

The SBIR/STTR Programs

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Purpose of Workshop

Become familiar with the:

- SBIR/STTR programs
- Proposal process
- NM FAST program at Arrowhead Center

SBIR/STTR Programs



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Small Business Innovation Research (SBIR) Program and Small Business Technology Transfer (STTR) Programs

“To help startups and small businesses transform their high-risk, high-impact technologies into marketable products and services that solve problems.”

Goals:

1. Meet federal R&D needs by providing research dollars to small businesses
2. Increase private-sector commercialization of innovations derived from federal R&D funding
3. Stimulate technological innovation
4. Foster and encourage participation in innovation and entrepreneurship by socially and economically disadvantaged persons
5. Foster technology transfer through cooperative R&D between small businesses and research institutions (STTR)



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Eligibility

- Organized **for profit**, with a place of business located in the **United States**
- More than **50%** owned and controlled by one or more individuals who are **citizens or permanent resident aliens of the United States**, or by other small business concerns that are each more than 50% owned and controlled by one or more individuals who are citizens or permanent resident aliens of the United States
- No more than **500** employees

Focus is on performing R&D – Not purchasing equipment, commercializing a technology that has already been developed, or one that has very low risk and only needs capital



Technical Challenge Focus

- Agencies want the business to solve a technical challenge with their innovation
 - “If I can already go out and buy it, I’ll do just that”
 - There needs to be a compelling reason why SBIR/STTR funding is the only path forward
 - Forms a backbone for growth
- Solving a technical challenge allows the business to look at other issues
 - Can the product be made better by doing X?
 - Can they cut costs by doing Y?



Small Business Innovation Research (SBIR) Program

Why SBIR?

1. Equity-free investment in your company
2. Allows you to demonstrate feasibility of your idea
3. Allows you to start building a team and build your company for success
4. Can help provide due diligence for follow-on funding
5. Allows you to map your product and value proposition to your intended customer
6. Reduces need to self-fund R&D, which can be expensive
7. IP/Data Rights
8. Positions you for sole-source government contracts



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Government purpose in SBIR/STTR

- Build a stronger economy for America
 - More businesses succeed, more tax revenue, more job growth, etc.
 - Small businesses account for 44% of U.S. economic activity
- Build a stronger innovation pipeline
 - Small businesses produce 16x more patents per employee than large businesses
 - Employ almost 40% of America's scientists and engineers
 - Much more flexible and mobile than larger companies



SBIR/STTR Program Overview

Over **7,000** new awards
every year!

SBIR

- Supports R&D and financing of innovative technologies
- ~\$3.8 billion annual set aside
- 3.2% of the extramural research budget for all agencies with a budget greater than \$100M per year

STTR

- Sister program designed to facilitate cooperative R&D between small businesses and U.S. research institutions – with potential for commercialization
- 0.45% of the extramural research budget for agencies with a budget greater than \$1 billion per year
- \$518 million set-aside per year

The small business is ALWAYS the applicant and awardee.



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Differences Between SBIR & STTR Programs

	SBIR	STTR
Partnering Requirement	Permits partnering	Requires a research institution partner
Principle Investigator	Primary employment (>50%) must be with the small business	PI may be employed by either the research institution partner or small business
Work Requirement	May outsource up to 33% (Phase I) and 50% (Phase II)	Minimum work requirements: 40% small business and 30% research institution partner
IP Requirement	Formal IP requirement not required	Formal IP agreement required (must be signed prior to award)
Participating Agencies	11 agencies (extramural R&D budget >\$100M)	5 agencies (extramural R&D budget >\$1B)
Program Size	\$3.8B	\$518M



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Participating Agencies

SBIR

STTR

Department of Agriculture
(USDA)

Department of Commerce
(DoC)
NIST, NOAA

Department of Defense
(DoD)

Department of Education
(ED)

Department of Energy
(DOE)

Department of Health and
Human Services
(HHS)
NIH, CDC, FDA

Department of Homeland
Security
(DHS)

Department of Transportation
(DOT)

