



2019

*Year
in Review*



U.S. AIR FORCE
SBIR-STTR

UNITED STATES AIR FORCE

SMALL BUSINESS INNOVATION RESEARCH | SMALL BUSINESS TECHNOLOGY TRANSFER

2020

INNOVATION IN SIGHT

2020 PITCH DAY EVENTS

Air Force Pitch Bowl

March 10-12 | Austin, TX

Air Force Life Cycle Industry Days

June 15-29 | Dayton, OH

For updates and additional details go to our website.



U.S. AIR FORCE
SBIR-STTR
[HTTPS://WWW.AFSBIRSTTR.AF.MIL](https://www.afsbirsttr.af.mil)

2019

Year in Review

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A MESSAGE FROM THE



PROGRAM DIRECTOR

DAVID E. SHAHADY



Fiscal year 2019 has been a monumental success for the Air Force Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Program. Building on the business model experiments, the Air Force has achieved the largest Phase III portfolio in recent history, with over \$2B in non-SBIR growth to our small businesses. With the advent of Pitch Days, open topics, and specific focus areas, we have seen tremendous advocacy of Air Force SBIR/STTR projects with Air Force program offices and warfighter organizations. Finally, the stand-up of the Air Force SBIR/STTR Center for Excellence has consolidated expertise across the Air Force to achieve never-before efficiencies in SBIR/STTR contracting, finance, and operations.

Our outreach initiatives have ensured we maintain solid business connections to our past performers while also bringing in new suppliers of critical research and technology for the future. Our commercialization efforts have served to bridge the “valley of death” between SBIR/STTR companies and the larger acquisition community. Our operational experimentation and technology demonstrations have linked small businesses with their customers and given companies unparalleled insight into the needs of the warfighter. Our AFWERX “Front Door” has simplified the entry point into the SBIR/STTR program and streamlined the process of doing business with the Air Force.

The future of SBIR/STTR within the Air Force is certainly bright with unprecedented levels of advocacy at the highest levels of Air Force leadership. Under the banner of Air Force Ventures, Air Force SBIR/STTR will continue to build partnerships with acquisition programs, warfighter organizations, and innovators. The Air Force SBIR/STTR Program remains fully committed to expanding the economic small business industry base, delivering critical Research, Development, Test and Evaluation (RDT&E) products to the Air Force, and achieving impacts quickly. As the Air Force experiments with new ways of doing business, new processes, and new impact models, we are equally dedicated to taking continuous improvement and course correction. Come join us as we seek to expand the growing influence of small business within the Air Force.

Inventors make stuff, but innovators make history!

A handwritten signature in black ink that reads "D. E. Shahady". The signature is written in a cursive, flowing style.

PROGRAM AND POLICY OVERVIEW

2019

The principle goal of Air Force SBIR/STTR is to serve the technology needs of the Air Force warfighter. This is accomplished as part of the Air Force’s technology development efforts to identify and provide advanced, affordable, and integrated solutions that maintain our Air Force’s ability to remain strong with the best available technologies. Congress designed the SBIR program, which is executed in a phased approach with hundreds of discrete small R&D contracts.

Air Force SBIR/STTR is set up to address barriers that exist in the traditional Air Force acquisitions process. In FY2019, Air Force SBIR/STTR expanded the use of an Open Topics solicitation process to address areas of concern, eliminating the lengthy and cumbersome requirements-development-funding-solicitation process. This allowed the Air Force to reach a solution faster in a low-risk environment by taking advantage of innovative thinkers in a competitive environment who might not otherwise have considered doing business with the U.S. government.

Air Force SBIR/STTR areas of concern are drawn from several centers and program offices, providing key user inputs into the focus area of our open solicitations.

To accomplish its mission, the Air Force SBIR/STTR program responsibilities are: Establishing the Air Force’s solicitation program to meet the DoD schedule; Managing and allocating funds; Creating and maintaining the Air Force SBIR/STTR database; Coordinating outreach and marketing efforts nationwide; and Responding to small business inquiries.

In May 2019, an updated SBIR policy directive was released by the Small Business Administration (SBA). Our efforts are guided by this policy and the statutory purpose as put forth by congress.

It is important to note that SBIR policies have not been established by the Department of Defense or the U.S. Air Force. In lieu of policies from DoD or USAF, the Air Force SBIR/STTR program follows the policy provided by SBA and by the statutory requirements established by congress.

The policy directive provided by the SBA can be found at <https://www.sbir.gov/about/about-sbir#sbir-policy-directive>.

The federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are similar. However, STTR programs require small businesses to formally collaborate with not-for-profit research institutions, such as universities, and are much smaller in size, reflecting a smaller percentage of federal budget allocation.

For Fiscal Year 2019, the three phases of the Air

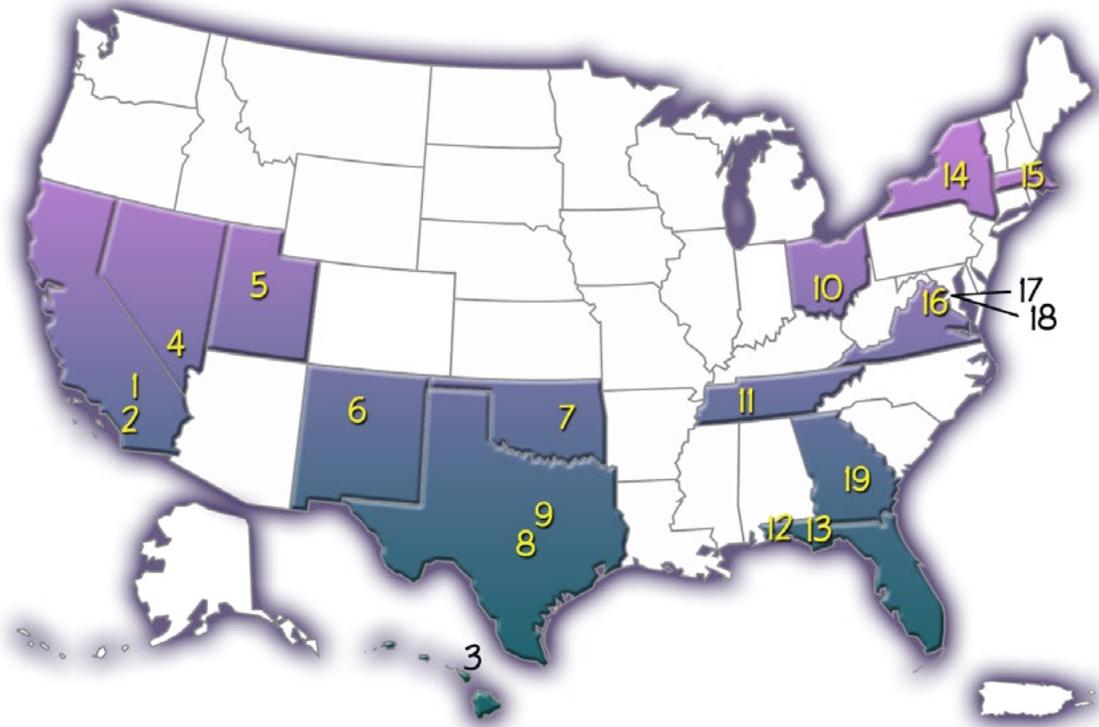
- Phase I: funds short-term feasibility studies of proposed innovations; can be up to \$225,000+.
- Phase II: funds successful Phase I projects; frequently results in development of a prototype; \$1 or \$1.5 million cap; typically for a two-year R&D effort.
- Phase III: funds work that derives from, extends, or completes an effort made under prior SBIR/STTR funding agreements; funded by sources other than SBIR/STTR; includes any follow-on, non-SBIR/STTR funding for further specialized R&D or transition of technologies to government acquisition programs.



AIR FORCE OPEN TOPICS

AIR FORCE PARTICIPATING ORGANIZATIONS

2019



CALIFORNIA

- 1. Edwards AFB**
Air Force Research Laboratory
Air Force Flight Test Center
- 2. Los Angeles AFB**
Space and Missile Systems Center

HAWAII

- 3. Maui**
Air Force Research Laboratory

NEVADA

- 4. AFWERX**

UTAH

- 5. Hill AFB**
Air Force Sustainment Center

NEW MEXICO

- 6. Kirtland AFB**
Air Force Research Laboratory
Air Force Nuclear Weapons Center

OKLAHOMA

- 7. Tinker AFB**
Air Force Sustainment Center

TEXAS

- 8. Lackland AFB**
Air Force Surgeon General
Air Force Civil Engineer Center
- 9. AFWERX**
- 10. Wright-Patterson AFB**
Air Force Research Laboratory
Air Force Life Cycle Management Center

TENNESSEE

- 11. Arnold AFB**
Air Force Test Center

FLORIDA

- 12. Hurlburt Field**
Air Force Special Operations Command
- 13. Eglin AFB**
Air Force Research Laboratory
Air Force Life Cycle Management Center
Air Force Test Center

NEW YORK

- 14. Rome**
Air Force Research Laboratory

MASSACHUSETTS

- 15. Hanscom AFB**
Air Force Life Cycle Management Center

VIRGINIA

- 16. Arlington**
Air Force Research Laboratory
F-35 Joint Strike Fighter

WASHINGTON D.C.

- 17. AFWERX**

18. MD5

GEORGIA

- 19. Robins AFB**
Air Force Sustainment Center

PROGRAM OVERSIGHT

2019

Small Business Administration (SBA) is the assigned Federal administration responsibility for the SBIR/STTR programs. The SBA develops and issues the SBIR and STTR policy directives, setting forth policy for the general conduct of the programs within the Federal Government.

DoD Office of Small Business Programs (OSBP) is responsible for the overall management of the DoD SBIR/STTR Programs. The DoD SBIR/STTR Program Office is responsible for interfacing with the services, defense agencies, SBA, and Congress regarding SBIR/STTR.

SAF/AQ appoints the AFRL commander as the Technology Executive Officer (TEO) and serves as the Air Force focal point for scientific and engineering integrity for the Secretary of the Air Force, Chief of Staff of the Air Force, and other Headquarters Air Force elements.

SAF/AQR serves as the Air Force Science & Technology (S&T) Executive to represent, advocate, and defend the Air Force S&T Program to the Office of the Secretary of Defense (OSD), the other services, and Congress. Serves as the SAF/AQ primary interface to the TEO.

SAF/AQV serves as the governing organization for Air Force Ventures.

SAF/SB monitors the Air Force SBIR/STTR Program and leverages program results and relevant technologies developed by small businesses, to meet prime and subcontracting goals, when appropriate.

AFWERX is a USAF organization with the goal of fostering a culture of innovation within the service.



SBIR|STTR CENTER FOR EXCELLENCE

2019

David Shahady | Director

Directs research budget of more than \$800 million focused toward qualified small businesses in the nation's high tech arena. Through a competitive awards-based program, he manages nearly 1,000 contract efforts sponsored by over 50 Air Force organizations from across the nation. He also enables small businesses to explore their technological potential and provides the incentive to profit from commercializing their technology.

Matt Howard | Deputy Director

Responsibilities include process improvements and documentation, financial strategy and planning, and facilitating the daily operation of the SBIR/STTR processes.

Kim Yoder | Contracting Chief

Works closely with the contracting team to ensure that all contracting time and quality requirements are met, including contract management, proposal oversight and various other initiatives that help the program run smoothly.

Sarah French | Chief Financial Officer

Manages the financial actions of the Air Force SBIR/STTR program, including financial reporting, planning and analyzing program resources and assets.

James Sweeney III | Chief Communications Officer

Responsible for managing and ensuring that a consistent, clear message is conveyed, publicly and internally, through various digital and print communications channels. These include, but are not limited to, videos, graphics, websites, social media, events, published materials, newsletters, and all outward and inward facing branded messaging.

Kelley Kiernan | Technical Advisor

Provides technical advice and assistance to improve program functions and procedures.

Ron Clyburn | Infrastructure Lead

Primary responsibilities include management of multiple information technology services, business process automation, data management and reporting services to maintain a state-of-the-art infrastructure and services that reduces cyber threats, maintains program efficiency and reduces operational costs.

