

## DRAFT

# FASTER (Federal Authority for Science, Technology, Engineering and Research) Federal Labs: Leveraging Place, Talent and Technology



The federal lab system is an enormous \$50 billion-plus enterprise of internal research and development taking place in federal facilities across the United States. As other governments around the world, including China, pour billions of dollars into government labs and research parks focused on advanced technologies, it is imperative that we use all aspects of country's own innovation ecosystem in the most creative ways possible, including our federal labs.

But because federal labs have varying management systems, missions, legal authorities, and cultures, their local economic engagement and technology commercialization record varies considerably. The FASTER Federal Labs Act will allow the federal lab system to be full partners with the private sector, universities, hospitals, and regions building communities of innovation as envisioned by other Congressional initiatives, such as the *Endless Frontier Act*.

Over the years organizations have recommended incremental changes to the federal lab system, including the National Governor's Association calling on labs to improve its tech transfer record, the Aldridge National Space Commission suggesting all NASA centers be managed as FFRDCs (federally funded research and development centers) to improve economic engagement, President Obama's management directive to increase federal lab impact, the Brookings Institution recommending federal labs have local economic development missions, and several members of Congress suggesting Department of Energy Labs be given authority to create for profit tech commercialization subsidiaries.

The FASTER Federal Laboratories Act is a comprehensive approach to federal lab engagement, aligning many policy initiatives over the decades.

Since passage of the Bayh-Dole Act, research universities have created communities of innovation around their campuses through leveraging their:

- *place* (creating adjacent research parks/innovation districts/tech incubators),
- *talent* (allowing faculty to be involved with start up companies under disclosed and managed conflict of interest plans), and
- *technology* (creating affiliated intermediary organizations, such as the University of Wisconsin Research Alumni Foundation (WARF), to take on the business of technology commercialization.<sup>1</sup>



APLU Commission on Economic and Community Engagement

The FASTER Federal Labs Act will, using the university engagement strategy that has proven successful in communities across America, provide federal laboratories the authority to leverage their:

**Place:** extend Enhanced Use Lease (EUL) Authority to all federal labs to allow them to consider inviting private sector research firms, universities, community colleges and foundations to develop public/private partnerships adjacent to federal laboratory facilities, such as the Department of Energy Sandia Laboratories Research Park in New Mexico.

**Talent:** commission the National Academy of Public Administration to study best practices among public research universities in disclosing, approving, and managing conflicts of interest among researchers and work with private sector companies for consideration in adopting uniform rules by Office of Public Management (OPM) for researchers employed by the federal government to attract and retain the government's best scientists.

**Innovation:** create a Congressionally chartered federal technology commercialization Authority that would allow federal labs to create technology commercialization authorities, as outlined below. This Authority would be modeled on affiliated commercialization authorities successfully developed by universities and states.

The FASTER Federal Labs Act will not require large outlay of federal appropriations as much of the impetus of the bill is giving federal labs enhanced authority to leverage the resources they have.

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<sup>1</sup> From the Association of Public Land Grant Universities Commission on Community and Economic Engagement

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# DAY ONE PROJECT

EMPOWERING THE FEDERAL  
LABORATORY SYSTEM: THE 'FASTER'  
ACT FOR TECHNOLOGY  
COMMERCIALIZATION, ECONOMIC  
DEVELOPMENT, AND  
INTERNATIONAL COMPETITVENESS

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# March 2021



## **Summary**

The federal laboratory system is a more than \$50-billion-dollar system of research centers across the United States, with a varying set of authorities, management structures and missions. Federal labs internal research programs have an enviable record of success, producing Nobel Prize winning research and fundamental technology advances.

However, the federal lab system compared to universities has underperformed in tech transfer, private sector and community engagement due to lack of clear legislative guidance, varying authorities, and structural issues. Federal labs do not have a local economic development mission, even though in many regions they are anchor institutions and often the largest employer in a community.

With legislative and policy reforms, the federal lab system can become more attractive to new scientific talent, serve as centers of regional economic development, and help the US become more technologically competitive internationally.

## **Challenge and Opportunity**

Since the passage of the Bayh-Dole Act in 1980, research universities developed tech transfer mechanisms, research parks, innovation districts and other tools to help communities retain spin out companies, STEM graduates and other sources of innovation. Parallel growth in angel and venture financing, new biotech discoveries, and other tools helped to develop university start-up companies. Over time, policy groups including the National Governor's Association, Brookings Institution, the Association of University Research Parks (AURP), and others have called for reforms that would allow federal laboratories to be better partners in local technology development.

