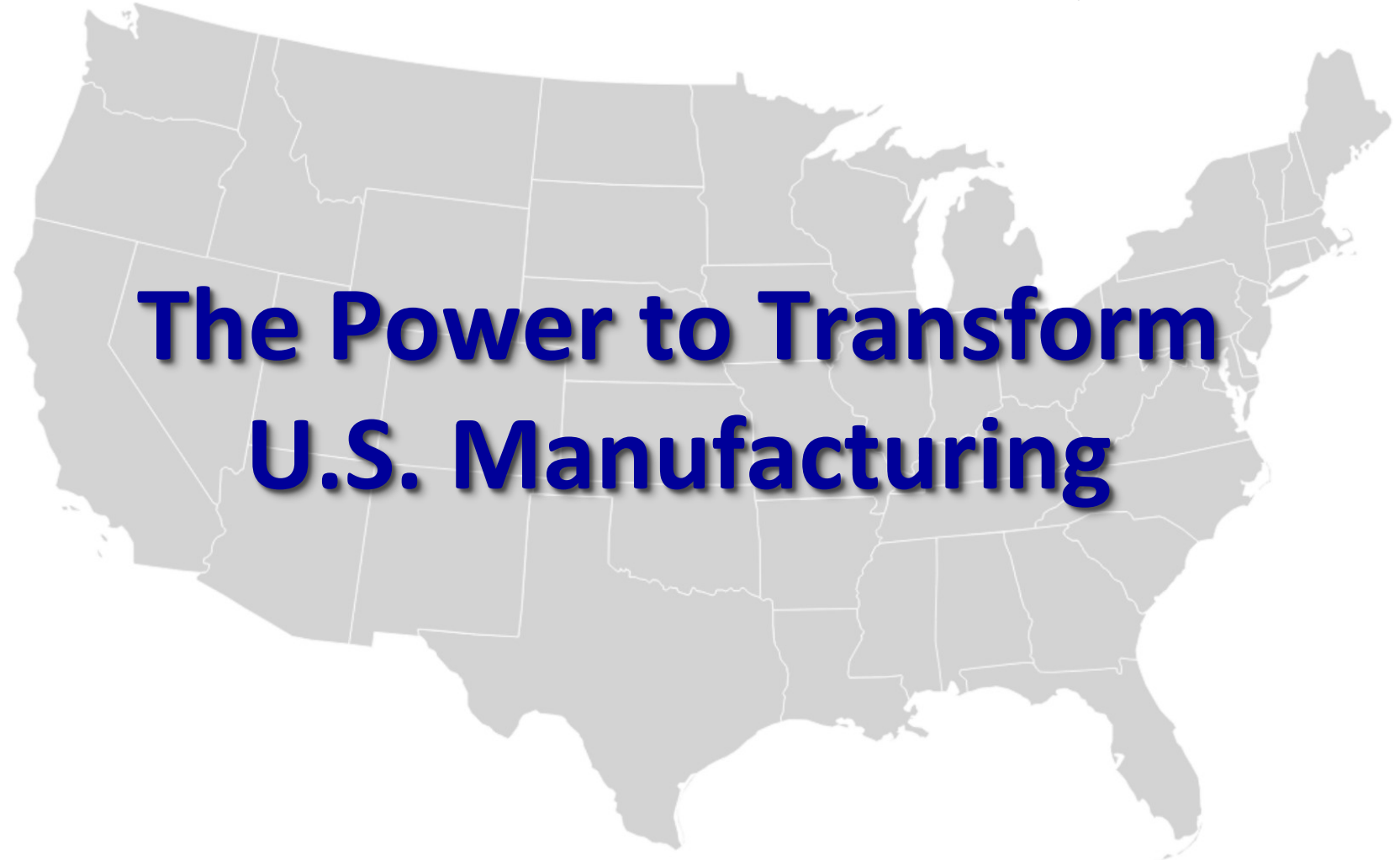


2016 NIST NNMI Institute Competition

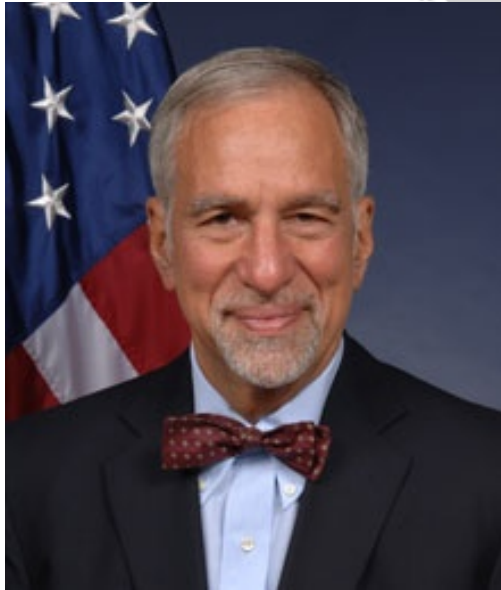
Proposers' Day, March 8, 2016



**The Power to Transform
U.S. Manufacturing**

2016 NIST NNMI Institute Competition

NNMI: The Power to Convene



Dr. Phillip Singerman
Associate Director for Innovation and Industry Services, NIST