Matt Howard (acting) | Business Operations Lead

DAVID SHAHADY
AIR FORCE SBIR|STTR PROGRAM DIRECTOR

MATT HOWARD
AIR FORCE SBIR|STTR
PROGRAM DEPUTY DIRECTOR

KIM YODER
AIR FORCE SBIR|STTR
CONTRACTING CHIEF

SARAH FRENCH
AIR FORCE SBIR|STTR
CHIEF FINANCIAL OFFICER

JIM SWEENEY
AIR FORCE SBIR|STTR
CHIEF COMMUNICATIONS OFFICER

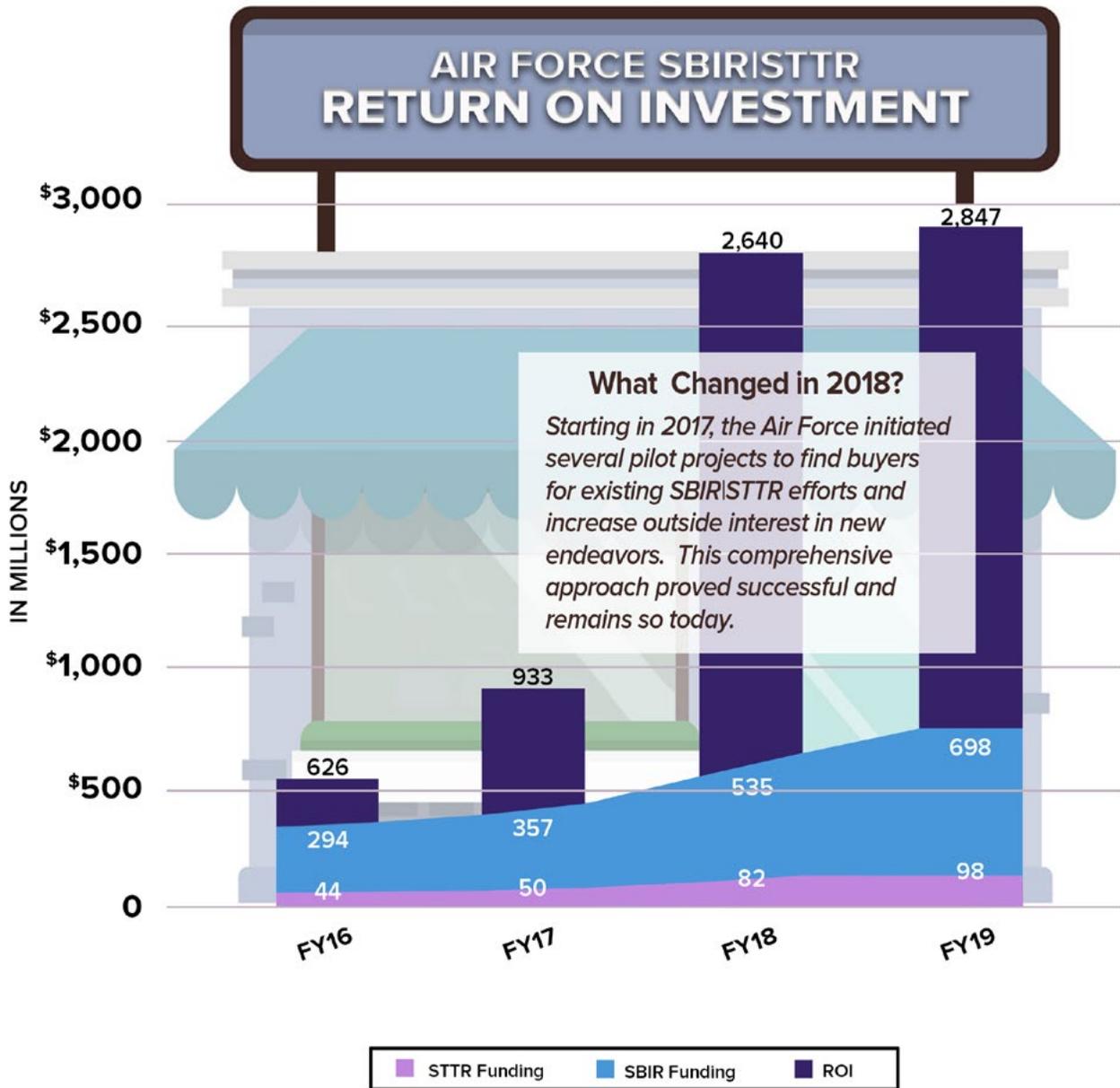
KELLEY KIERNAN
AIR FORCE SBIR|STTR
TECHNICAL ADVISOR

RON CLYBURN
AIR FORCE SBIR|STTR
INFRASTRUCTURE LEAD

MATT HOWARD (ACTING)
AIR FORCE SBIR|STTR
BUSINESS OPERATIONS LEAD

TOTAL AIR FORCE SBIR/STTR FUNDING 2019

Return on Investment (ROI) measures not only the successful performance of our small business technology, but also our contribution to the U.S. economy. The ROI information is based on data reported by SBIR firms through the DoD Central Contractor Registration (CCR). The basis is year reported.



2019

Year in Review

THE YEAR IN REVIEW

The Air Force program operates on a congressionally mandated percentage of the Air Force's extramural Research/Research & Development (R/R&D) budget as established by the Small Business Innovation Research and Small Business Technology Transfer (SBIR and STTR) policy directives. This amounted to roughly \$795M for FY 2019.

The Air Force received 4,721 proposals for 198 SBIR topics in FY 2019 (SBIR 2019.1, 2019.2 and 2019.3). In FY 2019, 1,211 Phase I and 451 Phase II contracts were awarded.

The Air Force received 478 proposals for 45 STTR topics in FY 2019 (STTR 2018.A, 2018.B, 2018.C). In FY 2019, 212 Phase I and 71 Phase II contracts were awarded.



AN OVERVIEW OF 2019

The Air Force SBIR/STTR Center for Excellence continued to streamline acquisition processes in Fiscal Year 2019. The program refined its approach to topics solicitation, creating a small-business-friendly environment that encourages innovative thinking and puts the best possible technologies into the hands of warfighters. The Pitch Day concept was introduced in 2019, which is modeled after investment pitch competitions used in commercial and university settings. The Air Force continued to build on the Contracting Sprint concept, achieving a six-fold increase in total contracts awarded.

Fiscal Year 2019 saw a continued commitment to small businesses attempting to bring innovative solutions to bear on Air Force concerns. The Air Force SBIR/STTR Center for Excellence provided numerous resources to the small business ecosystem to enhance their experience, improve their product offerings, and assist them while they navigate the solicitation-and-proposal process. The SBIR Technology Accelerator Project (TAP) program expanded to include spring and fall cohorts, and Tech Warrior Enterprise, originally launched in December 2017, became part of a permanent year-round endeavor in FY2019. Additionally, a percentage of funds were directed toward increasing participation by small disadvantaged businesses, women-owned small businesses, veteran-owned businesses, and small businesses in states currently considered “underserved” by the Small Business Administration (SBA) in terms of SBIR contract awards.

Therefore, the Air Force continued to use these funds in FY 2019 for the following purposes:

- Outreach
- Streamlining and simplifying processes
- Reporting (administrative, congressional, and interagency)
- Commercialization
- Prevention and detection of fraud, waste, and abuse
- Administration and implementation of the SBIR policy directive

The Air Force’s plan for the SBIR Administration Pilot funding includes the following:

- Increasing emphasis on detecting and preventing fraud, waste, and abuse in SBIR/STTR contracts
- Supporting technology demonstrations (Tech Warrior)
- Commercializing intellectual property through SBIR
- Improving manufacturing technology through SBIR
- Modernizing the Air Force SBIR/STTR program’s information technology infrastructure
- Increasing marketing and outreach efforts to underserved communities



2019

Year in Review

CENTER FOR EXCELLENCE STREAMLINING AND SIMPLIFICATION

The Air Force Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Center for Excellence initiated or continued several strategies to streamline acquisition processes. Those improvements have been put in place to get innovative technologies into the hands of warfighters faster and more efficiently. This simplified approach to acquisitions is designed to encourage participation by small businesses who may have considered working with the federal government too cumbersome and costly in the past. These processes make it easier to work with the U.S. Air Force, providing technology for the warfighter, supporting small businesses and the U.S. economy, and shoring up the U.S. industrial base, ensuring retention of the most innovative technologies and the people who create them.



OPEN TOPICS

2019

Over the past half-decade, the Air Force SBIR/STTR program has instituted a series of acquisition changes to break down the barriers that separate warfighters from small businesses. Barriers, such as stale requirements, talent and cultural problems, and lengthy, opaque contracting processes, stand in the way, disincentivizing domestic small businesses from doing business with the Air Force. In response, the Air Force has focused on expanding the talent pool, revolutionizing contracting approaches and timelines, and developing new processes to reposition the Air Force to be more small business friendly.

Historically, Air Force SBIR/STTR relied upon a linear requirements-to-solution acquisitions approach where buyers minimize searching for innovative, nontraditional solutions while exploiting existing connections, blinding the Air Force to external innovation. Thus, the entrenched acquisition system prioritized the purchase of “new old” solutions – buying new technologies that fit neatly into old ways of doing business – when it may have been better to purchase a wholly new capability. Catering to known problems limits an organization’s ability to recognize the extent to which externally derived technical innovations solve “unknown” problems.

The more linear acquisition process can take up to fifteen years start to finish: requirements = 2-4 years; funding = 1-2 years; contract solicitation = 7+ years. In many instances, by the time the pre-determined solution is delivered, the Air Force and their partner businesses are working the wrong problem and the end product is no longer valid.

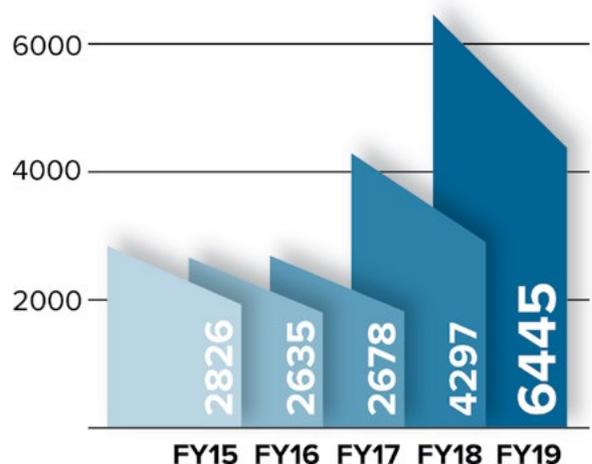
In FY2018, the Air Force SBIR/STTR Center for Excellence deviated further from the norm in the interest of delivering critical tools to the warfighter at an accelerated pace. Beginning with the 18.2 Spring Broad Agency Announcement, the Air Force began to allocate resources toward “Special Topics.” These were set up to address the inherent barriers that exist in the “requirements-first” approach, which places the burden of identifying solutions before soliciting proposals from a small set of known companies. This “Special Topics” approach also allowed Air Force SBIR/STTR to act more as a venture capital funding agency.

The Air Force SBIR/STTR Center for Excellence refined its approach to topics solicitation further in FY2019, relying more on an Open Topics solicitation process to address focus areas of interest. With this approach, the Air Force determines what focus areas need attention and opens the solicitation to small businesses and research institutions that might have viable technological solutions. Air Force SBIR/STTR areas of interest were drawn from several centers and program offices, providing key user inputs into the focus area of our open solicitations. Phase I solicitations allow these organizations to quickly come forward, present their ideas, and, if selected, explore their concept and discover buyers that they would not have had access to previously. This allows the Air Force to reach a solution faster in a low-risk environment by taking advantage of innovative thinkers in a competitive environment – innovators who might not otherwise consider doing business with the U.S. government because of their concerns with navigating the contracting bureaucracy.

SUMMARY

The Air Force SBIR/STTR Center for Excellence enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization. Open Topics were created to increase the efficiency, effectiveness, and transition rate of the SBIR program, resulting in a significant increase of proposal submissions.

PROPOSALS SUBMITTED



AIR FORCE CONTRACTING SPRINTS

2019

The Air Force achieved a six-fold increase in total contracts awarded through SBIR/STTR Contracting Sprints in Fiscal Year (FY) 2019 versus the prior year.

Working through the Air Force SBIR/STTR Center for Excellence, contracting officials awarded 600 contracts during two sprints to start-up companies with critical technologies for the warfighter. In comparison, officials issued more than 100 contracts at one event in FY 2018, the first year for sprints.

The sprints were designed to cut the time required to award contracts to businesses researching and developing disruptive technologies critical to the warfighter. This approach supports a wider effort by Air Force acquisition officials to create a more agile process for securing cutting-edge technologies.

In order to streamline the months-long process to 40 hours, the team worked to auto-generate many of the documents needed to award a contract by leveraging tools provided by AFWERX since the data from the proposals and government evaluations was available in their systems. This was previously a manual process that could take an about an hour.

With rapid technological change now the norm, those able to quickly develop and field solutions to problems have an advantage. Answers to many complex national security issues are delivered by harnessing the power of innovators and entrepreneurs within the Air Force and across the country.

AUSTIN, TEXAS

A Pro-Bowl Sprint, FY2019's first such event, was led by the Air Force Research Laboratory at the AFWERX Innovation Hub in Austin, TX. It ran from February 25 to March 1.

Contracting, financial, and technical personnel from across the Air Force awarded more than 160 contracts valued at \$58 million to small businesses during the five-day sprint. Twenty-five professionals from Wright-

Patterson, Kirtland, and Eglin Air Force Bases as well as from AFRL's Information Directorate in Rome, NY, and the Air Force Office of Scientific Research in Arlington, VA participated in the Pro-Bowl Sprint.



