Unleashing American Innovation

Update: Return on Investment (ROI) Initiative
Lab-to-Market Cross Agency Priority (CAP) Goal

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Council on Government Relations
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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.
Important to commerce

“Uniformity in the currency, weights, and measures of the United States is an object of great importance, and will, I am persuaded, be duly attended to.”

George Washington, State of the Union Address, January 8, 1790

Important to innovation

“If you can not measure it, you can not improve it.”

Lord Kelvin, Lecture to the Institution of Civil Engineers, 3 May 1883

Important to international trade

Up to 92% of U.S. Exports affected by standards/technical regulations

NIST Illustrated, https://youtu.be/2j9BGVkbzS4
NIST AT A GLANCE

Industry’s National Laboratory

- 3,400+ Federal Employees
- 3,500+ Associates
- 5 Nobel Prizes
- 2 Campuses: Gaithersburg, MD [HQ] Boulder, CO
- 10 Collaborative Institutes
- 400+ Businesses using NIST Facilities
- 14 Advanced Manufacturing Technology Collaborative Institutes: Manufacturing USA
- 51 Nationwide Manufacturing Extension Partnership (MEP) Programs
- U.S. Baldrige Performance Excellence Program
NIST Laboratory Programs

- Material Measurement Laboratory
- Physical Measurement Laboratory
- Engineering Laboratory
- Information Technology Laboratory
- Communication Technology Laboratory
- Center for Nanoscale Science and Technology
- NIST Center for Neutron Research
NIST and Joint Institute Locations

NIST Main Campuses
- Gaithersburg, MD
- Boulder, CO

Joint Institutes and Centers
- National Cybersecurity Center of Excellence
- Institute for Bioscience & Biotechnology Research
- Joint Quantum Institute
- Joint Center for Quantum information & Computer Science
- JILA
- Hollings Marine Lab
- Brookhaven National Lab
- Joint Initiative for Metrology in Biology

Atomic Clock Signal Stations
- NIST Ft. Collins CO WWV
- NIST Kauai HI WWVH

NIST Centers of Excellence
- Forensic Science
- Disaster Resilience
- Advanced Materials
Public-private partnerships improving U.S. economic competitiveness

Hollings Manufacturing Extension Partnership

Manufacturing USA

Baldridge Performance Excellence Program
Manufacturing Extension Partnership

The Go-To Experts for Advancing U.S. Manufacturing

51 MEP Centers

In 2017:
Connected to 26,000+ manufacturers
$12.6 B in sales
$1.7 B in cost savings
$3.5 B in new client investments
100,000+ jobs created and retained
NIST Programmatic Priorities

- Advanced Manufacturing
- Cybersecurity
- Disaster Resilience
- Engineering Biology
- Internet of Things
- Documentary Standards
- Technology Transfer
- Measurement Dissemination
- Quantum Science
- Artificial Intelligence

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[The U.S. patent system] “adds the fuel of interest to the fire of genius in the discovery and production of new and useful things.”

Abraham Lincoln

…I can not forbear intimating to you the expediency of giving effectual encouragement as well to the introduction of new and useful inventions from abroad as to the exertions of skill and genius in producing them at home”….

George Washington, State of the Union Address, January 8, 1790
Federal R&D Investment

- The Federal government invests approximately $150 billion per year in R&D:
  - ~1/3 invested at over 300 Federal laboratories
  - ~2/3 invested at universities and industry R&D institutions

- To produce economic gain and maintain a strong national security innovation base, the results of this investment must be put to productive use through:
  - applied research and services to the public
  - transfer to private companies to create new products and services
By statute, the Department of Commerce via NIST provides Federal leadership for promoting and reporting on technology transfer policies, practices, regulations.

DOC/NIST focus: *Advance Federal technology transfer to promote innovation and industrial competitiveness.*
As part of the President’s Management Agenda, the U.S. seeks to enable even greater return on the Federal government’s investment in R&D.

- Federal R&D Investment: $150B/year
- Technology Transfer System
- New IP, licensing, products, processes, services and companies return value via economic growth and enhanced national security.
Lab-to-Market CAP Goal

- Lab-to-Market: cross agency priority (CAP) goal of President’s Management Agenda to modernize government for the 21st century.

  ➢ Improve Transfer of Federally-Funded Technologies from Lab-to-Market.

- Lab-to-Market CAP Goal co-led by Department of Commerce via NIST and the White House Office of Science & Technology Policy (OSTP).

- NIST, in coordination with OSTP, will advance the President’s Management Agenda and its Lab-to-Market CAP Goal through the ROI Initiative.