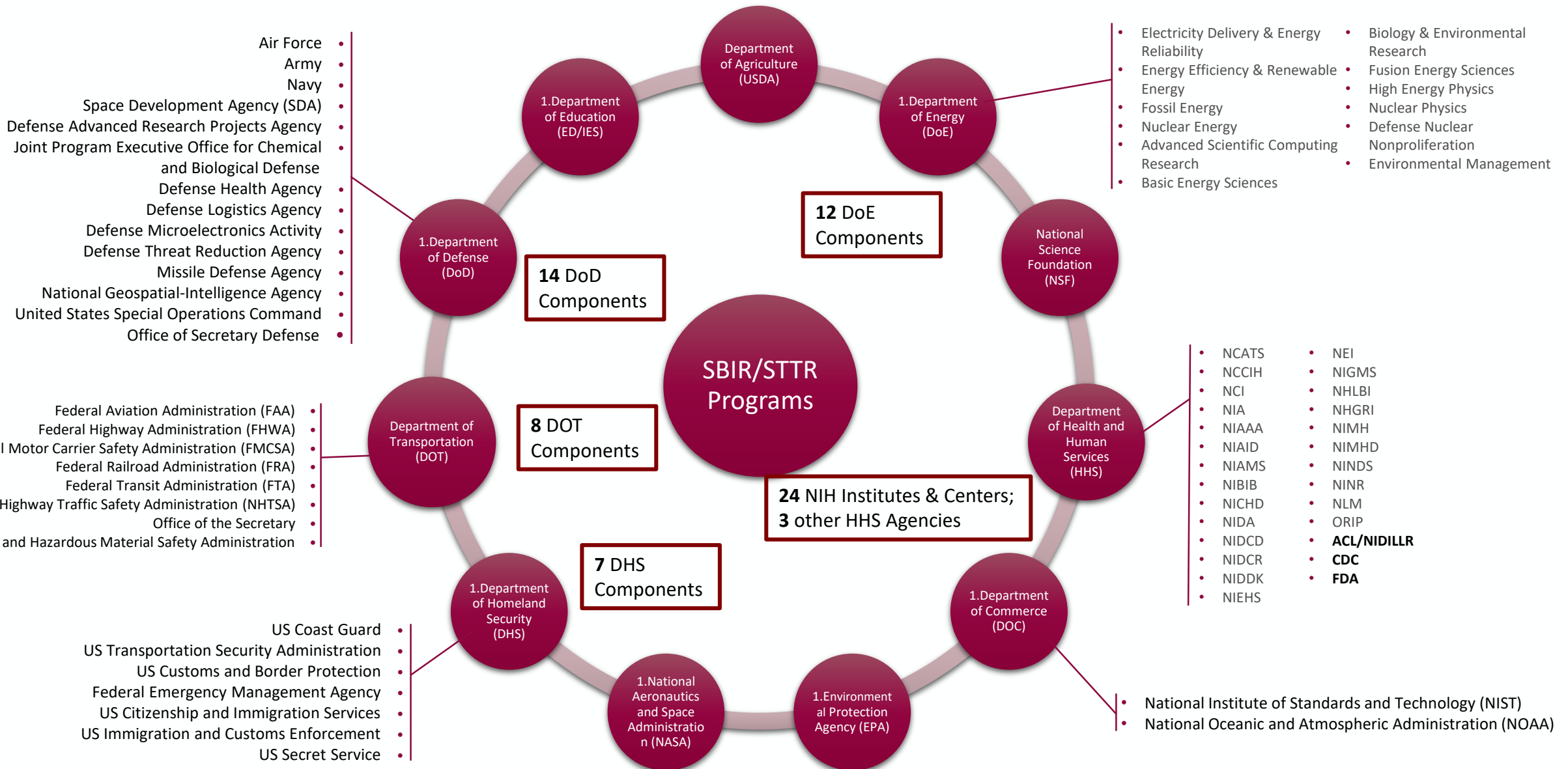
Environmental Protection
Agency
(EPA)

National Aeronautics and
Space Administration
(NASA)

National Science
Foundation
(NSF)



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Participating Agencies

- **NSF** – all scientific and engineering disciplines, save drug discovery and clinical trials
- **DoD** – support for warfighters in the field; risk mitigation, cyber, health care, etc.
- **NASA** – supports space missions; astronaut habitation and long-endurance flight are hot issues
- **HHS/NIH** – all things health and healthy Americans
- **DOE** – all things energy
- **EdD/IES** – all things education; large focus on STEM
- **DHS** – protection of critical infrastructure and borders/perimeters
- **DOT** – transportation innovations; highways, railways, infrastructure, traffic management, etc.
- **EPA** – all things environment and green tech
- **USDA** – food and agriculture; only agency with a COTS area
- **NOAA** – air and ocean protection, monitoring, and mitigation
- **NIST** – standards baselines for technology; advanced manufacturing, cybersecurity, etc.



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Agency Differences

- Proposal submission process can vary
- Proposal requirements do vary
 - Format and layout, page counts, content expectations, additional documents
- Funding levels vary
- Period of performance varies
- Solicitations per year vary; many are 1x, some up to 3x
- Communication with topic authors/program manager varies
- Registration requirements vary
- Funding vehicle varies (some are grant based and some contract based)

Funded in part by the Small Business Administration.

Agency	Program	Phase (P)	Open	Close
DHS	SBIR	P-I/P-II	December	January
DoD	SBIR/STTR	P-I/P-II	January	February
			May	June
			September	October
DoE	SBIR/STTR	P-I	August	October
			December	February
DoE	SBIR/STTR	P-II	October	December
			February	April
DOT	SBIR	P-I/P-II	February	March
EPA	SBIR	P-I	June	July
HHS*	SBIR/STTR	P-I/P-II	May	Sept/Jan/April
IES	SBIR	P-I	December	January
NASA	SBIR/STTR	P-I	November	January
NIST	SBIR	P-I/P-II	January	April
NOAA	SBIR	P-I	October	January
			December	March
			March	June
			June	September
			September	December
			September	November
USDA	SBIR	P-I	September	November
	SBIR	P-II	December	May

*These are general dates for the HHS SBIR/STTR programs. The solicitation open and close dates for specific NIH institutes may vary.
 ** NSF has moved to a "window" submission period. Windows run consecutively and cover an entire year.

