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Comparison of State-Funded Technology Maturation Programs

Prepared for Government Relations (Org. 160) by Systems Analysis and Decision Support (Org. 150)

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Abstract

This study examines the structure and impact of state-funded technology maturation programs that leverage research institutions for economic development throughout the United States. The lessons learned and practices identified from previous experiences will inform Sandia National Laboratories' Government Relations and Technology Partnerships teams as they participate in near-term discussions about the proposed Technology Readiness Gross Receipts Tax Credit and Program, and continue to shape longer-term program and partnership opportunities.

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Nomenclature

ACA	Arkansas Code of 1987 Annotated
AI	Advanced Industries
ASTA	Arkansas Science & Technology Authority
BEST	Built Environment and Sustainable Technologies
BFTDA	Ben Franklin Technology Development Authority
BIO	Biotechnology
BRC	Board Review Committee
BYU	Brigham Young University
CA	California
CAC	Commercialization Advisory Council
CEO	Chief Executive Officer
CIF	Cybersecurity Investment Fund
CIT	Center for Innovative Technology
CPE	Council on Postsecondary Education
CRCF	Commonwealth Research Commercialization Fund
DCED	Department of Community and Economic Development
DED	Department of Economic Development
DEED	Department of Employment and Economic Development
DOE	Department of Energy
EDC	Economic Development Committee
EPSCoR	Experimental Program to Stimulate Competitive Research
ESCR	Early-Stage Capital and Retention
FAST	Small Business Administration FAST project
FDA	Federal Drug Administration
FTE	Full Time Employee
FY	Fiscal Year
GOED	Governor's Office of Economic Development
IDOC	Idaho Department of Commerce
IGEM	Idaho Global Entrepreneurial Mission
IP	Intellectual Property
IRLEE	Institute for Research on Labor, Employment and the Economy
ITIF	International Technology and Innovation Foundation
KEF	Kentucky Enterprise Fund
KRS	Kentucky Revised Statutes
KSTC	Kentucky Science and Technology Corporation
KY	Kentucky
LA	Louisiana
LANL	Los Alamos National Laboratory
LOI	Letter of Intent
LSDF	Life Sciences Discovery Fund
MassCEC	Massachusetts Clean Energy Center

MBRCT	Montana Board of Research and Commercialization Technology
MCRN	Corporate Relations Network
MD	Maryland
MEDC	Michigan Economic Development Corporation
MII	Maryland Innovation Initiative
MN	Minnesota
MO	Missouri
MTC	Missouri Technology Corporation
MTI	Maine Technology Institute
MTTC	Massachusetts Technology Transfer Center
ND	North Dakota
NE	Nebraska
NH	New Hampshire
NHIRC	New Hampshire Innovation Research Center
NIF	Nebraska Innovation Fund
NMSBA	New Mexico Small Business Assistance
NMTM	New Mexico Technology Maturation Program
OARS	Oklahoma Applied Research Support
OCAST	Oklahoma Center for the Advancement of Science and Technology
OEDIT	Office of Economic Development and International Trade
ONAMI	Oregon Nanoscience and Microtechnologies Institute
OR	Oregon
ORNL	Oak Ridge National Laboratories
OSTRaD	Oklahoma Science & Technology Research & Development
PA	Pennsylvania
PI	Principal Investigator
POC	Proof of Concept
PSP	Private Sector Partner
RevV!	Tennessee Manufacturing Innovation Program
RFP	Request for Proposal
RIF	Rural Innovation Fund
ROI	Return on Investment
RS	Regular Session
RTIAC	Research and Technology Investment Advisory Committee
SBA	Small Business Administration
SBIR	Small Business Innovation Research
SCIP/TCA	Small Company Innovation Program/Technology and Commercialization Assistance
SOW	Statement of Work
STTR	Small Business Technology Transfer
TCF	Technology Commercialization Fund
TCIP	Technology Commercialization & Innovation Program
TDP	Technology Development Program

TEDCO	Technology and Economic Development Corporation
TIO	Technology Investment Office
TN	Tennessee
TRGR	Technology Readiness Gross Receipts Tax Credit and Program
TRL	Technology Readiness Level
TVP	Technology Validation Program
UMD	University of Maryland
UofU	University of Utah
US	United States
USTAR	Utah Science Technology and Research initiative
USU	University State Utah
UT	University of Tennessee
UW	University of Wisconsin
VC	Venture Capital
VEDP	Virginia Economic Development Partnership
WA	Washington
WEDC	Wisconsin Economic Development Corporation

1 Introduction

The transfer of technology to the private sector from national laboratories is a critical piece of the U.S. Department of Energy's mission to ensure America's security and prosperity (U.S. Congress 2005; Chu 2011). As with many federally-funded research institutions, the research at New Mexico's national labs is too immature to be used in commercial products without additional investments by companies, which hinders technology transfer from the labs to the private sector (Sandia National Laboratories 2013; Andes et al 2014).

In 2013, Sandia National Laboratories (Sandia) and Los Alamos National Laboratory (LANL) began to discuss the proposed Technology Readiness Gross Receipts (TRGR)Tax Credit and Program with key leaders in New Mexico's Department of Taxation and Revenue, Department of Economic Development, Office of the Governor and State Legislature.[1] The TRGR program is modeled after the successful New Mexico Small Business Assistance (NMSBA) program. This program would provide New Mexico businesses that license technology from a New Mexico national laboratory with services from researchers and facilities at the labs. This effort would assist these businesses to mature their licensed technology towards commercialization (New Mexico State Senate 2016; Sandia National Laboratories 2016).[2]

In conversations about the proposed TRGR program, state policy makers frequently asked what other states were doing to leverage local research institutions for local economic development. This study addresses that question by examining the structure and impact of state-funded technology maturation programs throughout the United States designed to leverage research institutions for state economic development. The research team identified relevant programs from across all states and analyzed program documents to understand previous experiences.

This study found that half of U.S. states are funding or have recently funded at least one program designed to mature technologies from locally-based research institutions for state economic development. These efforts are relatively young, as a large majority of the identified programs are under a decade old. This study examines the eligibility rules, funding criteria, and attributes of these programs to identify common practices that states use when structuring these programs. This study found that best practices cannot be established rigorously because impact data are often unavailable (especially with newer programs), lack rigor, or are aggregated across many different programs. However, practices in these programs have evolved and reflect the lessons learned over time by program administrators, so they should serve as an approximation of best practices.

[1] At the time, the proposed program was known as the New Mexico Technology Maturation (NMTM) Program
[2] Appendix 1 provides an overview of the proposed TRGR program

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2 Data and Methodology

This study compares the structure and impact of 39 state-funded technology maturation programs operating in 25 different states (Table 1).

Table 1. State-Funded Technology Maturation Programs by State

State	Program(s)
Arkansas	Technology Development Program (TDP)
Colorado	Advanced Industries Accelerator Programs • Proof of Concept (POC) Program • Early-Stage Capital and Retention (ESCR) Program
Idaho	Idaho Global Entrepreneurial Mission (IGEM) – Commerce Grant
Kentucky	• R&D Excellence Program – Emerging Technologies Award • Kentucky Commercialization Fund • Rural Innovation Fund • Kentucky Enterprise Fund
Louisiana	Technology Commercialization Credit and Jobs Program
Maine	Maine Seed Grant
Maryland	TEDCO Gap Funds • Maryland Innovation Initiative (MII) • Technology Commercialization Fund (TCF) • Cybersecurity Investment Fund (CIF) • Technology Validation Program (TVP)
Massachusetts	Catalyst Program Awards
Michigan	• University Commercialization Fund • Small Company Innovation Program Technology and Commercialization Assistance
Minnesota	Innovation Voucher Program
Missouri	Missouri TechLaunch
Montana	Montana Research & Commercialization Projects
Nebraska	• Nebraska Research & Development Grant Program • Nebraska Innovation Fund – Pre-seed Stage
New Hampshire	Granite State Technology Innovation Grant
North Dakota	Research ND Fund • Research ND Awards and BIO Awards • Research ND Venture Grant Awards
Oklahoma	Oklahoma Applied Research Support (OARS)
Oregon	• ONAMI – Launch Funding • ONAMI – Gap Funding • Oregon Best – Early Stage Investments
Pennsylvania	University Research Commercialization Grant
Rhode Island	Innovation Vouchers
South Dakota	Proof of Concept Fund
Tennessee	RevV! Tennessee Manufacturing Innovation Program
Utah	Technology Commercialization and Innovation Program
Virginia	Commonwealth Research Commercialization Fund (CRCF) • Commercialization Fund • Matching Fund
Washington	Life Sciences Discovery Fund • Proof-of-Concept Grant • Matching Grant
Wisconsin	Ideadvance Seed Fund

The study team identified these programs through a structured search process that considered three classes of sources. First, the team researched state government websites, particularly those of tax and revenue and economic development departments.[3] Second, the team queried internet search engines for the state name along with terms like "technology maturation" and "proof of concept." Finally, the team search through the C2ER State Business Incentives Database[4], which maintains records of many types of economic development programs.

States operate many types of economic development programs. For this study, the study team was interested in identifying programs with similar goals and methods as the proposed TRGR program. Therefore, programs were only considered if they were state funded, focused on technology maturation/commercialization, and were structured to leverage state research institutions for state economic development. Categories of programs excluded from this analysis include: angel investor tax credits, Research and Development (R&D) tax credits, Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Support, Business Competitions, and public university technology transfer programs.

The study team collected data for each of the 39 identified programs by gathering documents and web pages related to the programs and using those sources to answer the questions in the template in Table 2. In several instances, the information available online was not sufficient to answer the questions, in which case the study team emailed partially answered questions to the program contact listed on the website to request assistance in filling the gaps. Of the 39 templates sent, the study team received email or phone correspondence from program representatives who provided additional information on 20 programs. No attempt was made in this phase of the study to interview program leaders, or representatives from research institutions or private sector companies involved in the program. Appendix 2 provides a full set of the data gathered on each program.

Table 2. Data Collection Categories and Questions

Category	Questions
Dates of Operation	When was the program created? Is it still active?
Goal/Purpose	What is the goal/purpose of the program?
Managing Entities	What agency/organization manages the program?
Funding Source	How is the program funded?
Funding Type	What type of funding is provided to awardees (e.g., grant, loan, tax credit)?
Program Funding	How much money is typically dispersed annually?
Project Funding	How much money is dispersed per project?
Match Requirement	Is there a match requirement for recipients? Are in-kind matches accepted?
Applicant Eligibility	Who is eligible to apply for funding?
Award Limits	Beyond project funding caps, is there a limit to how many awards an applicant may receive in a given year or over the lifetime of the company or program?
Project Eligibility	What are allowable uses of project funds?
Priority Clusters	Are projects restricted to a set of state priority sectors/clusters?
Project Timeframe	Once selected, how long are awardees given to complete their projects?
Clawback Provisions	Are there repayment consequences if an awardee leaves the state or fails to achieve certain milestones?

[3] The U.S. Economic Development Administration maintains a useful database of potentially relevant departments (https://www.eda.gov/resources/).

[4] C2ER State Business Incentives Database (http://www.stateincentives.org/)

Category	Questions
Funding Cycles	Over the course of a year, how often are proposals solicited and reviewed?
Review Committee	Who reviews proposals and selects awardees? Does the committee include external members from the private sector or research communities?
Selection Criteria	What are the criteria used to review and select awardees?
Funding Disbursement	How and when is funding disbursed to awardees (e.g., up front, at the completion of key milestones, as reimbursement)?
Evaluation Metrics	What are the metrics used to evaluate the projects and program
Evaluation Timing	When are projects evaluated? (e.g. project report plus annual survey up to five years post funding)
Program Impact	What impact has the program had on state economic development?
Policy	What legislation created this program? What statute guides program implementation?

After data were collected for each of the relevant programs, the study team conducted a comparative analysis of the structure and impact of state-funded technology maturation programs (Section 3). The data are most amenable to structural comparisons that identify the range of program rules and attributes. The study team could not identify rigorously best practices by comparing the impact data to understand which structural components create stronger impacts. Impact data from new programs (29 of these 39 programs are less than 10 years old) were often not available and impact data from different programs were highly variable and impossible to compare.

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3 Comparative Analysis

3.1 Managing Entities

Of the 39 programs reviewed for this study, 18 are managed by a state agency, 17 are managed by state-funded, non-profit entities, three are managed by a university entity and just one, the RevV! Tennessee Manufacturing Innovation Program, is managed by a national lab (Figure 1).

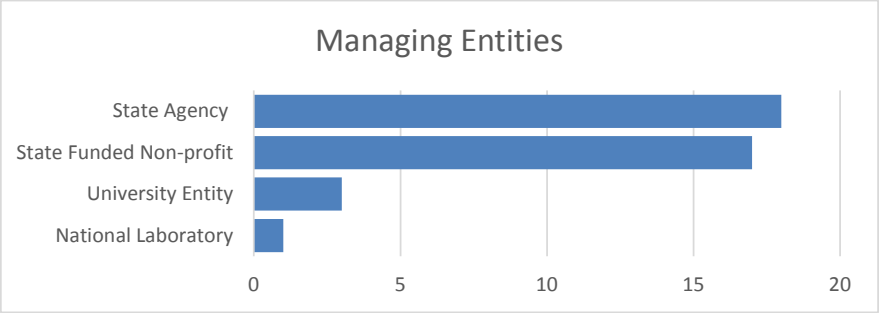

Figure 1. Managing Entities by Type

3.2 Funding

Analysis of the 39 programs found that 25 of the programs offered grants, or funding distributed to recipients with no expectation of repayment overtime (Figure 2). Eight of these 25 grant programs operate as voucher programs where private companies apply for money to be spent on their behalf by a research institution. Four programs offer recipients investment funding, which require a repayment of interest or equity, and nine programs offer a combination of grants and investments. One program offers recipients a tax credit for technology transfer activities.

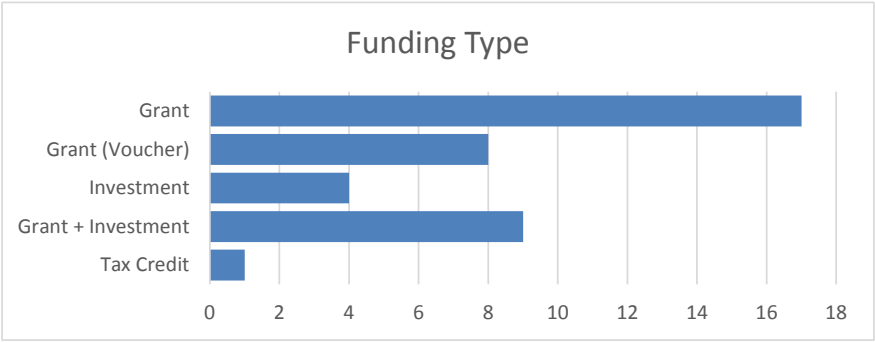

Figure 2. Type of Funding Provided by Programs

Annual program funding ranges from $200K to $10.5M per year, while program funding for the eight voucher programs ranges from $300K to $5M (Figure 3). Annual project funding ranges from $25K to $1M per year, while project funding for the eight voucher programs ranges from $40K to $1M (Figure 4).