- The National Science and Technology Council Lab-to-Market Subcommittee will coordinate, review, and implement interagency priorities for this CAP Goal.
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- **FC-STEM**
- **Networking IT R&D**
- **Research Business Models**
- **Scientific Collections**
- **R&D Infrastructure**
- **Open Data**
- **International S&T Coordination**
VISION: **Unleash the innovation power of America into our economy**

**GOAL:** Maximize the transfer of federal investments in science and technology into value for America

- *meet current and future economic and national security needs* in a rapidly shifting technology marketplace and enhance U.S. competitiveness globally
- *attract greater private sector investment* to create innovative products, processes, services, as well as new businesses and industries
Unleashing American Innovation

(L to R): Michael Kratsios – WH/OSTP, Walter Copan – U/S NIST, Wilbur Ross – Commerce Secretary, Margaret Weichert - Deputy Director OMB, Andrei Iancu – U/S USPTO

Photo courtesy of NIST / Peter Cutts
ROI Initiative Objective

Assess, streamline, and accelerate the transfer of technology from Lab-to-Market:

• Identify **critically needed improvements** to Federal technology transfer policies, practices, and efforts

• Seek **broad input** from Federal R&D, intellectual property and technology transfer stakeholders
ROI Initiative - Outreach

Unleashing American Innovation Symposium
April 19, Washington, DC

Request for Information
May 1 – July 30

ROI Public Meetings
May 17 – San Jose, CA
May 21 – Denver, CO
May 31 – Chicago, IL
June 14 – Gaithersburg, MD
ROI Recommended Actions → CAP Goal Implementation

ROI recommended actions will support five CAP goal strategies:

- Identify regulatory impediments and administrative improvements in Federal technology transfer policies and practices
- Increase engagement with private sector technology development experts and investors
- Build a more entrepreneurial R&D workforce
- Support innovative tools and services for technology transfer
- Improve understanding of global science and technology trends and benchmarks.
1. What are the **core Federal technology transfer principles and practices** that should be **protected**, and those which should be **adapted or changed**?

2. What are the **issues that pose systemic challenges** to the effective transfer of technology, knowledge, and capabilities resulting from Federal R&D?

3. What is the **proposed solution for each issue that poses a systemic challenge** to the effective transfer of technology, knowledge, and capabilities resulting from Federal R&D?

4. What are **other ways to significantly improve transfer of technology, knowledge, and capabilities** resulting from Federal R&D to benefit U.S. innovation and the economy?

   - What changes would these proposed improvements require to Federal technology transfer practices, policies, regulations, and legislation?
Submit written responses by **5:00 pm Eastern Time on July 30, 2018** using either of the following methods:

  
  > Follow the instructions for sending comments on the agency website.

- **E-mail**: [roi@nist.gov](mailto:roi@nist.gov).
  
  > Include “RFI Response: Federal Technology Transfer Authorities and Processes” in the subject line of the message.
ROI + CAP Goal + NSTC = Implementation

**Implementation**
- NIST L2M Funding and FTE Support
- T2 Professionals
- IAOGTT, IAWGBD, Agency Efforts, FLC

**NSTC Subcommittee**
- Agency Research Directors – Reports to OSTP
  Provides high level leadership and vision
  Enables successful implementation by Agency T2 Offices and programs

**CAP Goal**
- Agency Programmatic Leads – Reports to OMB
  Provides programmatic development
  Tracks metrics and progress

**ROI Initiative**
- Whole of Government with NIST as convener
- Stakeholder engagement to develop metrics and action plans
- Engages leadership at a high level to ensure success
- Addresses structural T2 issues as needed to set up new policies and practices for implementation
ROI Timeline and Milestones

February / March / April

- President’s Management Agenda released with Lab-to-Market CAP Goal
- Initial key stakeholder meetings to engage industry, university, and federal stakeholders
- NIST website with ROI information and updates

April / May / June / July

- Unleashing American Innovation Symposium Launch Event (April 19, 2018)
- Request for Information (closes 7/30) published in Federal Register (May 1, 2018)
- Public Forums announced in Federal Register (May 1, 2018)

August / September / October / November

- Analysis of inputs/studies
- Interagency review
- Recommendations (best practices, policies, regulatory, legislative-if appropriate)
- Initiate implementation of action plan
Examples of Systemic Challenges

- Difficulty negotiating IP terms and indemnification provisions
- Inconsistent practices and interpretation of authorities across USG
- Inability to effectively copyright and protect software and digital products developed by USG-operated labs
- Challenges in protecting trade secrets when collaborating with Federal laboratories
- Concerns about march-in rights and government use license
- Conflict of interest provisions limit entrepreneurship & restrict access to resources needed to commercialize technology
- Need for local control of agreement negotiation and execution
- Inconsistent interpretation of tech transfer legislation
- Challenges in creating consortium agreements
- Lack access to maturation funding to advance promising technologies
Federal Register and Press Release Announcement of RFI and Public Forums

Video Recording of Unleashing American Innovation Symposium

www.nist.gov/tpo/ROI