



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

### Goal Leaders

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## The Challenge

- The Federal Government invests approximately \$150 billion annually<sup>1</sup> 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.



1: Analytical Perspectives, Budget of the United States Government, Fiscal Year 2019, ch. 18. <https://www.gpo.gov/fdsys/pkg/BUDGET-2019-PER/pdf/BUDGET-2019-PER.pdf>



**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<sup>1</sup>

- National Science and Technology Council  
Lab-to-Market Subcommittee
- Interagency Working Group for  
Technology Transfer
- Interagency Working Group for  
Bayh-Dole<sup>2</sup>
- 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.







# Agency Progress

DHS, NOAA, DOE, USDA streamline internal tech transfer processes





DOE allows National Labs to demonstrate commercial application of its R&D

FLC partners with AUTM to improve Federal Technology Transfer




DOE funds 12 projects for Practices to Accelerate the Commercialization of Technologies

iNNOAvation Center launched at Blue Tech Week




NavalX Tech Bridge connects Navy to innovation ecosystem





Venture Capitalists connected to federal lab scientists




Challenge issued for disaster resilience innovation




InnovationXLab Summit for AI brings total interactions with potential partners to over 1,000



SBA expands innovation network through FAST partnership and Growth Accelerators





Technology Transfer Ambassadors Program expanded to additional NIH institutes




NCI launches Transition to Industry Fellowship



NCI develops Intramural Innovation Corps course



FY16 Federal Technology Transfer Report published




22:1 return on DoD SBIR/STTR investment 1.5M jobs, \$347B economic output

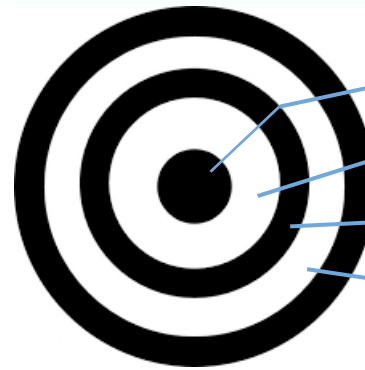



USPTO publishes report supporting women, minorities, and veterans as inventors




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



**Problems Targeted**

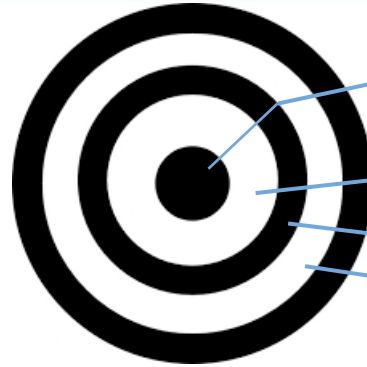
- Dated Legislation
- Inconsistent Interpretations
- Cultural Impediments
- Lost Opportunities

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	Q2FY20	On Track	Milestone extended due to administrative delays in review process; proposed updates circulated for informal agency feedback	NIST, IAWGBD
Develop legislative proposal for revisions to Stevenson-Wydler Act	Q2FY20	On Track	Milestone extended due to administrative delays in review process; legislative proposal awaiting clearance for formal agency review	NIST, IAWGTT
Reduce administrative burden for SBIR/STTR programs	Q1FY20	On Track	Air Force expanded Pitch Day concept; Navy reduces proposal requirements by 75%, accelerates evaluation, selection, payment process to under 30 days	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.**



**Problems Targeted**

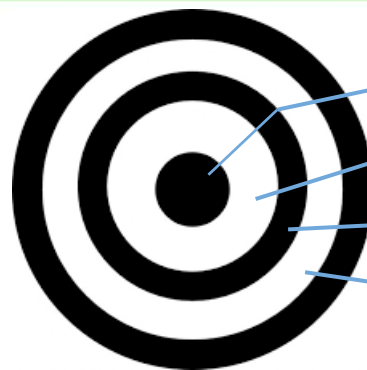
- Challenges working with Government
- Lack of Interest in Federal Technologies
- Mismatch with Market Needs
- Inability to Find Information

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	Q1FY20	On track	Milestone extended to allow additional findings to be developed; developed events to connect investors to laboratory researchers	NIST, GSA
Examine existing authorities that foster and provide flexibility for R&D collaborations with the private sector	Q1FY20	On Track	. OSTP hosted interagency roundtable, and co-hosted event with University-Industry Demonstration Project (UIDP) to advance R&D partnerships	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	Working group scoping R&D innovation ecosystem map, policy toolkit for ecosystem builders	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





**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

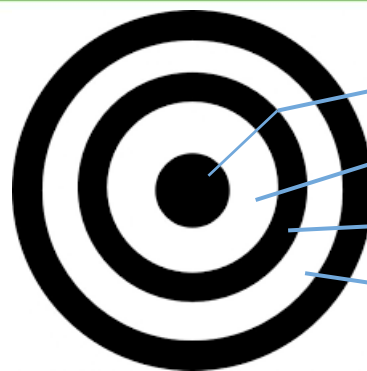
Policies that Discourage Entrepreneurship

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	No change	L2M SC, NSF
Develop and implement policies and best practices that encourage entrepreneurship and an entrepreneurial culture, including fostering public-private partnerships	Q2FY20	On Track	Milestone extended to allow additional findings to be developed; 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	Analyzing information from agencies	IAWGTT, OPM
Increase the participation of underrepresented groups in entrepreneurship to ensure a diverse and inclusive innovation community	Q1FY20	On Track	No change	L2M SC





**Support innovative tools and services for technology transfer. Improve and develop tools to support the discovery and transfer of technologies.**



### Problems Targeted

- Lack of Awareness
- Complicated Bureaucracy
- Inconsistent User Experiences
- Duplicative Tools

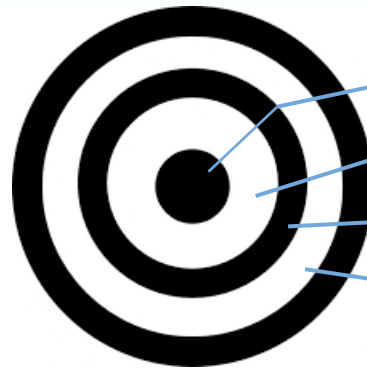
Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner
Enable interagency sharing and leveraging of resources and expertise related to implementing intramural and extramural reporting tools to enable adoption and adaptation for agency-specific missions and improve the user experience	Q1FY20	On Track	No change	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	No change	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







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



**Problems Targeted**

Demonstrating Value

Varying Missions

Activities vs Outcomes

Reporting Burdens

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner
Identify administrative and business data sources to evaluate company-level economic impacts of SBIR/STTR in collaboration with Census and USPTO	Q1FY19	On Track	No change	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 initiated, <a href="http://sites.nationalacademies.org/PGA/step/PGA_191994">http://sites.nationalacademies.org/PGA/step/PGA_191994</a>	L2M SC





# Milestones Completed in Previous Quarters (FY18)

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	L2M SC
Identify existing entrepreneurial training programs and models for the R&D workforce	Q4FY18	3	Initial input gathered from agencies	L2M SC
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	L2M SC
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





# Milestones Completed in Previous Quarters (FY19)

Completed Milestone	Completion Date	Strategy	Final Status	Owner
Survey agencies and customers to determine priority actions for FLCBusiness 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
Create an Interagency Working Group on entrepreneurial training to share practices and develop recommendations to improve federal entrepreneurial training programs	Q3FY19	3	Working Group formed	L2M SC, NSF
Complete a quantitative and qualitative study of federal tech transfer across multiple agencies	Q3FY19	5	Study published	NIST