Listed dates are valid as of November 2021 All dates above are subject to change at the agency level due to continuing resolutions, federal budget availability, or other mitigating factors. To stay up-to-date on the latest solicitation openings please visit our web-site at <http://arrowheadcenter.nmsu.edu/nmfast>. Copyright © 2021 by Arrowhead Center. All rights reserved.

Why Pursue SBIR/STTR Funding?

- Government's "seed fund" program
 - Government is investing in an idea
- Risk-free dollars
 - Not a loan; don't have to pay the money back
- No equity taken (non-dilutive funding)
 - Government doesn't want part of the business
- Similar to established process of seeking third-party investment
 - Put together a pitch, know the product, the market, and how it will be sold
- Priority position for sole source sales to government (e.g., DoD and NASA)



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Grants vs. Contracts

GRANTS	CONTRACTS
Less specific topics	Highly focused topics
A flexible instrument designed to provide funds to support a public purpose	A binding agreement between a buyer and a seller for goods or services
Principle Investigator has more freedom in defining scope of work	Scope of work is fairly inflexible
More flexibility in use of funds	Payments are based on deliverables and milestones with more fiscal requirements
Requires best efforts in research	Requires delivery of promised goods or services determined by contract type
Questions and answers about solicitation are not made public	Questions and answers about solicitations must be made public
Applicant defines the scope of work	Government defines the scope of work



Grants vs. Contracts

Contracts		Both		Grants	
DoD	Dept. of Defense	HHS	Health & Human Services Institute of Education	NSF	Natl. Science Foundation
NASA	Nat. Aeronautics & Space Admin.			DOE	Dept. of Energy
DOC	Dept. of Commerce			USDA	United States Dept. of Agriculture
DHS	Dept. of Homeland Security			IES	Sciences (Dept. of Education)
DOT	Dept. of Transportation				
EPA	Environmental Protection Agency				



Phase I and II Award Amounts and Periods of Performance

Agency	Phase I	Phase II	Phase I	Phase II	Total Program Funding
DoD	Up to \$250,000	Up to \$1,600,000	3-12 months	18-27 months	\$2.29 Billion
HHS	Up to \$252,131	Up to \$1,000,000	6 months	2 years	\$1.20 Billion
DOE	Up to \$200,000	Up to \$1,500,000	6-12 months	2 years	\$316 Million
NASA	Up to \$150,000	Up to \$1,000,000	6 months	2 years	\$169 Million
NSF	Up to \$256,000	Up to \$1,000,000	6-12 months	2 years	\$224 Million
DHS	Up to \$150,000	Up to \$1,000,000	5 months	2 years	\$15 Million
DOT	Up to \$150,000	Up to \$1,000,000	6 months	2 years	\$6.5 Million
EPA	Up to \$100,000	Up to \$400,000	6 months	2 years	\$4.1 Million
EdD	Up to \$200,000	Up to \$900,000	8 months	2 years	\$11.8 Million
USDA	Up to \$125K/\$175K	Up to \$600,000	8 months	2 years	\$32.2 Million
NOAA	Up to \$120,000	Up to \$400,000	6 months	2 years	\$10.7 Million
NIST	Up to \$100,000	Up to \$400,000	6 months	2 years	\$4.6 Million



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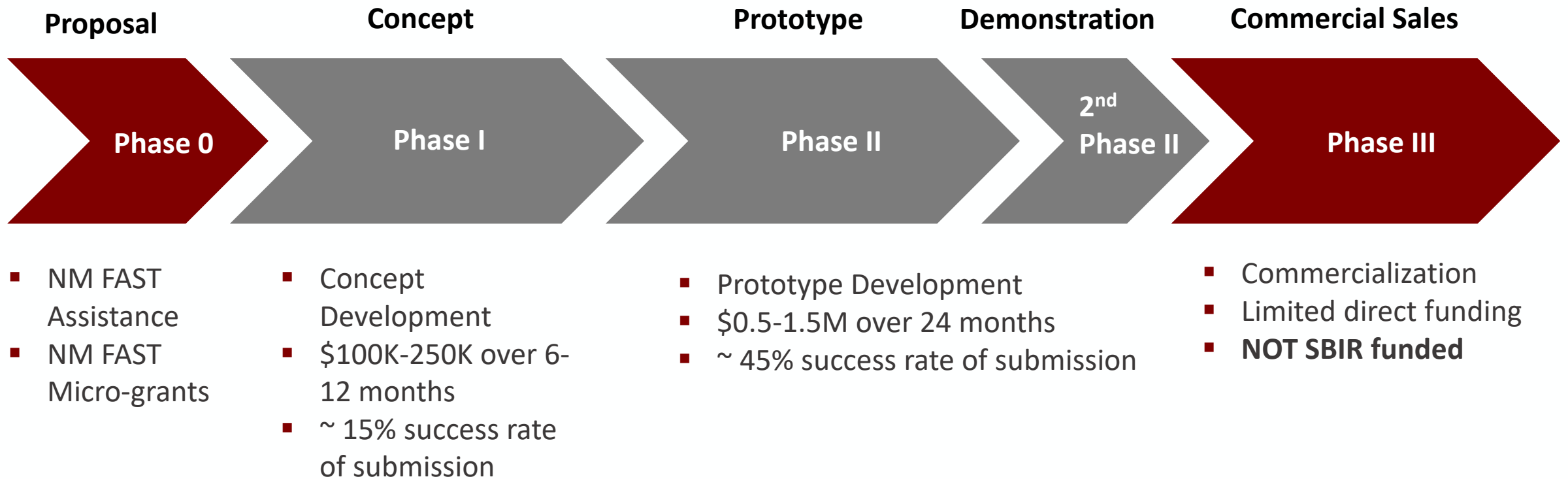
Data Rights and IP Protection