To spur parallel responses from federal labs, the Obama Administration on October 28, 2011 released the Presidential Memorandum—*Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses* calling on federal labs to increase technology commercialization and develop place-based partnerships, including research parks.

While the 2011 Presidential Memorandum helped to identify the issue, legislative and specific regulatory reforms did not accompany the Memorandum's release. According to a more recent report from National Institute for Standards and Technology (NIST):

*The U.S. R&D landscape has changed over the last several decades, with universities and other nonprofits accounting for a growing percentage of R&D work. Recent studies show that these organizations have been more successful than the federal government at realizing economic benefit from that investment.*

*For example, over a recent eight-year period, university and other nonprofit research was about five to seven times more likely to result in an active patent license. In addition, the economic impact per federal dollar is as much as 10 times greater when spent at a university lab versus a government laboratory. -NIST Return on Investment Report, May 1, 2018*

The former NIST director was a venture capitalist before he joined the federal government. He mentioned during a hearing that as a private businessman tried to license a technology from a federal lab and ran into so many roadblocks, he found it was easier to license similar technology from a company overseas.

Fortunately, NIST has introduced to Congress an important set of legislative and administrative reforms that would go very far in easing the pathway to license federal lab technology and meeting the objectives of the October 2011 Presidential Memorandum. These proposed reforms include providing all federal labs with increased contracting flexibility through extension of Other Transaction Authority (OTA), increasing limits on royalties for federal researcher and extension of authority to create affiliated private foundations for federal labs, among other changes.

However, some critical gaps still exist, including: i) better utilizing federal laboratory land for public private tech commercialization, ii) creating clearer pathways for federal researchers working with startup companies and retaining federal lab research talent, and iii) launching a more flexible federally chartered tech transfer organization based on models established at leading research universities.

Adding these reforms to the existing list of NIST legislative and administrative efforts should be considered to supplement those efforts for enhanced commercialization by federal laboratories. Importantly, these reforms will not require the outlay of major federal appropriations.

## **Plan of Action:**

### **Developing Place Partnerships with Universities and Private Sector: Expand Enhanced Use Lease (EUL) Authority to All Federal Laboratories:**

Currently a limited number of federal authorities have EUL Authority to lease excess land to the private sector with rent paid by the developer in the form of cash or in-kind services. EUL authority rests with the Department of Defense, with ancillary authority by NASA and a few other agencies, but no federal-wide authority.

Some EUL projects have included development of federal lab research parks, including the Falcon Hill AFB Research Park in Utah and the Moffett Field NASA Ames Research Park in California. The park includes private sector companies, universities, community colleges. STEM outreach and workforce housing.

Congress should extend permission for all federal laboratories to consider EUL partnerships, consistent with the vision of the many commentators over the years to help federal labs build public/private partnerships.

### **Reform Conflict of Interest Rules for Federal Researchers at Office of Personnel Management (OPM) Level:**

Federal employees, including federal researchers are governed by long standing government wide conflict of interest (COI) statutes as well as additional regulations at the agency and even laboratory level.

The Stevenson-Wydler Act of 1980 that encouraged federal laboratory research technology transfer requires federal laboratory directors to suggest COI changes to their appropriate authorizing committees in Congress if the conflicts could not be resolved under the lab's own authority, which has never been used.

Many observers have pointed to the lack of flexibility in federal COI rules for federal lab researchers working on technology transfer projects as a problem. Federal labs need to recruit young talent, and to compete with sectors such as universities and private sector where there is wide latitude. Entrepreneurial researchers want assurance they can be involved in entrepreneurial projects, and have ability to take entrepreneurial leave, for example.

After passage of the Bayh-Dole Act in 1980, many public universities faced similar issues with overarching state conflict of interest rules that would prevent university researchers from being involved with tech transfer projects. The state of Maryland, for example, has codified its COI rules, requiring public universities to establish their own conflict of interest regulations, to be approved by the State Office of Attorney General, and granted authority to university COI committees to accept disclosures, oversee and manage researcher conflict of interest.

Congress should commission the National Academy of Public Administration to conduct a study of best practices of public research universities, public university research foundations and state technology intermediaries to disclose, approve, and manage conflict of interest policies and procedure among public sector university researchers, to include suggested changes in Office of Personnel Management (OPM) laws and regulations to encourage the recruitment and retention of high value federal lab researchers and appropriate oversight and management of conflicts of interest involving federal researchers.

