation) assistance to industry**

THE EVENING STAR, MONDAY, MARCH 11, 1901

CORRECT MEASURES

Function of the New Bureau of Standards.

LABORATORY TO BE ERECTED

Prof. Stratton, the Director, Details Need of Establishment.

A HANDICAP REMOVED

A new bureau of the government, authorized by the last Congress, will be established in this city in the near future and will give employment to a number of persons. It is to be known as the national bureau of standards and is to be under the control of the Treasury Department. A separate building for a laboratory, to cost not to exceed $250,000, is to be erected on a site to be purchased at a cost of $25,000.

Mr. Samuel W. Stratton of Chicago has been appointed by the President to be chief of the bureau at an annual salary of $5,000. Prof. Stratton is to have the following as-

Director Stratton.

sistants, to be appointed by the Secretary of the Treasury: One physicist, at an annual salary of $3,500; one chemist, at [illegible] two assistant physicists or chemists, at an annual salary of $2,250; one assistant, at $1,800; one laboratory [illegible] at $1,200; one secretary, at $2,000; one [illegible] at $1,200; one messenger, at $720.

House Committee on Coinage, Weights and Measures … on the establishment of the National Bureau of Standards (now NIST) May 3, 1900

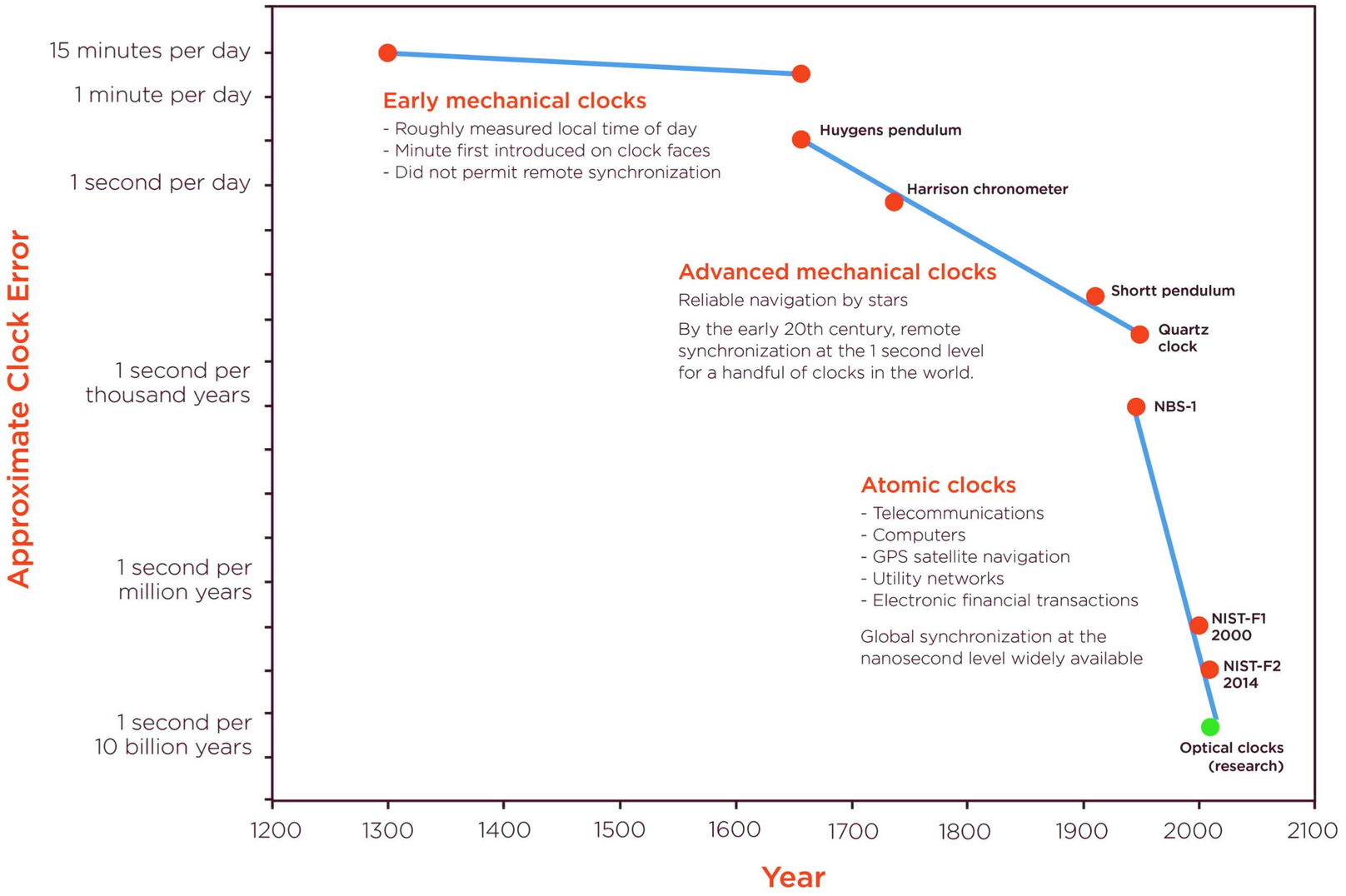
NMI's Around the World *are Working together*