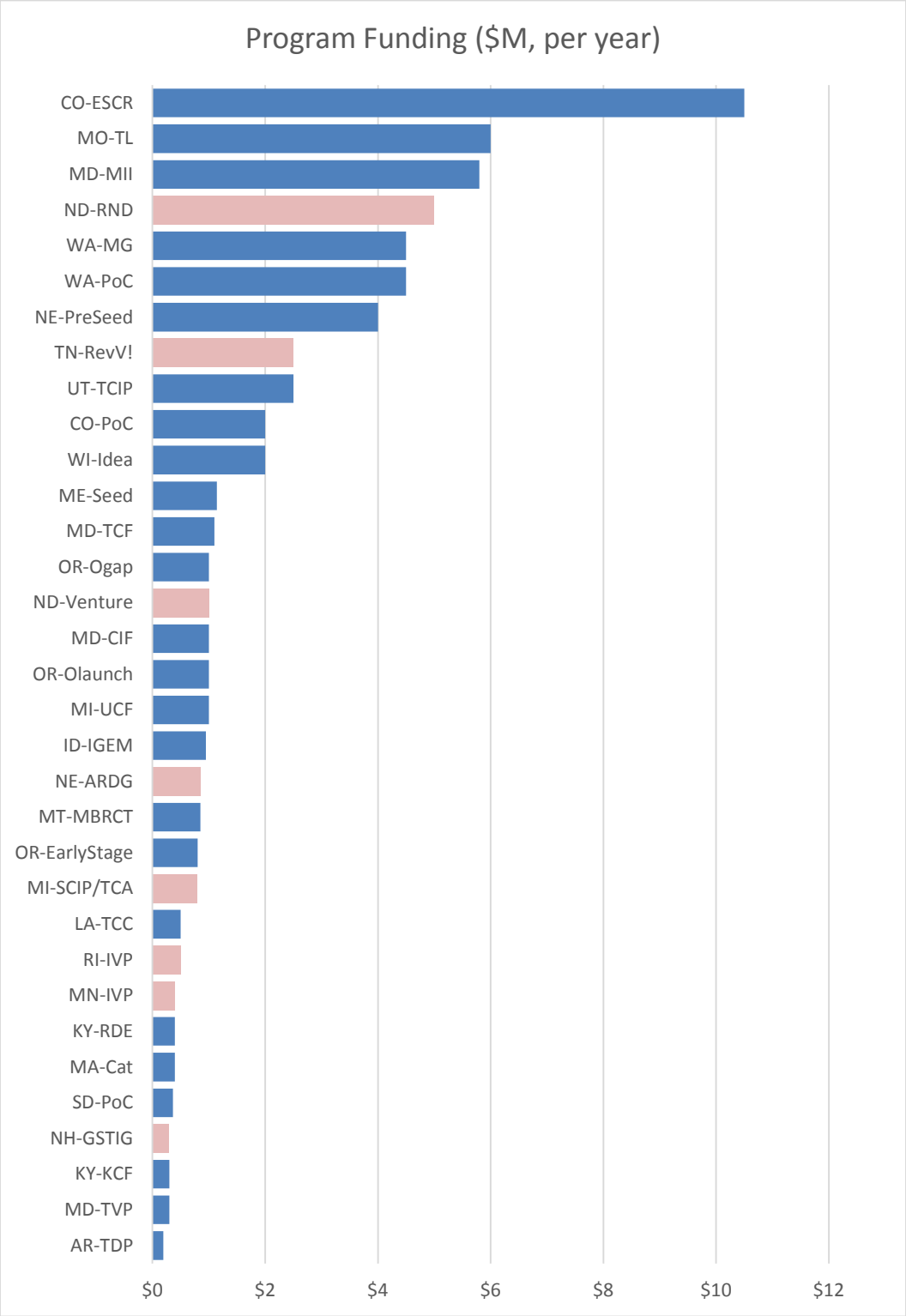

Figure 3. Annual Program Funding (Voucher Programs in Red)

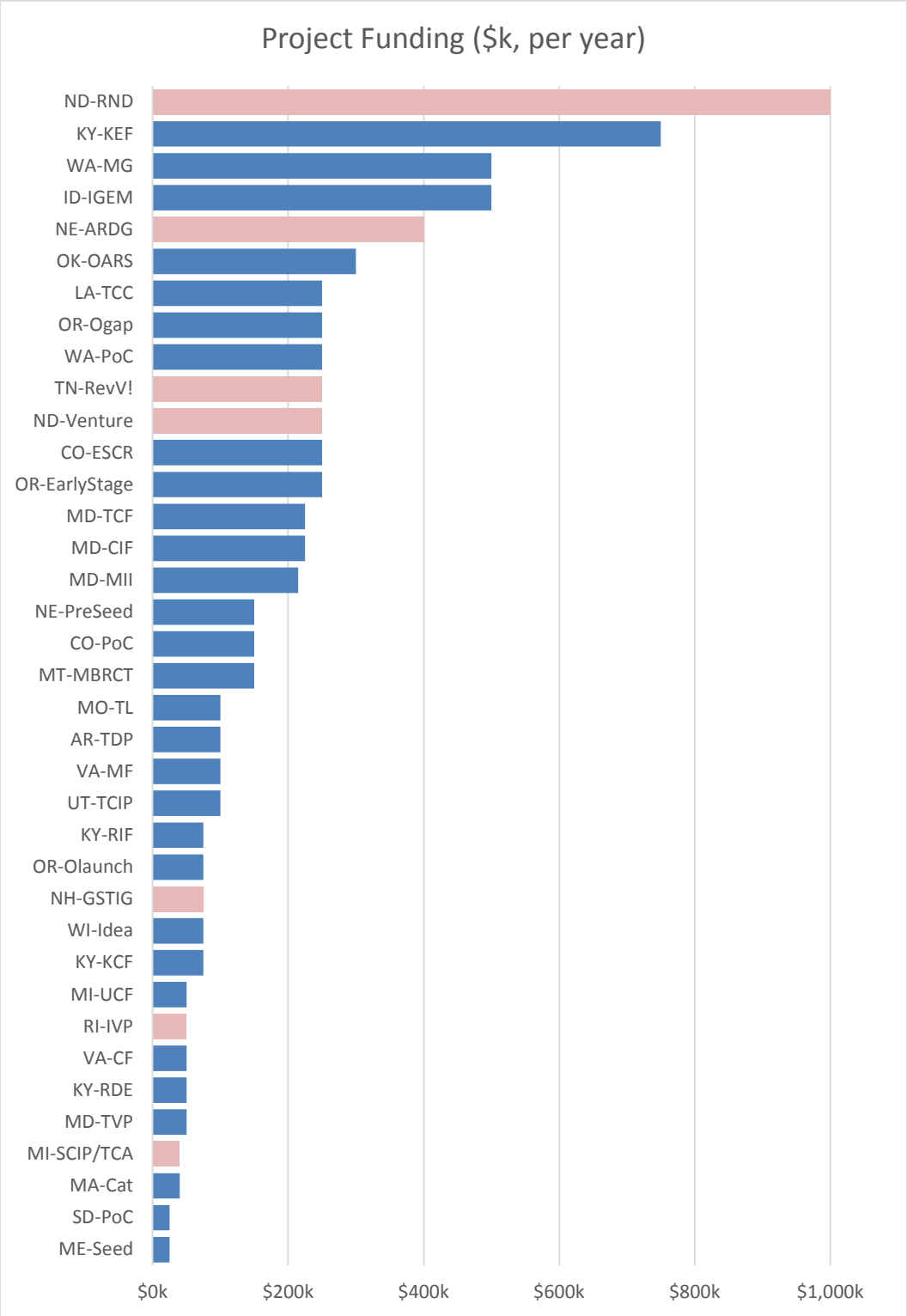

Figure 4. Annual Project Funding (Voucher Programs in Red)

3.3 Applicant Eligibility

Of the 39 programs reviewed, 14 accept applications only from private companies, 9 accept applications from only research institutions and 16 accept applications from either private companies or research institutions (Figure 5).

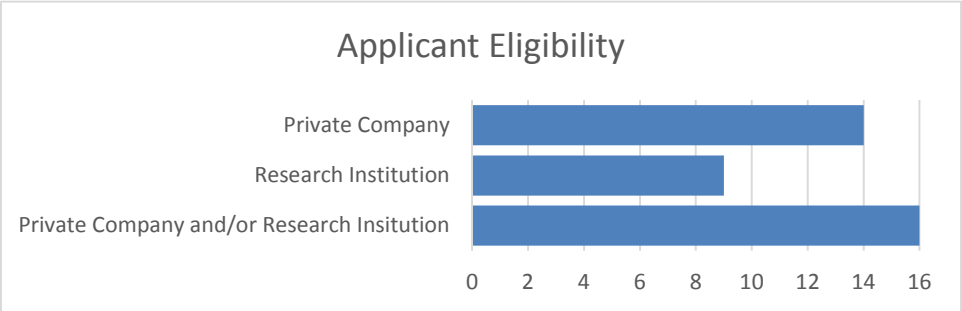

Figure 5. Applicant Eligibility by Type

Of the 30 programs that accept private company applicants, 26 require the company to be located in-state at the time of application, while 4 programs permit applications from companies that committed to locating in the state but currently residing elsewhere. The criteria for what qualifies as an in-state company varies from program to program. Some states requiring a company's headquarters to be located in the state or at least 50% of the employees to be located in-state, while other states merely require a company to show it has "significant business operations" in the state to be eligible for the technology incentive program.

Of the 30 programs that accept private company applicants, 22 are specifically focused on small businesses, while 8 have no size limitations attached to company eligibility. The criteria for what qualifies as a small business varies by program and often include limits on the number of employees or the amount of revenue or investment a company has achieved. Among those programs restricted to small businesses, employee caps range from 4-500 employees, revenue caps range from $50K to $10 million, and investment caps range from $500K to $2 million.

3.4 Project Eligibility and Priority Clusters

The definition of what qualifies as an eligible project varies by program, but common terms used to describe allowable activities include prototype, proof-of-concept, technical validation, applied research, testing and development.

Of the 39 programs, 20 are focused on priority research and economic development fields identified by the state. 11 of those 20 accept projects related to a set of state priority areas (e.g., bioscience, optics and advanced manufacturing), while 9 are tailored to a single focus area (e.g., cybersecurity).

3.5 Assurance Mechanisms

States have introduced a wide range of mechanisms to ensure that public funding is being used wisely and for its intended purpose, including tranched funding, award limits, sunset clauses, diverse review committees, match requirements, and clawback provisions.

Tranched funding, or funding that is disbursed upon the completion of specified milestones, is used by many programs to ensure recipient accountability.

Award limits are used to make sure that state funds are used to help launch, but not sustain, technology companies. Of the 39 programs analyzed, 25 set award limits beyond project funding caps. Eleven of these limits specify that applicants are eligible for only one award per technology.

Matching fund requirements are used in many programs to ensure that the company or research institution is also invested in the technology maturation process. Of the 39 programs, 22 require some type of formal match (Figure 6). Thirteen of these programs require a 1:1 match where the private company or research institution matches every dollar the state invests in in commercialization. Five of the programs require a match that is less that 1:1, (where the applicant contributes, but invests less than the state). 2 programs require the applicant to invest more than the state and 2 require a match but set no specific ratio.

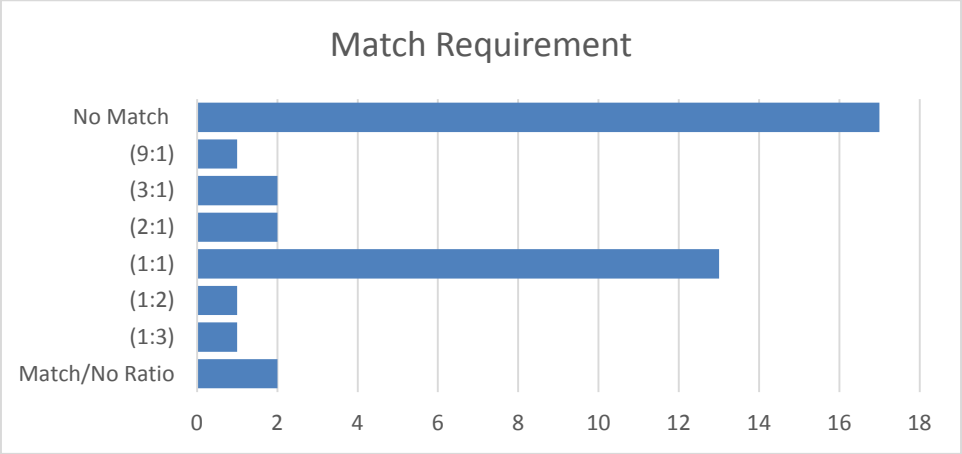

Figure 6. Match Requirements by Level (Program Funding: Recipient Funding)

Of the 30 programs that accept private company applicants, only 9 include a clawback mechanism requiring repayment if the company leaves the state. Only one of the voucher programs, the Nebraska Academic Research and Development Grant Program, includes a clawback provision for recipients.

3.6 Selection Process

The selection process varies from program to program. Of the 39 programs analyzed, 8 hold one funding cycler per year, 11 hold between 2 and 4, 13 accept applications on a rolling basis, 1 varies funding cycles based on available funding and 6 did not specify the frequency of applicant calls or awards (Figure 7).

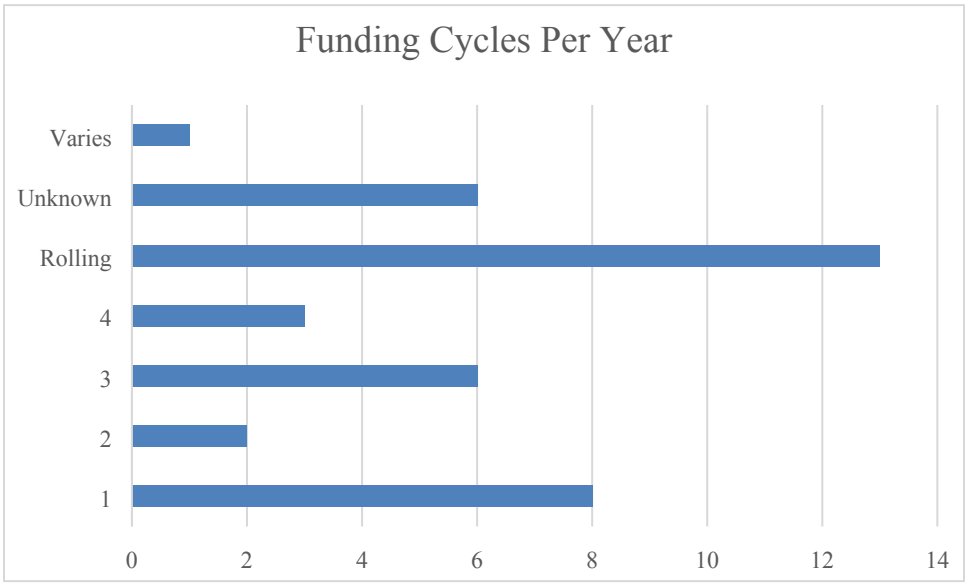

Figure 7. Funding Cycles Per Year

Once received, applications are generally reviewed by a selection committee. Of the 39 programs analyzed, 25 use a combination of internal and external experts to review applications and select awardees. Nearly all of the program ensure that both technical and economic development expertise are present on the review committee.

The specific selection criteria also varies by program (see Appendix 2), but nearly all of the programs use selection criteria that assess both the technical merit and commercial and economic development potential of the proposal.

3.7 Metrics and Evaluation

Most programs require project leads to submit interim and final reports. Several require award recipients to report on impact metrics for up to 5 years after the completion of the work. Specific metrics vary by program, but most programs assess program success based on:

- number of technologies matured
- number of businesses assisted
- amount of assistance disbursed
- number of jobs created or retained and mean salary
- amount of follow-on investments
- increase in company revenue
- increase in state tax revenue
- investment in state goods/services

3.8 Economic Impact

Data on the state economic impact of technology commercialization programs is highly variable. Several of the programs indicate significant returns in terms of follow-on investments, job creation and retention, tax revenue and overall economic impact. The variability of impact data makes it difficult to rigorously analyze the impact of program structure on economic impact.

4 Conclusion

This study found that half of U.S. states are funding or have recently funded at least one program designed to mature technologies from locally-based research institutions for state economic development. These efforts are relatively young, as a large majority of the identified programs are under a decade old. This study examines the eligibility rules, funding criteria, and attributes of these programs to identify common practices that states use when structuring these programs. This study found that best practices cannot be established rigorously because impact data are often unavailable (especially with newer programs), lack rigor, or are aggregated across many different programs. However, practices in these programs have evolved, reflect the lessons learned over time by program administrators, and can serve as an approximation of best practices. Further research, including interviews with representatives from the states' government, research institutions and private companies, could be used to identify and analyze the causal factors affecting program impact.

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Appendix 1. Overview of Proposed Technology Readiness Gross Receipts Tax Credit and Program (TRGR)

OVERVIEW

Background

New Mexico is home to a rich network of technology resources, which include national laboratories, universities and colleges, innovative companies, and entrepreneurs. Increasing the collaboration, capacity and competitiveness of these assets can help to drive growth in New Mexico's economy.

The transfer of technology to the private sector from national laboratories is a critical piece of the U.S. Department of Energy's mission to contribute to national economic security. Due to the nature of research at New Mexico's national labs, technology transfer is often difficult because the technology developed by the labs is too immature to be used in commercial products without additional investments by companies.

Modeled after the successful New Mexico Small Business Assistance (NMSBA) program and Tax Credit, the Technology Readiness Gross Receipts (TRGR) Tax Credit and program provides New Mexico businesses that license technology from a New Mexico national lab an opportunity to utilize researchers and facilities at the national labs to mature their licensed technology towards commercialization.

Purpose

The purpose of the TRGR tax credit is to:

- Enable collaboration between national laboratories, research institutions, and industry on technology maturation
- Promote the commercialization of licensed technology from a national lab in New Mexico
- Support the development and expansion of technology-based companies in New Mexico
- Increase economic development in New Mexico

Eligibility

- ***National Laboratory Eligibility*:** To be eligible to receive the technology readiness gross receipts tax credit, tax paying national labs (i.e., LANL and Sandia) must establish a coordinated technology readiness assistance program that will assist New Mexico businesses in advancing licensed technologies towards commercialization.
- ***Business Eligibility:*** To be eligible for technology readiness assistance a business must (a) be registered to do business in New Mexico, and (b) license a technology from a participating national lab (i.e., LANL or Sandia).
- ***Project Eligibility:*** To be considered for technology readiness assistance an eligible New Mexico business must propose a scope of work that advances the technology closer to a commercialization milestone such as market introduction, expanded sales, or customer

acquisition. Such work may include prototyping, proof-of-concept, field demonstrations, technical validation, and applied research, testing and development, among other activities.

Program and Project Funding

- ***Program Funding*:** The proposed tax credit will provide the national labs with a maximum annual aggregate of five million dollars ($5,000,000) per year.
- ***Project Funding*:** Businesses applying for technology readiness assistance may receive up to two hundred and fifty thousand dollars ($250,000) of assistance from the national lab (or university contractor) per year.

Application and Selection

Businesses will submit a formal application for technology readiness assistance to the program office at either LANL or Sandia. Applications will be reviewed by a team of internal experts at the two labs, as well as external experts representing the market and investment community. Applications will be evaluated based on technical merit, commercial viability, and potential economic impact.

Evaluation

Program impact will be evaluated by a third party and reported annually to the NM Tax and Revenue Department, the Economic Development Department and appropriate legislative interim committees.

FREQUENTLY ASKED QUESTIONS

Are there existing technology readiness funding programs in other states which may serve as models?

- Yes. While it should be noted that the NMSBA model (i.e., state tax credit to enable national lab work with private sector companies) is fairly unique, the study team examined gap funding programs across the country and identified 39 relevant programs in 25 states.

