

RE: RFI Response: Federal Technology Transfer Authorities and Processes
Docket Number: 180220199-819-01

Via email: roi@nist.gov

Response to NIST Request for Information: Federal Technology Transfer Authorities and Processes

Submitted by: The DOE National Lab Technology Transfer Working Group

The Department of Energy Technology Transfer Working Group (TTWG) was established through the passage of the Energy Policy Act of 2005 by the Secretary of Energy. TTWG activities are overseen by the director of the Office of Technology Transitions. TTWG primarily includes technology transfer professionals from the national laboratories, single purpose research facilities and production facilities, and DOE/NNSA field elements. This group works together to improve the technology transfer activities of the laboratories/facilities and the department. The members promote the implementation of DOE laboratory technology transfer policy in a mutually beneficial, supportive, and non-adversarial working environment that encourages open communication, teamwork, and professional development.

TTWG works to support the technology transfer mission of the DOE system and, through efforts of its members, supports technology translation, industry engagement and entrepreneurship through many different programs and activities.

TTWG appreciates NIST seeking input from the public regarding federal technology transfer practices and is pleased to respond to the request for information. TTWG fully supports the initiative and looks forward to working further with NIST to maximize the impact of federally funded innovations to the American public.

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

Past legislation, including Bayh-Dole and Stevenson-Wydler, are essential tools in the translation of federally funded research to innovative products, processes and services for the American people. It is essential to maintain the innovation pipeline that this legislation has established, through patent ownership and licensing by universities, federal labs and other non-federal entities.

However, the global economic landscape has changed in the almost four decades since these laws were passed. It is, therefore, a good time to review these core federal technology transfer principles to determine if they should be adapted or changed in some way.

Regarding changes, TTWG recommends that the flexibility in intellectual property licensing that is enabled by the Bayh-Dole Act to Government Owned Contractor

Operated (GOCO) DOE labs should be extended to Government Owned Government Operated (GOGO) laboratories to facilitate their technology transfer efforts. This would allow GOGO labs to maximize the impact of technology developed by GOGOs through federal funding.

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

TTWG members were asked to provide comments on issues that have created barriers to the effective transfer of technology, knowledge and capabilities resulting from federal R&D. These points are summarized below.

SOFTWARE AND COPYRIGHTABLE ASSETS: Software and datasets developed with federal funding are now an extremely important output of federal research and development either alone or alongside an associated technology. Much of this work is provided to the public through open source licensing. However, the transfer of software and data to private sector partners who see a commercial opportunity in such software or data analysis is often difficult due to inconsistent and inefficient transfer mechanisms. Clear and uniform policy and procedures for the ownership, transfer and licensing of Federally funded software and datasets across all federal agencies would be extremely welcome to all stakeholders who seek to develop novel products and services based on Federally funded software and datasets.

With respect to GOGO laboratories, the ability for federal employees to assert copyright in works that they create would be welcomed. In addition, GOGO labs would also like the ability to retain any royalties received from subsequent licensing of a copyright transferred to them through assignment. At present, they are only permitted to retain royalties from inventions, i.e., non-software technologies.

PROOF OF PRINCIPLE FUNDING/TECH MATURATION FUNDING: As the innovation pipeline from federally funded research has grown, so has a significant gap between the results of federally funded research and a consumer product. In many cases, the most significant gap occurs at the very beginning of product development – when potential is clear but the value proposition of a future product cannot be clearly defined. Often, one simple step, e.g., the development of a prototype, would have a significant impact on the commercial potential of a federally funded invention by attracting investors or startup interests. However, finding private funds for such an activity is difficult due to the inherent financial risks in such early stage activities. Additionally, in many cases, the inventors of the technology are the best suited innovators to do early stage development work, but they have no source of additional funding

One solution to overcome this roadblock would be the availability of federal funding, through a formal program, to support research and development projects with recognized technology transfer potential. These awards could be made available on a competitive

basis and would allow scientists to continue work at their institutions to develop their inventions to the next stage. Such funding opportunities would be aligned, and in some cases follow on, to other federal programs that encourage entrepreneurial activities for federally funded scientists. For example, an “SBIR phase 0” program, awarded to the scientists at their home institution to develop their technology, would be a great addition to the SBIR/STTR programs.

Due to the broad science mission of the DOE national labs and the national security focus of the NNSA plants and sites, it is important that such a program be available across all scientific disciplines and not focused on more applied technologies, in contrast to recent DOE technology maturation programs that have focused on specific areas rather than the full breadth of DOE funded science and technology. In addition, it is important that such programs take into account and include opportunities for both scientific disciplines and applied technologies related to national security. The NNSA plants and sites, in addition to labs, should be invited to participate in such programs.