to link our global measurement system to the fundamental constants of nature

Unit		*Reference value used to define the unit in current SI*	*in the new SI*	
second,	s	$\Delta\nu(^{133}\mathrm{Cs})_{\mathrm{hfs}}$	$\Delta\nu(^{133}\mathrm{Cs})_{\mathrm{hfs}}$	Cs hyperfine splitting
metre, m	*c*	*c*		speed of light in vacuum
kilogram,	kg	$m(\mathcal{K})$	*h*	Planck constant
ampere,	A	μ_0	*e*	elementary charge
kelvin,	K	T_{TPW}	*k*	Boltzmann constant
mole,	mol	$M(^{12}\mathrm{C})$	N_{A}	Avogadro constant
candela,	cd	K_{cd}	K_{cd}	luminous efficacy of a 540 THz source

Rigorous realization of these units has provided undeniable impact on U.S. trade, commerce, and quality of life

Leading the world in the realization of international system of units



TIME

Record-setting Atomic Clock

NIST/JILA's strontium lattice atomic clock, accurate to:
1 second in 15 billion years

Why this level of Precision Matters:

Electric power grid requires:

synchronization to about 1 millionth of a second per day

Modern telecommunications and computer network systems require:

synchronization to about 1 millionth of a second per day

GPS system requires:

synchronization to about 1 billionth of a second per day.

NIST official time is used to time-stamp hundreds of billions of dollars in U.S. financial transactions each working day.

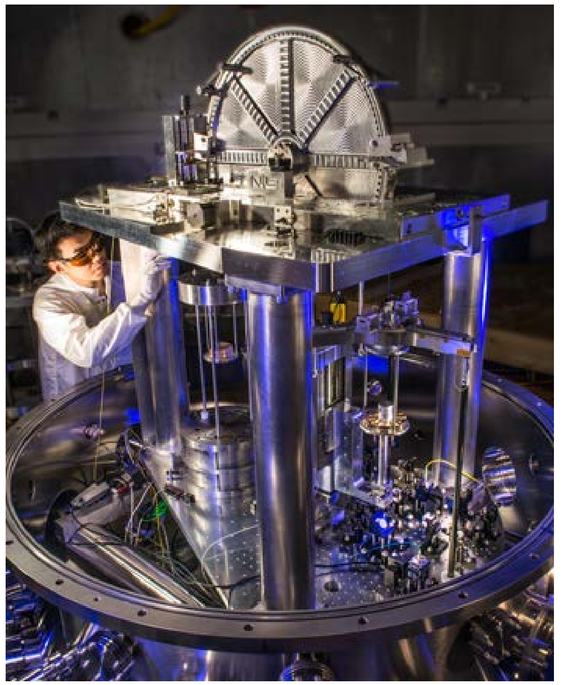
Redefining the international system of units

Physical kilogram artifact (1889)

MASS

Redefining mass from a physical artifact to a constant of nature by 2018.

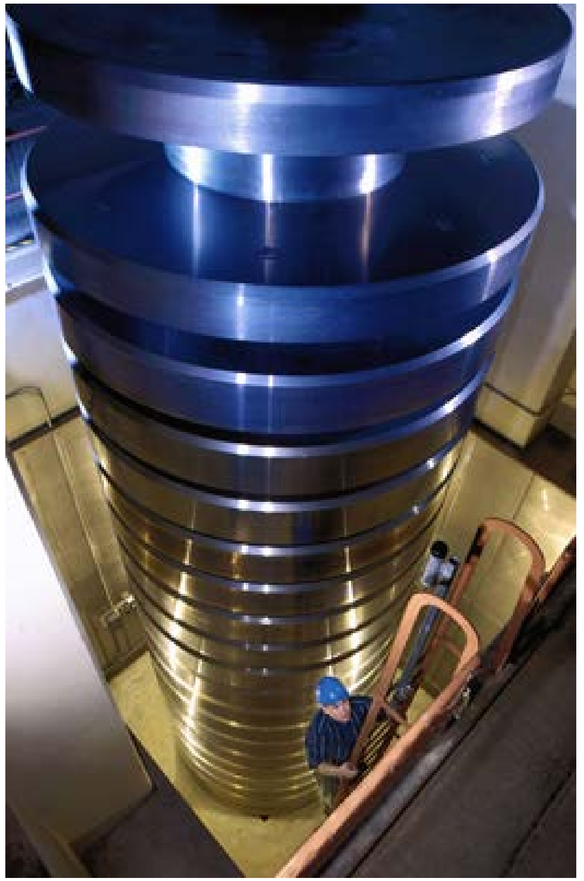
Working with other national metrology institutes around the world, NIST researchers are carefully measuring **Planck's constant** so that it can be the cornerstone of a new, improved International System of Units.