- Small business owns, and has full right and title to, the data developed under an SBIR award
- For STTR, you must negotiate and sign an IP agreement identifying the sharing of data rights *prior to award*
- Data is protected for a minimum of **20 years** (new change; used to be 4) from the start of your award
- The SBC must mark SBIR Technical Data appropriately
- Data rights only apply if you have not protected the technology before utilizing SBIR/STTR funding to develop
- Federal Government has limited use of the data
 - Primarily for evaluation of the results of the award
 - Federal Government does receive a royalty-free license for use (whether patented or not)
- U.S. PTO holds regular webinars on these topics
- More information can be found here: <https://www.sbir.gov/tutorials/data-rights/tutorial-2>



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Gated Program



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The SBIR/STTR Program Backbone

Innovation

- Innovation does not necessarily mean high-tech
 - Some low-tech processes and/or products are considered innovative (e.g., comic books for PTSD patients)
- Innovation comes in all shapes and forms
- Innovation can start anywhere in the product/idea chain

Commercialization

- “Commercial Merit” is one of the founding principles of the SBIR/STTR programs
- They don’t define how it needs to be commercialized but should have the potential to be commercializable
- Clear path to market or a strategy for how to get there, and how the funding will be used
- Will want to conduct customer discovery activities here: address pain point, show gain, find value statement, define the benefit, etc.



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Some Key Questions to Establish Commercial Viability

What is the demand, and how has it been validated?

- *Do people even need this product or service?*

What is the market size?

- *How many people will buy this to satisfy a need?*

What are the involved economic factors?

- *Is this need a luxury or a necessity?*

How can you reliably reach your customer?

What is the market saturation?

- *What does the competitive landscape look like, and how big are the other players?*

What is the acceptable price?

- *How much will people pay for this solution?*



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Government Contracting

- Though there are no specific incentives with the SBIR/STTR program for being an underserved business, there are some for other contract opportunities
 - A certain percentage of contracts have to go to historically underserved businesses
 - There are set-asides for small business, 8A, women-owned small business, HUB zone business, and service-disabled veteran-owned small business
- You can certify as an underserved business through certify.sba.gov
 - You will need a few documents about the business (EIN, Articles of Incorporation, etc.) to move through this process
- These set-asides can be a great vehicle for growing your business and can reduce the amount of competition on opportunities
- [Beta.sam.gov](https://beta.sam.gov) is your one-stop shop for more information



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Proposal Process



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Proposal Process

Determine Eligibility

1. Qualify as SBC (less than 500 employees)
2. Be a for-profit business
3. Primarily U.S. owned (51%)
4. Work must be done in the U.S.
5. PI primarily employed by small business



Develop Innovative Idea

Do you have an idea or technology that can respond to a specific need that the agency has?

Proposal Process

Complete Registrations

1. Dun and Bradstreet (DUNS)
2. System for Award Management (SAM)
3. SBA Company Registration
4. Agency-specific Registrations



Determine Topic Fit & Talk to Agency

Review solicitation for agency priority problems that need to be addressed and see if your innovation solves their problem. They are always interested in solutions, even if it is not the approach they want.

Proposal Process

Proposal Package

Differs depending on agency, but expect to complete:

1. Technical Proposal
2. Resumes
3. Facilities
4. Budget
5. Additional documents dependent on agency



Review

Secure a third-party reviewer to look through your proposal.

Proposal Process

Submit



Don't wait until the last minute. Submit ***at least one day before*** the application is due.