Contracting officers created standardized documents while financial specialists created the purchase requests for every award. Spreadsheets captured real-time data so that contracting officers and buyers could complete the award process.

The Pro-Bowl Sprint gathered all the necessary expertise into one room, including evaluators, contracting officers and financial specialists. Procurement analysts, legal counsel, information technology assistance, and technical personnel provided on-site, real-time support. Ultimately, officials want to scale these efficiencies out to other parts of the Air Force.

BOSTON SPRINT

The Air Force awarded more than 450 research and development contracts in 12 days totaling \$140 million during a contracting sprint in Boston.

The companies receiving contracts were all small start-up businesses with innovative ideas to develop which can meet national security challenges or provide game-changing expansions in capability.

More than 800 companies submitted proposals for evaluation during this sprint, the Air Force's third.

Approximately 320 of the contracts awarded were Phase I awards, giving each small business initial



funding and three months to perform a feasibility study of, and customer discovery for their technology to ensure that the product meets the needs of the warfighter. Another 100 of the contracts awarded were Phase II awards, which tasks each company with providing a working prototype of their new technology.

In addition to an Air Force contract award, each company was provided information on obtaining private sector matching funds via angel investors and venture capital organizations, which can boost each company's initial operating budget.

To review the proposals submitted for this contracting sprint, the Air Force gathered a team of more than 70 personnel from across the Air Force's contracting, logistics, and weapons systems directorates.

Contracting sprint personnel came from: Wright Patterson AFB, OH; Joint Base San Antonio-Lackland, TX; Scott AFB, IL; Kirtland AFB, NM; Boston, Hanscom AFB, MA; Spangdahlem Air Base, Germany; RAF Alconbury, United Kingdom; Edwards AFB, CA; Fairchild AFB, WA; Los Angeles AFB, CA.; Shepherd AFB, TX; Rome, NY; Dover AFB, DE; Joint Base Charleston, SC; Joint Base Elmendorf Richardson, AK; MacDill AFB, FL; Eielson AFB, AK; McConnell AFB, Kansas; Air Force Academy, CO; Tyndall AFB, FL; Austin, TX; and Hill AFB, UT.

The Army and Navy each sent several representatives to the event to observe and evaluate the potential of contracting sprints for their respective services.

BACKGROUND

In January of FY2018, officials from the Air Force Research Laboratory and AFWERX began working on new ways of doing business with the Air Force SBIR

program through "Special Topics." SBIR contracts are federally mandated set-asides for small businesses.

One outcome of that effort was SBIR issuing a Request for Proposals seeking open innovation dual-use technologies. The RFP resulted in a huge response from small businesses – proposals from 166 companies versus the traditional pace of 10 to 20 companies. During that 50-day cycle, officials awarded 52 contracts, compared with the usual two or three.

Dr. William Roper, Assistant Secretary for the Air Force for Acquisition, Technology and Logistics, then challenged the team to reduce the contract-award process from 50 days to 50 hours.

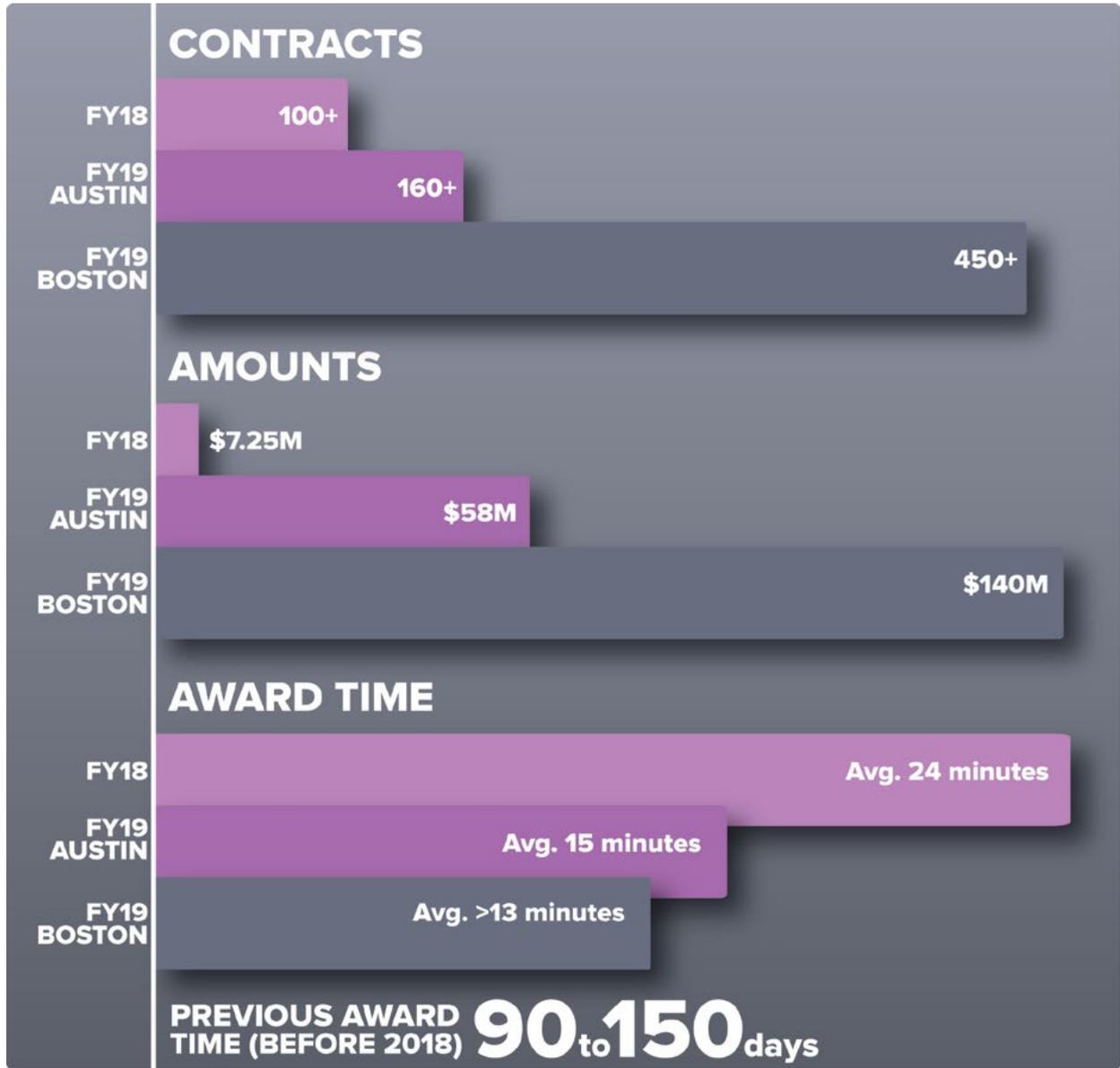
For this second round of SBIR contracts, the call for proposals closed October 24, 2019 and 279 proposals were received, versus 166 during the previous round. By the end of the week, the team had awarded more than 100 contracts in 40 hours valued at \$7.25 million, surpassing their goal.

The contracting team behind this success was comprised of personnel from Air Education and Training Command, AFWERX, Air Force Installation Contracting Agency, Air Force Research Laboratory, the Air Force Contracting office, Air Force Life Cycle Management Center, Air Force Space Command, Air Force Personnel Center, and the Air Force Small Business Innovation Research Program office.

In FY2020, the Air Force is capitalizing on this successful practice. A sprint in December resulted in contracting officials awarding more than 350 contracts totaling \$22 million over four days, setting a record.

The introduction of Contracting Sprints in FY2018 has allowed the Air Force SBIR/STTR Center for Excellence to significantly improve efficiencies and provide greater funding to small businesses across the nation. This approach to contracting has increased the number of awarded contracts, increased the amount of contract funding, and reduced the time it takes to award a contract to just minutes rather than days.

CONTRACTING SPRINT EFFICIENCIES



FY19 TOTALS 610+ Contracts
\$198 Million

<2631%
\$ INCREASE
OVER 2018

AIR FORCE PITCH DAYS

2019

The Air Force SBIR/STTR Center for Excellence launched the Air Force Pitch Day in FY2019, beginning with a two-day event in New York City.

The introduction of the pitch day concept marked a dramatic shift in the Air Force's acquisition strategy, creating a faster, smarter method to get cutting-edge technologies and capabilities into the hands of warfighters. Designed to speed up the investment process, the event has continued to expand its reach and scope, including the inaugural Air Force Pitch Bowl slated for March 2020.

The Air Force Pitch Bowl will be a Strategic Financing Event with Joint Partners and a Strategic SBIR showcase that will demonstrate new pathways that the Air Force is forging to bring high-growth, high potential commercial solutions into the DoD. To ensure that the event has the greatest impact, the Air Force will do this in partnership with its sister services and venture capital communities.

Air Force Pitch Day is modeled after investment pitch competitions used in commercial and university settings. The goal is to deliver a faster, smarter approach to compete for ideas in the technology ecosystem. During Pitch Days, officials can select technologies, issue contracts, and pay small businesses in a single day. This represents a major departure from the lengthy contractual processes typically expected of the military.

Pitch Days focus on rapidly awarding Phase I and II SBIR/STTR contracts to companies based on a streamlined evaluation of white papers and in-person presentations.

INAUGURAL PITCH DAY

The inaugural pitch day proved out the concept of pitch days as a vehicle for evaluating technology, awarding contracts to small businesses, and paying them in a matter of minutes.

During the 30-day application period leading up to the first pitch day, Air Force contracting officials reviewed 417 submissions. They invited 59 businesses to pitch their proposals in-person in New York City on March 6, 2019. Of those, 51 received an initial award of up to



\$158,000 with initial payment within minutes of their presentations. The Air Force Program Executive Offices (PEO) for Digital; Command, Control, Communications, Intelligence and Networking; and Special Forces participated.

The average amount of time to award contracts and pay companies via government credit card was 15 minutes. The fastest award occurred in only three minutes. Previously, the fastest award of a contract of this type was approximately 90 days – a period of time many small businesses and startups cannot survive without funding.

Offering a same-day payment method with a government credit card shows businesses the Air Force is a preferred partner for growth. It also positions them to focus on the Air Force mission instead of making payroll.

With the government purchase card, a small business doesn't have to secure loans or bridge financing while waiting to receive a contract. Instead, they're poised to immediately begin working with the Air Force, understanding its technology users, and delivering for the warfighter.

During the week prior to Pitch Day, the Air Force conducted a series of rapid contracting sprints, awarding 122 Phase I SBIR contracts totaling \$6 million. They also awarded 69 Phase II SBIR contracts totaling \$60 million, 11 of which featured government matching contributions and five contracts with private matching.

During the entire week, including Pitch Day, the Air Force awarded 242 SBIR contracts valued at \$75 million.

Stakeholders in the creating, structuring, and managing the March event included: SAF/AQ, Air Force Office of the Assistant Secretary for Acquisition and Technology; SAF/AQ, Air Force Acquisition and Technology 'AQ Delta Innovation Cell'; SAF/AQ, Air Force Office of the Deputy Assistant Secretary for Science, Technology and Engineering; SAF/AQC, Air Force Office of the Deputy Assistant Secretary for Contracting; SAF/SB, Air Force Office of Small Business Programs; SAF/PA, Air Force Office of Public Affairs; Air Force SBIR/STTR, Air Force SBIR/STTR Program Office; AFRL, Air Force Research Laboratory; AFRL/SB, AFRL Small Business Directorate; AFRL/PK, AFRL Contracting Directorate; AFRL/FM, AFRL Finance Directorate.

Contractors from Peerless Technologies and BRTRC provided the Air Force SBIR/STTR program with support at the event.

THE PITCH DAY GOES NATIONAL

Following the successful launch in New York City, Air Force officials held two more events in July as part of an ongoing effort to grow the Pitch Day program.

In the meantime, on July 24, the PEO for Digital awarded drone technology contracts to innovative companies at the Northeastern University Innovation Campus.

The UAS Pitch Day in Burlington, MA, awarded 13 companies \$75,000 for a total of \$975,000 in less than two-and-a-half hours. The fastest time to contract was 4 minutes and 30 seconds.

The daylong event began with thirteen pitches from businesses followed by deliberations by Air Force junior officers and civilians, who chose to award Phase I small business contracts to all participants.

Kessel Run is an Air Force program to streamline and hasten the acquisition of software. Organizers received 80 proposals and of those, invited 13 companies to pitch their technology. On July 26, eight of those small businesses received Air Force contracts ranging from \$32,100 to \$74,988.

Kessel Run Pitch Day organizers sought ideas that would advance software and weapons systems acquisition. This included the development and fielding of worldwide aerospace command-and-control applications. Officials emphasized security tools and services, edge as service, and enterprise platform tools and services.