Int. Avogadro Project

Makeover of NIST's 4.45-Million Newton Deadweight Machine

- NIST's 4.45-million newton (equivalent to one million pounds-force) deadweight machine – the largest in the world – is back in one piece after a colossal 16-month overhaul of the system – the first time in 50 years.
- The year-and-a-half-long saga involved dismantling, cleaning, restoring, and recalibrating about half of the stainless steel discs in the three-story stack of weights. It marked the first time the device had been taken apart since its original installation in 1965.
- Forces realized by all the deadweights in the machine before and after restoration have remained in agreement as shown by repeated measurements performed with a precision referee force transducer over the past 15 years.



NIST's fully assembled deadweight machine.

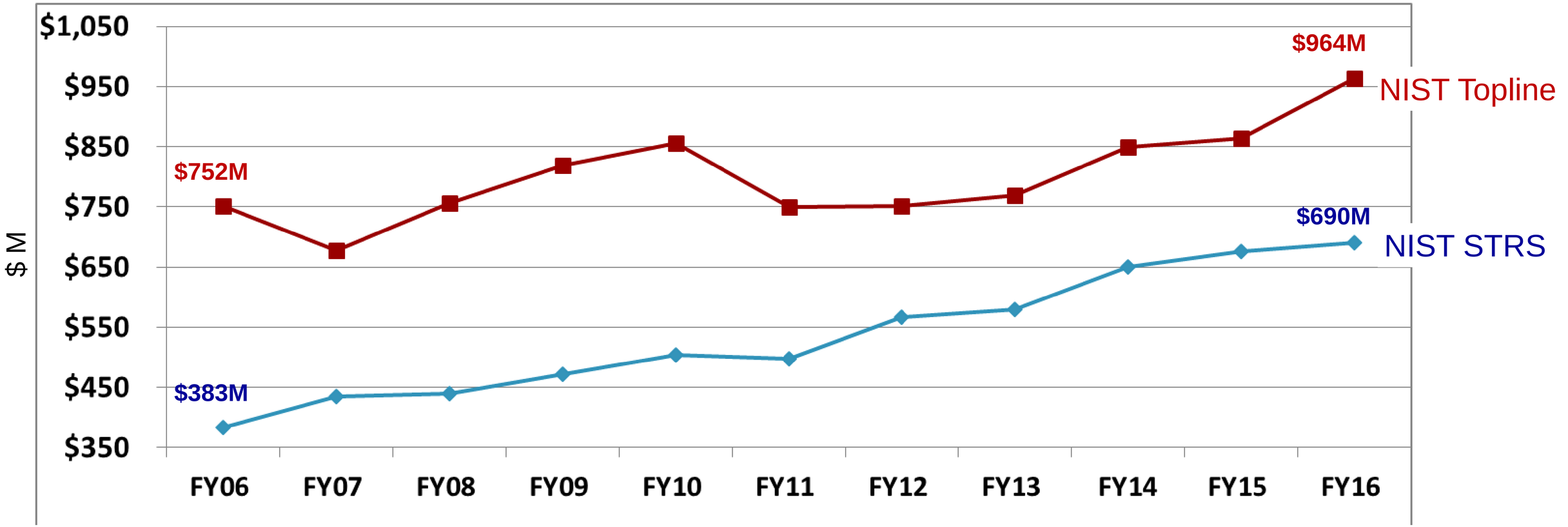
Customers who rely on this unique machine include US aerospace manufacturers, US military laboratories, and several top-end commercial force calibration labs, who have performed hundreds or thousands of calibrations, all directly traceable to NIST.

- In addition to the realization and dissemination of the more traditional National Physical Measurement Standards

- **We are focusing a significant portion of our research and measurement services budget on addressing contemporary societal needs. E.g., in areas like**
  - **Advanced communications**
  - **Advanced manufacturing**
  - **Advanced materials**
  - **Bioscience and Health**
  - **Climate assessment**
  - **Cyber-physical systems**
  - **Cybersecurity**
  - **Disaster resilience**
  - **Forensic science**
  - **Quantum science**

NIST has become:
- a key player on the Administration's Innovation Team
- the nation's go-to agency for measurements, standards, and technology

NIST Budget ($M): FY2006 – FY2016



Base Growth by Focus Area (2006-2016)