Wait

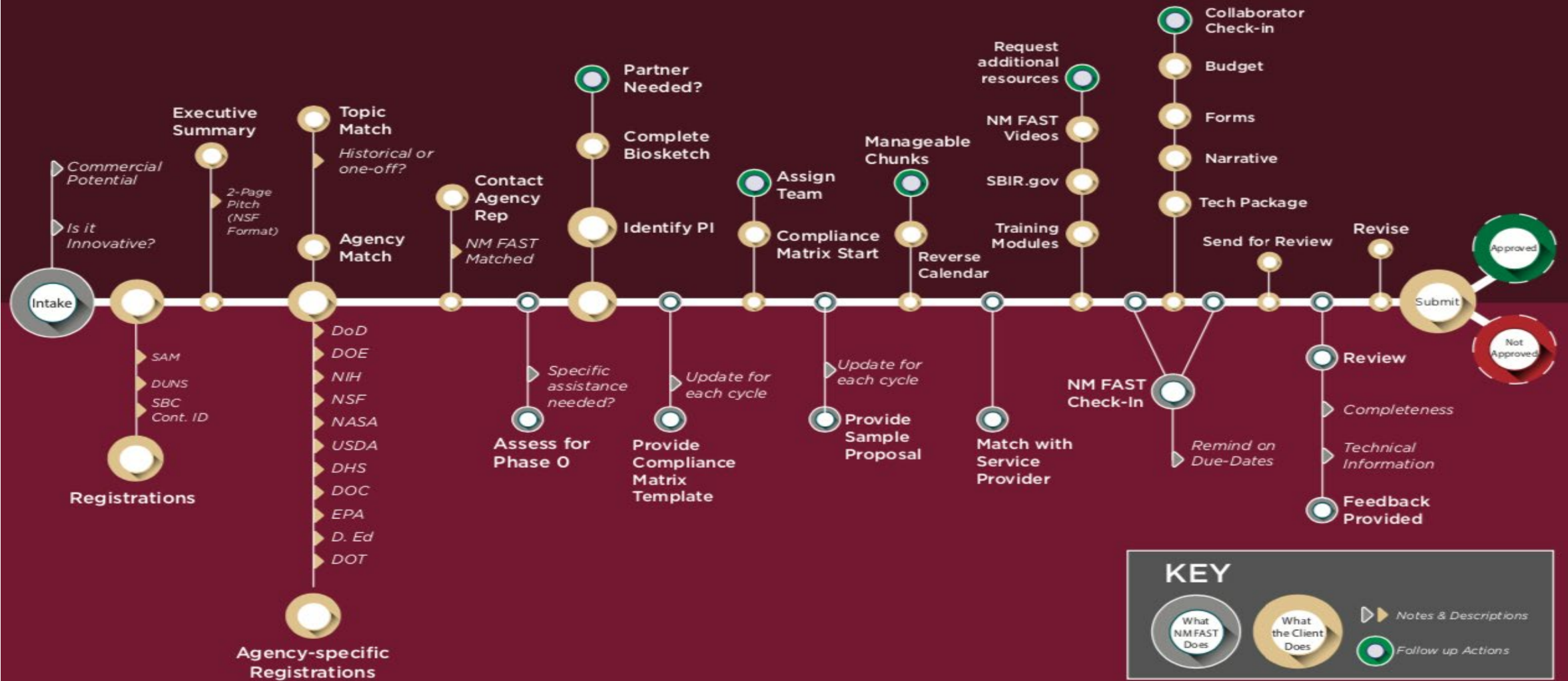
Award notification can take anywhere from 3-6 months, depending on the agency.