### **Develop Congressionally Chartered Technology Commercialization Authority: The FASTER (Federal Authority for Science, Technology, Entrepreneurship & Research) Act for Technology Commercialization and Economic Impact:**

Technology commercialization brings together a series of business arrangements that are not easily done through government structures, even universities. That is why many universities and states have created affiliated organizations to take on the business aspects of technology commercialization. The famous Wisconsin Alumni Research Foundation (WARF) is an example of such an organization that operates at the state level. When University of Wisconsin researchers synthesized Vitamin D, they created an independent, nonprofit corporation to manage the university's Vitamin D patents and invest the resulting revenue to support future research. Since its inception 90 years ago, WARF has provided \$2.3 billion in cumulative direct grants to the university.

The FASTER Act would be modeled on a Department of Energy federal foundation that was proposed in the 'IMPACT for Energy Foundation Act', as part of proposed bipartisan legislation in the 116<sup>th</sup> Congress but extended to all federal lab authorities. Other existing federal foundation authorities, such as the congressionally chartered Henry M. Jackson Foundation for the Advancement of Military Medicine, has a strong record of research and technology commercialization for the US Uniformed Health Services University. Because the Jackson Foundation's Congressional charter is broad and flexible, it now partners with federal laboratories across the US to improve military medicine and is one of Maryland's largest nonprofit entities with nearly half a billion dollars in annual revenue.

States have chartered independent technology intermediaries, such as the Maryland Technology Corporation (TEDCO) that have successful records in improving the technology commercialization performance of their states.

The FASTER Act would create an entity to be authorized to work with all federal laboratories, *at the discretion of fed labs*, hold patent rights as an agent for federal labs, hire experienced staff with strong backgrounds in technology commercialization from private sector venture, create technology incubators and research parks and improve the technology commercialization performance of the federal laboratory system.

### **Conclusion:**

Federal laboratories are amazing assets to the nation's competitive landscape, but with the NIST legislative reforms, coupled with these additional suggestions, the federal lab system will further attract talented scientists, help local economies grow, improve private-private partnerships and federal technology commercialization, and increase US scientific and technology competitiveness internationally.

## **Frequently Asked Questions**

### **What is included in the NIST Return on Investment Legislative Package?**

In April 2019, the National Institute of Standards and Technology (NIST) announced the release of a [Final Green Paper](#) from its Return on Investment (ROI) Initiative for Unleashing

American Innovation. This national goal aims to dramatically increase returns from the more than \$150 billion per year of U.S. federal investment in research and development.

The NIST ROI Green Paper provided a summary of private and public stakeholder inputs received from hundreds of experts and organizations representing thousands of companies, universities, federal laboratories, and other institutions.

Eight of the 15 findings noted that implementation would require revisions to the Stevenson-Wydler Technology Innovation Act of 1980, 15 U.S.C. 3710 et seq. NIST is pleased to share that the [ROI Legislative Package](#) for modernizing the Stevenson-Wydler Act has now been released to Congress for consideration.

### **What did the 2013 Obama Memorandum on Federal Technology Commercialization call for?**

Presidential Memorandum -- Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses: excerpt:

Sec. 4. Facilitate Commercialization through Local and Regional Partnerships. Agencies must take steps to enhance successful technology innovation networks by fostering increased Federal laboratory engagement with external partners, including universities, industry consortia, economic development entities, and State and local governments. Accordingly:

(a) I encourage agencies with Federal laboratories to collaborate, consistent with their missions and authorities, with external partners to share the expertise of Federal laboratories with businesses and to participate in regional technology innovation clusters that are in place across the country.

(b) I encourage agencies, where appropriate and in accordance with OMB Circular A 11, to use existing authorities, such as Enhanced Use Leasing or Facility Use Agreements, to locate applied research and business support programs, such as incubators and research parks, on or near Federal laboratories and other research facilities to further technology transfer and commercialization.

(c) I encourage agencies with Federal laboratories and other research facilities to engage in public-private partnerships in those technical areas of importance to the agency's mission with external partners to strengthen the commercialization activities in their local region.

### **What did the Stevenson-Wydler Act of 1980 say about federal lab researcher conflict of interest issues and why is it not working?**

Below is an excerpt from the Stevenson-Wydler Act of 1980 addressing conflict of interest issues. No agency as far as is known has requested overarching statutory changes to conflict-of-interest statutes since the burden of asking for changes from Congress is considerable.