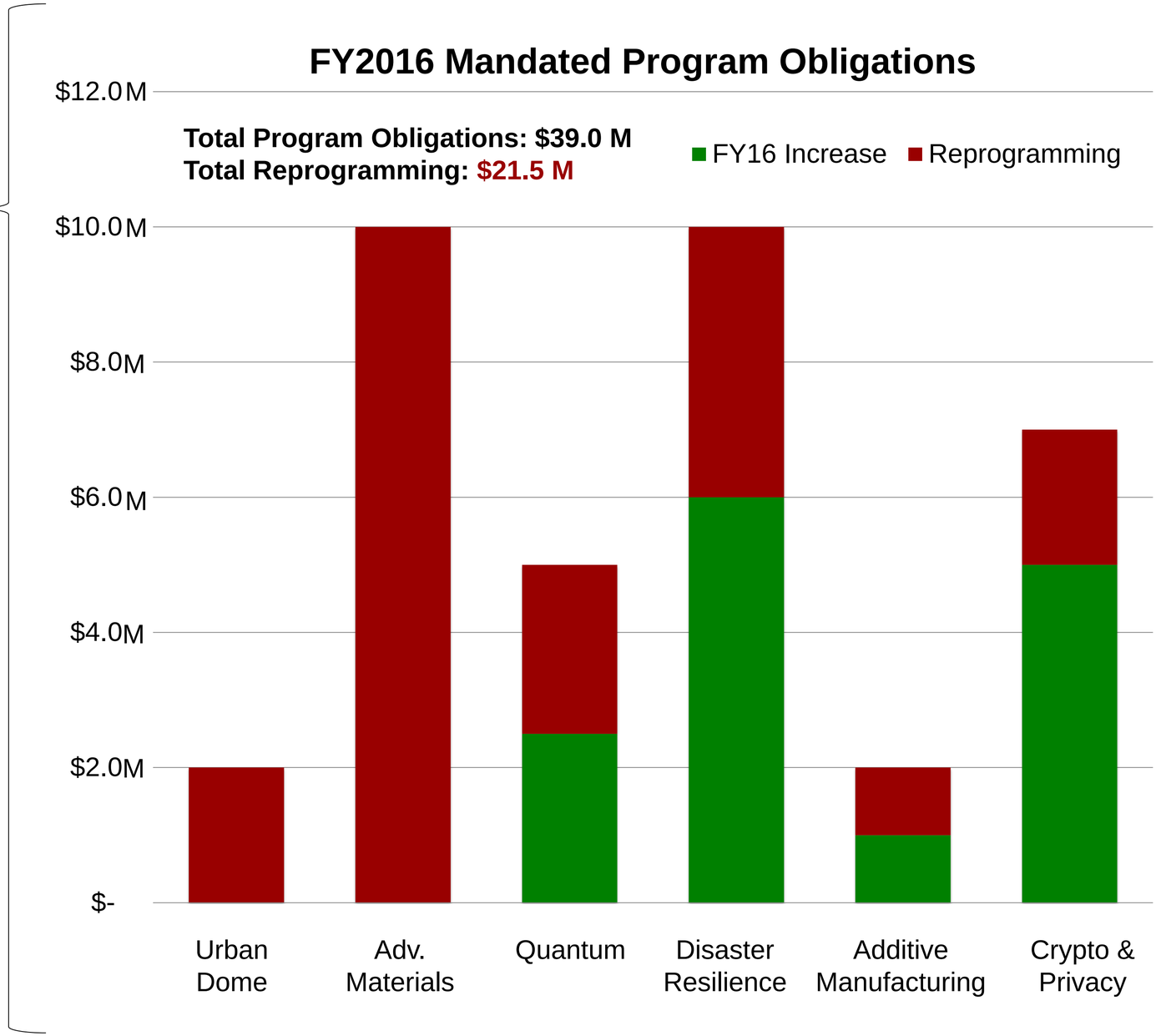
	$M
Advanced Manufacturing and Materials *(includes Nanotechnology & Biomanuf.)*	+ 86.5
IT R&D and Cybersecurity	+ 70.9
Physical Infrastructure and Resilience (including CPS)	+ 25.8
Greenhouse Gas Measurements	+ 19.5
Renewable Energy	+ 19.5
Quantum Science	+ 15.7
NIST Centers of Excellence Program	+ 15.0
Advanced Communications	+ 14.0
Bioscience and Health *(does not include Biomanufacturing)*	+ 12.5
Measurement Science, General	+ 10.0
Neutron Science	+ 11.8
Forensic Science	+ 8.5
STEM Activities	+ 3.0