Who actually receives the technology readiness gross receipts tax credit?

- The national labs receive the technology readiness gross receipts tax credit, not to exceed $5 million, or $2.5 million per laboratory, per year.
- NM businesses receive technology readiness assistance from the national labs (or contracted universities) worth up to $250,000.

What is the role of NM universities in this program?

- New Mexico universities may contract with the national labs to provide technology readiness services to NM businesses that have licensed a technology from the national labs.

Are businesses required to provide a cost-share or matching funds to receive technology readiness assistance?

- The technology license from a national laboratory serves as a cost-sharing mechanism.

Can a business utilize both the technology readiness program and the New Mexico Small Business Assistance (NMSBA) program?

- A small business cannot utilize both the technology readiness program and the NMSBA program in the same taxable year, but they are eligible to access assistance from both programs in separate taxable years.

Is the technology readiness assistance limited to small businesses?

- No. Any company registered to do business in New Mexico is eligible to apply for technology readiness assistance.

How will we know if the program is successful?

- Program impact will be evaluated by a third party and reported annually to the NM Economic Development Department, the NM Tax and Revenue Department, and appropriate NM legislative interim committees.
- The annual report will include:
    - A summary of program results;
    - A description of projects that received technology readiness assistance;
    - Results of surveys of businesses to which technology readiness is provided;
    - The total amount of the technology readiness gross receipts tax credits claimed for the year; and
    - An economic impact study of jobs created, jobs retained, cost savings, and increased sales generated by the businesses for which technology readiness assistance is provided.

Why is the tax credit scheduled to expire in 2028?

The ten-year sunset clause is included to give the legislature an opportunity to review the cost and benefits of the technology readiness assistance program and decide if tax credit should be renewed.

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Appendix 2. Overview of Programs by State

A2.1. Arkansas

Technology Development Program

Dates of Operation	1993 - present
Goal/Purpose	Assist in commercializing new technology-based products and processes through technology development activities
Managing Entities	Arkansas Economic Development Commission; Arkansas Science & Technology Authority (ASTA)
Funding Source	State of Arkansas
Funding Type	Grant/Investment
Program Funding	$194,696 (FY16)
Project Funding	Up to $100,000
Match Requirement	No match is required. However, the ASTA is authorized to collect royalties from sales generated from the developed technology. The royalty agreement may range from zero to five percent of net sales and shall not extend for more than ten years.
Applicant Eligibility	One or more innovators representing any source of innovation in this state, including, but not limited to, Arkansas-based inventors, small businesses, colleges or universities, and federal laboratories.
Award Limits	One award per technology. Companies may receive investments in multiple technologies.
Project Eligibility	The evolution of innovative products and processes through the following stages: The laboratory/workshop stage of development, usually before a working prototype is developed, during which evaluation and protection of the idea are paramount and a market application is identified; The workshop/early startup stage of development during which the production and testing of a working prototype are paramount; and the late startup/scale up stage of development during which limited production and market testing of products are paramount.
Priority Clusters	No
Project Timeframe	No set timeframe
Clawback Provisions	The investment agreement requires the awardee to stay in the state during the term of the 10-year investment.
Funding Cycles	Applications are accepted on a rolling basis.
Review Committee	Projects will be evaluated by the ASTA which may request the assistance of representatives from academia, private industry, and/or the public sector.
Selection Criteria	Technical feasibility; production feasibility; commercial feasibility; economic potential; patentability
Funding Disbursement	Funds will be disbursed by the Authority only after the Board of Directors adopts a resolution authorizing an award to the applicant.
Evaluation Metrics	Key metrics include jobs created and salaries
Evaluation Timing	Quarterly
Program Impact	"The program appears to be instrumental in creating high-tech companies in Arkansas"
Policy	Sections 15-3-101 through 15-3-306 of the Arkansas Code of 1987 Annotated (ACA).

Sources: Arkansas Science and Technology website; ASTA Annual Report; Email correspondence with program representative

A2.2. Colorado
Proof of Concept Program

Dates of Operation	2013 - present
Goal/Purpose	Support the commercialization of locally-developed Intellectual Property (IP) and inventions to grow the Colorado economy
Managing Entities	Colorado Office of Economic Development and International Trade (OEDIT)
Funding Source	State of Colorado
Funding Type	Grant
Program Funding	$2.8M awarded in FY13-14; $2.1M awarded in FY14-15;
Project Funding	$150,000 over Phase 1 and 2, with Phase 2 capped at $25,000 (Projects that focus on technologies that cut across multiple Advanced Industries [AIs] and include multiple research institutions may qualify for funding in excess of $150k)
Match Requirement	3 (state) to 1 (institution)
Applicant Eligibility	Research Institutions located and operating in CO including: public or private, nonprofit institution of higher education or teaching hospital; Federal Laboratory; Private Technology and Research Center; Private, nonprofit medical and research center
Award Limits	One project per technology
Project Eligibility	Phase 1: Pre-commercial Research (Proof of Principle; Intellectual Property Protection, Prototypes and Technical Validation); Phase 2: Commercialization Preparation (Market Assessment, Start-Up and Corporate Formation Costs)
Priority Clusters	Advanced manufacturing, aerospace, bioscience, electronics, energy and natural resources, infrastructure engineering, and technology and information
Project Timeframe	Phase 1: 24 months for non-bioscience projects and 36 months for bioscience projects; Phase 2: 3 months
Clawback Provisions	If a technology supported by the Proof of Concept (POC) program award is licensed to an organization NOT commercializing, developing, manufacturing, or producing products or services based on the technology in Colorado, the research institution shall reimburse the Advanced Industries (AI) Grant program by payment of a sum equal to 20% of any gross licensing revenue resulting from such a license each year until the AI program is reimbursed for the full amount of the award.
Funding Cycles	Three per year
Review Committee	Economic Development Committee (EDC) consultation; OEDIT compliance review; AI committee review; Strategic oversight board approval
Selection Criteria	Preference given to those projects that: Include impacts across more than one AI; Involve more than one research institution; Involve a research institution and an AI company; Originate from a nonprofit research institution
Funding Disbursement	95% of the award is advanced to the research institution with the final 5% delivered upon submission of the final report
Evaluation Metrics	Economic growth (net new jobs, new start-ups, new products or services, AI exports); Leveraged funds (Fed, Private, and Institution); Innovation (Number of ideas, Number of patents or IP advancements, Return on Investment (ROI)/Follow-on capital); Productivity (value of grants, value of growth projections, value of start-ups, average new revenues); Viability (number of start-ups and early stage companies in 1,2, and 5 years)
Evaluation Timing	Projects evaluated annually for 5 years; A legislative report is submitted annually
Program Impact	56 companies funded with $7.6M
Policy	Advanced Industries Accelerator Act. Senate Bill 14-011

Source: Colorado Office of Economic Development and International Trade website; Email correspondence with program representative

Colorado - Early Stage Capital and Retention (ESCR) Program

Dates of Operation	2013 - present
Goal/Purpose	Enhance the commercialization of advanced industry products or services in Colorado
Managing Entities	Colorado Office of Economic Development and International Trade (OEDIT)
Funding Source	State of Colorado
Funding Type	Grant
Program Funding	$14.1M in FY13-14; $10.5M in FY14-15
Project Funding	$250k (Projects that focus on technologies that cut across multiple AIs may qualify for funding in excess of $250k)
Match Requirement	1 (state) to 2 (private)
Applicant Eligibility	Private, for-profit companies with: Headquarters in or with at least 50% of employees based in Colorado; Less than $10M in annual revenues; Less than $20M raised from investors
Award Limits	One award per product/technology
Project Eligibility	Product development in preparation for a product launch; Advancement of a product or technology to achieve a commercial milestone: Model refinement (e.g., Engineering Prototype, Strategic Marketing Plan, Strategic Business Plan), Market introduction (e.g., Pre-Production Prototype, Market Validation, Business Start-Up), Commercial activity (e.g., Production, Sales and Distribution, Business Growth)
Priority Clusters	Advanced manufacturing, aerospace, bioscience, electronics, energy and natural resources, infrastructure engineering, and technology and information
Project Timeframe	12-24 months for non-bioscience projects and 36 months for bioscience projects
Clawback Provisions	In the event that a company supported by an ESCR Program award relocates or moves outside of the state within 24 months of the conclusion of the grant, the company shall be obligated to reimburse the AI Grant Program for the full amount of the award, over a payback period of no more than 60 months
Funding Cycles	Three cycles per year
Review Committee	EDC consultation; OEDIT compliance review; AI committee review; Strategic oversight board approval
Selection Criteria	Preference given to a company that is: Developing technology or R&D that impacts more than one advanced industry; Developing technology licensed from a Research Institution operating in CO; Participated/ing in an entrepreneurship program or engaged with an incubator/accelerator program; Referred by a Venture Capital (VC)/Angel investor group that has prepared a written analysis that the subject technology has commercial potential but is too early for their investment criteria
Funding Disbursement	Award payments are made in phases: 10% is advanced at the time of contract execution, 5% is held for the final report and the interim amount is reimbursed
Evaluation Metrics	Economic growth (net new jobs, new start-ups, new products or services, AI exports); Leveraged funds (Fed, Private, and Institution); Innovation (Number of ideas, Number of patents or IP advancements, ROI/Follow-on capital); Productivity (value of grants, value of growth projections, value of start-ups, average new revenues); Viability (number of start-ups and early stage companies in 1,2, and 5 years).
Evaluation Timing	Projects are evaluated annually for 5 years in September; A legislative report is submitted each year in November.
Program Impact	84 companies funded with $17.3M
Policy	Advanced Industries Accelerator Act. Senate Bill 14-011

Source: Colorado Office of Economic Development and International Trade website; Email correspondence with program representative

A2.3. Idaho

Idaho Global Entrepreneurial Mission (IGEM) – Commerce Grant

Dates of Operation	2012 - present
Goal/Purpose	Fund research grants between university and industry partnerships geared toward commercialization initiatives
Managing Entities	Idaho Department of Commerce under the direction of the IGEM Council
Funding Source	State of Idaho
Funding Type	Grant
Program Funding	$1 Million
Project Funding	No set cap. Recent awards range from $50,000 to $500,000.
Match Requirement	No set ratio, though a cash or in-kind investment from the industry partner is expected
Applicant Eligibility	Boise State University, Idaho State University and the University of Idaho. The university must be partnered with a business (preferably an Idaho business) to conduct research with the intent of propelling a product or concept toward commercialization.
Award Limits	Not specified
Project Eligibility	IGEM-Commerce funds costs associated with conducting research necessary for propelling a product or concept toward commercialization. Costs include research time, supplies, expert time (regulatory compliance guidance and expertise). In some cases, equipment can be funded. IGEM-Commerce will not fund research conducted outside of Idaho; Research conducted at a private Idaho university; religious research; political research; or government research
Priority Clusters	No
Project Timeframe	Generally, 1 year, though the council will consider projects up to two years in duration
Clawback Provisions	None specified
Funding Cycles	Applications are accepted on a rolling basis with intermittent submission dates three times a year in May, September and February.
Review Committee	The IGEM Council, a 12-member body appointed by the Governor, determines which applications will receive IGEM funding
Selection Criteria	Applicants are asked to describe: Key competitive advantages; Impact on university's core competency; Financial investment from each industry partner; Additional funding received; Additional research relationships that could be created through the IGEM grant; Market size; Plans to grow the project in Idaho; Estimated revenue that could generated, or potential jobs that could be created in 5-10 years; Strategic milestones already achieved; Three or more milestones that can be achieved w/grant funds; Strategic overview on how technology will be commercialized in the 12-24 months
Funding Disbursement	IGEM funds are distributed directly to the Eligible recipient (e.g., Boise State University, Idaho State University or the University of Idaho.) By Idaho code, payment cannot be paid to the industry partner or business
Evaluation Metrics	# of projects funded; total $ disbursed
Evaluation Timing	Not specified
Program Impact	In FY2014, 4 of 20 applications were funded, totaling $972,411
Policy	House Bill 546, 2012

Sources: 2015 Idaho Global Entrepreneurial Mission Annual Report; Idaho Global Entrepreneurial Mission website

A2.4. Kentucky
R&D Excellence Program - Emerging Technologies Award

Dates of Operation	2000 - present; First awards in 2001
Goal/Purpose	Achieve excellence in science and engineering in Kentucky, through innovation and technology development in existing and emerging areas or research, by making proactive investments through a peer-reviewed competitive selection process
Managing Entities	Kentucky Science and Engineering Foundation (The Foundation is administered by the Kentucky Science and Technology Corporation under a contract with the Council on Postsecondary Education)
Funding Source	State of Kentucky
Funding Type	Grant
Program Funding	Up to $400,000 (2016)
Project Funding	$20,000 to $50,000 per year; Maximum of $100,000 over two years
Match Requirement	None required, but may be considered in selection decision
Applicant Eligibility	Kentucky universities, colleges, and for-profit organizations may be eligible to apply
Award Limits	Only open to Principal Investigators (PIs) with no active R&D Excellence awards and/or less than three R&D Excellence awards in the past five years
Project Eligibility	Existing and emerging areas of research leading to innovation and technology development
Priority Clusters	Bioscience, Environmental and Energy Technologies, Human Health & Development; Information Technologies and Communications, Materials Science, and Advanced Manufacturing
Project Timeframe	12 months
Clawback Provisions	Awards above $25,000 to for-profit organizations require a payback upon achieving some financial milestones
Funding Cycles	Applications are accepted on a rolling basis
Review Committee	Peer-review system involving national and international subject matter experts
Selection Criteria	Selection based on: Rationale; Scientific of professional merit; Innovativeness; Qualifications and past record of investing; Facilities and equipment
Funding Disbursement	Reimbursement
Evaluation Metrics	# of awardees; Follow-on funding; New businesses; Publications; Students trained by awardees
Evaluation Timing	Semi-annual tech status report; Annually/final technical report; Post award report (up to five years)
Program Impact	Not specified
Policy	KRS 154.12-320

Sources: Kentucky Science & Engineering Foundation website; Kentucky Council of Postsecondary Education 2007 Report; Kentucky Science & Technology Corporation Annual Report.

Kentucky Commercialization Fund

Dates of Operation	2000 - present; First awards in 2001
Goal/Purpose	Provide seed funds to faculty members of Kentucky's universities for commercializing products, processes, or services through work undertaken at a Kentucky university
Managing Entities	Kentucky Science and Engineering Foundation (The Foundation is administered by the Kentucky Science and Technology Corporation under a contract with the Council on Postsecondary Education)
Funding Source	State of Kentucky
Funding Type	Grant
Program Funding	$300,000
Project Funding	Up to $75,000 over one year
Match Requirement	No
Applicant Eligibility	Kentucky Universities and Colleges
Award Limits	Maximum of $150,000 over two years
Project Eligibility	Testing, scale-up and validation of a ready-to-commercialize technology prototype or an identifiable product
Priority Clusters	Bioscience, Environmental and Energy Technologies, Human Health & Development; Information Technologies and Communications, Materials Science, and Advanced Manufacturing
Project Timeframe	12-24 months
Clawback Provisions	If licensed, the university pays back 2X the amount of the award
Funding Cycles	Not specified
Review Committee	Full proposal reviewed by peer review panel
Selection Criteria	Market potential, technical feasibility, technical significance, commercial viability, positive economic benefit and/or employment in KY, competitive with other proposals
Funding Disbursement	Not specified
Evaluation Metrics	Not specified
Evaluation Timing	Annual economic impact measured for up to five years following the completion of the funded project
Program Impact	Not specified
Policy	KRS 164.6035 and 164.6037

Sources: Kentucky Science & Engineering Foundation website; Kentucky Council of Postsecondary Education 2004 Report; Kentucky Business Incentives Overview.