MARKETING AND OUTREACH

More than 500 attendees from government, industry, academia, venture capital, and investment communities also participated in the March Air Force Pitch Day, which served as an open event that delivered a broader platform for invited companies to pitch to a larger community beyond the Air Force.

Two websites were created for the New York City Pitch Day. One was built on the public-facing SBIR/STTR website, and the second site was provided to individuals, organizations and companies who were invited to Pitch Day.

In the current fiscal year, the Air Force has continued to add Pitch Day events. In November and December, officials from the Air Force Life Cycle Management Center held six Pitch Days in California, Florida and Ohio. The event resulted in 71 Phase I contracts, valued at \$4.3 million, and 54 Phase II contracts, valued at \$49.7 million. Additionally, the Joint Strike Fighter program and the AFRL TEO held two more Pitch Days, bringing the total number of Pitch Days in 2019 to eleven.

2019 PITCH DAY RESULTS



SBIR TAP

2019

In FY2019, the U.S. Air Force SBIR Technology Accelerator Project (TAP) program expanded to include spring and fall cohorts. With the additional capacity, more than 80 companies participated over the course of the year – more than double FY2018’s participant totals.

Moreover, SBIR TAP also underwent a significant logistical change in FY2019 and—based on participant feedback—restructured its training sessions in Ohio, Colorado and Virginia to cut travel requirements and costs for participating small businesses.

The SBIR TAP program, established in 2015, offers support to SBIR companies to accelerate their technology, prepare them to win a Phase II award, attract a strategic partner or investor, and ultimately transition their technology into Department of Defense and commercial markets.

Built as a joint effort between the United States Air Force, the Air Force Research Laboratory (AFRL), Wright Brothers Institute (WBI), and The Entrepreneurs Center (TEC), the ultimate goal of SBIR TAP is to improve transition and commercialization rates resulting from SBIR awards.

SBIR TAP focuses on companies researching technology areas that are of interest to both the DoD and to commercial markets, including:

- Advanced Manufacturing
- Advanced Materials
- Big Data: data warehousing, management analytics
- Cyber Security
- Energy: Storage and generation
- Environmental Monitoring
- Biomedical
- Human Performance Enhancement: sense, assess, augment
- Internet of Things
- Personalized Learning

Recipients of Phase I SBIR contracts are eligible to participate in TAP at no cost to them.

Interested small businesses participate in a 30-minute interview with commercialization experts. The interview establishes a baseline understanding of the technology, the level of the team’s commercialization experience, and the level of interest each company has in SBIR TAP. Final selection of participants is made by following recommendations from a panel of commercialization experts and approval by the Air Force SBIR Center for Excellence. Selection is based on the following criteria:

- Alignment of the small business research with Air Force SBIR TAP technology commercialization focus areas
- Assessment of the commercialization potential of the SBIR technology
- Small business willingness and ability to attend and actively engage in the program

COMMERCIALIZATION TRAINING PROGRAM FOR SBIR RECIPIENTS

Each SBIR TAP company engages in a comprehensive on-site training program consisting of commercialization tools designed to address six key commercialization process milestones – all designed to provide SBIR Phase I recipients with a framework to identify the commercial value inside a science or technology innovation.

For as much as a six-month period following the in-person training, commercialization support staff spend extensive one-on-one time with each of the participating companies to help identify the commercialization milestones, overcome barriers, and connect with partners who can help them achieve their commercialization objectives. With this approach, each SBIR TAP participant experiences a program tailored to their specific needs – and allows commercialization assistance to continue after the Air Force SBIR contract formally ends.

As in previous years, the commercialization training program was held in May and October in the Washington DC area; Dayton, OH; and Denver, CO. In prior years, the sessions were held in those cities once each week over four weeks. Participants traveled weekly during the four-week course, typically flying in and out the same day. However, in FY2019, the program

was compressed into a 2.5-day period in a single week in the DC area, Dayton, and Denver, rather than half-day sessions over four weeks.

The training itself is built on a proven set of methodologies used by WBI and TEC. The primary methodology is the Wendy Kennedy Commercialization Training Program. Kennedy's program is a well-established methodology to assist technologists and scientists in understanding and articulating their value proposition; understanding industry and market; and thinking through the unique attributes of their offering.

TEC adds complimentary materials that have been honed to meet the needs of SBIR companies as they advance their commercialization efforts. This curriculum includes customer discovery modules, development of a Business Model Canvas or Mission Model Canvas, and pitch/communication training.

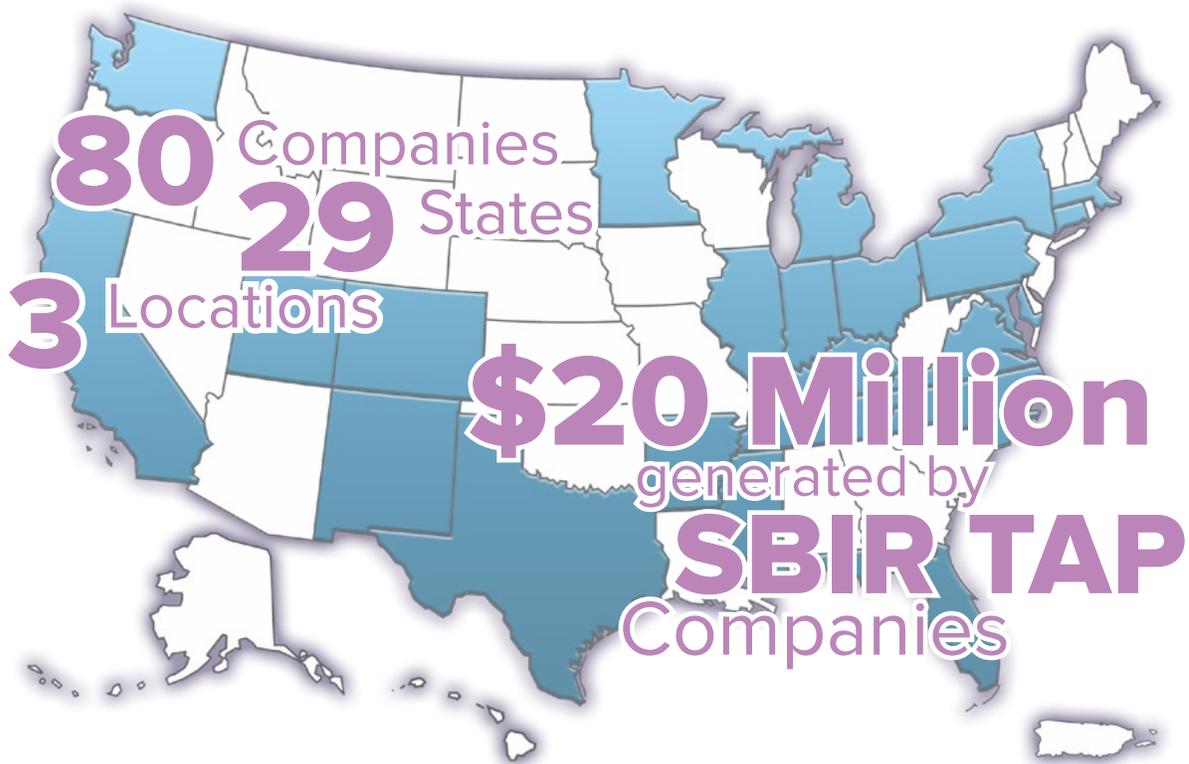
While participants find value in the methodology, one of the greatest benefits of SBIR TAP is what participants learn from other companies in their cohort. In addition

to networking, participants help each other hone their value proposition, talk through customer discovery, and share ideas and connections that may advance technology. Program staff establishes a LinkedIn group for each cohort, providing a forum for companies to post questions or discuss business challenges.

As in previous years, companies remained heavily engaged in the program following the in-person training. Of the more than 80 Program participants in 2019, engaged in projects with TEC, resulting in an award rate of more than 94 percent for companies invited to submit a SBIR Phase II response. In addition, SBIR TAP companies have generated more than \$20 million in external capital since the program's inception, with more than \$6 million in 2019 participants alone.

With programs like SBIR TAP, the Air Force can leverage its SBIR contract dollars into innovative products and services that will reach the Airmen faster and advance innovations in commercial industry as well, keeping the US protected and innovative.

SPRING AND FALL COHORTS



GSA AGREEMENT

2019

A pilot program in which the U.S. General Services Administration performs Phase III contracting on behalf of the U.S. Air Force has produced 15 contracts worth a combined \$738 million for SBIR companies in Fiscal Year 2019.

Phase III funding, which comes from sources outside of SBIR/STTR, can go toward accelerated development and integration of SBIR/STTR technologies. This phase represents a critical commercialization benchmark of the Air Force SBIR/STTR Program.

The SBIR Phase III pilot program was initiated in May 2018 with the GSA SPE's authorization. Two AAS offices (Client Support Centers 5 and FEDSIM) are providing support.

Most of the awards under the GSA SBIR Phase III pilot have been on behalf of the Air Force to SBIR-supported small businesses.

In FY2018, Air Force SBIR/STTR Program Director David Shahady signed an interagency agreement with the General Services Administration to calling for the GSA to perform Phase III contracting.

The agreement allows organizations throughout the Air Force, as an alternative, to obtain Phase III assisted acquisition services support from GSA on a fee-for-service basis.

A key feature of SBIR/STTR Phase III is the ability to award a sole-source contract to a small business for technology it has already developed under the program.

By law, competition requirements are satisfied when a business receives a Phase I and/or Phase II contract award.

Under this interagency agreement, Air Force organizations may obtain GSA assistance to award and administer Phase III contracts with any eligible small business regardless of which agency sponsored the Phase I and/or Phase II efforts.

The pilot program is not applicable to STTR topics.

AWARDS MADE UNDER GSA AGREEMENT



FRAUD, WASTE, AND ABUSE

2019

In accordance with Section 9(f) of the SBIR and STTR Policy Directive released May 2, 2019, the Air Force provided training to ensure compliance with the eligibility requirements for the SBIR and STTR programs. During Fiscal Year 2019, the Air Force SBIR/STTR Center for Excellence continued to work to make sure firms were aware of and complied with those policy directives. The Center for Excellence required all participating firms to complete training and provide a signed completion certificate prior to contract award, noting that failure to comply with these requirements would result in their SBIR/STTR proposal being ineligible for award.

The Air Force SBIR/STTR Center for Excellence continues to execute program initiatives to maintain and enhance strong deterrents by making it more difficult to commit fraud on Air Force SBIR/STTR contracts and providing better evidence when it does happen. The changes made in previous years have had a significant impact by putting the government in the strongest possible position to hold a fraudulent contractor accountable.

Two major components of these efforts are as follows:

- Requirement that proposers and their principal investigators are to review training slides of program rules and attach certificates of completion with every proposal submitted.
- Inclusion of a contract clause that requires companies to identify the principal investigator for each SBIR/STTR contract and requires written approval from the Air Force prior to making a change. This is designed to deter bait-and-switch schemes, in which contractors propose an experienced researcher as the principal investigator then use a lesser-qualified, lower-cost employee to serve in that role.

Fighting fraud protects the integrity of the government's procurement process, saves precious taxpayer dollars and mitigates significant threats to the safety of our warfighters. "Contractors that put the warfighter in danger and impede this program's ability to provide the best return on investment for the taxpayer will not be tolerated," said David Shahady, Air Force SBIR/STTR

Center for Excellence Director.

The Air Force SBIR/STTR efforts were led by the Air Force Office of Special Investigations - Office of Procurement Fraud Investigations Directorate, which partnered with a team at Wright-Patterson Air Force Base in Ohio. The team included Air Force Materiel Command's Law Office Procurement Fraud Division, the Air Force Research Laboratory Contracting Office, and the SBIR/STTR Center for Excellence.

OSI opened 8 new SBIR-related cases.



OSI closed 5 cases.



OSI had 17 cases on-going.



Returned \$4,942,482.16 to the US Government on cases we were involved in during FY19.

\$137,138.40 was returned to the USAF directly to impacted contracts.

TECH WARRIOR ENTERPRISE

2019

The Air Force Small Business Innovation Research and Small Business Technology Transfer Program's Operational Experimentation and Demonstration Pilot (Tech Warrior Enterprise), originally launched in December 2017, became part of a permanent, year-round program management office endeavor in FY2019.



Tech Warrior Enterprise is comprised of two types of events, Tech Warrior CONNECT and Tech Warrior OPS. Designed to accelerate critical tools and solutions developed by small businesses to the warfighter, these events provide an arena for

collaboration between small business and government customers and end-users. Additionally, they provide a proving ground for technologies and systems and foster long-term relationships that better posture technology for broader socialization, additional investment, commercialization and transition.