FY2016 Budget

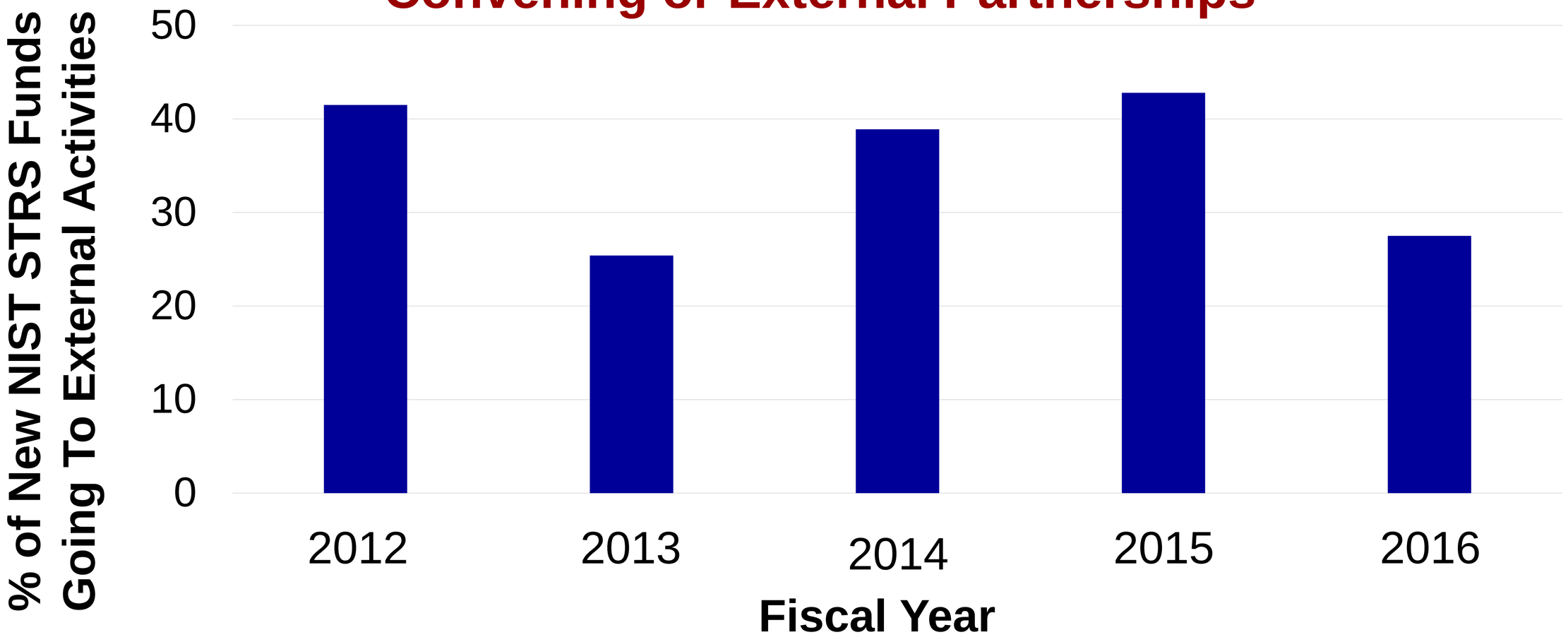
	FY2016 Enacted
STRS	$690.0 M
ITS	$155.0 M
CRF	$119.0 M
Total: NIST Discretionary	**$970.0 M**

Major Changes

- **STRS:** New mandatory obligations include Resilience Grants, Urban Dome, & Additive Manufacturing Grants
- **ITS:** NNMI (+$25.0 M) funds 1 institute & coordination
- **CRF:** Bldg. 245 renovation (+$60.0M); Boulder Bldg. 1 and 3 (+$15.0 M)



Percentage of NIST STRS Increase Going to Convening or External Partnerships



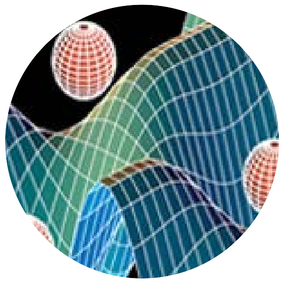
Over the past several years about 1/3 of new appropriations to the NIST labs have gone to support external partnerships and convening functions.

FY2017 Budget (total)
Flat or reduced

FY 2016 Enacted	President's Request	Senate Mark	House Mark
$964.0 M	$1014.5 M	$974.0 M	$865.0 M

President's Request (+$50.5M)

- Grow key laboratory programs:
  - Future Computing (+13.6 M)
  - Ensuring Neutron Facility (+4.8 M)
  - Biomanufacturing (+2.0 M)
  - Advanced Sensing for Manufacturing (+2.0 M)
  - Advanced Communications (+2.0 M)
  - Lab to Market (+2.0M)
- Continue renovations of Building 245 and Boulder Labs (-$24.0 M)
- Grow NNMI (+22.0M) and MEP (+12.0 M)



