Entrepreneurial and Innovation Ecosystems in the United States

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It has a budget greater than one hundred forty-one billion dollars ($141.0B) per year for research.

Its institutions consist of 14 research entities spanning all scientific disciplines, covering the entirety of the Research and Development (R&D) continuum from basic research to applied science.

It operates in each of the 50 States.

It has Nobel Prize winners among its scientists and it has funded prize-winning research. A large majority of its senior scientists are fellows in their respective scientific disciplines.

https://www.nist.gov/nist-and-nobel
Preliminary federal obligations for research & development, FY 2019

38.5% Intramural (including FFRDCs); 61.5% Extramural (Dollars in millions)

NSF Survey of Federal Funds for Research and Development
Federal Government and Innovation

Federal Tech-based Economic Drivers
- 14 Research Agencies
- Scientific expertise
- Facilities
- Technologies

Federal Support-Resources
- MEP
- NSF I-Corps
- FLC

Federal Funds
- SBA-SBIR/STTR
- MBDA
- Grants
- Challenges
- EDA
- Loan guarantees
Federal Agency R&D View (with external partners)

Research Collaboration
- Academic
- Industry
- PPP
- Foundations/Non-profits
- Consortia

Complimentary Assets
- Econ Dev Organizations
- Incubators
- Accelerators
- Investors

Federal Assets
- Scientists-Support
- Technologies
- Research Capacity
- Facilities
- TT professionals

Extramural Funds
- Agreements
- Grants
- Contracts
## Federal Labs as Innovation Ecosystem Drivers

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<tbody>
<tr>
<td>CRADAs, total active in FY</td>
<td>8,307</td>
<td>9,461</td>
<td>9,875</td>
<td>9,845</td>
<td>11,644</td>
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<td>New inventions disclosed in FY</td>
<td>5,347</td>
<td>5,339</td>
<td>5,106</td>
<td>4,826</td>
<td>5,086</td>
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<td>Patent applications filed in FY</td>
<td>2,576</td>
<td>2,579</td>
<td>2,694</td>
<td>2,481</td>
<td>2,596</td>
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<td>Patents issued in FY</td>
<td>2,325</td>
<td>2,049</td>
<td>2,215</td>
<td>2,185</td>
<td>2,341</td>
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<tr>
<td>Licenses, total active in FY</td>
<td>3,893</td>
<td>3,774</td>
<td>3,997</td>
<td>4,123</td>
<td>4,156</td>
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<td>New, executed in FY</td>
<td>501</td>
<td>436</td>
<td>383</td>
<td>567</td>
<td>572</td>
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<tr>
<td>Income from Licenses ($$M)</td>
<td>$167</td>
<td>$185</td>
<td>$194</td>
<td>$203</td>
<td>$179</td>
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Federal Labs as Innovation Ecosystem Drivers

Over 300 laboratory facilities

Over 2600 user facilities

Nearly 19,500 technologies available for licensing from Federal Labs

FLC Business
https://federallabs.org/flcbusiness/search
Entrepreneurial Ecosystems

• ETIWG formed in 2019
• Entrepreneurial Training Portal
• NSF I-Corps
• Agency-based programs (e.g., N-STEP)
• FedTech

Innovation Ecosystems

• NIST MINT and Boulder Ecosystem Efforts
• Lab-to-Market Prize Competition
• State/Regional Networks (MD Department of Commerce, MCEDC, TEDCO)
• Technology Collaboratives Pilots
NIST Partners Overlap with NIST Facilities

Data from NIST Economic Analysis Briefs 9 (CRADAs) and 10 (Licensees)
https://www.nist.gov/tpo/economic-analysis-briefs
Pending National Legislation

• **NIST Return on Investment Legislative Package**
  • 10 proposals to modernize the Stevenson-Wydler Technology Innovation Act of 1980 – copyright in federal software, expanded tech transfer authorities, increased protection for CRADA information

• **Securing American Leadership in Science and Technology Act**
  • Proposes revisions to the S-W Act, modernizes STEM workforce, requires STTR agencies to provide grants for innovative technology transfer approaches for commercializing federally funded R&D

• **Endless Frontier Act**
  • NSF -> NSTF, establishes new technology directorate, creates University Technology Centers to advance directorate technology areas, expands Regional Innovation Programs and creates 10-15 new Regional Innovation Hubs in coordination with MEP centers or advanced manufacturing institutes

• **Innovation Centers Acceleration Act**
  • Creates cabinet-level committee to select and fund 9 new innovation centers across the country

• **America LEADS Act**
  • Proposes to address technology and economic issues related to competition with China, authorizes a NASEM study on US manufacturing requirements in technology transfer, directs the Secretary of Commerce to develop government-wide policies to strengthen US manufacturing requirements and requires MEP to be consulted in the waiver process
Thank you!