Tech Warrior CONNECT serves several functions, including providing situational awareness of Air Force SBIR/STTR Center for Excellence opportunities, strategic introductions and collaboration, and face-to-face, immediate contact with and feedback from potential users. When appropriate, small business can leverage demonstration environments tailored to suit their individual needs.

Tech Warrior OPS events take place in an active training environment with one or more end-user communities. Hands-on use of technology by warfighters, special operators, first responders, etc., yields opportunities for small business to ask questions, gather specific data, interview operators, and integrate their technology with realistic training scenarios taking place in a realistic environment.

Technology showcase events are an integral part of Tech Warrior OPS and serve as an opportunity for tech scouts, government procurement and acquisition professionals, and commercialization and technology transfer and transition personnel, to evaluate the interactions between technologist and user and to determine best after-event courses of action. At times these collisions result in letters of support,

memorandums of understanding or agreement, validation needed to determine SBIR Phase II or subsequent Phase II investment, venture capital or angel investment, sales, etc.

Any small business with a government research and development contract, especially those with Air Force SBIR/STTR contract awards, are able to participate in the Tech Warrior Enterprise by working with its government



point-of-contact or program manager, or by contacting twenterprise@wright.edu. Participation in Tech Warrior events are free to business, who only pay their own travel, lodging and meal expenses.

THE SCOPE

Tech Warrior Enterprise explores the art of the possible by allowing business to demonstrate, integrate and test in a relevant setting. These events also offer the opportunity for Air Force stakeholders, supporting organizations and partners to see technology in action and to hear first-hand operator feedback. Technology evaluation resulting from Tech Warrior Enterprise events is used by Air Force SBIR/STTR Center for Excellence personnel, as well as partners from Air Force Program Element Offices, other government agencies, industry partners, etc., in aligning emerging developments and

products with appropriate investment opportunities and customer communities, and plan for strategic funding and investment where a “technology pull” or opportunity for “disruption” is present.



Because event participation includes non-SBIR/STTR businesses, the opportunity to increase stewardship of the SBIR/STTR process/opportunity via tri-annual Broad Agency Announcements/ topics exists. That stewardship extends to customer communities within the government who are introduced to small business capabilities that can fill gaps and meet requirements with agility and innovation.

The goals of Tech Warrior Enterprise activities are as follows:

- Provide opportunities for small business to test, experiment, conduct data collection, collect feedback, insert, showcase and demonstrate state-of-the-art technology in a realistic operational environment. Allow technologists the opportunity to fail, iterate, and evaluate technical risk associated with their efforts.
- Encourage failure as an opportunity to collect critical feedback, advance technology readiness, iterate.
- Identify small businesses that are deft and disruptive or have mission-critical technologies with alignment to warfighter needs, requirements and technology gaps. Plan next-steps with regards to alignment to future collaboration, partnership and investment opportunities.
- Provide situational awareness, socialization of opportunities for small business to solicit undiluted, seed funding for research, development, testing and evaluation, and capture feedback from military market customer communities, and evaluate market risk associated with their efforts.
- Facilitate strategic introductions between small business and supporting organizations, stakeholders, users, customers, advocates, investors.

- Provide opportunities for small business, procurement and acquisition communities, and end-user groups to collide, allowing them to evaluate, in partnership, the financial risk associated with continued technology research and development efforts.

TECH WARRIOR CONNECT

During FY19, Tech Warrior Enterprise conducted more than 50 Tech Warrior CONNECT events, ranging from extensive in-person meetings and telephone-conference activity, to hands-on demonstration with customer- and end-user communities, like doctors from the Air Force School of Aerospace Medicine, personnel from Air Force Life Cycle Management Center, and local fire and rescue, which took place predominantly at Calamityville/The National Center for Medical Readiness in Fairborn, Ohio.



TECH WARRIOR OPS

The Tech Warrior Enterprise Team conducted two, large-scale Tech Warrior OPS events in FY 2019, the first being a curated event, which took place June 3-7, focused on medical and tactical technology and was coupled with Air Force pararescue personnel (123rd Special Tactics Squadron) training. The event was also attended by representatives from the Air Force’s 59th Medical Wing, 88th Medical Group and Explosive Ordnance Disposal, 178th Fire Emergency Services, Civil Engineering Squadron, Security Forces Squadron, and Medical Group, the Air Force Small Business Office, as well as small business personnel from Air Force Materiel Command, Life Cycle Management Center, Research Laboratory, Test Center, Installation and Mission Support Center, Nuclear Weapons Center, Test Center, Sustainment Center, the Air Force School of Aerospace Medicine, and AFLCMC Agile Combat Support, Human Systems, Special Warfare, Aeromedical, and U.S. CENTCOM.



The second Tech Warrior OPS event held in concert with the Ohio National Guard’s 2019 Vigilant Guard exercise took place August 6-8 and included participation from U.S. NORTHCOM, Ohio Task Force 1, MED

Flight, and other Army Reserve, Air Force and first-responder participants. The event was also attended by representatives from Ohio University, University of Nebraska Medical Center, 46th Military Police Command, AFRL, Department of Emergency and Military Affairs, Defense Health Agency's Defense Medical Modeling and Simulation Office, AFLCMC Agile Combat Support, Human Systems, Special Warfare, Aeromedical, and U.S. CENTCOM.

Over 40 companies participated in the June event, while the August event brought over 30 small business participants.

OUTREACH AND MARKETING

The Air Force SBIR/STTR Center for Excellence publicizes the results of Tech Warrior Enterprise activities and the return on investment associated with Tech Warrior Enterprise participation, leveraging social media, press releases, and video products to communicate with stakeholders, supporting organizations, sponsoring and managing organizations, small business communities, and other relevant audiences.

In 2019, Tech Warrior Enterprise staff continued vigorous outreach efforts that began in late 2017. Those efforts

included:

- Maintaining the Tech Warrior Enterprise Facebook page at <https://www.facebook.com/techwarriorenterprise> (148 followers)
- Maintaining the Tech Warrior Enterprise Twitter account at https://twitter.com/T_W_Enterprise (104 followers)
- Maintaining the new Tech Warrior Enterprise website at <https://twenterprise.org>

As part of these outreach activities, Tech Warrior Enterprise Staff also attended the following events:

- Air Force Pitch Day, March 6-7, 2019, New York, New York. (See details on the Pitch Day page.)
- Air University Top Flight Pitch Night, May 21, 2019, Montgomery, AL: Sponsored by MGMWERX: The event offered students of Air University the opportunity to pitch ideas to a panel of judges including representatives from the Air Force, Alabama's Small Business Development Center Network at the University of Alabama, and the president and CEO of a local defense-related business.
- Technology Requirements & Innovation Awareness Days, August 19-23, 2019, Columbus, OH: A



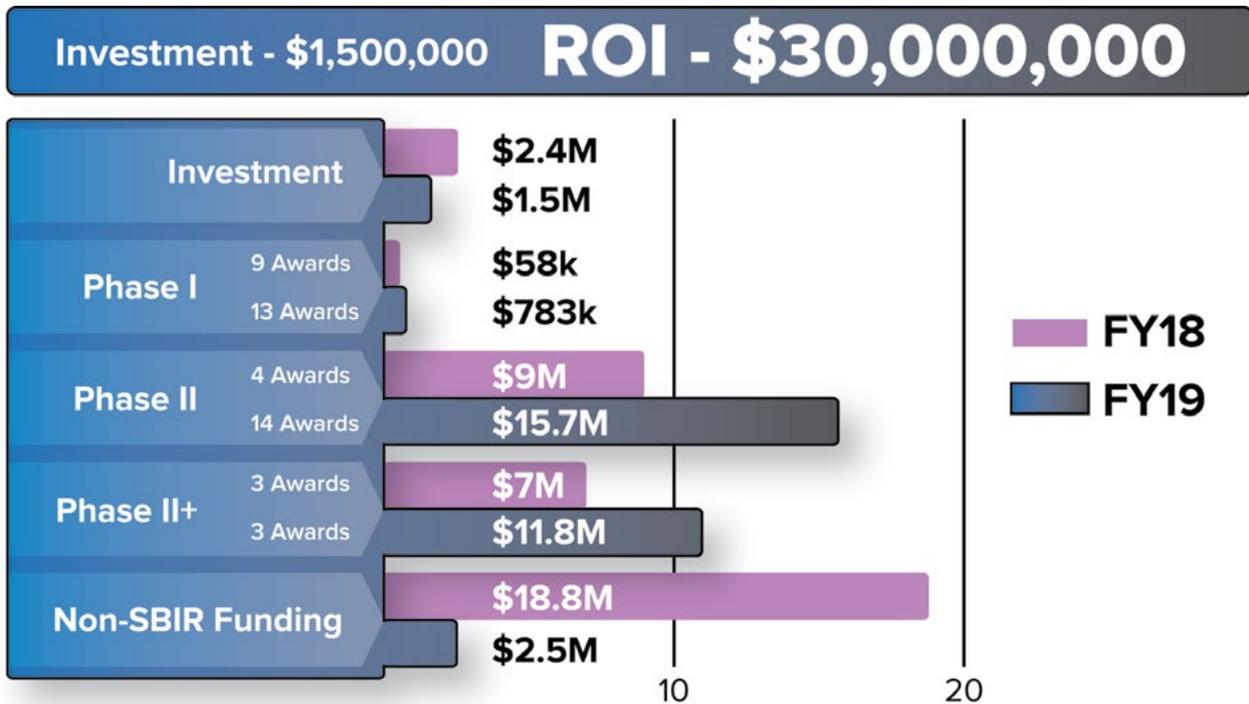
two-part event comprised of education day, an opportunity for business to learn about DoD needs, available business resources, and how to communicate with the government, and pitch sessions, an opportunity for business to demonstrate the value of their technology to DoD communities of interest.

- AFWERX “Ask Me Anything” Session, September 13 and 20: Hosted by AFWERX, these telephone and web-based conferences provided 19.2 special topic SBIR Phase I awardees with the opportunity to ask questions, socialize with Tech Warrior Enterprise personnel about program opportunities and events.
- Encountering Innovation Week 2019, September

23-27, 2019, Overland Park, KS: Hosted by the Kansas Small Business Development Center, the event offered educational sessions, pitch sessions with DoD tech scouts from a variety of combatant commands and government agencies, and a “parade of technologies” poster board session that allows business to market their technology to major defense contractors, manufacturers, angel investors, and DoD agency personnel.

COMPARISON OF FY18 AND FY19 RESULTS

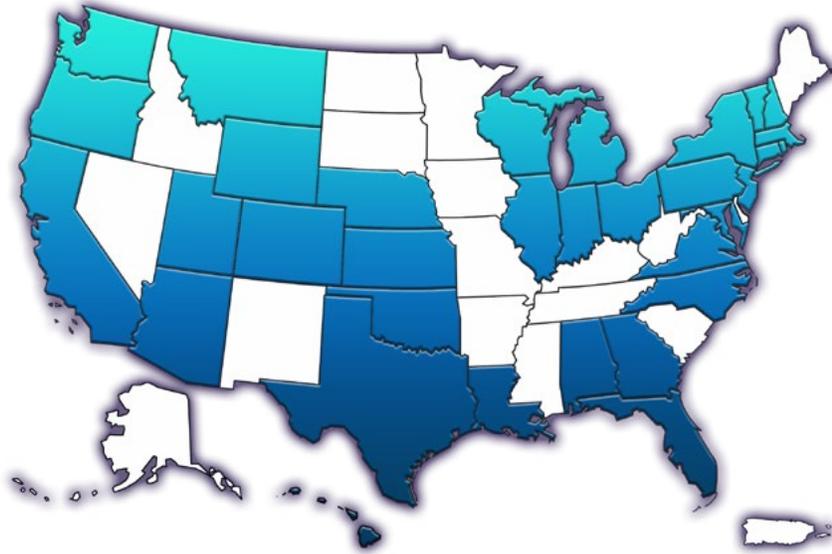
During FY 2019* the Tech Warrior Enterprise team designed and executed over 50 Tech Warrior CONNECT and two Tech Warrior OPS events with participation from over 70 small businesses.



*Return on investment tracked from October 1, 2018 - December 31, 2018, was previously reported in the FY 2018 Year in Review publication and is not duplicated here.