Kentucky Enterprise Fund

Dates of Operation	2002 - present
Goal/Purpose	Stimulate private investment in Kentucky-based technology and/or innovation-driven companies; Accelerate knowledge transfer and technological innovation, improve economic competitiveness, and spur economic growth in Kentucky based companies; Support feasibility, concept development, and commercialization activities that have clear potential to lead to scalable, platform-based, commercially successful products, processes, or services within a reasonable period of time
Managing Entities	Kentucky Science and Technology Corporation (KSTC) administers these funds under contract with the Council on Postsecondary Education (CPE)
Funding Source	State of Kentucky
Funding Type	Grant/Investment
Program Funding	$4.5M (2007)
Project Funding	Grants: Up to $30,000 for companies exploring the feasibility of technology commercialization. Investments: Up to $750,000 – Funds will be invested as part of a qualified round of financing. KSTC's investment must be matched, at a minimum, 1:1 by qualified private investment i.e., private investors.
Match Requirement	Companies must provide a 1:1 dollar match for the grant and the investment. Matching for the grant may come from cash or in-kind sources.
Applicant Eligibility	High growth, early-stage companies developing and commercializing a technology product, process, or service with potential to raise private capital. Small or medium size businesses (150 or fewer employees). Companies with principal place of business in KY or at least fifty percent (50%) of its property and payroll located in KY.
Award Limits	Total Rural Innovation Fund (RIF) and Kentucky Enterprise Fund (KEF) grants and investments may not exceed $780,000 per company
Project Eligibility	Funds may be used to support commercialization activities including, but not limited to: Development of a prototype; Proof of concept work or product testing; Commercial development work; Product launch; Business expansion; Filing for intellectual property protection; Other operational expenses as needed. Funds may not be used for construction, retail, or real estate projects.
Priority Clusters	Biosciences; Environmental and Energy Technologies; Human Health and Development; Information Technology and Communications; Materials Science and Advanced Manufacturing
Project Timeframe	Not specified
Clawback Provisions	Specified in funding agreement
Funding Cycles	Applications accepted on a rolling basis
Review Committee	Internal and External reviewers
Selection Criteria	KSTC will support companies that are likely to: Raise private capital; Produce a measurable result and be technically sound; Lead to innovative technology or new knowledge; Produce scalable, commercially successful products, processes, or services within a reasonable period of time; Show significant potential for stimulating innovation-driven economic growth and a reasonable probability to enhance employment opportunities within the Commonwealth; Make best efforts to partner with a college or university.
Funding Disbursement	Companies receive lump-sum payments according to the terms specified in the funding agreement
Evaluation Metrics	Not specified
Evaluation Timing	Annual reports with monitoring up to 10-12 years following the initial investment
Program Impact	Not specified
Policy	KRS 164.6019 and 164.6021
Dates of Operation	2002 - present

Sources: 2007 KSTC Annual Report on Kentucky Enterprise Fund; Startup Kentucky website

Kentucky - Rural Innovation Fund

Dates of Operation	2000 - present
Goal/Purpose	Enable small, rural Kentucky-based firms to undertake research and development, and entrepreneurial innovation work in partnership with postsecondary institutions in the Commonwealth; Accelerate knowledge transfer and technological innovation that improve economic competitiveness and spur economic growth in rural, Kentucky-based, small companies; Support entrepreneurial activities that have clear potential to lead to commercially successful products, processes, or services within a reasonable period of time; Stimulate growth-oriented enterprises within the Commonwealth; Encourage partnerships and collaborative projects between private enterprises, Kentucky's postsecondary institutions, research organizations, and the Small Business Development Center Network in Kentucky
Managing Entities	Kentucky Science and Technology Corporation administers these funds under contract with the Council on Postsecondary Education (CPE)
Funding Source	State of Kentucky
Funding Type	Grant/Investment
Program Funding	Not specified
Project Funding	Level 1 (12 months): up to $25,000 in a one-year period to hire consultants, university partners and other entities; Level 2 (24 months): up to $100,000 over two years
Match Requirement	Companies must match the Level 2 investment 1:1
Applicant Eligibility	High growth, early-stage companies developing and commercializing a technology product, process, or service with potential to raise private capital; Small businesses (50 or fewer employees); Business with principal place of business in Kentucky or at least fifty percent (50%) of its property and payroll located in Kentucky; Business that is located in rural area of the state (e.g., outside of Fayette or Jefferson County)
Award Limits	Total RIF grants and investments must not exceed $100,000. Total RIF and KEF grants and investments may not exceed $780,000 per company
Project Eligibility	Research, development, entrepreneurial innovations
Priority Clusters	Bioscience, Environmental and Energy Technologies, Human Health & Development; Information Technologies and Communications, Materials Science, and Advanced Manufacturing
Project Timeframe	Level 1: 12 months; Level 2: 24 months
Clawback Provisions	Payback provisions are specified in the negotiated funding agreement
Funding Cycles	Applications are accepted on a rolling basis
Review Committee	KSTC will perform an independent review with input from outside experts
Selection Criteria	Produce a measurable result and be technically sound; Lead to innovative technology or new knowledge; Lead to commercially successful products, processes, or services within a reasonable period of time; or show significant potential for stimulating economic growth and a reasonable probability to enhance employment opportunities within rural Kentucky
Funding Disbursement	Funding disbursed by KSTC according to the grant and/or investment agreements
Evaluation Metrics	# of new jobs created since funding; funds raised since initial funding; accrual based financials
Evaluation Timing	Companies are required to submit regular project progress reports
Program Impact	Not specified
Policy	KRS 164.6027 and 164.6029, KRS 164.6031 (5)(a)

Sources: Startup Kentucky website; 2007 KSTC Annual Report on Kentucky Enterprise Fund; 2013 Rural Innovation Fund Guidelines.

A2.5. Louisiana
Technology Commercialization Credit and Jobs Program

Dates of Operation	2003 - present
Goal/Purpose	To induce companies purchasing the rights to commercialize technology produced at a LA university to locate and grow their businesses in Louisiana; To expand the economy of the state by enlarging its base of technology and research-based businesses; To enlarge the number of quality jobs available to an educated workforce; To retain the presence of young people educated in Louisiana colleges and universities; To attract and retain the finest research faculty to Louisiana universities
Managing Entities	Department of Economic Development
Funding Source	State of Louisiana
Funding Type	Tax Credit
Program Funding	Approved commercial costs $0.5M; Total tax credits certified $0.2M (2015)
Project Funding	Up to $250,000
Match Requirement	No
Applicant Eligibility	Individuals or businesses that invest in the commercialization of Louisiana technology in Louisiana. To qualify for a technology commercialization credit for five tax years, all of the following qualifications shall be required by each applicant: The investment in commercialization costs; An agreement with a Louisiana regionally accredited college, technical school, university or research company to commercialize or research a technology; To qualify for a technology commercialization credit for five additional tax years immediately succeeding the first five years, the applicant shall demonstrate that it will continue to increase the number of jobs of the applicant in Louisiana (and continue to meet the first two criteria)
Award Limits	Maximum of 10 consecutive years of tax credit to one business
Project Eligibility	Investment in commercialization costs; An agreement with a Louisiana regionally accredited college, technical school, university or research company to commercialize or research a technology
Priority Clusters	None specified
Project Timeframe	Tax credit claimed on an annual basis with eligibility for up to 10 consecutive years of tax credit
Clawback Provisions	No
Funding Cycles	Eligibility applications are accepted year-round and due by December 31 of the year the company is seeking tax credits
Review Committee	Louisiana Economic Development Review panel
Selection Criteria	Investment in commercialization costs; Agreement with a Louisiana regionally accredited college, technical school, university or research company to commercialize or research a technology
Funding Disbursement	Application is presented to the Louisiana Economic Development review panel; Notification of the decision will be sent via email; LA Department of revenue is notified of the eligibility; Company submits Technology commercialization application for credits and fee
Evaluation Metrics	# of companies with certified credits; Total # of credits disbursed; # of technologies commercialized
Evaluation Timing	Not specified
Program Impact	Not specified
Policy	RS 51:2351; Title 13, Chapter 27, Section 2701

Source: Louisiana Economic Development/Technology Commercialization Credit and Jobs Program website

A2.6. Maine
Maine Seed Grant

Dates of Operation	2011 (Maine Technology Institute [MTI] created in 1999; Seed Grant Program revised in 2011)
Goal/Purpose	Support entrepreneurs/companies who are engaging in Research and Development activities leading to commercialization or follow-on funding. Stimulate the commercialization of a new innovative product, process or service.
Managing Entities	Maine Technology Institute
Funding Source	State of Maine
Funding Type	Grant
Program Funding	In 2015 MTI funded 51 of 91 applications, representing $1,144,000 (matched by $1.6)
Project Funding	Up to $25,000 per project
Match Requirement	1:1
Applicant Eligibility	Maine entrepreneurs, Maine-based companies and non-profit research institutions and universities with operations in the state of Maine requesting funds to develop, transfer and advance technologies into the commercial market. Any size Maine-based company may submit an application. Awardees must have a significant base of operations in Maine prior to signing their MTI Grant Agreement.
Award Limits	The total of all Seed Grant awards granted for projects related to the development of any one technology (product, process or service) shall not exceed $50,000 per organization or principal investigator. The total of all Seed Grant awards shall not exceed $50,000 in a 24-month period per organization or principal investigator
Project Eligibility	Specific projects leading to the commercialization of new innovative products, processes or services in the State's targeted technology sectors. Eligible activities include proof of concept work, prototype development, market research required to inform design or justify commercial assumptions, field trials, prototype testing, engagement with commercial partners, intellectual property filing and assignment, design for manufacturing
Priority Clusters	Advanced technologies for forestry and agriculture; Composite materials technology; Aquaculture and marine technology; Environmental technology; Biotechnology; Information technology; Precision manufacturing technology
Project Timeframe	12 months
Clawback Provisions	Not specified
Funding Cycles	3 cycles per year
Review Committee	All complete applications are forwarded to the specified sector's Technology Board Review Committee (BRC), which include research and business representatives. The BRC makes recommendations to the MTI Board of Directors
Selection Criteria	Scientific and technical merit; Market potential; Scope of work; Commercialization strategy; Potential for economic impact; Management team; Project budget
Funding Disbursement	80% of the approved grant will be disbursed at the start of the project and a final 20% will be disbursed upon project completion
Evaluation Metrics	Creation or retention of jobs; additional company investments; Increased competitiveness; Infrastructure investments by the company; Increased sales and revenue; Increase in Maine's capacity for R&D; Patents, trademarks and/or licenses; Additional outside investment into the company; Firm survival and growth.
Evaluation Timing	Not specified
Program Impact	Not specified
Policy	Not specified

Source: Maine Technology Institute website

A2.7. Maryland
Maryland Innovation Initiative (MII)

Dates of Operation	2012 - present
Goal/Purpose	To promote the commercialization of university innovations through technology validation, market assessment, and the creation of start-up companies in Maryland
Managing Entities	Maryland Technology and Economic Development Corporation (TEDCO)
Funding Source	State of Maryland
Funding Type	Grant/Investment
Program Funding	74 awards made for $7.4M (2013-2015)
Project Funding	Up to $215k over three phases. Phase 1: Technology Validation - up to $100,000; Phase 2: Market Assessment - up to $15,000; Phase 3: Commercial Launch - up to $100,000
Match Requirement	Phase 3: 3% of revenues for 10 years, up to twice award.
Applicant Eligibility	Faculty from qualifying universities and entrepreneurs (Phases 2 to 3) creating a university startup using technology licensed from a qualifying university. Active qualifying universities and research institutions in the MII statute: Johns Hopkins, Morgan State, UMD-College Park, UMD-Baltimore, UMD-Baltimore County
Award Limits	Not specified
Project Eligibility	Technology validation; Market assessment; Creation of start-up
Priority Clusters	No
Project Timeframe	Phase 1: 9 months; Phase 2: 3 months; Phase 3: 9 months
Clawback Provisions	If non-MD company licenses, university reimburses 20% of royalties until funding is repaid
Funding Cycles	Rolling applications reviewed every other month
Review Committee	"Site Miners" selected by TEDCO serve as champions to guide applications. TEDCO Review Committee reviews top applications. MII board makes the final decisions
Selection Criteria	Not specified
Funding Disbursement	Not specified
Evaluation Metrics	Major metrics are follow-on funding and number of start-ups.
Evaluation Timing	Economic impact reports required annually for ten years following last award
Program Impact	Not specified
Policy	House Bill 44 (2015)

Sources: TEDCO: The Maryland Innovation Initiative (MII) website; Battelle 2015 Report.

Maryland - Technology Commercialization Fund (TCF)

Dates of Operation	2004 - present
Goal/Purpose	To support companies that advance a technology toward commercialization
Managing Entities	Maryland Technology and Economic Development Corporation (TEDCO)
Funding Source	State of Maryland
Funding Type	Investment – Convertible note bearing 8% interest
Program Funding	14 companies funded for $1.1M (FY2013)
Project Funding	Up to $225k in two distinct investments: 1st Investment - up to $100k for critical product development. Provided to support achieving specific project milestones 2nd Investment - up to $125k, subject to a concurrent third party investment, to support critical product development and prepare a company for product launch and revenue generation
Match Requirement	1st investment requires a 50% company match, which can include in-kind contributions. 2nd investment requires concurrent third party investment
Applicant Eligibility	For-profit entity located in Maryland with fewer than 16 employees; Pre-revenue or has received less than an aggregate of $500,000 or a university spin-off less than 5 years-old; Requires "significant collaboration" with a federal lab, academic institution, or non-profit research institution
Award Limits	Not specified
Project Eligibility	Product development, technology commercialization
Priority Clusters	No
Project Timeframe	Not specified
Clawback Provisions	No
Funding Cycles	Rolling applications reviewed every month
Review Committee	TEDCO Review Committee holds monthly meetings where it makes recommendation. TEDCO President/ Executive Director makes final decision.
Selection Criteria	Not specified
Funding Disbursement	The First TCF Investment of up to $100,000 is provided in tranches that are subject to the achievement of specific project milestones. The Second Investment of up to $125,000 is provided as a one-time investment, subject to a subsequent issuance of securities in an aggregate amount of $500,000 or more from institutional or other Accredited Investors (a "Qualified Investment").
Evaluation Metrics	Major metrics are follow-on funding attracted by the TCF companies.
Evaluation Timing	Periodic economic development reports including: tax returns, employee census of MD full time employees (FTEs), and other information as requested
Program Impact	Since the program's inception, 176 companies have received funding and completed projects. With an investment of $12 million, these companies have gone on to receive more than $532 million in downstream funding from angel and venture investors, federal awards, and other resources.
Policy	2015 TEDCO Budget

Sources: TEDCO: Technology Commercialization Fund (TCF) website; TEDCO: Award Notices website; Battelle 2016 Report

Maryland - Cybersecurity Investment Fund

Dates of Operation	2014 - present
Goal/Purpose	Support companies to develop and commercialize new products that enable or enhance privacy and/or security in a networked environment
Managing Entities	Maryland Technology and Economic Development Corporation (TEDCO)
Funding Source	State of Maryland
Funding Type	Investment - convertible note bearing 8% interest
Program Funding	$1M annually (planned between FY15 and FY19)
Project Funding	Up to $225k in two distinct investments: 1st Investment - up to $100k for critical product development. Provided to support achieving specific project milestones; 2nd Investment - up to $125k, subject to a concurrent third party investment, to support critical product development and prepare a company for product launch and revenue generation
Match Requirement	1st investment requires a 50% company match, which can include in-kind contributions. 2nd investment requires concurrent third party investment
Applicant Eligibility	For-profit entity located in Maryland with fewer than 16 employees; Pre-revenue or has received less than an aggregate of $500,000; Requires "significant collaboration" with a federal lab, academic institution, or non-profit research institution
Award Limits	Not specified
Project Eligibility	Projects that enable companies to reach a critical milestone in their product (or service) development that will move their technology further along the commercialization pathway, increase the company's valuation, and lead to follow-on investment for further growth and sustainability
Priority Clusters	Cybersecurity
Project Timeframe	Not specified
Clawback Provisions	No
Funding Cycles	Rolling applications reviewed every month.
Review Committee	TEDCO Review Committee holds monthly meetings where it makes recommendation. TEDCO President/ Executive Director makes final decision.
Selection Criteria	Not specified
Funding Disbursement	Not specified
Evaluation Metrics	Major metrics are follow-on funding attracted by the CIF companies
Evaluation Timing	Periodic economic development reports including: tax returns, employee census of MD FTEs, and other information as requested.
Program Impact	Not specified
Policy	2015 TEDCO Budget

Source: TEDCO: Cyber Security Investment Fund website

Maryland - Technology Validation Program

Dates of Operation	2013 (upon restructuring of other existing programs) to present
Goal/Purpose	To foster the creation of more start-up companies based on technologies developed at Maryland's universities, not-for-profit research institutions, and federal laboratories
Managing Entities	Maryland Technology and Economic Development Corporation (TEDCO)
Funding Source	State of Maryland
Funding Type	Grant
Program Funding	$300,000 annually
Project Funding	Market Assessment Phase: up to $10k for a market analysis and commercialization plan; Technical Validation Phase: up to $40k for proof-of-principle studies at a Maryland university
Match Requirement	None
Applicant Eligibility	Universities and not-for-profit research institutions in Maryland are eligible for both phases (provided they are not an active qualifying university with MII). Entrepreneurs considering a start-up company relying on technology from an eligible university, a not-for-profit research institution, or a federal lab in Maryland are eligible for the Market Assessment phase.
Award Limits	Not specified
Project Eligibility	The validation of a market opportunity generally involves a market analysis that demonstrates that products based on the technology will have a clear competitive advantage and meet a clear need in a significant market. The validation of a technology for a specific application generally involves a small proof-of-principle study to demonstrate that the technology works as intended.
Priority Clusters	None
Project Timeframe	Market Assessment Phase: 2-3 months; Technical Validation Phase: 6-9 months
Clawback Provisions	None
Funding Cycles	Rolling applications reviewed every month
Review Committee	Submissions are reviewed and recommended by TEDCO internal staff and Review Team. TEDCO President/ Executive Director makes final decision
Selection Criteria	Not specified
Funding Disbursement	Not specified
Evaluation Metrics	Major metrics are follow-on funding, number of start-up companies formed, and number of patent licenses.
Evaluation Timing	Not specified
Program Impact	Not specified
Policy	2015 TEDCO Budget