INCENTIVES FOR INDUSTRY ENGAGEMENT: Industry engagement is an important mission of DOE national labs. The labs would welcome incentives for the private sector to engage with them. Suggestions include a program for special R&D tax incentives to companies that engage in collaborative R&D with federal laboratories and universities. In addition, a relaxation of the stringent 1:1 match requirement for cost share agreements with industry would incentivize the private sector to collaborate with laboratories.

IMPROVING INDUSTRY ENGAGEMENT: CRADAs are an extremely effective technology transfer mechanism that should be retained and improved upon, particularly with regard to delegation of certain decisions to the lab level, for example approval of CRADA agreements under a certain threshold dollar value, and a more streamlined approval process. Industry sponsored contracts such as SPPs, which are often low risk to the lab, could be expedited with a more flexible approach to limitations on liability

Cross-agency collaboration would be facilitated if all agencies adopted standard CRADA procedures and agreements. In some cases, non-CRADA agreements, intended for cross-agency collaboration, are not acceptable to DOE labs.

ADEQUATE FUNDING FOR THE ORTA FUNCTIONS AT A LABORATORY: There are large inconsistencies in the funding levels and organizational structures in the offices charged with technology transfer, entrepreneurship and industry at DOE national labs. This leads to inconsistencies in the level of service for technology transfer functions provided at each lab.

TTWG recommends increasing the ORTA staffing levels defined by Stevenson-Wydler. Currently, labs with over 200 scientific employees are required to have only one full time technology transfer professional. For a large laboratory, this level of staffing is clearly not sufficient to provide even the most basic services. Perhaps the statutory expectation could be reframed, such as stating that there should be one technology transfer professional for every X number of scientific personnel, drawing on the combined experiences and best practices of both federal laboratories and universities.

We also recommend revision of the definition of “sufficient resources” to execute the technology transfer mission. Required technology transfer resources go beyond the ORTA staffing. Patenting budgets need to be aligned with the technologies and the realities of a global market. Researchers need to be provided with the time and the budget to participate in the patenting process. At a minimum, the definition of what should be funded should be expanded, so that laboratories have the authority to request/allocate sufficient funding. A more aggressive solution would be to establish a statutory “floor” for each laboratory/agency.

GLOBAL MARKETPLACE: Given the global nature of business, many companies are foreign owned but have manufacturing presences in the US. To transfer technology in this global marketplace, many universities have reformed their industry sponsored contracting agreements to offer multiple IP ownership or licensing options in exchange for up-front fees. The federal government could follow suit and offer ownership options to foreign companies in exchange for a fee.

FORMAL ENTREPRENEURIAL LEAVE PROGRAM: In many cases, input from the inventor and technical collaborators is necessary to ensure that a technology can be developed into a commercial reality. In these cases, the creation of a formal entrepreneurial leave program for lab employees (both federal and non-federal), with transparent conflict of interest management plans, would best position early stage technologies developed with federal funding for success.

4. 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?

US COMPETITIVENESS: Clarification of US competitiveness provisions such as “substantial manufacture in the United States” and how this requirement could be waived in relation to sponsored research and licensing activities conducted by the national labs would be extremely useful for industry collaborations. Given multinational firms and global supply chains, even US companies balk at this provision, making it an obstacle to greater commercialization activities.

MARCH IN RIGHTS: A clear statement of the purpose of the “March in Rights” provision that is easily accessible on a public website would be welcomed by the TTWG community. This would provide a definitive source of information for industry partners who request additional information on US government march in rights.

NON-FFRDC DESIGNATED SITES AND FACILITIES: DOE sites and installations that are not designated as FFRDCs face a strong disadvantage, as many opportunities are not afforded to them. For example, SBIR participation, legislation for technology transfer and entrepreneurial programs specific to FFRDCs, and some DOE programs such as the small business voucher program are only applicable to FFRDCs. Absent this support, in the case of a non-FFRDC seeking to engage a licensee or partner, there is very little that

can be done besides providing a modest amount of technical support from the inventor-scientist. This policy is counterintuitive and inhibits DOE from realizing the full impact of the technology transfer mission. The solution to the inconsistent practices would be to provide standardized, all-inclusive programs and practices across the entire DOE system.

CENTRALIZATION OF INFORMATION AND OPPORTUNITIES: The development of a centralized repository of DOE technologies, facilities and expertise would greatly enhance the ability of potential licensees and industry partners to find the correct DOE lab, facility or site to meet their needs. This would also enable the DOE community to identify and post synergistic technologies in portfolios and expertise that would better inform prospective partners.

Thank you for the opportunity to comment on this important initiative.

TTWG Executive Committee

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