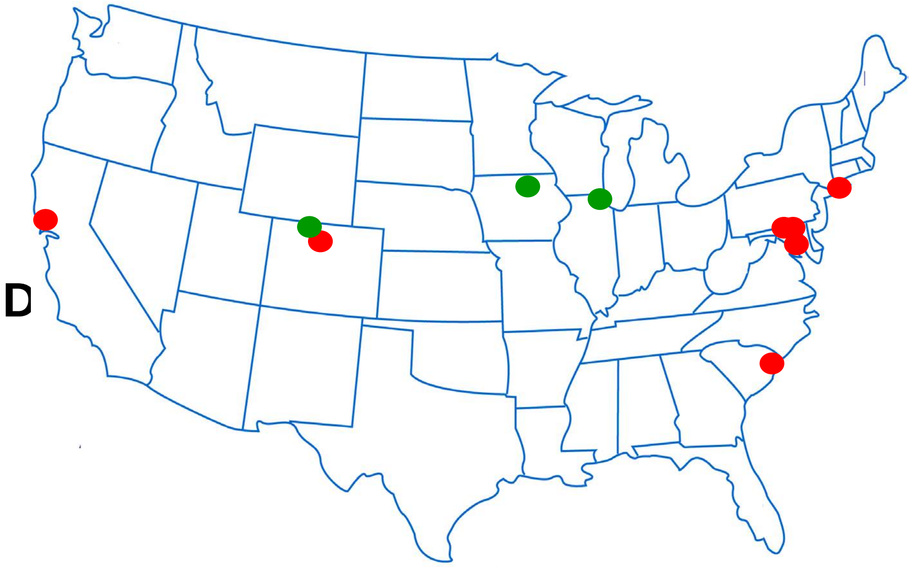
Senate Mark (+$10.0 M)

- Funds biomanufacturing initiative
- Increases funding for cybersecurity R&D
- Directs NIST to give grants in Disaster Resilience and Additive Manufacturing
- Encourages NIST to create a spectrum challenge prize and multidisciplinary program in cybersecurity

House Mark (-$99.0 M)

- Eliminates funding for Urban Dome, Lab to Market, and Forensic Science Advisory Committees
- Reduces NNMI funding to program coordination only
- Reduces Construction and Renovation funding
  - Halts Building 245 & Boulder renovations
  - Reduces Safety, Capacity, Maintenance and Repairs (SCMMR) funding baseline

Leveraging the nation's best experts in a range of S&T fields



NIST Joint Institutes (red)

- **JILA – CO**
- **Institute for Bioscience and Biotechnology Research – MD**
- **Hollings Marine Laboratory – SC**
- **Joint Quantum Institute – MD**
- **Joint Center for Quantum Information and Computer Science – MD**
- **Joint Initiative for Metrology in Biology – CA**

NIST Centers of Excellence (green)

- **National Cybersecurity Center of Excellence –** Mitre, 22 high-tech companies, Univ. of MD System
- **Center for Hierarchical Materials Design –** Northwestern University/ Univ. of Chicago
- **Center for Statistical Applications in Forensic Science** -- Iowa State University
- **Center for Risk-Based Community Resilience Planning** – Colorado State University

National Cybersecurity Center of Excellence

Accelerating the deployment and use of secure, standards-based technologies

History/Background

- Established in Feb. 2012 by NIST, Montgomery County and the State of Maryland & 22 industry partners in IBBR space
- **First Federally Funded R&D Center for Commerce and First Dedicated to Cybersecurity; Sept. 2014**
- New NIST Special Publication Series Launched for Cybersecurity Practice Guides in 2015

New Facility Opened for Business – December 2015

- **Located ~3 miles from NIST Gaithersburg Campus, 9700 Great Seneca Hwy, Rockville, MD**
- The additional 60,000 square feet expands the center's workspace from 4 to 22 separate, flexible laboratories
- **Ribbon-cutting ceremony on February 8, 2016**

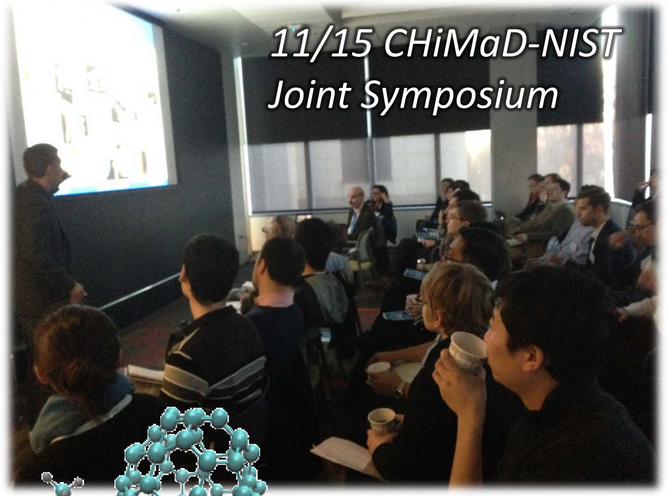
New NCCoE Facility

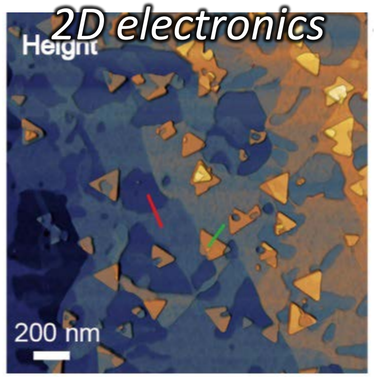
Current areas of research and development:

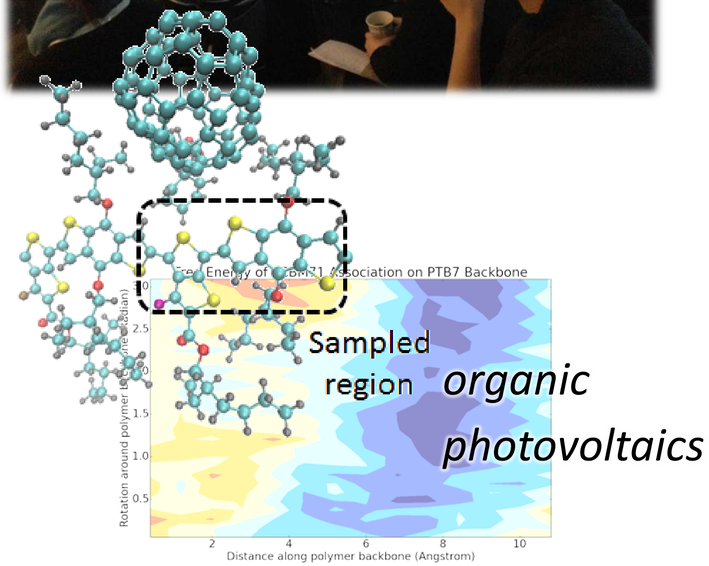
- **Health Care** – Security platforms for wireless medical infusion pumps
- **Energy** – Identity and access management central management for IT and operational resources
- **Transportation** – Cybersecurity profile for bulk liquid transport
- **Financial Services** – IT asset management to support making software changes and network breaches more easily identifiable
- **Attribute Based Access Controls** – Capability to support controlled access by an individual's attributes rather than their role.
- **Trusted Email** – Security platform that provides trustworthy email exchanges across organizational boundaries

Center of Excellence: Advanced Materials
Center for Hierarchical Materials Design (CHiMaD)

- To accelerate materials discovery and development using data science, computation, and experiment
- Competitively selected from among 28 Applicant teams
- U. Chicago, Northwestern, Argonne, Fayetteville State, QuesTek, ASM.
- $5M/yr for 5 years starting CY 2014
- 36 PIs, 34 Postdoctoral Fellows, 38 Graduate Students, 40 NIST collaborators
- Eight Use Cases with NIST & CHiMaD







MATERIALS DATA FACILITY

Center of Excellence: Forensic Science

Kickoff Meeting held
October 26-27, 2015 in Ames, IA

- Competitively selected from among 14 Applicant teams
- Iowa State, Carnegie Mellon, University of California at Irvine, and University of Virginia
- $4M/yr for 5 years starting in spring 2015

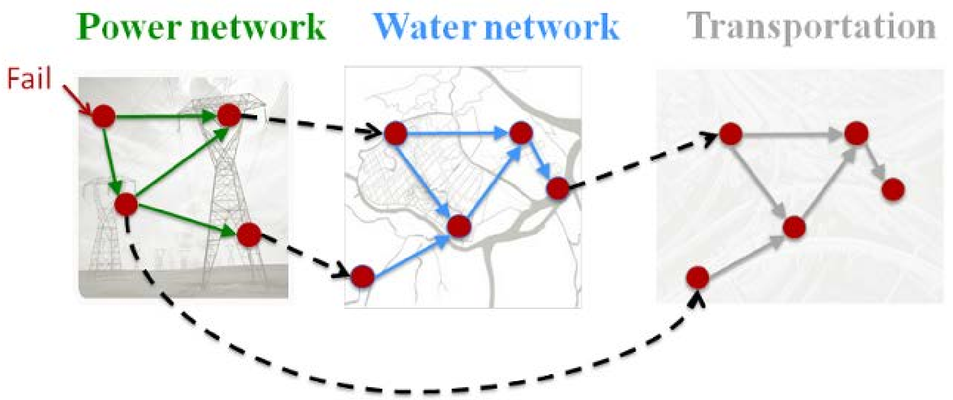
CSAFE will focus on the following objectives:

- **Develop and apply statistical methods** to pattern evidence, including latent prints, handwriting, tool marks, computer and information systems, social media, and GPS
- **Develop,** in collaboration with NIST scientists, **new methods for forensic evidence**
- **Develop new inference techniques that account for various sources of uncertainty**
- **Establish a sound base of interpretation for forensic evidence** in judicial settings

- **Educate and train forensic practitioners, judges and attorneys**, and the next generation of statisticians

Center of Excellence: Community Resilience
Center for Risk-Based Community Resilience Planning