Source: TEDCO: Technology Validation Program website

A2.8. Massachusetts

Massachusetts Clean Energy Center (MassCEC) Catalyst Program Awards

Dates of Operation	2010 - present
Goal/Purpose	Stimulate the commercialization of clean energy technologies developed in the Commonwealth
Managing Entities	Massachusetts Clean Energy Center (MassCEC) and the Massachusetts Technology Transfer Center (MTTC)
Funding Source	State of Massachusetts
Funding Type	Grant
Program Funding	$560,000 for 14 awards per year
Project Funding	Up to $40,000
Match Requirement	No formal match requirement, but many institutions waive overhead for this award
Applicant Eligibility	Eligible applicants include: Massachusetts-based Principal Investigators (at non-profit research institution, including federal research labs; Early-stage companies with innovative commercially viable, clean energy technologies under development (No more than $1 million in combined financing, grant funding and revenues within the past five years; Have four or fewer full-time employees)
Award Limits	One award per technology; Applicants may not submit Catalyst Program applications for the same idea or concept more than 3 times, unless there has been a substantial change in the technology or market which advances the case for an award; Applicants are encouraged to apply to multiple MAssCEC grant award programs over their development lifecycle, but it is standard practice for MassCEC to refrain from awarding two different awards to the same company concurrently
Project Eligibility	Demonstrate the feasibility of technologies in specific industry applications in order to obtain increased industry and investor interest. Typical uses include: Conduct further defined research on an invention that will lead to proof of concept or prototypes; Undertake testing of a technology or material to obtain initial data on performance; Develop a more user-friendly software interface; Send material out to independent third party for testing under industrial conditions; Hire outside expert consultants to validate technology
Priority Clusters	Clean Energy; Clean Water
Project Timeframe	12 months
Clawback Provisions	No
Funding Cycles	Two cycles per year: five energy and two water projects selected per cycle
Review Committee	Proposals are initially reviewed by MTTC to select finalists; Finalist presentations are reviewed by industry experts
Selection Criteria	Particular emphasis will be placed on selecting technologies that can be a foundation for new companies or technologies that can improve the competitiveness of existing Massachusetts companies. Judging criteria includes: Technical merit; Commercial potential; Impact and project plan; Team members; Clean energy or water impact
Funding Disbursement	The contract for award winners must be executed within 60 days of notification
Evaluation Metrics	Research completed, milestones achieved, new technologies disclosed and use of funds.
Evaluation Timing	Award recipients must submit a formal interim report and a final report
Program Impact	$2.45 million to 62 research teams (as of Feb 2016); $45 million in follow on investments; 7 new companies; 68 patents; 44 new research publications
Policy	MassCEC was created in 2008 and is funded by the Renewable Energy Trust Fund (Chapter 23J of the General Laws)

Sources: Massachusetts Clean Energy Center Catalyst website; 2015 Massachusetts Clean Energy Industry Report

A2.9. Michigan
University Commercialization Fund

Dates of Operation	2014-2015
Goal/Purpose	Commercialization of cutting edge technologies and that demonstrate a plan to spin out the technology with start-up companies
Managing Entities	Invest Michigan, Pre-Seed Fund 2.0
Funding Source	State of Michigan – Michigan Strategic Fund's 21st Century Jobs Fund
Funding Type	Grant to University Technology Transfer Office; Debt or Equity to start-up company
Program Funding	$1M across one year and three funding rounds
Project Funding	Up to $50,000
Match Requirement	1 (state):1 (non-state)
Applicant Eligibility	Technology transfer office of any Michigan public university, or start-up company with signed option for a license from a Michigan public university
Award Limits	Not specified
Project Eligibility	Minimum TRL of 3
Priority Clusters	No
Project Timeframe	Not specified
Clawback Provisions	Immediate payback of grant to technology transfer office if licensed to an entity other than a Michigan startup company; Universities expected to payback 3x upon revenue generation
Funding Cycles	Three rounds between Fall 2014-Fall 2015
Review Committee	Invest Michigan's Investment Review Committee has final approval of authority grants and investments. The committee is composed of investors, industry experts and university representatives.
Selection Criteria	Timely, complete and clarity of application; Proof of matching funds; Commercialization potential; Clarity of commercialization path forward; Timeliness to commercialization; Technology readiness; Clearly identified use of funds that demonstrate a significant milestone
Funding Disbursement	Not specified
Evaluation Metrics	Not specified
Evaluation Timing	Requires status reports indicating progress, budgeting, and milestone achievement
Program Impact	Not specified
Policy	Not specified

Sources: University Commercialization Fund Overview; Email correspondence with program representative

Michigan - Small Company Innovation Program/Technology and Commercialization Assistance (SCIP/TCA)

Dates of Operation	2011 - present
Goal/Purpose	Promote the creation of new relationships between industry and academia by making university resources more affordable for companies who may not otherwise have the means to pay for it.
Managing Entities	Michigan Corporate Relations Network (MCRN) with support from the Michigan Economic Development Corporation (MEDC)
Funding Source	State of Michigan
Funding Type	Grant (voucher)
Program Funding	Up to $800,000 per year
Project Funding	Up to $40,000
Match Requirement	1 (state): 1(company/non-state). Universities will waive the indirect costs for every dollar to be applied to the associated project as their contribution.
Applicant Eligibility	Existing Michigan company, with significant business operations in the state and a desire to grow via university collaboration tapping into faculty expertise, facilities, lab equipment, testing capabilities or business resources. Both the funding awarded and the company match go directly towards University research.
Award Limits	Not specified
Project Eligibility	University research and testing towards commercialization.
Priority Clusters	No
Project Timeframe	12 months
Clawback Provisions	No
Funding Cycles	Not specified
Review Committee	Applications are reviewed by the SCIP/TCA team housed at the Institute for Research on Labor, Employment and the Economy (IRLEE) at the University of Michigan. Each MCRN university and MEDC will periodically review the approved and unapproved applications.
Selection Criteria	Evaluation on technical merit or research merit is dependent on the individual project and university researcher. The proposed project must be compelling and spur meaningful collaboration between the company and university partner.
Funding Disbursement	When the award is granted, the company is expected to pay upfront its full 50% share to the designated university as a condition for the SCIP/TCA to pay its half. All of the funding will be awarded upon the university's receipt of the matching funds.
Evaluation Metrics	Not specified
Evaluation Timing	Not specified
Program Impact	Not specified
Policy	Not specified

Source: Michigan Corporate Relation Network/Small Company Innovation Program/Technology and Commercialization Assistance website; Email correspondence with program representative

A2.10. Minnesota
Innovation Voucher Program

Dates of Operation	2014 - present
Goal/Purpose	Help small businesses purchase technical assistance and services necessary to advance research development or commercialization of new or innovative products and services
Managing Entities	MN Department of Employment and Economic Development (DEED)
Funding Source	State of Minnesota
Funding Type	Voucher
Program Funding	$400,000 (FY2015 appropriation through June 2017)
Project Funding	4 projects funded for $92,440 (2015)
Match Requirement	2 (state): 1 (business); Cash match only
Applicant Eligibility	Companies with 40 or fewer employees, with at least half of the employees based in Minnesota, may apply. Before submitting an application, businesses must make arrangements with a higher-education institution or a MN-based nonprofit of their choice to provide the services they need
Award Limits	Not specified
Project Eligibility	Vouchers may be used to purchase services in such areas as research, technical development, product development, commercialization, market development, technology exploration, and proven business practices, including strategies to grow business and create operational efficiencies
Priority Clusters	No
Project Timeframe	18 months
Clawback Provisions	Not specified
Funding Cycles	Vouchers awarded on a rolling basis, contingent on the availability of funds.
Review Committee	The agency review team will make recommendations for awards to the Commissioner of DEED who will make final award decisions
Selection Criteria	Not specified
Funding Disbursement	Qualifying companies receive vouchers which can be redeemed with approved public universities, colleges, technical schools and nonprofits in Minnesota
Evaluation Metrics	Not specified
Evaluation Timing	Not specified
Program Impact	Not specified
Policy	2014 Minnesota Laws Chapter 312, Article 3, section 19

Source: Minnesota Innovation Voucher Program website

A2.11. Missouri
Missouri TechLaunch

Dates of Operation	2012 - present
Goal/Purpose	Help high-tech entrepreneurs overcome the principal financing challenges of launching new start-ups that leverage discoveries and talent at Missouri's world-class public and private universities and other research organizations. Accelerate the commercialization of research discoveries; Increase the number of investment-grade start-up companies launched; Leverage research and talent at Missouri's public and private universities and other Missouri research institutions to promote economic development; Attract research and capital investment; Create sustainable high-paying, private sector jobs
Managing Entities	Missouri Technology Corporation (MTC)
Funding Source	State of Missouri
Funding Type	Investment - Equity or convertible debt
Program Funding	Variable. $30M over 5 years with projected $15M in FY17
Project Funding	Up to $100,000
Match Requirement	Third-party funding commitment that equals at least 100% of total funds requested
Applicant Eligibility	A Missouri-based start-up company (or company relocating its headquarters and operations to Missouri); Has or will establish a relationship with a Missouri public or private research university or research institution; Is in pre-seed financing stage; Has less than 500 existing employees
Award Limits	Companies are limited to one award over the lifetime of the company
Project Eligibility	Intellectual property development and evaluation, including in-depth analysis of market potential, conducting competitive analysis, establishing proof of concept of a scientific discovery, prototype design and development, and related activities.
Priority Clusters	Animal health, plant science, biomedical science, applied engineering, or defense and homeland security
Project Timeframe	No deadline
Clawback Provisions	No
Funding Cycles	Quarterly
Review Committee	Applications are pre-screened by MTC staff, reviewed and scored by the MTC investment committee and approved by the MTC Board of Directors
Selection Criteria	Acceleration of a scientific discovery into a new high-growth company; Increase research and capital investment funding; Leverage private investment; Create successful collaborations and partnerships needed to commercialize technology and create a high-tech start-up; Develop solutions to solve key business and technical milestones; Strengthen one or more of MTC's targeted high-tech clusters; and Create sustainable high-paying, private sector jobs
Funding Disbursement	Equity or convertible debt agreement
Evaluation Metrics	Job creation, Return on Investment (ROI), Revenue Patents, Taxes paid.
Evaluation Timing	Quarterly financial statements and annual metrics reporting.
Program Impact	Few hundred jobs created. Studies have shown St. Louis to be the #1 fastest growing city for startups in the country, with Kansas City, MO as #10.
Policy	http://www.missouritechnology.com/about-us/statutes

Source: Missouri Technology Corporation/Missouri TechLaunch website; Email correspondence with program representative

A2.12. Montana

Montana Board of Research and Commercialization Technology

Dates of Operation	2000 - present
Goal/Purpose	Encourage Economic Development through investment in research and commercialization projects
Managing Entities	Montana Board of Research and Commercialization Technology, Montana Department of Commerce
Funding Source	State of Montana
Funding Type	Grant
Program Funding	$850,000 in FY17
Project Funding	Project dependent - $20,000 to $150,000, $100,000 average
Match Requirement	3 (state): 1 (non-state); At least 25% of total project costs must be in the form of match. In-kind matches may be accepted.
Applicant Eligibility	Montana-based research and commercialization centers (University of Montana, Montana State University, Tribal Colleges, Community Colleges, Agricultural Research Centers, Private Laboratories or Research Centers)
Award Limits	No
Project Eligibility	Research projects that lead to marketable products or processes
Priority Clusters	No
Project Timeframe	Project dependent – typically 12 months
Clawback Provisions	No
Funding Cycles	One cycle per year. Applications due in March with decisions issued in July.
Review Committee	The Board reviews projects and makes funding decisions. The Board is comprised of six persons, two of which are appointed by the Governor, and four members are individually appointed by the legislative leadership.
Selection Criteria	Has potential to diversify or add value to a traditional basic industry of the state's economy; Shows promise for enhancing technology-based sectors of Montana's economy for the commercial development of discoveries; Employs or otherwise takes advantage of existing research and commercialization strengths within the state's public university system and private research establishment; Involves a realistic and achievable research project design; Develops or employs an innovative technology; Is located in Montana; The research team possesses sufficient expertise in the appropriate technology area to complete the research objective; Has received financial support based on its scientific merits; Includes research opportunities for students
Funding Disbursement	The board may disburse the funds outlined in the funding agreement according to performance benchmarks or other requirements as determined by the board.
Evaluation Metrics	Follow-on funding, commercialization successes
Evaluation Timing	The nature and timing of the progress reports will be specified in the funding agreement. A final report is due upon completion of the project term.
Program Impact	According to a 2014 report produced by the Bureau of Business and Economic Research at the University of Montana, the program has generated 459 jobs per year, resulted in $315 million in additional income by Montana households, and resulted in $718 million in increased gross sales by Montana-based businesses and other organizations.
Policy	http://leg.mt.gov/bills/mca/90/3/90-3-1003.htm

Source: Montana Board of Research and Commercialization Technology website; Email correspondence with program representative

A2.13. Nebraska
Academic Research and Development Grant Program

Dates of Operation	2011 - present; will sunset in 2021 unless extended
Goal/Purpose	Provide an opportunity for the State of Nebraska to partner with Nebraska businesses, Nebraska Colleges and Universities to fund research and development activities that lead to new or better products, process, and innovations that might not result without state assistance
Managing Entities	Nebraska Department of Economic Development (DED)
Funding Source	State of Nebraska
Funding Type	Grant (voucher)
Program Funding	Up to $4M per year based on funding availability
Project Funding	Phase 1 (product development, proof of concept)– up to $100,000; Phase 2 (product design and development) – up to $400,000
Match Requirement	R&D grant funding must be matched at 100% (1:1). Eligible matching funds include any non-state source including private foundations, federal or local governments, quasi-governmental entities, commercial lending institutions, investors, or other sources provided they are not using funds appropriated by the Nebraska legislature
Applicant Eligibility	Any Nebraska based for-profit business, regardless of employment size may request financial assistance to pay Nebraska public, private colleges, university educational institutions or faculty for academic research and product development undertaken on their behalf
Award Limits	Businesses are eligible for Phase 2 only if theyhave successfully completed Phase 1; DED will not grant more than two awards in any four-year period per project
Project Eligibility	R&D grant funding may be used for applied research, new product development or new uses of intellectual property already generated by a private or public college or university in Nebraska. The research and development must be directed toward the commercialization of new products, and/or modification of existing products that lead to substantially improved marketability or the improvement of existing process that may provide a new source of revenue to Nebraska business.
Priority Clusters	Not specified
Project Timeframe	Generally, each phase will be completed within 24 months of award
Clawback Provisions	Yes. Contract specifies that recipients cannot leave the state within 3 years of award without repaying funds
Funding Cycles	The application cycle opens on January 1. The Department will accept applications in an open cycle until such time as all of the funding appropriated by the Nebraska Legislature is exhausted or fully committed.
Review Committee	Department of Economic Development Project Review Team
Selection Criteria	Total cost of the project; Measurable goals to benchmark progress; The commercial relevancy of the desired product; Market potential for the product that results from the project research; The potential of the business opportunity that may be realized by employing the product or process; The potential for a Nebraska-based business to result from a successful project; Partnership or expertise of subject matter at the college or university chosen to conduct research. 40% of the investment made with R&D funding is targeted for projects that alleviate chronic economic distress in distressed areas of Nebraska.
Funding Disbursement	The Department of Economic Development will disburse funds to the applying business as reimbursements for eligible expenses incurred by the Business and/or by the Nebraska College or University.
Evaluation Metrics	Number of projects completed; Number of jobs created and wage levels; Additional funding received by the company and type (grant, loan, equity

	investment, other), and exits
Evaluation Timing	Recipients must submit progress reports every six months while the research project is underway in addition to a final report. DED reserves the right to survey recipients to evaluate impact for a minimum of three years after the project is completed.
Program Impact	10 companies funded with $1.5 million (FY2014) Total estimated annual impact of Business Innovation Act programs is $15.23M in compensation spread over 307 jobs. For every dollar invested by the state, there was $5.12 in private investment.
Policy	LB387 (2011); Nebraska Revised Statutes at §§81-12,152 - 81-12,167.

Sources: Nebraska Department of Economic Development website; Invest Nebraska Corporation 2014; Email and phone correspondence with program representative

Nebraska - Pre-Seed Prototype Grant Program

Dates of Operation	2011 - present; will sunset in 2021 unless extended
Goal/Purpose	Provide financial assistance to individuals and businesses operating in Nebraska to support proof of concept activities
Managing Entities	Nebraska Department of Economic Development
Funding Source	State of Nebraska
Funding Type	Grant
Program Funding	Up to $4M per year based on funding availability
Project Funding	Maximum grant funding of $150,000 per project
Match Requirement	Applicants must provide matching funds equal to 50% (2:1) of the grant amount, or 25% (4:1) for value-added agriculture projects. Eligible matching funds include any non-state source which are private foundations, federal or local governments, quasi-governmental entities, commercial lending institutions, investors, or other sources provided they are not using funds appropriated by the Nebraska Legislature. Matching funds must be in the form of a cash match.
Applicant Eligibility	Any Nebraska based corporation, Limited Liability Company, partnership, registered limited partnership, sole proprietorship, business trust, or other entity with less than 500 employees, engaged in non-retail primary industries that are adding value to products or processes in Nebraska
Award Limits	No, but prior awards are considered during the review process
Project Eligibility	Pre-Seed Stage funds may be used for creating a prototype of a product stemming from research and development at a business operating in Nebraska or research at a public or private college or university in Nebraska
Priority Clusters	No
Project Timeframe	24 months
Clawback Provisions	Yes. Contract specifies that recipients cannot leave the state within 3 years of award without repaying funds
Funding Cycles	There will be an open application cycle, and approved applications will be funded until the allocation is exhausted
Review Committee	For each application submitted, DED will perform an independent review, and at DED's discretion, may utilize the assistance of outside experts
Selection Criteria	Evidence that the project is a platform technology and is scalable for high growth potential; Verification that the applicant meets the eligibility requirements of the NIF program; Technology description and plan that is sufficient for external expert review; Detailed financial analysis that includes the commitment of resources by the applicant and others; Detail concerning proposed project, type, and amount of work to be performed, and expected product, process, or service with estimated costs to be reflected in the negotiated contract or agreement; and Statement on the economic development potential of the project with sufficient supporting documentation
Funding Disbursement	Funds are disbursed on a reimbursement basis. Grant recipients must pay for eligible expenses and then DED will reimburse a portion of the costs (66% for regular projects; 80% for value-added agriculture).
Evaluation Metrics	Post-funding, DED requires that grant recipients submit a feasibility report that details what was learned during the product development and whether or not the product will be brought to market. DED has also surveyed recipients and asked for number of jobs created and wage levels, additional funding received by the company and type (grant, loan, equity investment, other), and exits.
Evaluation Timing	Recipients must submit progress reports every six months while the project is underway in addition to a final report. DED reserves the right to survey recipients to evaluate impact for a minimum of three years after the project is completed.
Program Impact	12 companies funded for $546,204 (FY2014); Total estimated annual impact of

	Business Innovation Act programs is $15.23M in compensation spread over 307 jobs. For every dollar invested by the state, there was $5.12 in private investment.
Policy	LB387 (2011); Nebraska Revised Statutes at §§81-12,152 - 81-12,167.