*(3)(A) Any agency using the authority given it under subsection (a) shall review standards of conduct for its employees for resolving potential conflicts of interest to make sure they adequately establish guidelines for situations likely to arise through the use of this authority, including but not limited to cases where present or former employees or their partners negotiate licenses or assignments of titles to inventions or negotiate cooperative research and development agreements with federal agencies*

*(B) If, in implementing subparagraph (A), an agency is unable to resolve potential conflicts of interest within its current statutory framework, it shall propose necessary statutory changes to be forwarded to its authorizing committees in Congress.*

15 U.S.C 3710a

### **What is an example of a state reforming its conflict-of-interest laws to accommodate the unique role of public sector researchers in tech commercialization projects?**

Here is an example from the state of Maryland:

State of Maryland Conflict of Interest Procedures for Researchers at Public Universities

15–523 of the State Government Code of Maryland.

The procedures adopted by an educational institution under subsection (b)(2) of this section shall:

(1) require disclosure of any interest in or employment by or other relationship with an entity for which an exemption under this section is claimed, on a form filed with the Ethics Commission and maintained as a public record at the educational institution.

(2) require review of all disclosures by a designated official, who shall determine what further information must be disclosed and what restrictions shall be imposed by the educational institution to manage, reduce, or eliminate any actual or potential conflict of interest.

(3) include guidelines to ensure that interests and employment for which an exemption under this section is claimed do not improperly give an advantage to entities in which the interests or employment are maintained, lead to misuse of institution students or employees for the benefit of entities in which the interests or employment are maintained, or otherwise interfere with the duties and responsibilities of the exempt official or employee.

(4) require approval by the president of the educational institution of any interest or employment for which an exemption is claimed under this section; and (5) require approval by the governing board of the educational institution if an exemption is claimed by the president of the educational institution.

### **What are some examples of groups calling for reforms in federal technology commercialization?**

Policy document from Association of University Research Parks (AURP)

# THE POWER OF PLACE 2.0 THE POWER OF INNOVATION



<https://www.aurp.net/assets/documents/AURPPowerofPlace2.pdf>

Testimony on Behalf of the Maryland Life Science Advisory Board (LSAB) Task Force on Federal Laboratory Commercialization Opportunities to the National Institute for Standards and Technology (NIST) Return on Investment Initiative (ROI) June 14, 2018



[https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/REPORTS/LSAB\\_Darmody\\_Report.pdf](https://www.montgomerycountymd.gov/COUNCIL/Resources/Files/REPORTS/LSAB_Darmody_Report.pdf)

**What would the FASTER (Federal Authority for Science, Technology, Entrepreneurship and Research) Commercialization Act look like from legislative perspective? Adopted from the Department of Energy IMPACT for Energy Foundation, as proposed in 116<sup>TH</sup> Congress, but expanded to all federal laboratories:**

DRAFT LEGISLATION CREATING THE FEDERAL AUTHORITY FOR SCIENCE, TECHNOLOGY, ENTREPRENEURSHIP AND RESEARCH (FASTER) COMMERCIALIZATION

WHEREAS Federal laboratories and federal laboratory scientists are important institutions in the creation of new knowledge and technologies, but lag in research commercialization to the private sector,

WHEREAS approximately \$50 billion a year in internal research is performed by federal labs nationally,

WHEREAS Numerous commentators from across the country have urged federal reforms in helping federal laboratories improve their record of technology transfer,

WHEREAS Public research universities and states have used affiliated organizations as models to improve technology commercialization to the private sector,

WHEREAS Federal laboratories have varying statutory authorities and management structures that may inhibit working with the private sector,

WHEREAS A federally chartered non-profit organization modeled on best practices from public research universities and state governments would be a new administrative tool that could help federal laboratories improve their technology commercialization and connection to the private sector,

WHEREAS A more robust record of technology commercialization is important to help the United States remain technology leaders internationally, and increase STEM participation through federal lab partnerships,

Now Therefore, the following legislation is introduced:

A Bill for An Act Entitled: "The Federal Authority for Science, Technology, Entrepreneurship, and Research (FASTER) Commercialization Act"

#### A Bill

To Amend the Stevenson-Wylder Act to establish the Federal Laboratory Commercialization Corporation, and for other purposes:

Resolved by the U.S. Senate of the United States of America, that the following article is proposed as federal law under the jurisdiction of the United States of America, enforceable by Executive action.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that:

#### Section 1. Short Title:

This Act may be cited as "The Federal Authority for Science, Technology, Entrepreneurship and Research (FASTER) Commercialization Act.:

#### Section 2.

(1) LIMITATION. –The Federal Authority for Science, Technology, Entrepreneurship and Research (FASTER) shall not be an agency or instrumentality of the Federal Government.

(2) NONAPPLICABILITY OF FACCA. –The Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Foundation.