TECH WARRIOR ENTERPRISE PARTICIPANTS

2019



I3 Technologies Inc | Londonderry, NH
361 Interactive LLC | Springboro, OH
Agile Ultrasonics Corp | Columbus, OH
Airborne Outfitters LLC | Dayton, OH
Air Cleaning Blowers | Highland, NY
Airstar America | Orlando, FL
ALL43D | Oklahoma City, OK
Alphamicon | Kent, OH
Amsel Medical Corp | Cambridge, MA
Aptima | Woburn, MA
Archarithms Inc | Huntsville, AL
Archiemd Inc | Boca Raton, FL
ARMR Systems | Boston, MA
ARYSE | Lincoln, NE
Ascend Innovations | Dayton, OH
Ascent Solar Technologies | Thornton, CO
ATV Corp | Orange, CA
B5 Systems | Xenia, OH
Battle Sight Technologies LLC | Dayton, OH
Bloodstone Division LLC | Tampa, FL
Botanisol Analytics | Phoenix, AZ
Bowerbags | Arlington, VA
BTG Labs | St Bernard, OH
Capella Audio | Fayetteville, NC
Cardio Simulation Medical LLC | Cheyenne, WY
Carver Scientific Inc | Baton Rouge, LA
Centeye | Washington D.C.
CFD Research Corp | Huntsville, AL
Charles River Analytics Inc | Cambridge, MA
Clarity Innovates | Columbia, MD
Conductive Composites | Heber City, UT
Constant Sentinel LLC | Dayton, OH
Cornerstone Research Group Inc | Miamisburg, OH
Cowboy Barriers | Owasso, OK
Cryptomove Inc | Walnut Creek, CA
Design Interactive Inc | Orlando, FL
The Design Knowledge Group | Fairborn, OH
Earthcast Technologies | Marshall, NC
Eccrine Systems Inc | Cincinnati, OH
Edaptive Computing Inc | Dayton, OH
Enduvo Inc | Peoria, IL
Exsurco Medical | Wakeman, OH
Firetech | Centerville, OH
Functional Formularies | Centerville, OH
Genecapture Inc | Huntsville, AL
Georgia Institute of Technology | Atlanta, GA
GlobalFlyte Inc | Riverside, OH
Greyman Group LLC | Ave Maria, FL
Harpoonx LLC | Menlo Park, CA
HVMN Inc | San Francisco, CA
Hyprum LLC | West Lafayette, IN
Image Insight Inc | Hartford, CT
IncludeHealth | Cincinnati, OH
Info Builders | New York, NY
Innovator Health | Englewood, OH
Intelligent Automation | Rockville, MD
Int. Shelter Solutions LLC | Cuyahoga Falls, OH
Irad Corp | San Diego, CA
Iseeyou 360 | Grove, OK

Kay Kare LLC | Alington, VA
KEF Robotics | Pittsburgh, PA
Kingetics LLC | Kihei, HI
KYMETA Government Solutions | Redmond, WA
Legionarius | Boston, MA
Lynntech Inc | College Station, TX
Mainstream Engineering Corp | Rockledge, FL
Mavenview | Columbus, OH
Microinvestigate LLC | Arlington, VA
MIDE Technology Corp | Woburn, MA
Mike Sutton Consulting Inc | Owens Cross Roads, AL
MVP LLC | Lincoln, MA
Nanofiber Solutions | Hilliard, OH
Nanohmics Inc | Austin, TX
Neurorescue LLC | Lewis Center, OH
New Comer Arms LLC | Phillipsburg, NJ
Northern Star Fire | Eau Claire, WI
Peak Safety Systems | Killingworth, CT
Propel LLC | Pawtucket, RI
Protective Innovations LLC | Alexandria, VA
Puffin Innovations | Boston, MA
Ravenops Inc | San Francisco, CA
RDB Bioinformatics LLC | Omaha, NE
Research Logistics Co | Englewood, CO
Redhawk Construction Inc | Oklahoma City, OK
Remote Health Solutions LLC | Richmond, VA
Renovoderm | Columbus, OH
Revmedx Inc | Wilsonville, OR
Rini Technologies Inc | Oviedo, FL
Roam Robotics | San Francisco, CA
Rose-Field Inc | Hawthorne, CA
Salient Technologies Inc | Bozeman, MT
Salvo technologies | Largo, FL
Selecttech Services Group | Dayton, OH
Sempulse | San Marcos, TX

Sharp Vision Software LLC | Houston, TX
Silver Oak Leaf Inc | Atlanta, GA
SKC Powertech Inc | Budd Lake, NJ
Skyward LTD | Dayton, OH
Smarter Armour | Walpole, MA
Soartech Inc | Ann arbor, MI
Soar Technology Inc | Orlando, FL
Sonivate Medical Inc | Portland, OR
Stark Industries LLC | Columbus, OH
TAC Clamp LLC | Parker, CO
TAM Technology LLC | Cuyahoga Falls, OH
Techshot Lighting LLC | New Albany, IN
Three Firefighters LLC | Zanesville, OH
Thermal Storage Systems | Banks, OR
Tialinx Inc | Newport Beach, CA
TKM Unlimited Inc | Cuyahoga Falls, OH
Torrent Loading Systems LLC | Lynchburg, VA
Truproducts LLC | Nobel, OK
TRX Systems Inc | Greenbelt, MD
Ubihere | Columbus, OH
Unveil LLC | Cincinnati, OH
Utopia Compression | Los Angeles, CA
VAWD Applied Science & Technology Corp | Tuscon, AZ
Vcom3d | Orlando, FL
Viaanix Inc | Wichita, KS
Virtual Reality Rehab Inc | Clermont, FL
Vivonics Inc | Bedford, MA
Waterfull LLC | Whittier, CA
Wolfcom Enterprises | Pasadena, CA
Wolf Technical Services Inc | Indianapolis, IN
Yawpitch LLC | Holland, MI
Yotta Navigation Corp | Santa Clara, CA

AFRL SMALL BUSINESS HUB

2019

Collider events drive opportunity, discovery and identify supporting resources. Attendees are able to engage with fellow community members from business, government and academic circles. Focused around technology, entrepreneurship, and business growth, the Collider Series offers networking components in four different areas. These include:

- Information Series – educational or learning sessions
- Partnership Series – networking, partnership opportunities, matchmaking, Q&A panels, and problem solving
- Innovative Technology Series – targets specific leading-edge research areas and technology needs

- Regional Ecosystem Series – cross-promotes events happening throughout the region

To join the Collider Project register at www.meetup.com/collider to see all the new hosted Colliders.

The Small Business Hub is also active on Twitter @AFRLBizHub ending FY19 with 1,230 Followers

For more information on the AFRL SB Hub, connect with **Jim Masonbrink**, AFRL SB Hub Director Wright Brothers Institute, james.masonbrink@wbi-innovates.com 937-689-0889



APEX

2019

The Air Force SBIR/STTR Program is collaborating with an initiative funded by the Air Force to increase cooperation between the military, industry and academia.

In FY2019, the SBIR/STTR program began working with the U.S. Air Force Academic Partnership and Engagement Experiment. Dubbed APEX, the project is being managed by the Wright State Applied Research Corp.

The five-year, \$49 million APEX project will focus on enhancing academic engagement nationwide in support

of the Air Force Small Business program, National Defense Strategy and the Air Force's 2030 Strategy.

APEX will expand and accelerate technology transfer from universities to industry and the Department of Defense across the United States, enabling the Air Force to extend its technological superiority.

APEX will begin with facilitation of the STTR program, which requires partnerships between universities and small businesses. This will include coaching of small businesses seeking STTR contracts.

2019

Year in Review

OUTREACH (MARKETING AND COMMUNICATIONS)

In FY 2019, the Air Force Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Center for Excellence continued to execute our strategic marketing and communications efforts. The Marketing and Communications group provided messages that inform, educate, and promote awareness among our diverse target audiences. Due to the unique requirements of each audience, our approaches were tailored according to the needs of each group. Using multiple media outlets, we increased our reach and continued to ensure that the Air Force SBIR/STTR program reputation as an advocate for better acquisition processes, small business engagement, and Air Force warfighter support remained strong.



OUTREACH EVENTS

2019

The Air Force SBIR/STTR Center for Excellence participated in a variety of outreach and training efforts in FY2019. In addition to the Pitch Day and Tech Warrior events previously mentioned, Air Force SBIR/STTR participated in Road Tours that took us to cities across the United States and Puerto Rico, including Burlington, VT; College Park MD; Tucson, AZ; El Paso, TX; Boulder, CO; Des Moines, IA; Fargo, ND; Miami, FL; and San Juan, PR. The Center for Excellence also supported a number of events related to SBIR/STTR activities, listed below.

**Purdue Showcase Event at the Dayton Engineers Club
1 October 2018 | Dayton, OH**

The mission of the Engineers Club of Dayton and Purdue University in their showcase is to foster the advancement of business, education, engineering and science.

**Defense TechConnect
23-25 October 2018 | Tampa, FL**

Global innovation, business and military leadership as they deliver innovation to our national defense.

**NASA: Innovation & Opportunity Conference
7-8 November 2018 | Aurora, CO**

The Innovation & Opportunity Conference: Advancing Aerospace & Defense (IOC), now in its second year, brings together NASA and other government agency experts, small businesses, startups, research institutions and large businesses/prime contractors for a technology and commercialization event.

**Ohio Aerospace Day
5 December 2018 | Columbus, OH**

A strategic assembly of government, industry, and academic leaders to discuss the future of the aerospace and aviation industry in Ohio.

**UDRI Proposal Writing Workshop
3 January, 2019 | Dayton, OH**

This event included a 2-hour class providing an overview of the Congressionally-mandated SBIR / STTR programs and expert advice on SBIR / STTR Proposal Writing.

**Defense Tech Connect
17-18 June 2019 | Boston, MA**

At this conference attendees learned how to participate and compete for funding in these two programs that encourage small businesses to engage in Federal Research/Research and Development (R/R&D) and to commercialize their technological innovations.



INFORMATION SUPPORT

2019

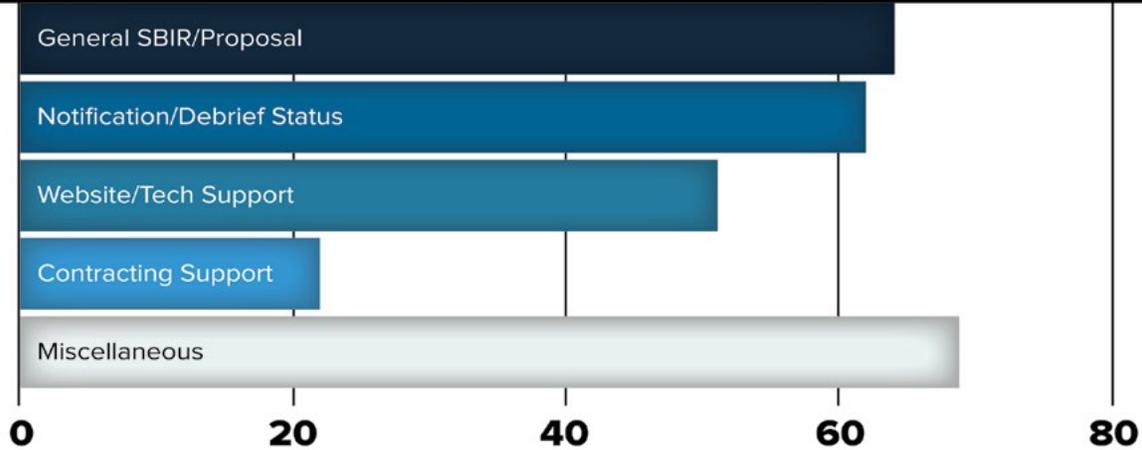
In 2015, the Air Force SBIR/STTR Program Office added dedicated staff to support the small business program information e-mail account (afsbirsttr-info@us.af.mil) and small business information line (1-800-222-0336). This program support staff was responsible for providing response and feedback to all received queries.

In 2019, received inquiries on both the 800 line and information email covered components of the program such as status requests on submitted proposals and debriefs, BAA and program awareness, website and technical support, and questions regarding contractual matters.

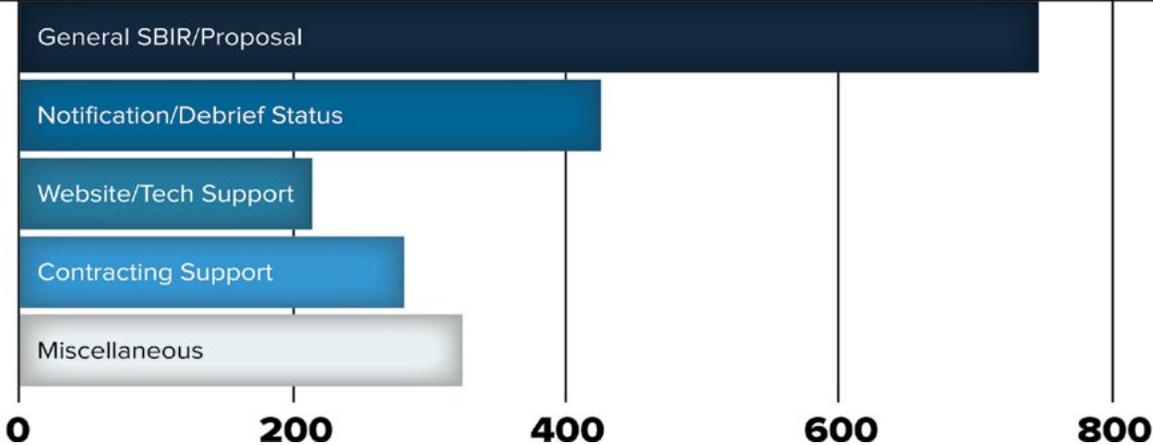
In 2019, 809 total inquiries requested general SBIR information and proposal support, 486 requested support on proposal notifications and status of debriefs, 264 requested website and technical support, and 304 were related to contractual matters. 393 miscellaneous items requesting support not directly related to Air Force SBIR were also received.