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Timeline Process

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NM FAST at Arrowhead Center

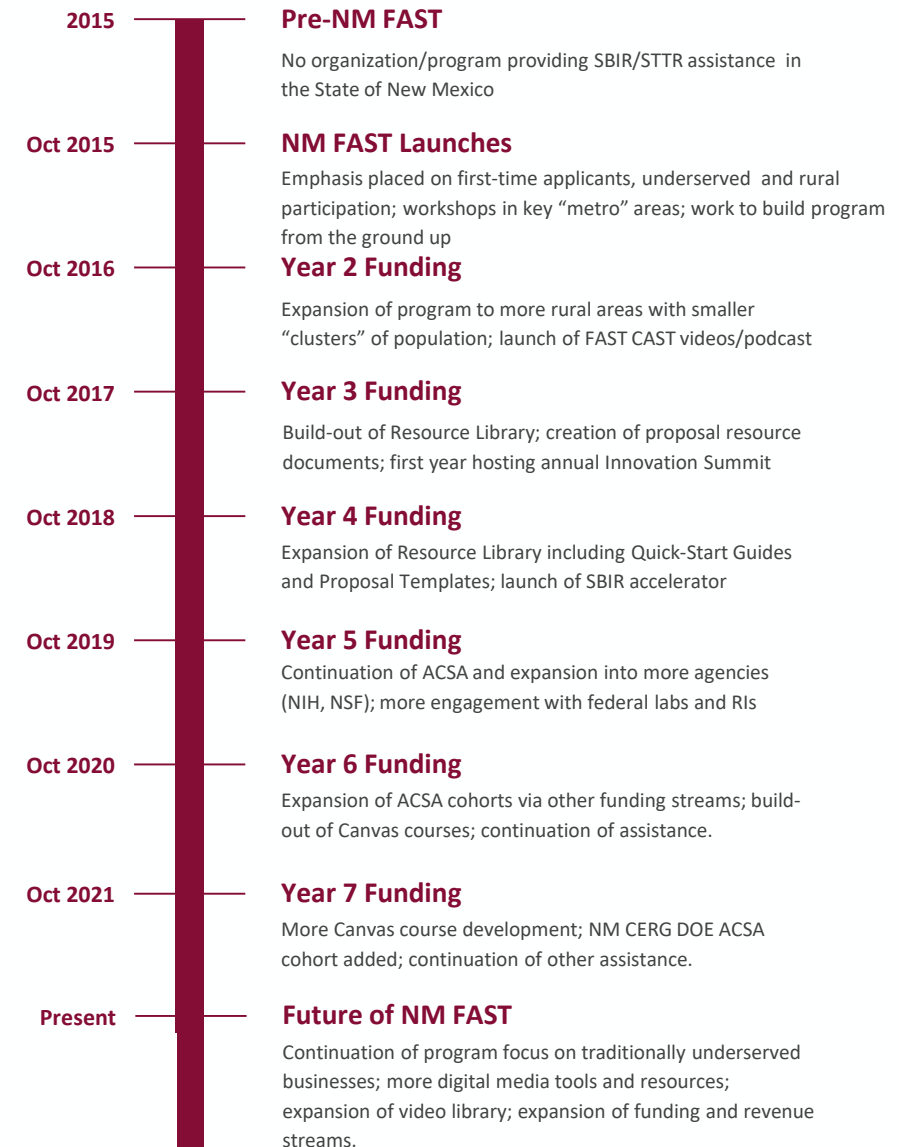


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NM FAST: SBIR/STTR Story

New Mexico's source for SBIR/STTR proposal development programming and assistance, built from the ground up

- **NM FAST** was created through New Mexico State University's Arrowhead Center, which serves as the economic development engine for the university
- Arrowhead resources include experiential entrepreneurship education for K-16+ students and community members, business startup and development assistance, IP guidance and management, and a business and research park
- Funding through the SBA's FAST grant allowed Arrowhead to fill a critical need within the State of NM - providing underserved small businesses access to SBIR/STTR proposal development assistance through the NM FAST program



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NM FAST Activities & Assistance

NM FAST offers NM small businesses:

- Free SBIR/STTR proposal development assistance (e.g., topic and agency matching, budget assistance, proposal writing assistance, etc.)
- Proposal package review
- Tailored services for each client
- Micro-grants (up to \$2,000) available to help with proposal development and/or conference travel
- Free workshops and engagement activities held throughout the state (from March 2020-present, webinars in lieu of in-person events due to COVID-19 restrictions)
- SBIR/STTR tools and resources available on website: <https://arrowheadcenter.nmsu.edu/program/nm-fast/>
- Monthly SBIR/STTR newsletter and agency blasts for each solicitation
- Video series: <https://bit.ly/2D3UV4M>
- Multi-week SBIR/STTR accelerators
- Annual SBIR/STTR Innovation Summit
- Canvas integration of SBIR/STTR curriculum and tools

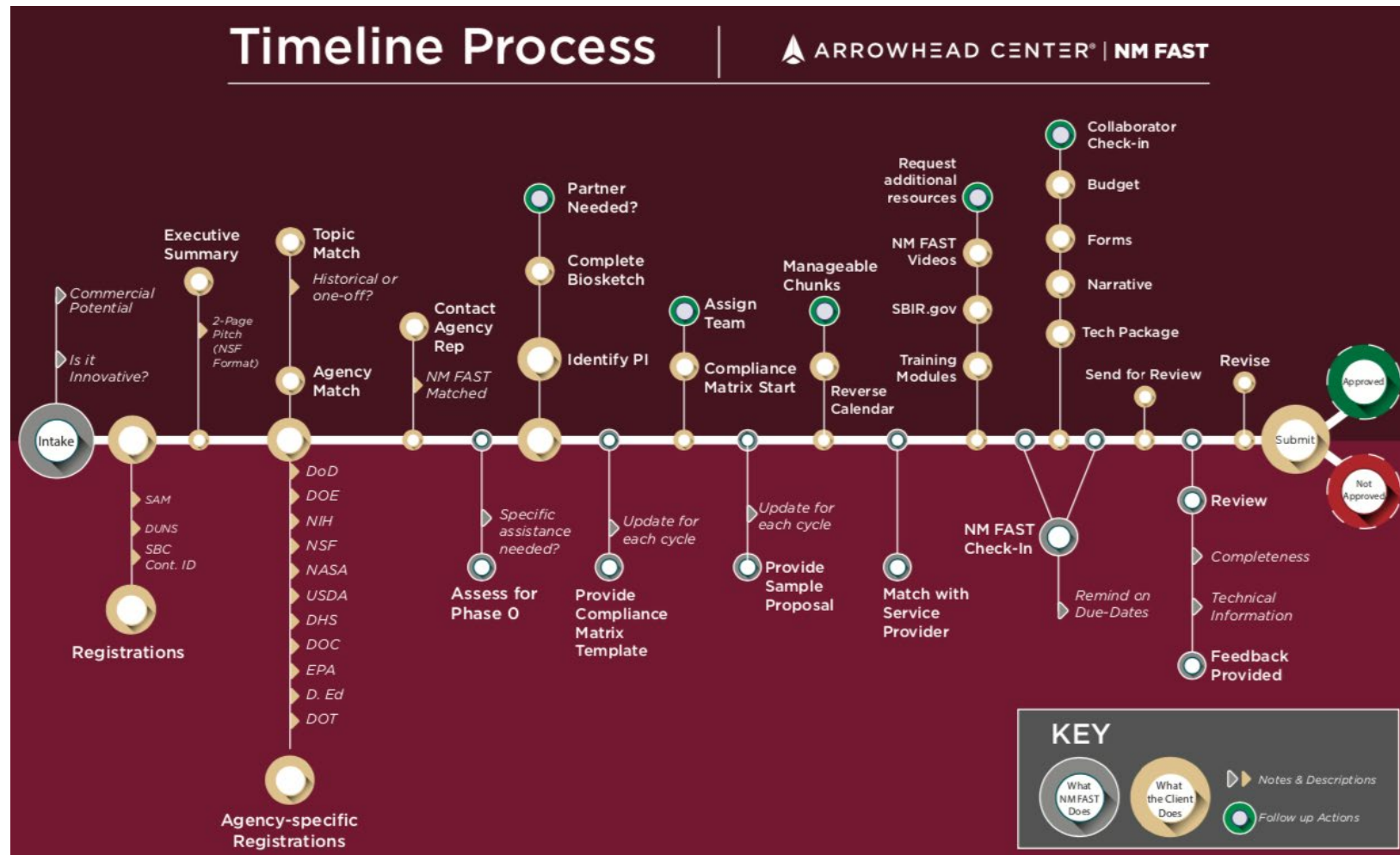
“The NM FAST team has been outstanding. The support package is tailored to the company, providing critical expertise and knowledge to the company. It truly is hands on engagement.” – NM FAST Client