- To develop system-level models and databases for community resilience
- Competitively selected from among 28 Applicant teams
- 10 academic institutions lead by **Colorado State University**
- $4M/yr for 5 years starting spring 2015
- 90 individuals working on 45 distinct tasks
- **Year 1** - Developing modeling environment
- **Year 2** - Extending modeling environment to include other hazards, and add social and economic impacts



Topics: NIST Update and Agenda Review

- Safety and Site Security
- Update on Director’s Priorities
- Budget Status
- Research and Program Highlights
- Agenda Review

Examples of Recent Scientific Breakthroughs

NIST Team Proves 'Spooky Action at a Distance' is Really Real
http://www.nist.gov/pml/div686/20151105loophole.cfm

Multilingual Circuit: NIST's "Optomechanical Transducer" Links Sound, Light and Radio waves
http://nist.gov/cnst/nists-optomechanical-transducer-links-sound-light-and-radio-waves.cfm

DNA-Encoded Circuits Made Easier, Faster, and More Measurable
http://nist.gov/mml/bbd/dna-encoded-circuits-made-easier-faster-and-more-measurable.cfm

MOF (metal-organic frameworks), SIFSIX, modeled/developed to separate impurities from materials at levels needed in manufacturing such as in plastics where high purity ethylene is needed to make polyethylene

A Crack in the Mystery of 'Oobleck'—Friction Thickens Fluids
http://www.nist.gov/mml/msed/a-crack-in-the-mystery-of-oobleck-friction-thickens-fluids.cfm

Optical Clocks Synched to Femtoseconds -- Through the Air
http://nist.gov/pml/div686/grp07/optical-clocks-synched-to-femtoseconds-over-air.cfm

NIST Team Breaks Distance Record for Quantum Teleportation, useful in both quantum communications and quantum computing (>100 km of Optical Fiber material that offers more flexibility for network design than other materials)
http://www.nist.gov/pml/nist-team-breaks-distance-record-for-quantum-teleportation.cfm

Topics: NIST Update and Agenda Review

- Safety and Site Security
- Update on Director’s Priorities
- Budget Status
- Research and Program Highlights
- Agenda Review

VCAT Meeting Agenda: June 7-8, 2016

June 7, 2016

NIST Update & Safety

8:30 **Call to Order:** **Rita Colwell**, Chair, VCAT

8:35 **NIST Update and Agenda Review:** **Willie E. May**, Director

9:05 **Discussion**

9:20 **Safety Update**: **Rich Kayser**, Chief Safety Officer

9:40 **Discussion**

9:50 ***Break***

10:00 **Updates on Major Programs**

10:00 **Commission on Enhancing National Cybersecurity** – **Kiersten Todt**, Executive Director, Commission on Enhancing National Cybersecurity

10:25 **Forensic Science** – **Rich Cavanagh**, Director, Special Programs Office

10:50 **National Network for Manufacturing Innovation** – **Mike Molnar**, Director, Advanced Manufacturing Program Office

VCAT Meeting Agenda - continued

Achieving Balance in NIST Laboratory Programs

11:15 **Setting the Context: Kent Rochford**, Associate Director of Laboratory Programs

11:45 **Discussion**

12:00 ***Lunch***

1:00 **Stakeholder Perspectives**: **Stakeholder Panel**

- **Bob Doering** – Research Manager, Technology and Manufacturing Group, Texas Instruments
- **Andy McMillan** – President and Managing Director, BACnet International
- **Roger Peniche** – Director of Worldwide Engineering and Product Innovation, Fluke Calibration
- **Gail Folena-Wasserman** – Senior Vice President, Biopharmaceutical Development, MedImmune

2:15 **Case Studies**

- *2:15* **Smart Grid** – **Dave Wollman**, Deputy Director, Smart Grid & Cyber-Physical Systems Program Office, EL
- *2:45* **Cybersecurity Framework** – **Kevin Stine**, Chief, Applied Cybersecurity Division, ITL
- *3:15* **5G Wireless** – **Nada Golmie**, Chief, Wireless Networks Division, CTL

3:45 ***Break***

4:00 **Lab Director Panel**

- **Jim Olthoff** – Director, Physical Measurement Laboratory
- **Laurie Locascio** – Director, Material Measurement Laboratory
- **Howard Harary** – Director, Engineering Laboratory
- **Chuck Romine** – Director, Information Technology Laboratory

5:30 **Adjourn; *Informal Reception at NIST***

VCAT Meeting Agenda - continued

June 8, 2016

NIST Security Posture – Closed Session	
8:30	**Closed Session**
10:20	***Break***
National Strategic Computing Initiative	
10:30	**Call to Order**
10:30	**Overview of NSCI and NIST's role: Carl Williams**, Deputy Director, PML
11:15	**Discussion**
Wrap up	
11:30	**Wrap up and Next Steps: Rita Colwell**
12:00	**Public Comments**
12:30	**Adjourn**