**Request for Information**

**Federal Technology Transfer Authorities and Processes**

**Last day to submit the responses: July 30, 2018**

### Introduction

In order to advance the President's Management Agenda to modernize government for the 21st century, including the associated Lab-to-Market CAP Goal in coordination with the White House's OSTP, NIST is initiating a Return on Investment (ROI) Initiative [4] with the intent of conducting a comprehensive assessment of the Federal technology transfer system that will identify opportunities to improve Federal technology transfer efforts, policies, and practices. The goal of this effort is to, where appropriate, streamline and accelerate transfer of technology from Federal R&D investments to attract greater private-sector investment for innovative products, processes, and services, as well as new businesses and industries that will create jobs, grow the economy, and enhance national security.

NIST is seeking broad input and participation from stakeholders in Federal R&D, intellectual property, and technology transfer to assist in identifying and prioritizing issues and proposed solutions. This assessment will address: (a) Core Federal technology transfer principles and practices that should be protected, and those which should be adapted or changed; (b) approaches to improve efficiency and reduce regulatory burdens for technology transfer to attract private sector investment in later-stage R&D, commercialization, and advanced manufacturing; (c) new partnering models and technology transfer mechanisms with the private sector, academia, other Federal agencies, state, and other public-sector entities to support technology development and maturation; (d) new approaches that will reduce or remove barriers, and enable accelerated technology transfer, with a focus on areas of strategic national importance; (e) better metrics and methods to evaluate the ROI outcomes and impacts arising from Federal R&D investment; and (f) new approaches to motivate significantly increased technology transfer outcomes from the Federal sector, universities, and research organizations.

This information will only be used as input to the Return on Investment initiative. All submissions, including attachments and other supporting materials, will become part of the public record and subject to public disclosure. Sensitive personal information, such as account numbers or Social Security numbers, or names of other individuals, should not be included. Submissions will not be edited to remove any identifying or contact information. Do not submit confidential business information, or otherwise sensitive or protected information. Comments that contain profanity, vulgarity, threats, or other inappropriate language or content will not be considered.

### Instructions

This template is designed to facilitate responses to the RFI. Use of this form is optional.

It is not required to fill out all of the sections, for example a participant may elect to only provide input on one question.

Save and email it to [roi@nist.gov](mailto:roi@nist.gov).

# Contact Information

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Questions

1. What are the core Federal technology transfer principles and practices that should be protected, and those which should be adapted or changed?

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| First, the I-Corps program initiated at NSF, and which has spread to DOE, NIH (and to some extent within the DOD) should be kept and expanded at other agencies. They are critical to assessing market needs early in the development cycle of the technology. This enables the technology to be develped with market needs in mind (or to be closed and the resources to be refocused to more critical areas of research if that technology is not viable for commercialization). Second, the SBIR/STTR program (which I recognize is part of the SBA and not NIST), should allow a higher percentage of the funds to by used for market assessment and market development. The SBIR/STTR funding model is too focused on technology development and not enough on market/customer development. The I-Corps program and similar programs have demonstrated that customer/market development in parallet with technology development is essential to increase the success rate of technology transfer and commercialization. |

1. What are the issues that pose systemic challenges to the effective transfer of technology, knowledge, and capabilities resulting from Federal R&D? Please consider those identified in the RFI as well as others that may have inhibited collaborations with Federal laboratories, access to other federally funded R&D, or commercialization of technologies resulting from Federal R&D?

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| I have been active in technology commercialization from federal labs and universities for several years. One of the biggest impediments to successful commercialization is the "ditch of death" that occurs before MVP's (Minimum Viable Product) or production prototypes can be made. During this time period, the company/startup needs capital to do Customer Discovery/Validation, and to iterate on their prototypes/MVP's until willing customers step forward to make a purchase. The activities in Customer Discovery/Validation require funds to preform Customer Interviews and follow up meetings to test/validate prototypes/MVP's. Many startups don't have that capital, especially startups that wish to take advantage of the SBIR/STTR programs. This occurs during both Phase I and Phase II of those programs. |

1. 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? Please consider the approaches identified in the RFI.

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| The proposed solutions are to 1) broaden the I-Corps like programs to all federal agencies and federal labs, and 2) provide critical funding to Customer Discovery/Validation activites in parallel with technology development. Within the SBIR/STTR programs, 10-15% of the allocated funding should be allowed to perform Customer Discovery activities during Phase I, and Customer Validation activities in Phase II. |

1. What are other ways to significantly improve the 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?

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| The Bayh/Dole act did much to enable commercialization of technologies generated in federal labs. The place in the development lifecycle where many technologies will die on the vine is early in the development phase, when product and market risks are high. (I have written a white paper regarding the issues and a pilot solution at Boise State University that can be accessed at https://heinonline.org/HOL/Page?handle=hein.barjournals/adisb0060&id=1006&collection=adisbcol&index=adisbcol#) This "ditch of death" occurs well before Angels and VC are willing to invest capital. A great deal of Customer Discovery and Validation activities must occur before enough traction is made and the venture is sufficiently "de-risked" in the eyes of investors to motive them to invest. Properly exercising Customer Discovery and Validation phase activities is crucial to reducing losses (unviable business models) and determining if/how techonolgies can move forward in commercialization. One impediment in performing these activities is sufficient very early stage capital for these activties. Providing capital during this crucial time span is imperative to nurture the technologies and nascent companies/teams. Such capital can be provided along a few vectors.  1) Augmenting funding of the SBIR/STTR programs in the manner describe in 3. above.  2) Provide tax incentives to investors to encourage them to take more risk early on in a technology project or tech startup  3) Allow creation of non-profit organizations that act to provide capital (some which may be tax incentived or tax free) and mentoring to project teams or companies looking to commercialize technologies. Just as certain hospitals are tax-exempt non-profits, these organizations would be repaid for capital they paid in at a liquidity event, and may retain a small % of equity in the companies they assist to provide a longer standing evergreen fund. |

## Thank you for your time and participation.