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Assistance Provided

- **280** clients served over the program's 5-year history
- Assists an average of **38** clients per quarter for SBIR/STTR development
- Average **14** new client intakes per quarter
- Outreach and assistance workshops and events throughout the state, touching **12** communities (75% rural) across **106** events
- Provides micro-grant services of up to **\$2,000** for proposal development assistance, with over **\$50K** awarded to clients over the life of the program
- NM small businesses supported by NM FAST have received over **\$9.2M** in SBIR/STTR funding since program inception in 2015



"The assistance we have received from the NM FAST team over the past two years has been phenomenal. Moving through all the different tools and resources that NM FAST has created, attending their workshops, receiving a micro-grant for budget development, and really, just getting that great level of direct, hands-on assistance has allowed us to focus around a core innovation for company growth." – NM FAST Client



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Living Library & Website

Our always-on digital resources ensure applicants get the answers they need when they need them.

- Agency “Quick-Start” Guides
- YouTube Channel: Archive of prior workshops, structured video playlists for each agency, videos on various proposal components, etc.
- Compliance Matrices: Bird’s-eye view of solicitation requirements
- Checklists: Final verification that all requirements have been met
- Templates: Proposal, executive summary, budget justifications, letters of support
- Solicitation Guide (updated solicitation schedule available on website)
- 96 proposal development documents created
- 18 agency guides translated into Spanish
- Documents and resources updated every release to provide the most up-to-date tools for successful proposal creation



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EPA	SBIR	P-I	June	July
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IES	SBIR	P-I	January	March
NASA	SBIR/STTR	P-I	November	January
NIST	SBIR	P-I/P-II	January	April
NOAA	SBIR	P-I	October	January
NSF**	SBIR/STTR	P-I/P-II	December	March
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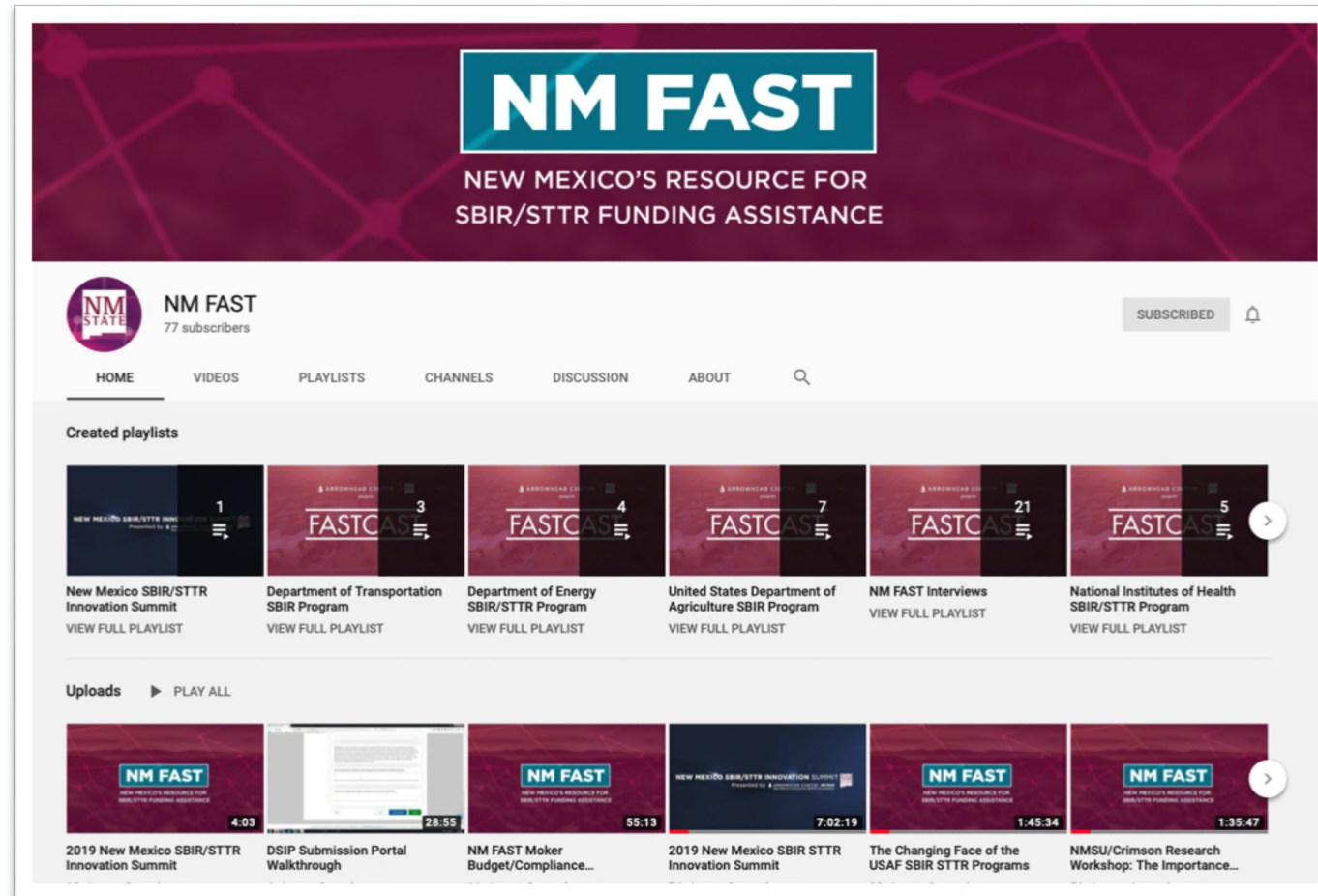
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YouTube Channel