Sources: Nebraska Business Innovation Act website; Invest Nebraska Corporation 2014 Report; Email and phone correspondence with program representative

A2.14. New Hampshire
Granite State Technology Innovation Grant

Dates of Operation	1991 - present
Goal/Purpose	Fund partnerships between NH companies and academic institutions to expand the research activities of an industry partner, encourage competitiveness through the development of new products and processes, and to attract, grow, and retain companies in the state
Managing Entities	New Hampshire Innovation Research Center (NHIRC) is administered by UNHInnovation at the University of New Hampshire with satellite office at Dartmouth
Funding Source	State appropriations to NHIRC, and federal funding from the National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR) Program to the NH EPSCoR program
Funding Type	Cash match by company, grant by NHIRC to university/college
Program Funding	300K per year (FY16)
Project Funding	Currently 4-5 companies get funding yearly, receiving $25,000 - $75,000 each. 6 grants awarded FY 2012-13. In 2007, $20K - $150K per grant, 4-8 grants.
Match Requirement	Cash grant by NHIRC; 1:1 Company matches, cash or in-kind, funds distributed to NH universities and colleges. The NHIRC will assist with "matchmaking."
Applicant Eligibility	New Hampshire companies
Award Limits	Not specified
Project Eligibility	Not specified
Priority Clusters	Applications especially encouraged in bioinformatics, computational tools, environmental technologies, geospatial analysis, information technology, materials science, medical technologies, nanotechnology, optics, precision engineering, robotics, and sensors.
Project Timeframe	Two-year funding possible; a budget justification for each year should be included
Clawback Provisions	Not specified
Funding Cycles	Two RFP solicitations annually. FY 17 solicitation schedule: August 2016 solicitation, award notification December Projects start in Jan 2017
Review Committee	A 12-member Oversight Committee reviews proposals. Its positions are legislated or appointed by the NH Governor (drawn from legislature, government officials, businesses, academia)
Selection Criteria	Not specified
Funding Disbursement	Paid monthly in cash. The Cooperative Agreement must be executed between the company and academic institution within 60 days of the award.
Evaluation Metrics	In-kind reports submitted monthly
Evaluation Timing	Final report within 30 days after project ends. The PI and company are required to jointly submit this report, which will outline research, educational activities, and accomplishments. Participation in a follow-up survey may be requested.
Program Impact	Responses from 21% of grant recipients over the years showed creation of 650 jobs. Awardees have gone on to secure more than $32M in SBIR grants and more than $900M investment and acquisition capital.
Policy	NHIRC: RSA 187-A:30-33

Sources: New Hampshire Innovation Research Center website; 2015 New Hampshire Innovation Research Center Impact Report

A2.15. North Dakota
Research ND

Dates of Operation	2013 - present
Goal/Purpose	Provide matching funds for the development and commercialization of products and processes through industry/research university collaborative projects; Have a long term positive economic impact on the State and Private Sector through various means including, but not limited to economic diversification, improved production factors, and the development of new markets
Managing Entities	North Dakota Department of Commerce (may use up to $2M of the funds transferred to the Research ND fund for venture grants); awards decided by North Dakota Centers of Excellence Commission.
Funding Source	State of North Dakota
Funding Type	Grant
Program Funding	$10M ($5.5M for Research ND; $0.5M for Research ND Fast Track; $4M for Research ND Bio)
Project Funding	Up to $500,000 for Research ND; Up to $50K for Fast Track; Up to $1M for Research ND Bio
Match Requirement	1:1 for each dollar of state funds, in cash, may not include in-kind assets
Applicant Eligibility	Private sector partner companies are allowed to participate, but see Evaluation Metrics below for details.
Award Limits	Not specified
Project Eligibility	Eligible uses include: Commercialization of new technologies; Research and development of new products; Improvement of existing products
Priority Clusters	Biotechnology (Research ND BIO); All industry sectors that are targeted within the Economic Development Foundations current strategic plan (advanced manufacturing, technology-based businesses, value-added agriculture, tourism, and energy.
Project Timeframe	Not specified
Clawback Provisions	Not specified
Funding Cycles	4 cycles per year (Aug/Nov/Feb/May) with Fast Track applications accepted at any time
Review Committee	Not specified
Selection Criteria	Significance, Technical Feasibility, Quality of Methodology, Likelihood of Success, Backgrounds of Principal Investigator and Project Director, Appropriateness of the Research Team, Facilities and Equipment, Project Management Plan, Budget, and Impact to North Dakota (economy of the State)
Funding Disbursement	Center submits a budget and timeline with solicitation. First disbursement: Center must demonstrate private sector participation and availability of statutorily required matching funds. Subsequent disbursement: Centers of Excellence Commission will consider the amount of matching funds already received by the center making the request.
Evaluation Metrics	Expected benefit to the State of North Dakota is included the application. Private sector partners (PSPs) should discuss how the project will have an impact on ND outside of grant monies spent by the Research University, discuss plans to open facilities in ND, contract with existing ND manufacturers, and other plans that would have economic impact to the state.
Evaluation Timing	Application includes a milestone chart and specific project objectives
Program Impact	Not specified
Policy	1.02a N.D.C.C. § 54-65-06 Research North Dakota Grants; 1.02b N.D.C.C. § 54-65-07 Research North Dakota Venture Grants; 1.02c Section 30 of Chapter 49 of the 2013 Session Laws

Source: North Dakota Department of Commerce website

North Dakota - Research ND-Venture Grants

Dates of Operation	2013 - present
Goal/Purpose	Provide grants to a research university for pursuing further commercialization of technology developed by the research university or developed jointly by the research university and either startup of spinoff business operating in North Dakota
Managing Entities	North Dakota Department of Commerce
Funding Source	State of North Dakota
Funding Type	Grant
Program Funding	$2M
Project Funding	Phase I: Awards up to $100,000 per project; Phase II: Matching funds up to $150,000 per project
Match Requirement	There is no private sector match required for Phase I; A 1:1 match is required for Phase II in the form of cash to the university for use on the approved project or cash reserved by the PSP to be spent on the approved project.
Applicant Eligibility	Start-up or spinoff businesses operating in ND. Phase I applications may be submitted by the Research University alone or with an identified PSP. Phase II applications must be a joint submission between the Research University and the PSP.
Award Limits	Not specified
Project Eligibility	Eligible uses include: commercialization of new technologies; research and development of new products; improvement of existing products
Priority Clusters	Biotechnology (Research ND BIO); All industry sectors that are targeted within the Economic Development Foundations current strategic plan (advanced manufacturing, technology-based businesses, value-added agriculture, tourism, and energy.
Project Timeframe	Not specified
Clawback Provisions	Not specified
Funding Cycles	4 cycles per year (Aug/Nov/Feb/May) with Fast Track applications accepted at any time
Review Committee	Not specified
Selection Criteria	Significance, Technical Feasibility, Quality of Methodology, Likelihood of Success; Backgrounds of Principal Investigator and Project Director, Appropriateness of the Research Team, Facilities and Equipment, Project Management Plan, Budget, and Impact to North Dakota (economy of the State)
Funding Disbursement	Center submits a budget and timeline with solicitation. First disbursement: Center must demonstrate private sector participation and availability of statutorily required matching funds. Subsequent disbursement: Centers of Excellence Commission will consider the amount of matching funds already received by the center making the request.
Evaluation Metrics	Expected benefit to the State of North Dakota is included the application. PSPs should discuss how the project will have an impact on ND outside of grant monies spent by the Research University, discuss plans to open facilities in ND, contract with existing ND manufacturers, and other plans that would have economic impact to the state.
Evaluation Timing	Application includes a milestone chart and how objectives relate to the project's significance
Program Impact	Not specified
Policy	1.02a N.D.C.C. § 54-65-06 Research North Dakota Grants; 1.02b N.D.C.C. § 54-65-07 Research North Dakota Venture Grants; 1.02c Section 30 of Chapter 49 of the 2013 Session Laws

Source: North Dakota Department of Commerce website

A2.16. Oklahoma
Oklahoma Applied Research Support

Dates of Operation	2005 - present
Goal/Purpose	Increase investment in the R&D of new technologies that will ultimately bring value to the state of Oklahoma and help grow and diversify the state's economy
Managing Entities	Oklahoma Center for the Advancement of Science and Technology (OCAST)
Funding Source	State of Oklahoma
Funding Type	Grant
Program Funding	$2.8 million (FY12)
Project Funding	Proof-of-Concept Applied Research and Development: $45k/year for 2 years; Accelerated Applied Research and Development: $300k total
Match Requirement	1 (state):1(non-state) funds; Universities and nonprofits can use equipment as a match
Applicant Eligibility	Oklahoma public or private colleges and universities; Oklahoma non-profit research organizations; Oklahoma enterprises of special importance to the state's economy.
Award Limits	Typically, one award per technology. No limit on the number of OARS applications that may be submitted by an individual investigator during a funding cycle.
Project Eligibility	*Proof-of-Concept Applied Research and Development*: Early-stage R&D such as proof-of-concept research and technical development projects, exploratory development, and product definition. *Accelerated Applied Research and Development*: Later stage applied research and development projects for which the product is defined, the market opportunity is well assessed, commercial opportunities are clearly identified, and a commercial entity is defined.
Priority Clusters	No
Project Timeframe	Proof-of-Concept: up to 24 months; Accelerated: up to 36 months
Clawback Provisions	No
Funding Cycles	One cycle per year
Review Committee	Applications reviewed and ranked by peer reviewers. Reviewers chosen by Oklahoma Applied Research Committee. Reviewer recommendations are presented to the Oklahoma Science & Technology Research & Development (OSTRaD) Board, OCAST's governing board, which grants final approval for funding.
Selection Criteria	*Proof of Concept*: 30% economic impact potential 70% technical merit; *Accelerated*: 50% economic impact potential 50% technical merit
Funding Disbursement	Continued funding is contingent upon quarterly or annual reviews
Evaluation Metrics	Publications; Intellectual Property; Economic Impact (percent increase in productivity; percent increase of market share; increase in sales; dollar savings in cost-containment; number of jobs created or retained); Leveraged support
Evaluation Timing	Annual reports; Quarterly reports for projects more than $200k/year.
Program Impact	15 projects funded in FY14; Overall OCAST impact in 2014 included $483 in total leveraged funds (30.8 ROI), 1,561 jobs created or retained, $274.4 million in direct impact on gross sales at participating companies
Policy	Funded by the Oklahoma Center for the Advancement of Science and Technology (OCAST) (1987 legislation, Oklahoma Statute 74, Sections 5060.1a and 5060.2A)

Sources: Oklahoma Center for the Advancement of Science & Technology/ Programs/OARS website;
2015 OCAST Impact Report

A2.17. Oregon
ONAMI Launch Funding

Dates of Operation	2015 - present
Goal/Purpose	Support early-stage ideas that have business potential
Managing Entities	Oregon Nanoscience and Microtechnologies Institute (ONAMI), 501(c)(3) non-profit
Funding Source	State of Oregon
Funding Type	Grant/Investment
Program Funding	$800,000 per year
Project Funding	Up to $75,000
Match Requirement	Company ownership for ONAMI or ONAMI share of related licensing revenue to the licensing institution
Applicant Eligibility	Open only to ONAMI members (Private Company or Research Institution)
Application Fee	No
Award Limits	One per technology
Project Eligibility	Moving nano- or micro-technologies with business potential toward company launch
Priority Clusters	Nano- or micro-technologies
Project Timeframe	12-18 months
Clawback Provisions	None specified
Funding Cycles	Rolling applications
Review Committee	Proposals are reviewed by the ONAMI Executive Director and Commercialization Manager who will request any necessary revisions and improvements before considering scheduling a presentation to the ONAMI Commercialization Advisory Council (CAC)
Selection Criteria	Potential for "significant follow-on private and/or federal funding within 12-18 months"
Funding Disbursement	If agreement on terms in the above step is reached, ONAMI and the university will execute the necessary contracts/statement of work (SOW) to enable the flow and tracking of funds.
Evaluation Metrics	Startups funded; follow-on funding
Evaluation Timing	Monthly reports and final technical and financial report; Quarterly reports for up to 5 years
Program Impact	Overall ONAMI Impact: 45 start-ups; 194 jobs; $562 million in total financial leverage; 88 patents (as of June 2015)
Policy	Oregon Revised Statute 284.740 Oregon Innovation Council Research Centers

Source: ONAMI website; Email and phone correspondence with program representative

Oregon - ONAMI Gap Funding

Dates of Operation	2007 - present
Goal/Purpose	Enable researchers to bring their technology or product to life and to the marketplace through an Oregon-based company
Managing Entities	ONAMI, 501(c)(3) non-profit
Funding Source	State of Oregon, Economic Development Department
Funding Type	Investment – Equity Financing
Program Funding	$344,549 (2014) $7.9M (FY07-FY15 total)
Project Funding	$250,000
Match Requirement	These agreements may require that ONAMI receive a small percentage of the royalties or equity benefits accruing to the partner university and/or some form of equity from the company
Applicant Eligibility	ONAMI Members (OR University affiliated) as a PI, Oregon startup or small business as a team member
Award Limits	None specified
Project Eligibility	Maturation/commercialization of nano- or micro-technologies
Priority Clusters	Nano- or micro-technologies
Project Timeframe	12-18 months
Clawback Provisions	None specified
Funding Cycles	Rolling applications
Review Committee	Pre-screen by ONAMI commercialization manager or president before presentation to the Commercialization Advisory Council (CAC). The CAC consists of local and regional angel and venture capital investors, expertly qualified to help us determine whether your product and company have the potential to grow and thrive in Oregon. The ONAMI Operations Council (a subset of the ONAMI board of directors) makes final funding decisions and releases funds at the appropriate times.
Selection Criteria	Market opportunity; technical merit; commercialization partners
Funding Disbursement	Funding is dispersed to the University and tranched over the life of the project
Evaluation Metrics	Startups funded, additional funding obtained, and jobs created/retained
Evaluation Timing	Monthly reporting to and regular meetings with the commercialization manager; Final Report; Post-project reporting, quarterly for five years on investment and grant funds raised and Oregon-based employment levels at the company
Program Impact	From FY07 through FY15, ONAMI funded 53 Gap Grant projects, including 45 University Startup Company teams, at a cost of $7.9M. In the same period, those Startup Companies raised $165M (approximately 82% from private capital, 11% from federal grants and 7% in revenue). Overall ONAMI Impact: 194 jobs; $562 million in total financial leverage; 88 patents (as of June 2015)
Policy	Oregon Revised Statute 284.740 Oregon Innovation Council Research Centers

Sources: ONAMI website; ONAMI Grant Reporting – Investment and Outcomes Memorandum; Email and phone correspondence with program representative

Oregon BEST Early-Stage Investments

Dates of Operation	2011 - present
Goal/Purpose	Catalyze the transformation of cleantech innovations into thriving businesses
Managing Entities	Oregon BEST (independent nonprofit)
Funding Source	State of Oregon
Funding Type	Grant
Program Funding	$5.9M (2015); $3.2M (2011-2014)
Project Funding	$250,000
Match Requirement	None specified
Applicant Eligibility	Oregon-based concept and launch stage companies. Partnership with a university researcher or Lab required.
Award Limits	One per technology
Project Eligibility	Research and development, product validation, or product launch of cleantech
Priority Clusters	Cleantech
Project Timeframe	Not specified
Clawback Provisions	Not specified
Funding Cycles	Not specified
Review Committee	Reviewed by Oregon BEST's Commercialization Advisory Board and subject to approval by Oregon BEST's Board of Directors
Selection Criteria	Not specified
Funding Disbursement	Not specified
Evaluation Metrics	Not specified
Evaluation Timing	Not specified
Program Impact	Between 2011 and 2014, $3.2M led to $18M in follow-on funding. Made $4.4M in early state investments to help 35 OR start-ups bring clean technologies to market that helped company founders raise another $32M in private capital and grants and employ over 260 people. Connected over 250 interdisciplinary researchers and faculty who attracted more than $142M in research support.
Policy	Oregon Revised Statute 284.740 Oregon Innovation Council Research Centers