In order to mitigate the more complex or technical questions, program support conducted extensive research, internal datamining, SBIR documentation referencing (instructions, policies, etc.), and POC coordination in order to provide optimal support.

FY19 INFO CALLS RECEIVED - Total: 268



FY19 INFO EMAILS RECEIVED - Total: 1988



SOCIAL MEDIA

2019

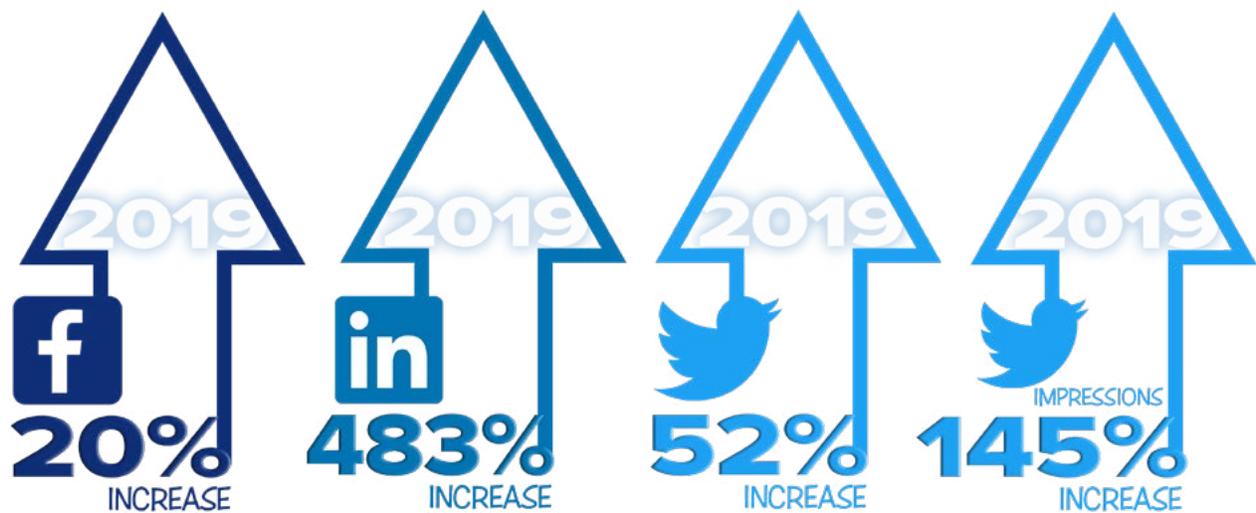
The Air Force SBIR/STTR Center for Excellence used a number of social media channels to deliver compelling and relevant content to increase program awareness. We used them to communicate SBIR/STTR developments related to policy or program changes; promote outreach activities, events, and other opportunities; solicit feedback from program participants; and increase advocacy for the Air Force SBIR/STTR Center for Excellence from key stakeholders.

Content was developed under one of two categories:

- Shared Content** - For Air Force SBIR/STTR, shared content encompassed relevant industry news. Google Alerts were set up to be received as they happen, and were directed to a general Air Force SBIR/STTR email account. At the start of, and periodically throughout each day, this email account was reviewed for any news items based on predetermined Google alert key phrases.
- Planned Content** - Our planned social media content was developed by the Air Force SBIR/STTR communications and marketing team to promote and communicate program activities, upcoming events, and material that highlighted the program philosophy and mission. A weekly plan calendar was produced and approved that provided a posting schedule and the content for each post. The Planned Content goal was to ensure that relevant posts occurred on a daily basis to keep the Air Force SBIR/STTR Center for Excellence at the forefront of the SBIR/STTR ecosystem.

Messaging and information that was shared via our social channels publicized and promoted previously approved materials or information that was already made public. For example, success story graphics were created using quotes and images that were already approved by Public Affairs.

As a result of our efforts, all of our social media channels saw an increase in usage and reach.



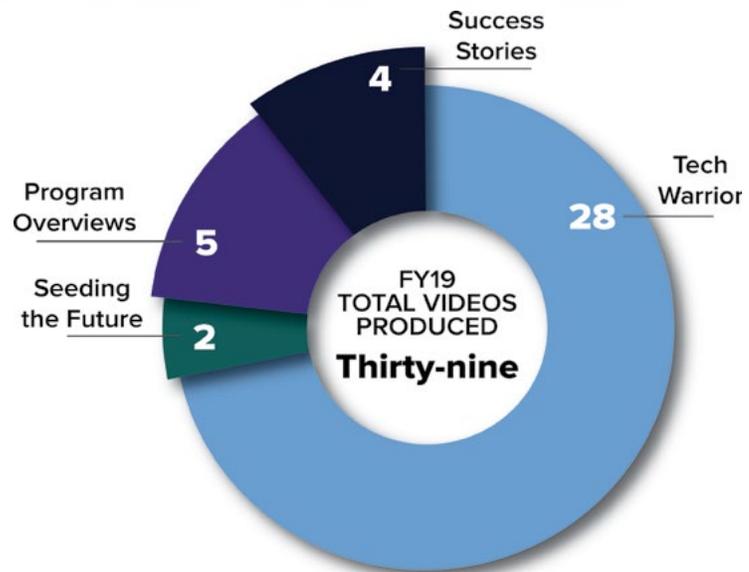
No money was spent on social media advertising in FY 2019.

FY 2019 VIDEOS

2019

The Air Force SBIR/STTR Marketing and Communications team continued to produce videos to communicate small business successes within the SBIR/STTR program as well as program information vital to the small business community and our stakeholders. Our videos were available via three options: the Air Force SBIR/STTR website, YouTube, and DVIDS. With these three channels, there was a significant increase in viewership as well as subscribers.

Our video production efforts for FY2019 are available on YouTube and DVIDS by searching on the words "Air Force SBIR/STTR," or by going to our website at <https://www.afsbirsttr.af.mil/Media/Videos/>.



PROGRAM WEBSITE

2019

The Air Force SBIR/STTR website is the backbone of our communications efforts. It helps keep our audiences up to date with program news and events, and provides a single location for vital details that describe program initiatives, processes, required forms, and access to supporting resources. Information is clearly displayed, easily digestible, and relevant to the SBIR/STTR mission and vision. The site has been designed to be responsive and easily navigated on mobile devices, and optimized to load quickly on any device.

The Marketing and Communications team reviews the website to ensure material is as up-to-date as possible and coordinates with the IT group to update the site as needed. Every effort has been made to develop a constant flow of relevant content for the website.

Key features of the Air Force SBIR/STTR website include:

- Compliance with AFI 35-107 and other DoD and Air Force regulations as required

- Integration with the Defense Visual Information Distribution Service, DVIDS
- Program overview and details regarding leadership; Phase I, II, II+ (CRP), and Phase III processes; Broad Agency Announcements; Fraud, Waste, and Abuse Prevention; and events such as Air Force Pitch Days, Tech Warrior Enterprise efforts, Road Shows, and numerous other SBIR/STTR-related events
- News and information, including Success Stories, Digitally formatted fact sheets and publications, and relevant videos
- List of points of contact, a program support form, and a list of frequently asked questions

Visit the website at <https://www.afsbirsttr.af.mil>.

SUCCESS STORIES

2019

Hundreds of small businesses successfully moved into Air Force Small Business Innovation Research Phase II contracts. In addition to the Phase II successes, a number of those small businesses secured Phase III contracts in FY2019, a critical commercialization benchmark. Phase III dollars can come from either government or private-sector sources. Phase III awards fund accelerated development and integration of SBIR-supported technologies.

A 2018 pilot program in which the U.S. General Services Administration performs Phase III contracting for the U.S. Air Force helped drive these successes. Since its inception, that program has resulted in \$773.2 million Phase III contracts for Air Force SBIR companies. Through the pilot program, Air Force SBIR/STTR received contracting support from the GSA's Assisted Acquisition Service's (AAS) Great Lakes Region (Region 5) and AAS's Federal Systems Integration and Management (FEDSIM) teams. The SBIR Phase III pilot program was initiated in May 2018 with the GSA SPE's authorization. And, while the SBIR-GSA partnership resulted in significant wins, more than a dozen other SBIR companies such as Dzyne Technologies, Etegent Technologies Ltd., Strategic Analysis Enterprises Inc. and Phase Sensitive Innovations Inc., inked significant Phase III agreements outside the pilot program with Air Force customers during FY 2019.

A sampling of the small businesses who achieved success in 2019 are shown below:

Design Knowledge Co. Inc. | Fairborn, OH
\$67 million Indefinite Delivery, Indefinite Quantity (IDIQ) contract supporting AFRL Sensors Directorate. Supports the continued research, development and implementation of Phase I and Phase II technology for the Common Operating Picture for Event Response Situation Awareness (COPERS). In addition to the IDIQ award, Design Knowledge also was awarded task orders for \$14.9 million and \$39.9 million.

Sabel Systems Technology Solutions LLC | Arlington, VA
Woman-owned small business. \$50 million contract supporting AFMC Directorate of Engineering on April 24, 2019. This contract, awarded through AAS, leverages technology developed in a SBIR Phase I award to support rapid and repeatable capability adoption of Digital Engineering Solutions within the DoD.

The Perduco Group | Beavercreek, OH
Woman-owned small business. \$150 million contract supporting Air Force's Strategic Development Planning and Experimentation Office. The contract supports development of an infrastructure roadmap to enable effective enterprise modeling, simulation and analysis (MS&A) capability to support acquisition tradespace exploration. In addition, on Feb. 15, 2019, Perduco received a \$39 million task order against the Phase III contract.

Discovery Machine Inc. | Williamsport, PA
Woman-owned small business. \$2.2 million contract supporting Air Force AETC/AFWERX Pilot Training Next (PTN) Virtual Instructor Pilot (VIPER) program. The contract advances work performed under the previously awarded SBIR II contracts issued by the Air Force to bring a more

complete virtual instructor pilot solution to the Air Force AETC's PTN program.

HumanIT Solutions LLC | Fairborn, OH
Veteran-owned small business. \$61 million IDIQ contract supporting AFLCMC Business and Enterprise Systems Directorate (HIBC). The contract leverages a Chatter Analytics Decision Engine (CADE) tool to quickly ingest various types of data to help end customers, data analysts and decision makers better understand their data. The first Task Order on this contract is being used to assist the Air Force in upgrading its contract writing systems.

Geneva Technologies Inc. | Monument, CO
Woman-owned small business. \$62 million IDIQ contract supporting AFRL Space Vehicles Directorate. The contractor will research and further develop high-speed, high-resolution analog-to-digital and digital-to-analog circuitry and software. Additionally, it will apply the technology to communications, data collection, controls and other subsystems and implement it in a representative and mission relevant environment for space vehicles and flight operations.

Tenet3 LLC | Riverside, OH
\$200 million IDIQ contract supporting AFRL Sensors Directorate. The contract will develop cost-effective ways in which the Air Force can mitigate opportunities for information arbitrage (i.e. instances where one party knows something the other does not) by those deemed as "unfriendly" to the U.S. This will make it more difficult for adversaries to gain insight by observing US systems over time and practicing their attacks on similar systems

or components of these systems that are commercially available.

Aptima Inc. | Fairborn, OH
 \$58.8 million IDIQ contract supporting Air Force’s 711th Human Performance Wing. The contract will provide innovative training analysis, performance assessment and augmentation, and data analysis and visualization solutions to enhance the readiness of the Air Force, Joint Staff, and Coalition personnel. Outcomes from these activities will be applied to future training and readiness assessments, making them more effective and accessible.

Magis Group LLC (Evenpulse Division) | Boulder, CO
 Small disadvantaged business. \$47 million IDIQ contract supporting Air Force’s 9th Security Forces Squadron. Focusing on the neurophysiology of stress and applying the previously developed BASE-R-Method training platform, the contract will provide a single training package addressing mission readiness fundamentals, specific skill applications, overall life skills, and other topics.

Revacomm Inc. | Honolulu, HI
 Small disadvantaged business. \$442,000 contract supporting the 15th Wing, Pacific Air Forces (PACAF). The contract will help teach Airmen and women agile software development commercial best practices specifically related to Development, Security and Operations (DevSecOps) activities. As a result, Airmen and women will be able to independently and collaboratively develop secure and modern software, such as adapting the Air Force Mission Weapons System’s PUCKBOARD for flight-scheduling program.