NM FAST created a dedicated YouTube channel to provide an additional layer of SBIR/STTR support

- Archive of workshops and events
- **141** videos in YouTube library
- **22** playlists in YouTube library
- Over **102 hours** of video content
- ~80 views per month
- Access to live events where viewers can interact with program managers and resource providers
- Structured videos navigating proposal submission sites to clarify submission process

YouTube channel link: <https://bit.ly/2D3UV4M>



"Being able to watch, and re-watch, videos at any time really helped me figure out the whole proposal process and cleared up my confusion." - NM FAST Client



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Arrowhead Center SBIR Accelerator (ACSA)

NM FAST created ACSA after noticing a recurrent trend among clients - many would complete all or most of a proposal package but fail to submit. NM FAST was also spending time and resources answering duplicative questions and providing the same assistance across multiple clients. Two tracks of ACSA were created (agency-focused and SBIR/STTR 101) to provide directed, hands-on assistance throughout the proposal process.

Goals:

- Increase the number of quality proposals being generated by New Mexico businesses
- Provide oversight and ownership of proposal process
- Drive state of innovation in New Mexico
- Provide a structured system to work on small sections of the proposal package over time
- Increase participation of historically underserved populations
- Use a cohort-based model to increase accountability

To-Date:

- Ten cohorts completed: two DoD-focused, two NSF-focused, two NIH-focused, one USDA-focused two SBIR 101, and one STTR 101
- 13 participants in DoD cohorts led to 13 proposal submissions from businesses that would not have submitted otherwise
- 170 applicants; 109 participants
 - Applicants; 73.5% first-time applicants, 28.8% women-owned businesses, 37.1% minority-owned businesses, 8.8% veteran-owned businesses, 44.1% total underserved
 - Participants; 76.1% first-time applicants, 21.1% women-owned businesses, 22.0% minority-owned businesses, 7.3% veteran-owned businesses, 51.4% total underserved
- Program is completed by 86.2% of participants
- Resulted in 38 SBIR/STTR proposal submissions

"The ACSA is an effective way to reduce the intimidation factor and at the same time, help entrepreneurs to submit stronger, more competitive NSF SBIR/STTR proposals. It is an excellent compromise between the efficiency of workshops and training, and one-on-one assistance, providing more in-depth assistance but at a lower cost. The Arrowhead Center is doing an excellent job of continuing to refine the ACSA over time, making it even more beneficial to participants." – *Jim Greenwood*



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Upcoming ACSA Cohorts

Department of Energy ACSA

- New agency-focused ACSA cohort tailored for the Department of Energy (DOE)
- 12-week cohort that covers items such as navigating DOE topic areas, preparing a Letter of Intent (LOI), creating a strong team, and developing a Commercialization Plan for your proposal submission
- Team-taught with an Industry Expert that has secured SBIR/STTR funding as well as reviewed proposal packages for DOE
- Outgrowth of the New Mexico Clean Energy Resilience and Growth (NM CERG) cluster; participants must be an active member of NM CERG
 - Can still apply to the program, and if you are a fit for NM CERG, we will on-board you during the process
- Applications available here: <https://arrowheadcenter.nmsu.edu/program/nm-fast/acsa/acsa-doe/>



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In Summary, NM FAST...

- **Assists** in identifying appropriate agency(s) and topic area(s)
- **Provides** how-to information on agency registrations and electronic proposal submission
- **Helps** guide proposal preparation, including assessments of technical objectives, commercialization plan, research hypotheses, and creation of supporting documents
- **Provides** access to a suite of SBIR resources
- **Reviews** proposal drafts, with feedback
- **Offers** micro-grants for proposal development support



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Thank You!

Contact:

Dana Catron, dderego@nmsu.edu

Apply for assistance at:

arrowheadcenter.nmsu.edu/program/nm-fast