TABLE 8-5

Examples of federal policies and programs supporting early-stage technology development and innovation

(Summary of program goals and activities for selected federal agencies)

Agency, office, and program
Department of Agriculture
Under Secretary for Research, Education, and Economics
Agricultural Research Service (ARS)
Program name: Agricultural Research Partnerships (ARP) Network
Program goals: The ARS founded the ARP Network to expand the impact of ARS research and provide resources to help ARS commercial partners grow.
Program activities: The ARP Network matches business needs with ARS innovations and research capabilities and provides business assistance services to help companies and startups solve agricultural problems, develop products, and create new jobs. The ARP Network assists ARS in creating new partnerships and in supporting existing partnerships to advance ARS R&D efforts and subsequent utilization, including commercialization. Some of the ARP Network activities include matching industry needs with ARS patents and researchers for partnering; providing access to ARS research expertise, facilities, and equipment; and assisting in identifying sources of funding. The ARP Network is composed of organizations interested in agriculture-based economic development.
Department of Defense
Department wide
Program name: Manufacturing Technology (ManTech) Program
Program goals: The Defense-Wide ManTech Program was established to address crosscutting, game-changing initiatives that are beyond the scope of any one military department or defense agency.
Program activities: ManTech seeks to address defense manufacturing needs, transition manufacturing R&D processes into production applications, attack manufacturing issues, and explore new opportunities.
Department of Health and Human Services
National Institutes of Health (NIH)
National Center for Advancing Translational Sciences
Program name: Therapeutics for Rare and Neglected Diseases (TRND)
Program goals: The TRND program supports pre-clinical development of therapeutic candidates intended to treat rare or neglected disorders, with the goal of enabling an Investigational New Drug (IND) application to the Food and Drug Administration.
Program activities: The TRND program encourages and speeds the development of new treatments for diseases with high unmet medical needs. The program advances the entire field of therapeutic development by encouraging scientific and technological innovations to improve success rates in the crucial preclinical stage of development. TRND stimulates therapeutic development research collaborations among NIH and academic scientists, nonprofit organizations, and pharmaceutical and biotechnology companies working on rare and neglected illnesses. The program provides NIH's rare and neglected disease drug development capabilities, expertise, clinical resources, and regulatory expertise to research partners to optimize promising therapeutics and move them through preclinical testing, with the goal to generate sufficient-quality data to support successful IND applications and first-in-human studies in limited circumstances.
Department of Transportation
Federal Highway Administration
Office of Innovative Program Delivery
Program name: State Transportation Innovation Council (STIC) Incentive Program
Program goals: The STIC Incentive Program offers technical assistance and resources to support the standardization of innovative practices among state transportation agencies and other public-sector stakeholders.
Program activities: The STIC Incentive Program provides up to $100,000 per state per federal fiscal year to STICs to support or offset the costs of standardizing innovative practices in a state transportation agency or other public-sector STIC stakeholder. STIC Incentive Program funding may be used to conduct internal assessments; build capacity; develop guidance, standards, and specifications; implement system process changes; organize peer exchanges; offset implementation costs; or conduct other activities the STIC identifies to address Technology and Innovation Deployment Program goals.
National Aeronautics and Space Administration (NASA)
Human Exploration and Operations Mission Directorate
Advanced Exploration Systems Division
Program name: Next Space Technologies for Exploration Partnerships (NextSTEP)
Program goals: The NextSTEP program is a public-private partnership model that encourages commercial development of deep space exploration capabilities to support more extensive human spaceflight missions in the proving ground around and beyond cislunar space—the space near Earth that extends just beyond the moon.
Program activities: NextSTEP stimulates the commercial space industry to help NASA achieve its strategic goals and objectives for expanding the frontiers of knowledge, capability, and opportunities in space. The NextSTEP partnership model provides an opportunity for NASA and industry to partner to develop capabilities that meet NASA human space exploration objectives while also supporting industry commercialization plans. Through these public-private partnerships, NextSTEP partners provide advanced concept studies and technology development projects in the areas of advanced propulsion, habitation systems, and small satellites.

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Examples of federal policies and programs supporting early-stage technology development and innovation

(Summary of program goals and activities for selected federal agencies)

Agency, office, and program
National Science Foundation (NSF)
Directorate for Engineering
Division of Industrial Innovation and Partnerships
Program name: Innovation Corps (I-Corps™) program (NSF, NIH, the Department of Defense, the Department of Energy, and the U.S. Department of Agriculture all have I-Corps programs.)
Program goals: The I-Corps program aims to foster entrepreneurship that will lead to the commercialization of technology that has been supported previously by NSF-funded research. The program provides entrepreneurial education for federally funded scientists and engineers, pairing them with business mentors for an intensive curriculum focused on discovering a demand-driven path from their lab work to a marketable product.
Program activities: There are three distinct components of I-Corps: Teams, Nodes, and Sites. I-Corps Teams include NSF-funded researchers who will receive additional support—in the form of mentoring and funding—to accelerate innovation that can attract subsequent third-party funding. Nodes serve as hubs for education, infrastructure, and research that engage academic scientists and engineers in innovation; they also deliver the I-Corps Curriculum to I-Corps Teams. I-Corps Sites are academic institutions that catalyze the engagement of multiple, local teams in technology transition and strengthen local innovation.

Note(s)

The table summarizes examples of policy and program information collected during the spring and fall of 2017 from federal staff for a selected set of U.S. agencies with major R&D and technology development activities. The table reflects agency responses. For a more comprehensive list of federal policies and programs see Table S8-61.

Source(s)

National Center for Science and Engineering Statistics, National Science Foundation; SRI International, special tabulations of federal program information (2017). See Table S8-61.

Science and Engineering Indicators