Source: Oregon Best Early Stage Investment website

A2.18. Pennsylvania
University Research Commercialization Grant

Dates of Operation	2011 - present
Goal/Purpose	Promote stronger synergy between university-based applied research and development (R&D) and the transfer of technology as it relates to economic and workforce development in the areas of energy, nanotechnology and advanced materials
Managing Entities	Ben Franklin Technology Development Association, which is managed by the Technology Investment Office within the PA Department of Community and Economic Development (DCED)
Funding Source	State of PA
Funding Type	Grant
Program Funding	Varies. $4.5 million (2011-12)
Project Funding	Varies, $225,000 in 2014
Match Requirement	1 (state): 1 (non-state)
Applicant Eligibility	A Pennsylvania higher education institution located in PA and legally authorized to grant degrees in the Commonwealth; Consortia of PA higher education institutions are encouraged; A PA not-for-profit with the ability to advance commercialization of research done in the areas of energy, nanotechnology and advanced materials
Award Limits	Not specified
Project Eligibility	Funds shall be used for nanotechnology-related: 1) applied R&D of technology, 2) technology transfer, 3) product development and design, 4) university-based educational and workforce development programs and, 5) other innovative initiatives arising from regional portfolios and state growth opportunities.
Priority Clusters	Nanotechnology
Project Timeframe	Multi-year project requests allowed; approval needed for each subsequent year of funding
Clawback Provisions	No
Funding Cycles	One per year. Applications due between November 1 and December 31.
Review Committee	Technology Investment Office (TIO) staff will review each project and present recommendations to the Ben Franklin Technology Development Authority (BFTDA) Board for approval.
Selection Criteria	Ability to achieve one of four program goals (40pts); Likelihood that proposed project milestones will be completed on time (25pts); Projected overall impact (15pts); Past performance in meeting or exceeding deliverables (10pts); Budget alignment with project goals, timeline and metrics (10pts)
Funding Disbursement	Not specified
Evaluation Metrics	*Semi-annual report metrics*: Jobs Created; Jobs Retained; Businesses Assisted; Leverage of Additional Funding—Private and Public; New Company Formation; Development and Introduction of New Products; Expanded Research, Development, Testing and Evaluation; Intellectual Property and Licensing; Increased Revenues; Increased Productivity; Graduates and Job Placement; Seed Capital Awards; Publications; Internships; Program Trainees; Program Graduates; Deliverables. *Final report metrics*: Achievement of benchmarks, performance measures and deliverables for the project within the timelines established in the application; Patents that have been developed and royalties and equity investment earnings of the project(s); Progress made toward the commercialization of a technology, product or process(es); University or program collaboration with industry; When applicable, the relationship of the project(s) to the regional portfolios and growth opportunities within the

	region and the Commonwealth.
Evaluation Timing	All grant recipients must provide semi-annual reports are due Jan 10th and June 10th, detailing progress toward accomplishing required deliverables. A final report for each funded project is due within six months of the contract end date. Reporting shall continue for three years following the contract expiration or termination date.
Program Impact	Overall Technology Investment Office impact (FY14): 3.761 jobs created; 4,848 jobs retained; 4,239 businesses assisted; 278 new technologies established
Policy	Act 38 of June 22, 2001 BFTDA est.; Ben Franklin Technology Development Authority Act (Refs & Annos). Effective: July 1, 2001. 73 P.S. § 400.53. § 400.53. A percentage of the BFTDA appropriation in the PA annual budget as determined by BFTechnol Partners.

Sources: Pennsylvania Department of Community and Economic Development website; DCED 2013 Annual Report

A2.19. Rhode Island
Innovation Voucher Program

Dates of Operation	2016 - present
Goal/Purpose	Enable businesses to unlock R&D capacity in Rhode Island
Managing Entities	Rhode Island Commerce Corporation
Funding Source	State of Rhode Island
Funding Type	Grant (voucher)
Program Funding	$500,000 (FY16) Increase requested for FY17
Project Funding	Between $5,000 and $50,000
Match Requirement	No
Applicant Eligibility	The *Applicant* must: Be a small business (fewer than 500 employees); Be registered to do business in the State; Obtain a signed letter from a Knowledge Provider demonstrating that the Knowledge Provider is capable and willing to provide the services that will be supported by the Voucher. The *Knowledge Provider* (e.g., Rhode Island institution of higher education or other entity located in Rhode Island) must: Be independent from the Applicant and there must be no existing commitments between the Applicant and such personnel, other than commitments facilitated by a Voucher granted under the Act; Charge on a fee for service basis and at reasonable market rates, and indirect costs charged shall not exceed twenty-five percent (25%).
Application Fee	No
Award Limits	An Applicant is eligible to be awarded no more than two vouchers within a 12-month period. Unused Vouchers not cancelled by the Applicant shall count for purposes of implementing this provision.
Project Eligibility	Access to research or scientific expertise, including preparatory work for research and development; Technological development or technology exploration; Product, service, or market development or commercialization, including prototyping, testing, or validation trials for new or enhanced products or services; Improved business practices that implement strategies to grow business and create operational efficiencies.
Priority Clusters	No
Project Timeframe	12 months
Clawback Provisions	No, but Includes 2018 program sunset clause
Funding Cycles	One per year until funds are exhausted
Review Committee	Applications reviewed by the Corporation Internal Review Committee
Selection Criteria	In determining whether to approve a Voucher, priority will be given to Innovation Projects with the greatest commercial potential. Other factors considered may include: Quality of the organization and design of the Innovation Project; Qualifications and experience of the team conducting the Innovation Project; The Innovation Project's ability to further the development or commercialization of new or enhanced innovative products or services; Capacity for implementing and sustaining the results and findings of the Innovation Project; Potential for the Innovation Project to result in the creation of new full-time jobs; Level of the Applicant's own cash or in-kind investment in the Innovation Project, and the potential for additional investment; The catalytic impact successful completion of the Innovation Project will have for the Applicant; and Potential for further collaboration between the Applicant and Knowledge Provider after the completion of the Innovation Project.
Funding Disbursement	The voucher can be redeemed upon the completion of the Innovation Project and the receipt of the Corporation of adequate proof of project expenses
Evaluation Metrics	Tech transfer activities, such as partnership between business and

	knowledge provider resulting in additional project; Commercialization activities such as patents, patents pending, licenses generated; Jobs, wages, revenues, additional investments
Evaluation Timing	Monthly or quarterly depending on the length of the project; final report; annual metrics up to 5 years
Program Impact	None yet (new program)
Policy	Chapter 64.28 of Title 42 of the Rhode Island General Laws, the Innovation Initiative act (the "Act")

Sources: Commerce Rhode Island/Innovation Vouchers website; Email correspondence with program representative

A2.20. South Dakota
Proof of Concept Fund

Dates of Operation	2013 - present
Goal/Purpose	Enable the commercialization of innovations in South Dakota
Managing Entities	Governor's Office of Economic Development (GOED)
Funding Source	State of South Dakota U.S. Small Business Administration FAST program
Funding Type	Grant/Investment
Program Funding	$500,000 authorized; $366,168 (2015)
Project Funding	Up to $25,000
Match Requirement	9:1 (10%) match required. Cash or in-kind accepted
Applicant Eligibility	Entrepreneurs, universities, existing South Dakota companies, or other entities committed to commercializing the results in South Dakota
Award Limits	One award per concept or product
Project Eligibility	Investment proceeds may be used to pay for consultant contracts, material and supplies, salaries for employees in South Dakota, and necessary services for technical feasibility or marketing studies.
Priority Clusters	No
Project Timeframe	Varies by project. Typically, 2-24 months
Clawback Provisions	No
Funding Cycles	Applications accepted at any time
Review Committee	Applications screened by GOED staff and forwarded to the Research Affairs Council (consisting of representatives from the six public universities) for a technical review. An advisory group of private equity investors and business incubator managers will conduct a business review.
Selection Criteria	Technical/scientific viability; Economic viability
Funding Disbursement	Funding is granted after the completion of work
Evaluation Metrics	Job creation, sales revenue, wealth creation
Evaluation Timing	Each project must submit a final report and an annual update on progress for five years
Program Impact	Since 2013, 46 projects have been supported. Companies receiving Proof of Concept support raised more than $10 million in equity capital and $4 million in SBIR funding. Some projects were also financed with debt financing as well.
Policy	HB 1060 and SB 90 (2013); The program was started/piloted with a US Small Business Administration FAST project and matching state funds. Based on that success, a onetime appropriation of $500,000 was approved by the state legislature to continue the program. In 2016 the state legislature approved a $250,000 annual appropriation to support the program. There was not specific enabling legislation passed. The program operates under the Governor's Office of Economic Development existing program authority.

Sources: South Dakota Governor's Office of Economic Development website; Email correspondence with program representative

A2.21. Tennessee
RevV! Tennessee Manufacturing Innovation Program

Dates of Operation	2015 - present
Goal/Purpose	Build Tennessee manufacturers' competitive advantage in the global market place by providing access to researchers and facilities at Oak Ridge National Laboratories (ORNL)
Managing Entities	University of Tennessee (UT) and ORNL
Funding Source	State of Tennessee, General Fund
Funding Type	Grant (voucher)
Program Funding	$2.5M
Project Funding	$50k to $250k
Match Requirement	None
Applicant Eligibility	Private, for-profit companies that: Currently manufacture a product; Employ a minimum of 10 workers in the State of Tennessee or have made a firm commitment to do so
Award Limits	One award per company
Project Eligibility	Project must take advantage of unique assets at ORNL
Priority Clusters	Advanced manufacturing
Project Timeframe	12 months
Clawback Provisions	No
Funding Cycles	Applications accepted on a rolling basis
Review Committee	Proposals are reviewed by a team from UT and ORNL
Selection Criteria	Statement of need for the proposed project; Potential for TN job creation, new capital investment, or jobs saved as a result of this project; Potential for new product development or significant process improvements; Availability of ORNL staff and equipment to perform the work requested
Funding Disbursement	Once the application is approved, an agreement is signed between UT, UT-Battelle, and the participating company. Funding is provided to ORNL so work can begin.
Evaluation Metrics	Project reports are generated for each project. Project and program impact is evaluated based on: Number of businesses assisted; Dollar value of vouchers awarded; Jobs created and retained; Process improvements and energy savings; New capital investments
Evaluation Timing	Project reports are generated at the completion of each project
Program Impact	New program. Two projects have been completed from the inaugural year.
Policy	House Bill 1374 - Appropriation for Oak Ridge Manufacturing Research Grant

Sources: Oakridge National Laboratory REVV website; Email correspondence with program representative

A2.22. Utah
Technology Commercialization & Innovation Program (TCIP)

Dates of Operation	2011 - present (Previously known as the Centers of Excellence Program 1986-2011)
Goal/Purpose	Provide competitive grants to small businesses and university teams to accelerate the commercialization of their innovative technologies
Managing Entities	Governor's Office of Economic Development
Funding Source	State of Utah
Funding Type	Grant
Program Funding	$2,459,700 awarded in 2016
Project Funding	Teams may apply for grants up to $100,000
Match Requirement	Grant money may be contingent on raising matching funds from federal or private sources
Applicant Eligibility	A university team or be a licensee of a university technology or a small business (per the SBA definition) and have generated no more than $500,000 in revenue from the proposed new or derivative technology and raised no more than $3,000,000 in total prior funding (including both equity and debt based financing)
Award Limits	Teams may only apply for funding in up to three funding rounds; Technologies can only be awarded up to $200,000 in TCIP grants over the life of the technology; Only one technology per applicant or entity will be reviewed per funding round
Project Eligibility	Prototyping, testing, marketing, travel expenses to trade shows, etc.
Priority Clusters	No
Project Timeframe	Awardees have approximately two years to claim grant funds, but must maintain the project in the state for five years.
Clawback Provisions	If the applicant fails to maintain a manufacturing service location in Utah for at least five years from the date the grant award letter is issued, the entire grant amount may be subject to recapture.
Funding Cycles	Funding cycles are determined by level of available funding
Review Committee	University applicants are pre-screened by the Technology Transfer offices at U of U, BYU, USU or USTAR. Small business applicants are prescreened by a panel of at least three members and may include Cluster Directors within the Governor's Office of Economic Development, USTAR affiliates, other State agencies and industry professionals capable of assessing new technology within specific areas Applicant presentations will be reviewed by the TCIP Review Panel (comprised of industry leaders, technologists and government experts). Recommendations will be reviewed and approved by the Executive Director of GOED.
Selection Criteria	Potential economic development in the state of Utah (number of jobs, average salary, etc.); Quality of management and leadership, including experience in startups or commercialization; Strength of the company's technology and potential for commercialization; Size and growth of the market for the proposed technology; Ability to sell and market the technology and credibility of their "go-to-market" strategy; Strength of the company's overall value proposition and competitive advantage
Funding Disbursement	First payment: Up to 75% of grant funds as set forth in a contract between the grant awardee and TCIP; Second Payment**:** Remaining balance will be paid upon completion of additional milestones as outlined in grant recipient's proposal and contract.
Evaluation Metrics	# of awards; Total $ granted; # of awards by economic cluster; # of awards by applicant type; Project status (active, acquired, dead); Acquisition Price (if applicable); Incremental Revenue; Incremental Net Income; Incremental Capital Raised; Sources of Private Funding; Incremental New Jobs

	Created; Incremental Payroll Growth; Incremental New Customers/Users; Incremental New Patents
Evaluation Timing	Monthly reports for the first six months of the award and then they will submit quarterly and annual reports for the five-year term of the agreement
Program Impact	TCIP funded companies have contributed to new jobs, tax revenue, and millions of dollars' worth of new capital in the state of Utah.
Policy	TCIP Statute 63N-Chapter 3-Section 2; TCIP Rule R357-11

Sources: Utah Governor's Office of Economic Development website; Email correspondence with program representative

A2.23. Virginia
Commonwealth Research Commercialization Fund (CRCF)

Dates of Operation	2011 - present
Goal/Purpose	Assist for-profit technology companies in Virginia in commercializing qualified technologies, products, or services that have a reasonable probability of enhancing the Commonwealth's national and global competitiveness
Managing Entities	Administered by the Center for Innovative Technology (CIT) on behalf of the Innovation and Entrepreneurship Investment Authority
Funding Source	State of Virginia
Funding Type	Grant
Program Funding	Varies - $3.4M for all CRCF programs in FY16. There is not a predetermined amount for the Commercialization Program; overall awards are selected on their merit up to the total amount available
Project Funding	Up to $50,000
Match Requirement	1:1
Applicant Eligibility	Applicants for the Commercialization Program must: Have Virginia as the principal place of business for the firm and its CEO; Conduct the CRCF project in Virginia; Have received no more than five (5) federal SBIR or STTR awards; Have received no more than an aggregate of $2 million in outside private investment (not including funds from family, friends, and/or founders) and had cumulative commercial revenue of no more than $5 million since January 1, 2011. Awards may be made to Virginia public or private institutions of higher education or to their associated intellectual property foundations and qualified research institutions, federal labs, political subdivisions, and/or to technology companies within the Commonwealth
Award Limits	Organizations may submit up to two (2) Letters of Intent (LOIs)/applications and receive up to two (2) awards during this solicitation
Project Eligibility	Projects must be based upon scientific principles and present an opportunity for valid research, as well as offer significant potential for commercialization and economic benefits that accrue to the Commonwealth. Projects must be for proof-of-concept work, defined as demonstration of viability of the theory or concept underlying a new product or service offering
Priority Clusters	Advanced manufacturing, specifically robotics, additive manufacturing, and remote monitoring and sensing; communications, specifically next-generation broadband networks, wireless telecommunications, and next-generation 911 infrastructure; cyber security; energy; information technology, specifically data analytics; life sciences; and modeling and simulation.
Project Timeframe	Typically, Commercialization Program projects are 6-12 months; however, longer or shorter projects are acceptable
Clawback Provisions	Award recipients whose CRCF-related activity leaves the Commonwealth during or within 24 months following the period of performance end date will be required to repay, in full, funds awarded. Partial repayment will not be accepted. As contemplated by this paragraph, CRCF-related activity may “leave” the Commonwealth as a result of a variety of factors, including, for example, the relocation of all or part of the award recipient, or the sale of the award recipient or of the CRCF-supported technology.
Funding Cycles	Typically, 1 per year (2 solicitations offered in FY2012 and FY2014)
Review Committee	Applications will be evaluated initially by CIT, followed by an external review, and subsequently by the Research and Technology Investment Advisory Committee (RTIAC). The RTIAC is composed of four vice-provosts of research from major state institutions of higher education; the president and chief executive officer of the Virginia Economic Development Partnership (VEDP); and five citizen members appointed by the Speaker of the House of Delegates, the Senate Committee on Rules, or the Governor. Citizen appointments are as follows: one member with experience in financing emerging technology

	businesses; two members who represent engineering firms; one citizen who represents an independent or federal research facility in the Commonwealth; and one citizen who represents a technology company with significant operations in the Commonwealth. After its review, the RTIAC will recommend awards to the CIT Board, which will consider those recommendations and make award decisions.
Selection Criteria	Technical merit and feasibility; Potential for and time to commercialize; Potential for measureable economic and technological benefits to the Commonwealth; Applicant's/team's technical and managerial qualifications to carry out the proposed activities; Strength and quality of the project's work plan, including measurable milestones; Extent to which the requested funds and the project costs are reasonable in relation to the project's objectives, design, and potential significance; Strength of the evaluation plan; Leverage of other funds; Active third-party equity holders; Amount of funding requested for direct costs, stronger consideration will be given to applications that request CRCF funds for direct costs only; Performance history and success on CRCF projects; Demonstration of public/private collaboration
Funding Disbursement	Awards are typically disbursed in two tranches: 60% of the award amount made at the time of the award, once award acceptance materials have been received, and the remaining funds usually halfway through the project; disbursement of the remaining funds is based on progress toward project milestones as discussed in a progress report
Evaluation Metrics	Clinical trials; FDA approval; Investment from federal, private, or other sources; Beta product releases; Companies created, expanded, or acquired; Products launched; Revenue generated; Intellectual property developed and licensed; Key personnel recruited
Evaluation Timing	Awardees will be required to submit progress reports and/or a final report as a condition of their award, and applicants will be required to report on commercialization and/or other outcomes for up to five (5) years after the period of performance.
Program Impact	Overall CRCF CY15 Impact includes: 9 clinical trials approved, underway or completed; 5 new products brought to market; 2 new companies; 115 new hires; $60 million in follow-on funding; 28 patents and 90 patents pending; 200 publications
Policy	Virginia Code Section 2.2.-2233.1

