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
Industry’s National Laboratory

- 3,400+ Federal Employees
- 3,900+ Associates
- 5 Nobel Prizes
- 2 Campuses: Gaithersburg, MD [HQ]; Boulder, CO
- 11 Collaborative Institutes
- Thousands of businesses using NIST facilities
- 14 Coordinating network of MFG Institutes
- 51 Manufacturing Extension Partnership Centers
- U.S. Baldrige Performance Excellence Program
NIST Addresses National Priorities

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

Public-private partnerships strengthening America’s manufacturing core and organizational performance

Hollings Manufacturing Extension Partnership

Manufacturing USA®

Baldridge Performance Excellence Program
National Strategy for Advanced Manufacturing

• In the face of intense global competition, **strong action is needed to defend the economy**, expand manufacturing workforce, ensure a strong manufacturing and defense industrial base, and resilient supply chain.

• The U.S. needed a clear and comprehensive strategic plan, as requested by Congress, for **American leadership in advanced manufacturing**
Vision: American leadership in advanced manufacturing across industrial sectors to ensure national security and economic prosperity

Goals

1. Develop and transition new manufacturing technologies – 5 Objectives with 15 priorities

2. Educate, train, and connect the manufacturing workforce – 4 Objectives with 9 priorities

3. Expand the capabilities of the domestic manufacturing supply chain – 4 Objectives with 11 priorities

Mission: Connecting people, ideas, and technology to solve industry-relevant advanced manufacturing challenges, thereby enhancing industrial competitiveness and economic growth and strengthening our national security.

Vision: U.S. global leadership in advanced manufacturing
Manufacturing USA Institutes

Public-private partnership creating a neutral convening space for U.S. industry and academia to collaborate

Market Failure in Pre-Competitive Applied Manufacturing R&D

Funding/Investment

High

Government and Universities

Low

Manufacturing-Innovation Process

Basic manufacturing research
Proof of concept
Production in laboratory
Capacity to produce prototype
Capacity in production environment
Demonstration of production rates

Manufacturing Readiness Levels (1-10)
R&D Transition – the ROI Initiative

ROI Initiative designed to be responsive to PMA’s long-term vision for modernizing the Federal Government for the 21st Century:

• Enable the Federal Government to **adapt to changing needs** over time
• Pursue **deep-seated transformation** rather than short-term fixes

**Root cause challenges**

• Regulatory Burden
• Structural Issues
• Decision-Making and Processes
• Leadership and Culture
• Capabilities and Competencies
Public Sector R&D: Creating Seed Corn

• The Federal government invests over $150 billion per year in R&D:
  - ~1/3 at 300+ Federal laboratories
  - ~2/3 at universities, R&D institutes, industry

• For economic vitality, competitiveness and national security, the results of this investment must be put to increasingly productive use through:
  - applied research and services to the public
  - maturation and transfer to companies to create new products and services
21st Century Innovation Ecosystems

We’ve come a long way since 1980....
Federal Government, Universities, Federal Labs, Research Organizations, Entrepreneurs remain at the heart of innovation ecosystems

• Networks
• Agility
• Co-development
• Proximity
• Resource access
• Talent
Accelerating Lab to Market

Cross Agency Priority Goal 14: Improve Transfer of Federally Funded Technologies from Lab-to-Market

Goal Leads

**Walter Copan**
Under Secretary of Commerce for Standards and Technology
Director, National Institute of Standards and Technology

**Michael Kratsios**
Deputy Assistant to the President for Technology Policy
White House Office of Science and Technology Policy

Interagency Contributors

- National Science and Technology Council Lab-to-Market Subcommittee
- Interagency Working Group for Technology Transfer
- Interagency Working Group for Bayh-Dole
- Small Business Innovation Research (SBIR) Program Managers Working Group
- Interagency I-Corps Community of Practice
- Federal Laboratory Consortium for Technology Transfer

Participating Agencies
Open, inclusive, and collaborative outreach

- Four main Public Forums totaled 341 registered attendees
- Responses to Request for Information represented thousands of stakeholders.
- Broad cross section of stakeholder community, including universities, industry, government agencies, individuals
- Other sources:
  - Unleashing American Innovation Symposium (D.C. – April 19, 2018)
  - Maryland Technology Transfer Summit (NIST – April 20, 2018)
  - Multiple stakeholder engagement sessions nationwide
  - Extensive review of prior reports and studies
  - International benchmarking underway
ROI Draft Green Paper

- Developed with support of the Science and Technology Policy Institute (STPI) and with White House Office of Science and Technology Policy
- Carefully considered extensive stakeholder inputs
- Addressed review with interagency working groups
- Published as NIST Special Publication 1234

5 strategies and 15 findings that may help streamline and accelerate innovation at the public-private sector interface, moving technologies from lab to market
ROI Actions to support 5 Lab-to-Market 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.
Technology transfer - processes by which knowledge, facilities and capabilities developed under Federal research and development (R&D) funding are used to fulfill public and private need

Enable evolving paradigms and models of technology transfer and U.S. innovation
Thank you!

Please stay in Touch...

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