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

Goal Leaders

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PRESIDENT'S MANAGEMENT AGENDA

The Challenge

- The Federal Government invests approximately $150 billion annually[1] in research and development (R&D) conducted at Federal laboratories, universities, and other research organizations.
- For America to maintain its position as the global leader in innovation, bringing products to market more quickly, growing the economy, and maintaining a strong national security innovation base, it is essential to optimize technology transfer and support programs to increase the return on investment (ROI) from federally funded R&D.

The Goal

- Improve the transition of federally-funded innovations from the laboratory to the marketplace by reducing the administrative and regulatory burdens for technology transfer and increasing private sector investment in later-stage R&D;
- Develop and implement more effective partnering models and technology transfer mechanisms for Federal agencies; and
- Enhance the effectiveness of technology transfer by improving the methods for evaluating the ROI and economic and national security impacts of federally funded R&D, and using that information to focus efforts on approaches proven to work.

The 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.

✓ Discovery ✓ Strategy Development ✓ Options & Solutions ✓ Develop Action Plan and Key Milestones **ONGOING** Implement and Assess Progress

NIST

Walter Copan, Under Secretary of Commerce for Standards and Technology and Director, NIST

Michael Kratsios, Chief Technology Officer of the United States, The White House

Participating Agencies

Interagency Contributors[1]

National Science and Technology Council
Lab-to-Market Subcommittee

Interagency Working Group for
Technology Transfer

Interagency Working Group for
Bayh-Dole[2]

Small Business Innovation Research (SBIR)
Program Managers Working Group

Entrepreneurial Training
Interagency Working Group

Federal Laboratory Consortium for
Technology Transfer

1: See https://www.nist.gov/tpo/lab-market for descriptions of participating working groups and strategy team focus areas
2: The Interagency Working Group for Bayh-Dole coordinates implementation of the Bayh-Dole Act; see 35 U.S.C. 200 and 37 C.F.R. 401 and 404.

Administrative barriers cut to streamline partnerships with DOE Labs

Dept of Ed increases investment in ed-tech commercialization

77 private sector partners supported

Adv Manufacturing Summit convened industry, investors, DOE Lab experts

Case study published on Navy lab regional innovation ecosystem

Innovative Postdoctoral Entrepreneurial Research Fellowship awards $5.3M

American innovation showcased at 2019 Global Entrepreneurship Summit

NIH created new Office of Biomedical Entrepreneurship and Innovation

205 DOE Lab Facilities made easily searchable

Report on trends and characteristics of U.S. women inventors published

"Advancing America Through Tech Transfer" posters highlight DOE impacts

Study shows $1.4T in economic benefit from GPS

Study of Federal Lab Technology Transfer published

First biannual report on I-Corps released

Identify regulatory impediments and
administrative improvements in
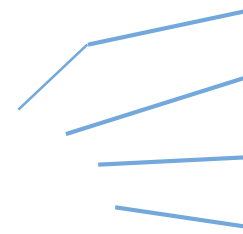Federal technology transfer policies
and practices.

Problems Targeted

Dated Legislation

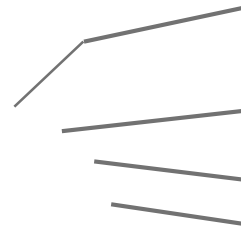Inconsistent Interpretations

Cultural Impediments

Lost Opportunities

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner
Develop proposed updates to the Bayh-Dole Act implementing regulations for cross-agency and public feedback processes.	Q4FY19	On Track	Notice of Proposed Rule Making being drafted for review	NIST, IAWGBD
Develop legislative proposal for revisions to Stevenson-Wydler Act	Q4FY19	On Track	Legislative proposal being prepared for formal agency review	NIST, IAWGTT
Reduce administrative burden for SBIR/STTR programs	Q1FY20	On Track	Interagency sharing of application streamlining practices	SBA SBIR PM
Foster innovation in regulated technology areas through practices such as creating sandboxes safe spaces to test solutions in controlled environments	Q4FY20	On Track	N/A	L2M SC

Increase engagement with private sector technology development experts and investors.

<u>Problems Targeted</u>

Challenges working with Government

Lack of Interest in Federal Technologies

Mismatch with Market Needs

Inability to Find Information

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner
Develop recommendations for making federally funded technologies, knowledge, and capabilities more attractive for private investment through Presidential Innovation Fellow's assessments	Q4FY19	On track	Initiated discussions with private sector investors; presented at National Venture Capital Association meeting	NIST, GSA
Examine existing authorities that foster and provide flexibility for R&D collaborations with the private sector.	Q1FY20	On Track	Paper drafted on common technology transfer and cost share mechanisms	L2M SC
Enhance interagency collaboration to support the R&D innovation ecosystem, such as through consortia and regional innovation clusters, to engage the private sector and leverage non federal resources	Q1FY20	On Track	Hosted White House innovation ecosystem case study review	L2M SC
Improve outreach activities from agencies to the private sector, such as demonstration and showcasing of federally funded R&D	Q1FY20	On Track	N/A	L2M SC

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Build a more entrepreneurial R&D workforce. Support entrepreneurial education and training to develop the next generation of skilled innovators and entrepreneurs, and enable technology transfer and start -ups.