Sources: Center for Innovative Technology website; Commonwealth Research Commercialization Fund 2015 Annual Report; Email correspondence with program representative

Virginia – CRCF – Matching Fund

Dates of Operation	2011 - present
Goal/Purpose	Assist qualified organizations in commercializing qualified research or technologies and/or leveraging federal and private funds designated for commercialization.
Managing Entities	Administered by the Center for Innovative Technology (CIT) on behalf of the Innovation and Entrepreneurship Investment Authority
Funding Source	State of Virginia
Funding Type	Grant
Program Funding	Varies. $3.4M for all CRCF programs in FY16. There is not a predetermined amount for the Matching Funds Program; overall awards are selected on their merit up to the total amount available
Project Funding	Up to $100,000
Match Requirement	1:1
Applicant Eligibility	Applicants for the Matching Funds Program must be a: Virginia public or private institution of higher education or its associated intellectual property foundation; Federal research facility located in Virginia; University research consortium that includes Virginia college and university member institutions. Awards may be made to Virginia public or private institutions of higher education or to their associated intellectual property foundations and qualified research institutions, federal labs, political subdivisions, and/or to technology companies within the Commonwealth.
Award Limits	Organizations may submit up to four (4) LOIs and subsequently four (4) applications; Of an organization's four (4) LOIs/applications, a Principal Investigator may submit up to two (2)
Project Eligibility	Projects must be based upon sound scientific principles and present an opportunity for valid research, as well as offer significant potential for commercialization and economic benefits that accrue in the Commonwealth.
Priority Clusters	Cyber Security; Energy; Information Technology (specifically data analytics); Life Sciences; Unmanned Systems (for air, ground, sea, or space)
Project Timeframe	Project periods of performance are typically 12 months; however, projects with shorter or longer durations are acceptable
Clawback Provisions	Award recipients whose CRCF-related activity leaves the Commonwealth during or within 24 months following the period of performance end date will be required to repay, in full, funds awarded. Partial repayment will not be accepted. As contemplated by this paragraph, CRCF-related activity may "leave" the Commonwealth as a result of a variety of factors, including, for example, the relocation of all or part of the award recipient, or the sale of the award recipient or of the CRCF-supported technology.
Funding Cycles	Typically, 1 per year (2 solicitations offered in FY2012 and FY2014)
Review Committee	Applications will be evaluated initially by CIT, followed by an external review, and subsequently by the Research and Technology Investment Advisory Committee (RTIAC). The RTIAC is composed of four vice-provosts of research from major state institutions of higher education; the president and chief executive officer of the Virginia Economic Development Partnership (VEDP); and five citizen members appointed by the Speaker of the House of Delegates, the Senate Committee on Rules, or the Governor. Citizen appointments are as follows: one member with experience in financing emerging technology businesses; two members who represent engineering firms; one citizen who represents an independent or federal research facility in the Commonwealth; and one citizen who represents a technology company with significant operations in the Commonwealth. After its review, the RTIAC will recommend awards to the CIT Board, which will consider those

	recommendations and make award decisions.
Selection Criteria	Technical merit and feasibility; Potential for and time to commercialization; Potential for measureable economic and technological benefits to the Commonwealth; Applicant's/team's technical and managerial qualifications to carry out the proposed activities; Strength and quality of the project's work plan, including measurable milestones; Extent to which the requested funds and the project costs are reasonable in relation to the project's objectives, design, and potential significance; Strength of the evaluation plan; Leverage of other funds; Demonstration of public/private collaboration, or collaboration between higher education institutions; Amount of funding requested for direct costs; stronger consideration will be given to applications that request CRCF funds for direct costs only; Performance history and success on CRCF projects
Funding Disbursement	Awards are typically disbursed in two tranches: 60% of the award amount made at the time of the award, once award acceptance materials have been received, and the remaining funds usually halfway through the project; disbursement of the remaining funds is based on progress toward project milestones as discussed in a progress report
Evaluation Metrics	Performance against milestones, proposed budget vs. actual expenditures, intellectual property created, commercialization, job creation and retention, and other economic outcomes
Evaluation Timing	Awardees will be required to submit progress reports and/or a final report as a condition of their award, and applicants will be required to report on commercialization and/or other outcomes for up to five (5) years after the period of performance.
Program Impact	Overall CRCF CY15 Impact includes: 9 clinical trials approved, underway or completed; 5 new products brought to market; 2 new companies; 115 new hires; $60 million in follow-on funding; 28 patents and 90 patents pending; 200 publications
Dates of Operation	2011 - present

Sources: Center for Innovative Technology website; Commonwealth Research Commercialization Fund 2015 Annual Report; Email correspondence with program representative

A2.24. Washington
Life Sciences Discovery Fund – Proof of Concept Grants

Dates of Operation	2009-2016
Goal/Purpose	Encourage the translation of health-related technologies from discovery to development for eventual delivery to the marketplace
Managing Entities	Life Sciences Discovery Fund (LSDF) established by the Governor and WA Legislature in 2005)
Funding Source	State of Washington's Master Tobacco Settlement Agreement
Funding Type	Grants
Program Funding	$4.5M (2015)
Project Funding	$250,000
Match Requirement	No set ratio, but the commitment of "tangible resources that directly support and sustain the proposed research and development and commercialization" is required
Applicant Eligibility	Washington non-profit research organizations (public or private) Commercialization partner required
Award Limits	One per technology
Project Eligibility	Technology validation, proof-of-concept or prototype
Priority Clusters	Life Sciences; Health Care
Project Timeframe	12 Months
Clawback Provisions	Yes. Repayment criteria for triggering events specified in negotiated contract
Funding Cycles	One per year
Review Committee	Applications reviewed by science and business experts convened by LSDF; Awardees chosen by LSDF Board of Trustees
Selection Criteria	*Economic Benefit* – Enhance commercialization of research outcomes; Start new companies with the prospect for new job creation; Attract follow-on grant/investment funding; Decrease state expenditures for health care; *Health Benefit* – Improve diagnosis, treatment, prevention, and management of significant health and health care problems in Washington state; Increase efficiencies in health care and health-care systems; *Competitiveness Benefit* – keeping Washington's life sciences sector vital
Funding Disbursement	Funds are disbursed to applicant organizations on a cost-reimbursement basis subject to progress towards mutually agreed upon milestones and timelines.
Evaluation Metrics	Return on investment; health savings; follow-on funding; direct and indirect jobs; economic activity; # of start ups
Evaluation Timing	Reporting requirements will be finalized in the grant agreement. LSDF requires the following reports for Commercialization grants: regular oral progress updates, semi-annual written progress reports, invention reports, annual financial reports, and periodic reports after completion of the work. Site visits to and in-person briefings from principal investigators may be used by LSDF as tools to track the progress of funded activities.
Program Impact	LSDF grants as a whole have 7:1 return, $67M in health savings, $588M in follow-on funding, 4,000 direct and indirect jobs, $1B in economic activity, 40 startups
Policy	SB5581 (2005)

Source: Life Sciences Discovery Fund/2012 Commercialization Grant Competition website; Email and phone correspondence with program representative

Washington - Life Sciences Discovery Fund - Matching Grant

Dates of Operation	2014-2016
Goal/Purpose	Support research and development and commercialization-related initiatives to improve human health and health care, stimulate economic activity, create and retain jobs, and promote life sciences competitiveness in Washington
Managing Entities	Life Sciences Discovery Fund (established by the Governor and WA Legislature in 2005)
Funding Source	State of Washington's Master Tobacco Settlement Agreement
Funding Type	Grants
Program Funding	$4.5 Million for Program and Project Matching Grants
Project Funding	*Program Grants*: up to $1 Million; *Project Grants*: up to $500,000
Match Requirement	*Program Grants*: 1:3 cash match is required; *Project Grants:* 1:1 cash match required
Applicant Eligibility	*Non-profit organizations*: Washington state governmental or non-profit entities that have recently engaged in competitively funded, sponsored research and have a commercialization partner, a commercialization coordinator and intellectual property *For-profit organizations* with resources to conduct the work, substantial presence in WA, $500,000 or less in equity investment, and intellectual property access
Award Limits	One per technology
Project Eligibility	Technologies must be beyond the stage of basic or discovery research; the proposed commercial product must have clear potential to improve human health and health care in Washington
Priority Clusters	Life Sciences; Health Care
Project Timeframe	Varies by project
Clawback Provisions	Yes. Repayment criteria for triggering events specified in negotiated contract
Funding Cycles	Three per year
Review Committee	All applications are reviewed by science and business experts convened by LSDF; Awardees chosen by LSDF Board of Trustees
Selection Criteria	The board's award selections will be based on expert reviews, the availability of funds, and the goals of the granting program. The board may also consider the following in making award decisions: diversity of subject matter; variety of health, health-care and economic benefits anticipated; and the geographic impact of the work in Washington.
Funding Disbursement	Funding disbursed based on negotiated agreement
Evaluation Metrics	Return on investment; health savings; follow-on funding; direct and indirect jobs; economic activity; # of start ups
Evaluation Timing	Reporting requirements will be finalized in the grant agreement and may include the following: quarterly oral progress updates; semi-annual written progress reports, invention reports from non-profits, triggering event reporting from for-profits, annual financial reports and periodic reports after completion of the work.
Program Impact	LSDF grants as a whole have 7:1 return, $67M in health savings, $588M in follow-on funding, 4,000 direct and indirect jobs, $1B in economic activity, 40 startups
Policy	SB5581 (2005)

Sources: Life Sciences Discovery Fund 2014-2105 Matching Grants website; Email and phone correspondence with program representative

A2.25. Wisconsin
Ideadvance Seed Fund

Dates of Operation	2014 - present
Goal/Purpose	Support specific commercialization steps or milestones that will reduce the business risk in the recipient's ideas and ultimately help make the recipient's business investor-ready
Managing Entities	Ideadvance (University of Wisconsin-Extension)
Funding Source	$1M Wisconsin Economic Development Corporation, Capital Catalyst program $1M UW System, Economic Development Incentive Grant
Funding Type	Grant
Program Funding	The entire seed fund is $2M. The annual disbursements vary.
Project Funding	Stage 1: Up to $25K based on completion of commercialization milestones Stage 2: Up to $50k based on completion of commercialization milestones
Match Requirement	Yes. Stage 2: 1:1 (50% can be through in-kind)
Applicant Eligibility	Staff, faculty, and students who are part of the UW system; Young companies with licensed technologies from the WiSys Technology Foundation of the UW-Milwaukee Research Foundation
Award Limits	Generally, a company can receive one Stage 1 award and one Stage 2 award
Project Eligibility	Ideas from across any discipline are welcomed. Funds can be used for most any business expense including marketing, accounting, legal, etc. The money is not intended to pay salaries.
Priority Clusters	No
Project Timeframe	Stage 1: 6 months; Stage 2: Up to 1 year
Clawback Provisions	Yes. If the awardee fails to meet milestones, they do not receive additional funding.
Funding Cycles	Annually two solicitation deadlines for Stage 1 and three solicitation deadlines for Stage 2
Review Committee	Investment Committee includes representatives from UW System, WiSys Technology Foundation, UW-Extension, Wisconsin Economic Development Corporation (WEDC), and an entrepreneur affiliated with an eligible UW Campus
Selection Criteria	The Investment Committee selects competitive proposals that have described well the significance of the market problem, the strength of the proposed solution, and the learning needed to help reduce risks in their business model. The Committee also focuses on the skills of the team and how well prepared they are to tackle this learning. Projects are evaluated based on the market need, competitive advantage, team and impact for Wisconsin.
Funding Disbursement	Awards are not given in one lump sum but are incrementally dispersed based upon completion of commercialization milestones
Evaluation Metrics	Awardees are annually reviewed for their current progress and economic metric data are gathered, such as the following: Number of employees; Salaries and wages; Follow-on funding; Royalty revenue; Sales/revenue)
Evaluation Timing	All award recipients will submit an annual report for up to five years including content that describes the extent to which the company has advanced including quantitative and qualitative measures of success
Program Impact	Awardees report over $2.6M in capital. Anecdotally, the program has helped entrepreneurs be more productive in new ventures even if their Ideadvance company failed. At least 3 entrepreneurs have leveraged the Ideadvance program to pursue and receive SBIR/STTR federal funding and follow-on funding through additional state match programs.
Policy	There was no legislation that created this program. The program is a collaborative effort between UW System and the Wisconsin Economic Development Corporation.

Source: University of Wisconsin Extension Ideaadvance Seed Fund website; Email correspondence with program representative

Appendix 3. Summary of Study Purpose, Data and Findings[5]

PURPOSE

This study analyzes the structure and impact of state-funded technology maturation programs throughout the United States designed to leverage research institutions for state economic development. The intent is to inform Sandia's Technology Partnerships and Government Relations teams as they participate in discussions about the proposed New Mexico Technology Readiness Gross Receipts Tax Credit and Program.

DATA SET

- 39 programs in 25 states
  - ***Inclusion Criteria:*** State funded, focused on technology maturation/commercialization, and structured to directly or indirectly leverage state research institutions for state economic development.
  - ***Exclusion Criteria:*** Types of programs not included in the data set include angel investor tax credits, R&D tax credits, SBIR/STTR Support, Business Competitions, and public university technology transfer programs
  - ***Program Maturity:*** 29 of these programs are less than 10 years old

MANAGING ENTITIES

- Managed by a State agency: 18
- State-funded, non-profit entities: 17
- University Entity: 3
- National Laboratory: 1

FUNDING

- ***Funding Type****:*
  - Grants: 25 (including 8 voucher programs where private companies apply for money to be spent on their behalf by a research institution)
  - Combination of grants and investments: 9
  - Investments: 4
  - Tax Credit: 1
- ***Program Funding:*** Annual program funding ranges from $200K to $10.5M per year.
  - Program funding for the 8 voucher programs ranges from $300K to $5M.
- ***Project Funding:*** Annual project funding ranges from $25K to $1M.
  - Project funding for the 8 voucher programs ranges from $40K to $1M.

APPLICANT ELIGIBILITY

- ***Type of Applicant:***
  - Private companies: 14
  - Research institutions: 9
  - Either private companies or research institutions: 16
- ***Company Requirements:*** Of the 30 programs that accept private company applicants
  - 26 require the company to be in-state, while 4 programs permit applications from companies that are committed to locating in the state.
    - The criteria for what qualifies as an in-state company varies (e.g., headquarters, at least 50%

[5] A version of this appendix was previously published as SAND2016-7663O

of employees, significant business operations)
  - 22 are specifically focused on small businesses, while 8 have no size limitations
    - The criteria for what qualifies as small varies (employee caps range from 4-500; revenue caps range from $50K-$10M; investment caps range from $500K-$2M)

PROJECT ELIGIBILITY

- ***Allowable use of funds:*** The definition of what qualifies as an eligible project varies by program, but common terms used to describe allowable activities include *prototype, proof-of-concept, technical validation, applied research, testing and development*.
- ***Priority Clusters:*** Of the 39 programs, 20 are focused on priority research/economic development fields.
  - 11 of those 20 accept projects related to a set of state priority areas.
  - 9 of those 20 are tailored to a single focus area.

ASSURANCE MECHANISMS

- ***Match Requirements:*** 22 programs require some type of formal match
  - Match less than 1:1: 5
  - 1:1 match: 13
  - Match greater than 1:1: 2
  - Require a match but set no specific ratio: 2
- ***Funding Disbursement:*** Tranched funding is used by many programs to ensure accountability
- ***Clawback Provisions:*** 9 programs include a Clawback mechanism requiring repayment if the company leaves the state.
  - Several programs have repayment requirements for research institutions if the technology is licensed to an out-of-state company
- ***Award Limits:***
  - 25 of the programs set award limits beyond project funding caps
  - 11 specify that applicants are eligible for only one award per technology
- ***Other:*** Sunset clauses and diverse review committees (including technical and business expertise) are also used as assurance mechanisms

SELECTION PROCESS

- ***Selection Criteria:*** Most of the programs use selection criteria that assess both technical merit and commercial/economic development potential
- ***Review Committee:*** 25 use a combination of internal and external experts to review applications and select awardees and nearly all programs have both technical and economic development expertise on the review committees

METRICS/ EVALUATION

- ***Metrics:*** Specific metrics vary by program, but most programs assess program success based on:
  - number of technologies matured
  - number of businesses assisted
  - amount of assistance disbursed
  - number of jobs created or retained and mean salary
  - amount of follow-on investments
  - increase in company revenue
  - increase in state tax revenue
  - investment in state goods/services

- ***Evaluation Timing:*** Most programs require project leads to submit interim and final reports. Several require award recipients to report on impact metrics for up to five years after the completion of the work

ECONOMIC IMPACT

- Data on the state economic impact of technology commercialization programs is highly variable
- Several of the programs indicate significant returns in terms of follow-on investments, job creation and retention, tax revenue and overall economic impact

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