Call to Order

2016 NIST NNMI Institute Competition

Proposers' Day, March 8, 2016

Website and Resources

- Visit www.nist.gov/amo/nnmi/2016competition.cfm
- Resources to assist Applicants, include:
 - Documents, FAQs, Suggested Templates and Guidance, and How-To's
 - Cooperative Agreements & Award Requirements, and Publications
- Send questions to NIST hotline at nnmifund@nist.gov or (301) 975-0404

Competition Timeline

February 19, 2016	Announced on Grants.gov (2016-NIST-NNMI-01)
April 20, 2016, 11:59 p.m. ET	Pre-Applications due through Grants.gov
May 23, 2016 (on or about)	Pre-Application review and selection notification
July 22, 2016, 11:59 p.m. ET (on or about)	Full Applications due through Grants.gov
Q1, CY 2017	Anticipated start date for awards

2016 NIST NNMI Institute Competition



**NNMI: The Power
to Innovate**



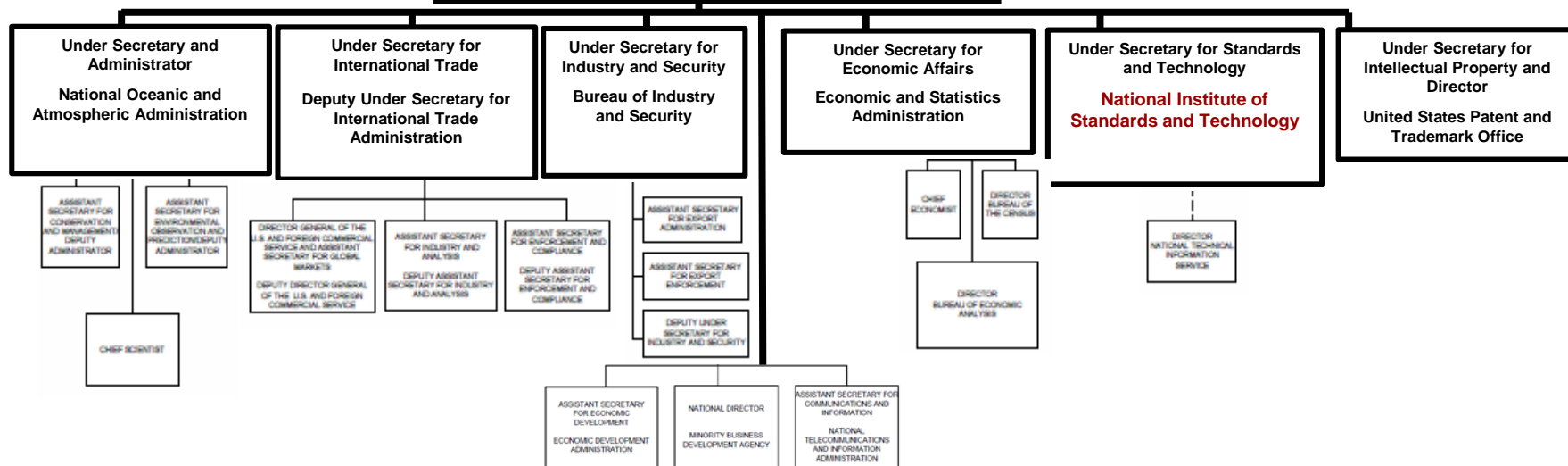
Dr. Willie E. May
Under Secretary of Commerce for Standards and Technology
& NIST Director

Welcome

NIST is part of the Department of Commerce



Penny Pritzker
Secretary of Commerce



NIST's Mission is to:

promote U.S. innovation and industrial competitiveness by advancing **measurement science, standards, and technology** in ways that enhance economic security and improve our quality of life.