Problems Targeted

Lack of Knowledge

Lack of Incentives

Cultural Impediments

Policies that Discourage Entrepreneurship

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner
Improve and expand agency participation in R&D entrepreneurial training programs, such as I-Corps, the Lab-Embedded Entrepreneurship Program, and internships	Ongoing	On track	Collecting data on entrepreneurial training programs	L2M SC, NSF
Create an Interagency Working Group on entrepreneurial training to share practices and develop recommendations to improve federal entrepreneurial training programs*	Q3FY19	Complete	Working Group formed	L2M SC, NSF
Develop and implement policies and best practices that encourage entrepreneurship and an entrepreneurial culture, including fostering public-private partnerships	Q4FY19	On Track	Promising practices to be shared in entrepreneurial training interagency working group	L2M SC
Submit proposal to designate a job series for Federal technology transfer professionals	Q4FY20	On Track	Collecting information from agencies	IAWGTT, OPM
Increase the participation of underrepresented groups in entrepreneurship to ensure a diverse and inclusive innovation community	Q1FY20	On Track	Initiated collaboration with Interagency Working Group on Inclusion in STEM	L2M SC

* Previous milestones for analyzing training programs and setting metrics will fall under new working group once established

Support innovative tools and services for technology transfer. Improve and develop tools to support the discovery and transfer of technologies.
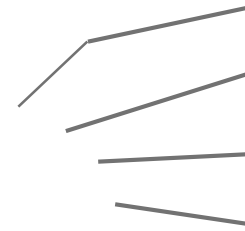
<u>Problems Targeted</u>

Lack of Awareness

Complicated Bureaucracy

Inconsistent User Experiences

Duplicative Tools

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner
Enable interagency sharing and leveraging of resources and expertise related to implementing intramural and extramural reporting tools to enable adoption and adaptation for agency specific missions and improve the user experience.*	Q1FY20	On Track	Developing framework to enable intramural T2 data commons.	L2M SC
Improve outreach to extramural R&D performers (university technology transfer offices, SBIR/STTR awardees) to support effective reporting of federally funded R&D outputs	Q1FY20	On Track	N/A	L2M SC
Develop enabling policies and guidance (Federal and agency specific) to improve tools used for outreach and raising public awareness of Federal R&D resources, including federally funded R&D outputs	Q1FY20	On Track	Participating in The Opportunity Project to support private sector teams developing tools for easier Federal resource access	L2M SC
Identify common measures and mechanisms to improve the effectiveness of technology transfer tools and services used for outreach and to raise public awareness of federally funded R&D outputs	Q4FY20	On Track	N/A	L2M SC

* Previous milestones that will fall under new milestone of interagency sharing: Develop an inventory of existing tools & services used across the agencies and labs; Identify tools & services best practices both within the Federal labs and externally; Identify and recruit individuals external to the Federal government to provide input and perspective as end customers of Federal tech transfer; Identify and recommend near-term pilots to improve tools and services; Develop and present a comprehensive plan with costs, schedule and milestones to improve and develop tools and services for improved T2.

Improve understanding of global science and technology trends and benchmarks to measure progress and achieve results.

<u>Problems Targeted</u>

Demonstrating Value

Varying Missions

Activities vs Outcomes

Reporting Burdens

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner
Complete a quantitative and qualitative study of federal tech transfer across multiple agencies	~~Q4FY18~~ Q4FY19	Complete	Study published	NIST
Identify administrative and business data sources to evaluate company-level economic impacts of SBIR/STTR in collaboration with Census and USPTO	Q1FY19	On Track	Pilot study with Census complete; USPTO study on track	SBA
Update Federal-wide guidance by developing unified methodology for data collection/sharing and clarify definitions/data collection processes	Q1FY20	On Track	N/A	IAWGTT, OMB
Enhance reporting guidance to add "a la carte" technology transfer metrics that agencies might include in their annual reporting	Q1FY20	On Track	N/A	L2M SC
Issue a prize competition to solicit proposals/ideas for increasing extramural invention reporting	Q1FY20	On Track	N/A	NIST
Compose a white paper on findings in TT and ROI literature and possible future studies	Q1FY20	On Track	N/A	L2M SC
Bundle publicly-available Federal innovation data to support research in the field of science and innovation policy	Q1FY20	On Track	N/A	L2M SC
Make recommendations based on study of issues in reporting data, software and apps that may expand the definition of technology transfer.	Q4FY20	On track	Study Committee formed, http://sites.nationalacademies.org/PGA/step/PGA_191994	L2M SC

Completed Milestone	Completion Date	Strategy	Final Status	Owner
Hold kick off event: "Unleashing American Innovation: Lab-to-Market" on April 19, 2018	Q3FY18	1	233 registered attendees	DOC, OSTP
Publish Request For Information (RFI) and hold public forums to gather input	Q4FY18	1	4 Public Forums with 341 registered participants; 104 RFI responses received	NIST
Examine existing models for private investment and growth, including agency foundation and investment mechanisms	Q4FY18	2	Interagency strategy team produced list of existing agency models and mechanisms	L2MSC
Identify existing entrepreneurial training programs and models for the R&D workforce	Q4FY18	3	Initial input gathered from agencies	L2MSC
Examine differences in conflict-of-interest policies and how they impact ability of personnel to engage in entrepreneurial activities.	Q4FY18	3	Interagency strategy team collected and evaluated COI policies and practices at agencies and universities	L2MSC
Execute and begin Joint Venture Partnership to engage the private sector to develop tools for efficient utilization of public and private data to enhance technology commercialization efforts	Q4FY18	4	Partnership executed and project underway	NIST
Complete a study of global practices in technology transfer and commercialization.	Q4FY18	5	Study complete	NIST
Complete a study of state programs in technology transfer and commercialization.	Q4FY18	5	Study complete	NIST

Completed Milestone	Completion Date	Strategy	Final Status	Owner
Survey agencies and customers to determine priority actions for Business implementation	Q1FY19	4	FLCBusiness updated to version 3.0 per user and stakeholder input.	FLC
Analyze input and develop additional milestones	Q2FY19	1-5	Milestones added to all strategy areas	L2MSC
Develop regulatory and/or legislative package timetables to carry out recommendations	Q2FY19	1	Timetables complete	NIST