(3) NONPROFIT STATUS. –The Foundation shall be an organization described in section 501(c) 21 of the Internal Revenue Code of 1986 and exempt from taxation under section 501(a) of that Code.

(4) BOARD OF DIRECTORS. – (A) IN GENERAL. –The Foundation shall operate under a board of directors.

(B) INITIAL APPOINTMENT. –The initial 2 appointment of the board of directors shall be 3 facilitated by the National Institute for Standards and Technology and Office of Science and Technology Policy (OSTP).

(C) COMPOSITION. –To the maximum extent practicable, the board of directors shall include representatives from a diverse range of communities, including– (i) the academic community; (ii) the business community; (iii) nonprofit organizations; (iv) the communities surrounding federal laboratories and facilities, and (v) the technology transfer and commercialization community.

(D) RESTRICTION ON MEMBERSHIP. –No employee of any federal agency shall be appointed as a member of the board of directors

b) PURPOSE; ACTIVITIES. –

(1) PURPOSE. –The purpose of the Foundation is to channel private sector investments that support efforts to create, develop, and commercialize innovative technologies that address technology challenges by methods that include–

(A) fostering collaboration and partnerships with researchers from the Federal Government, State governments, institutions of higher education, federally funded research and development centers, industry, and nonprofit organizations for the research, development, or commercialization of technologies.

(B) leveraging technologies by supporting new product development that supports regional economic development; and

(C) administering prize competitions to accelerate private sector competition and investment.

SEC. 4. ESTABLISHMENT OF FOR-PROFIT SUBSIDIARIES. (a) ESTABLISHMENT. –The Foundation may establish 1 or more for-profit subsidiaries, including an impact investment fund–

(1) to stimulate economic development activities relating to the purpose of the Foundation described in section 3(b)(1);

and

(2) to attract for-profit investment partners for technology translation and commercialization activities.

(b) AUTHORITIES OF THE FOR-PROFIT SUBSIDIARY. – (1) IN GENERAL. –Subject to paragraph (2), a for-profit subsidiary established under subsection (a) may–

(A) enter into a partnership with an economic development corporation, including an incubator, accelerator, or small business investment company;

(B) pay for the cost of building and administering a facility, including a microlab or incubator or research park, to support the activities of the Foundation described in section 3(b)(2); and

(C) provide funding to a startup.

2 COST RECOVERY REQUIREMENTS. –A for profit subsidiary established under subsection (a) shall–

(A) ensure that the Foundation owns any intellectual property rights generated through activities funded by the for-profit subsidiary, if appropriate; and

(B) own an equity stake in any startup invested in by the for-profit subsidiary.

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## President’s Commission on US Space Exploration Policy



### Aldridge NASA Commission

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#### *Recommendation 3-3 :*

The Commission recommends that NASA Centers be reconfigured as Federally Funded Research and Development Centers to **enable innovation** , to work effectively with the private sector, and to **stimulate economic development** . The Commission recognizes that certain specific functions should remain under federal management within a reconfigured Center.



# Governors Policy Position

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07/20/2005

## National Research, Development, and Technology Policy

### 4.7 Improve the Technology Transfer Performance of Federal Laboratories

Governors recognize that small businesses and the related investment capital industry have been the source of most technological innovation and all of the job growth during the past 25 years. *Federal laboratories spend \$25 billion annually in research and development but under perform in terms of technology transfer*. State-sponsored technology transfer programs have successfully transferred research and development into commercial activity.

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## About the Authors



Brian Darmody is CEO of the Association of University Research Parks (AURP), a global nonprofit representing research parks and innovation districts sponsored by universities, federal laboratories, hospital systems and communities. Previously he served in many roles at the University of Maryland, College Park, including Associate Vice President for Research and Economic Development and Assistant to the President for State and Federal Government Affairs. He serves on the Maryland Venture Authority Board among other board positions.



Rich Bendis President and CEO of BioHealth Innovation, Inc. Mr. Bendis is the Founder, President and CEO of BioHealth Innovation, Inc. He is a successful entrepreneur, corporate executive, angel investor, investment banker, innovation and technology-based economic development leader, international speaker and consultant in the technology and healthcare industries. He currently serves as the founding President and CEO of Innovation America (IA), a national public-private partnership focused on accelerating the growth of innovation economy in America. Mr. Bendis serves on Governor Hogan's Life Science Advisory Board. He was voted one of the Top 5 Speakers on innovation and creativity, voted 4th best Innovation Blogger, a 2017 most influential Marylander award and a 2017 Maryland innovator of the year award. Mr. Bendis is also the host of the BioTalk podcast series.