NIST At-a-Glance

Major Assets, Partnerships, People, Budget



**2 Large
Research
Campuses**



Gaithersburg, MD— **62** bldgs., **578** acres
Boulder, CO—**26** bldgs., **208** acres



**Partnerships
In Every State**



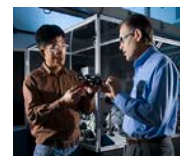
60 Manufacturing Extension Centers
10 joint institutes/Centers of Excellence



**FY 2016
Appropriations.
\$964 Million**



NIST labs, **\$690 M**
Industrial Technology Services, **\$155 M**
Construction of Research Facilities, **\$119 M**



**People:
Employees
& Associates**

~**3,400** Federal Employees
~**3,700** Guest Researchers & other NIST Associates
~**400** NIST Staff on ~ **1,000** standards committees

Additional Resources

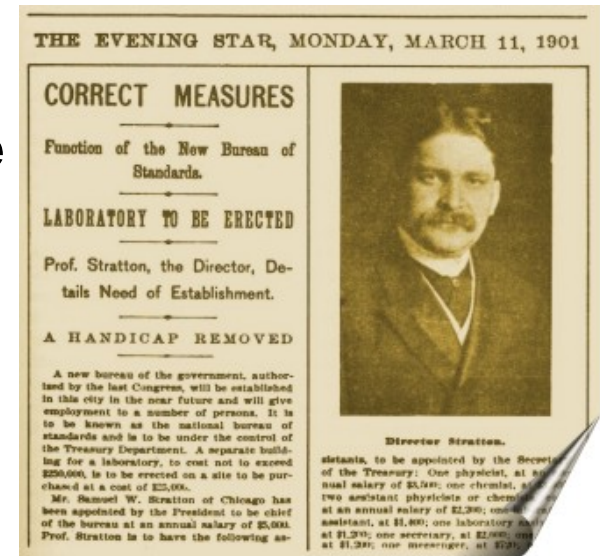
~ **\$120 M** from other government agencies
~ **\$50 M** from reimbursable services

NIST (NBS) established in 1901

“It is therefore the unanimous opinion of your committee that no more essential aid could be given to

- **manufacturing**
- **commerce**
- **the makers of scientific apparatus**
- **the scientific work of Government**
- **schools, colleges, and universities**

than by the establishment of the institution proposed in this bill.”



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

NIST – Who We Are and What We Do in 2016

NIST is a world-class scientific and technical agency uniquely focused on driving innovation and economic competitiveness through:

- **a world-leading scientific research program** – measurement, technology, and standards solutions to our stakeholders
- **a Manufacturing Extension Partnership** – focused on strengthening our nation's small and medium manufacturers
- **an Advanced Manufacturing National Program Office** – facilitating expansion of a nationwide network of Institutes for innovation in Manufacturing
- **a Baldrige Performance Excellence Program** – used to assess the nation's companies and organizations which is recognized, utilized, and emulated around the world

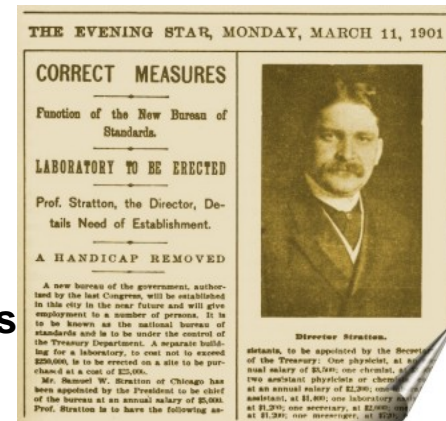
We have a great and unique Mission and are:

- a key player on the Administration's Innovation Team
- the nation's go-to agency for measurements, standards, and technology
- receiving bipartisan and bicameral support

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 U.S. 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



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	$\Delta\nu(^{133}\text{Cs})_{\text{hfs}}$	$\Delta\nu(^{133}\text{Cs})_{\text{hfs}}$	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	$M(^{12}\text{C})$	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 trade, commerce, and quality of life

Leading the world in defining the 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

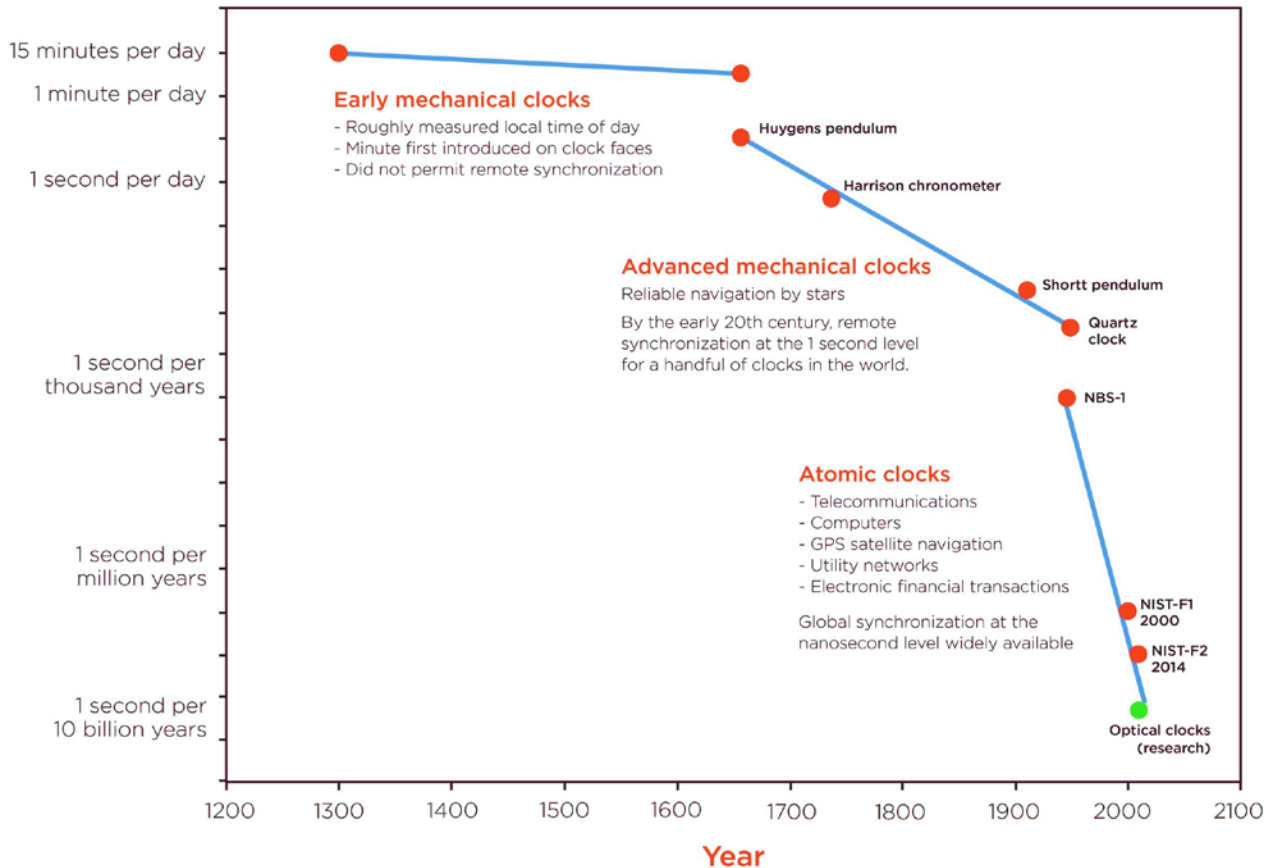
Modern telecommunications and computer network systems require:

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.



But since our inception as the **National Bureau of Standards in 1901**, in addition to maintaining the more traditional National Physical Measurement Standards, **we have also focused a significant portion of our research and measurement services activities on addressing contemporary societal needs**



NIST has become:

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

1901

2016

Supporting the Industrial Revolution

-  Interoperability of fire hose screw threads
-  Light bulb standards
-  Standards for irons and steels
-  Working with ICC to reduce railway accidents

-  Advanced manufacturing
-  Advanced communications
-  Advanced materials
-  Bioscience and Health
-  Cyber-physical systems
-  Cybersecurity
-  Disaster resilience
-  Forensic science
-  Quantum science

Advanced Manufacturing

Building a National Network for Manufacturing Innovation



Current Institutes

(Sponsored by DoD and DoE)

- **America Makes** (additive manufacturing) Youngstown, OH
- **Digital Manufacturing and Design Innovation Institute**, Chicago, IL
- **Lightweight Innovations for Tomorrow**, Detroit, MI
- **Power America** (Wide Band Gap Semiconductors) Raleigh, N.C.
- **Institute for Advanced Composites Mfg. Innovation**, Knoxville, TN
- **Integrated Photonics**, New York
- **Flexible Hybrid Electronics Manufacturing Innovation Institute**, San Jose, CA

Coming this year!

DoC – 1-2, open topic

DoD – 2, topics TBD

DoE – 2, topics TBD

Today, I'm asking Congress to build on the bipartisan support for this idea . . . creating a network of these hubs and guaranteeing that the next revolution in manufacturing is "Made in America." -- July 30, 2013

NIST Role in NNMI

- **Hosts the Advanced Manufacturing National Program Office to:**
 - Convene network for collaboration and support among Institutes
 - Provide annual reporting to Congress
 - Share best practices among Institutes
- **Providing support to current institutes** for measurement science research
- **NIST MEP Network linked to NNMI Network** via MOUs, to ensure institute work with small and medium entities
- **NIST lab experts are heavily involved in advisory roles and collaborations with Institute researchers**
- **And now, establish open-topic DoC-led Institute(s)**

Again, Welcome to NIST!

We hope your time here is informative and productive.

2016 NIST NNMI Institute Competition Proposers' Day

Session I: The 2016 NIST Funding Opportunity

- NNMI and NIST Competition Overview
- The Elements of a Complete and Competitive Application
- How Applications Will Be Evaluated

Session II: MEP and Administrative Requirements

- Leveraging the Network of NIST MEP Centers
- Administrative and Award Requirements

Session II: Participant Questions and Next Steps

- Questions and Answers
- Wrap-Up and Next Steps