Orbital Micro Systems (OMS) | Boulder, CO
 \$1.8 million contract supporting the Air Force’s Commercial Weather Data Pilot Program. The project is researching a

proof of concept to test that commercially sourced passive microwave data can provide the warfighter benefits at a reduced total cost leveraging the delivery of a proposed WeatherLock-Global Environmental Monitoring System (GEMS) sensors.

Bluestaq LLC | Colorado Springs, CO
 \$37 million contract supporting AFRL and Air Force SMC. The project will integrate data from an Enterprise Ground System with a Data-as-a-Service Unified Data Library platform.

Vana Solutions | Beavercreek, OH
 Woman-owned small business. \$26 million contract supporting Air Force Security Assistance and Cooperation Directorate. This agile cloud migration and analysis project will provide the Air Force with an approach transforming current digital assets and accelerating the pace at which it develops, tests, deploys, and sustains capabilities.

Second Front Systems | Arlington, VA
 Veteran owned small business. \$10 million IDIQ contract supporting AFWERX/RSC Innovative Capabilities Database project continues to research the application of a tool called Atlas Fulcrum. The tool brings together a discovery platform for nontraditional companies and their capabilities with government entities looking for solutions to challenges and creating potential matches in capability with solutions.

Etegent Technologies Ltd. | Cincinnati, OH
 \$24.5 million Phase III Air Force contract to provide for further development of cognitively-derived analyst tools to support the integration of more fully integrated intelligence products of greater relevance to the warfighter. In addition, the IDIQ contract also provides for transitioning of analyst-aiding tools and technologies within the Department of Defense intelligence community.

SUCCESS RESULTS FOR PHASE I AND PHASE II



2019

Year in Review

COMMERCIALIZATION

The Air Force Small Business Innovation Research/ Small Business Technology Transfer (SBIR/STTR) Commercialization Readiness Program has provided a strategically driven process that has helped focus SBIR and STTR topics on high-priority technology needs and has worked with small businesses, program offices, SBIR/STTR program managers, technical points of contact, and industry technology integrators to accelerate technology transition. Each year, the Air Force has dedicated one percent of its overall SBIR/STTR budget to its Air Force SBIR/STTR CRP efforts.



TECHNOLOGY TRANSITION

2019

PLANS

The Air Force SBIR/STTR CRP has brought together the stakeholders utilizing Air Force SBIR/STTR CRP Portfolio Managers (PMs) to help focus SBIR/STTR topics on high-priority technology needs. The PMs have operated on-site at various Air Force bases supporting Air Force partners including PEOs, program offices, AFRL, among others. The PMs worked closely with these organizations to help implement the entire SBIR/STTR process, from topic generation to facilitating the transition of resulting technologies. This close working environment allowed the PMs to have a better understanding of the customer and their needs. The PMs have been fully engaged as the program's boots on the ground supporting the Air Force Life Cycle Management Center (AFLCMC), Air Force Sustainment Center, Space and Missile Systems Center, Nuclear Weapons Center and the Air Force Test Center. The PMs have also supported the Joint Strike Fighter program as well as the nine technology directorates (TD) within the Air Force Research Laboratory (AFRL). With changing leadership and policies, the PMs have served as a constant resource for those Centers/PEOs and TDs.

In addition, the PMs worked with small businesses, system program offices (SPOs), SBIR/STTR Program Managers, Technical Points of Contact (TPOCs), and industry technology integrators to identify and document the transition planning through non-binding SBIR/STTR Technology Transition Plans (STTPs) for high transition potential projects. These plans identified critical stakeholders, their roles and responsibilities, technology and manufacturing readiness levels, tasks and timing, funding sources, and risk mitigation to support SBIR/STTR technology transition.

In 2019, AF SBIR/STTR funding included Phase I, Phase II, and enhancements to Air Force SBIR/STTR CRP-approved projects. Non-SBIR/STTR funding sources included industry Independent Research and Development (IR&D), SBIR/STTR firm investment, Air Force Programs of Record, AFRL core budget, DoD transition funds, and state small business funds.



SUCCESES

Since the inception of the program, 178 Air Force SBIR/STTR CRP projects have been considered transition successes and are providing significant benefit to the nation's warfighters in improved performance, new capabilities, increased reliability, and cost savings well exceeding the investment. Each project has met the technology needs of at least one Air Force system with total cost savings estimated at over \$1 billion.

During 2019, 6 projects were identified as successes, adding to the 172 successes identified through 2018 that have continued to mature and yield benefits. To be considered a transition success, a project must lead to the production and delivery of products, processes, technologies, or services for sale to or use by the Federal government or commercial markets. Transition successes have provided significant benefit to the nation's warfighters in improved performance, new capabilities, increased reliability, and cost savings.

Each transition success and its benefits are briefly described here:

STTP 2010-28 | (ES3) Engineering & Software System Solutions, Inc.

Development of Novel Cooling and Temperature Monitoring for High Velocity Oxygen Fuel (HVOF) Coating Applications on Metallic Aircraft Components and Propeller Components | AF073-121

Eliminates extended off-part dwell time for cooling, reduces process time, man hours, and powder and fuel costs on C-5 slat tracks and other components coated with HVOF WC-Co-Cr. New process also reduces use of hazardous materials.

TRANSITION SUCCESSSES

2019

STTP 2013-11 | ReliaCoat Technologies, LLC

Real Time Measurement of Design Relevant Thermal Spray Coating Properties | AF093-195

In situ coating properties (ICP) sensor is advanced concept that allows for measurements of coating properties within thermal spray booth during or within minutes after deposition. The measured coating properties provide relevant information about process stability as well as assess any deviation from the anticipated outcome. The process/coating engineers and operators receive benefits for quantitative reporting on coating properties with consistent interpretation, and expedite booth to booth comparison. These benefits and capabilities of ICP sensor have already demonstrated in the production environment at Tinker AFB during phase I and phase II. ICP has the potential to transform the thermal spray industry in its coating specification, design and processing strategy. It can also significantly reduce time, enhance interpretation and improve quality without need for any modification of current working practices.

STTP 2014-51 | Tethers Unlimited, Inc.

Programmable Frequency Satellite Transceiver for Small Spacecraft | AF112-072

High-performance, SWaP-efficient software defined radio (SDR) platform to provide primary TT&C, crosslink, relative navigation, and SIGINT capabilities for small, affordable spacecraft systems. SWIFT radio platform will enable a modular architecture that enables cost-effective implementation of radio solutions over different frequency ranges and will support a wide variety of ground station systems and communications protocols, including UHF, S-band, L-band, K-band, and wideband radio solutions currently in development, as well as additional solutions to enable operation at X and V bands. Additionally, RF frontends will be readily swappable and combined to enable a variety of frequency combinations. This will result in a lower cost, more cost efficient solution in a smaller package.

STMP 2014-AD | Intuidex, Inc.

Enhanced Exploitation and Analysis Tools, Watchman Analytics | AF083-055

Intuidex, Inc. proposes to support the requirement of Enhanced Intelligence Capability in A2/AD through research, development, and transition of an improved Data Analytics Framework. The Framework will enhance military capability through (1) the incorporation of open-source intelligence (OSINT) sources; (2) enhancing entity resolution (ER) algorithms to operate across all applied data sources (including MIDB and social media sites); (3) visualizing the fused, resolved data in both desktop and mobile modalities. The Framework also aims to accelerate military development capability through accessible programmatic APIs to encourage system integration of this entity resolution capability with other Air Force acquisitions.

STMP 2014-W | ThermAvant Technologies, LLC **Next-Generation Micro-chip Carrier for Cooling of Satellite Payload Electronics | AF112-057**

The expected benefit of this proposed Phase II effort is the deployment of higher-power processors aboard satellite payloads. Such an enabling technology will be applicable to commercial and military satellite applications, as well as terrestrial ones, with ultra-high heat flux and/or constrained heat-rejection rates.

STTP 2017-02 | Innoflight, Inc.

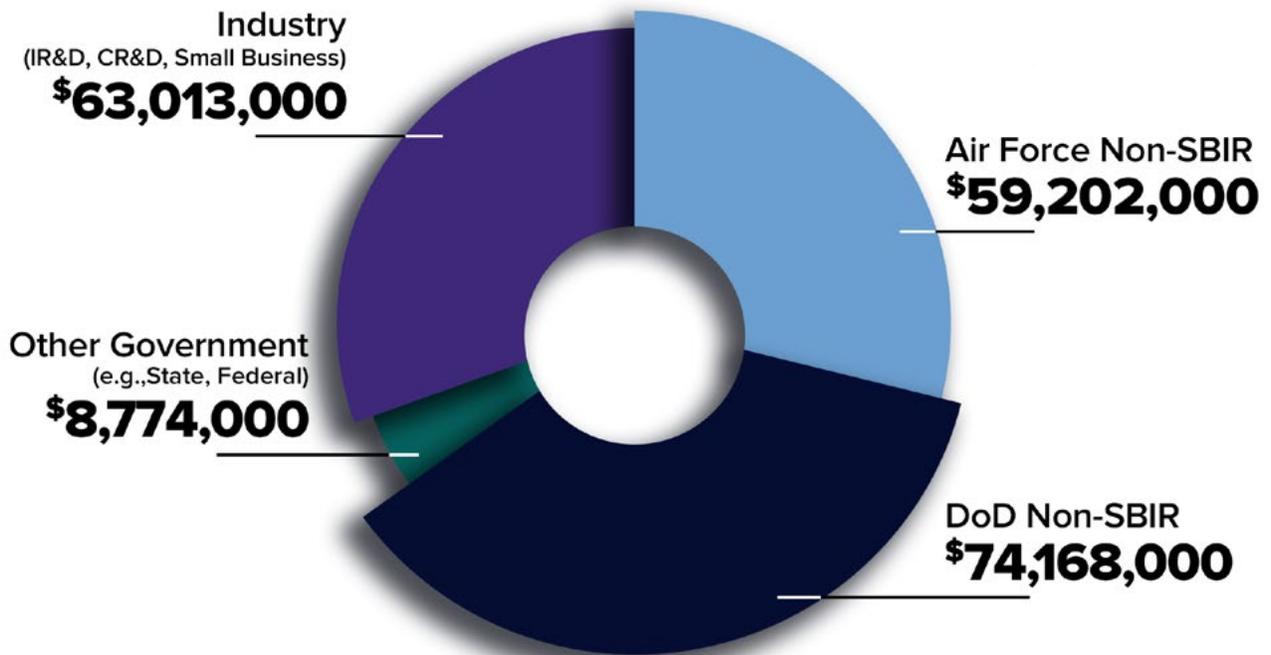
Gnome Space Secure Communications System Maturization & High-Assurance Certification | AF121-070

The “Gnome” is a family of extremely low SWaP-C space COMSEC End Cryptographic Units (ECU) with deeply integrated spacecraft software-defined radios. It will replace much more expensive, larger, and higher-power consumption specialized communication packages used on legacy space systems. Its use enables cubesats to comply with National policy on secure space communications (CNSSP-12), enabling cubesats to be used for our Nation’s most highly-classified space applications, providing the highest level of assurance in the integrity, authenticity, and confidentiality of space command, telemetry, and mission data. The Gnome system is fully compatible with legacy ground networks, including both AFSCN / SGLS and CCSDS, including legacy deployed ground C2 equipment.

FUNDING LEVERAGED

2019

Since its inception in 2006, the program has improved technology transition outcomes by accelerating the transition of SBIR/STTR-developed technologies into real-world military and commercial applications. The Air Force SBIR/STTR CRP team tracks generation of each SBIR or STTR topic and enables eventual transition of the topic's technology to military or public sectors. The Air Force SBIR/STTR CRP has achieved success by aligning and connecting transition stakeholders, and has leveraged the funds required to mature SBIR/STTR projects. Funds leveraged in FY19 include:



TECHNOLOGY INTERCHANGE MEETINGS

2019

The Air Force SBIR/STTR CRP continued TIMs as a means of building relationships with Major Defense Contractors (MDC), encouraging small business participation in SBIR/STTR, and bringing solutions to Air Force warfighters. By continued utilization of Air Force SBIR/STTR CRP TIMs, unique technology meetings tailored to MDC needs and hosted at MDC facilities, key stakeholders were brought together, integrating small business capabilities with the larger defense industries, assisting small businesses with visibility into new markets, and increased return on investment opportunities for the Air Force. The goal of the TIMs was to establish a general process conducive to shepherding SBIR/STTR developed technologies for transition to support the warfighter. The hope was to establish partnerships between relevant stakeholders, allowing for a greater probability of return on investment for SBIR topics. These were two-day events with MDC leadership briefings, briefings from the Air Force, and one-on-one technology matchmaking meetings.

Since their inception in 2008, 17 different MDCs requested and participated, most of whom, after experiencing success, had participated more than once. The outstanding support continued to grow, and this was evident each year through the addition of new organizations, incorporation of new business units, and inclusion of new subject matter experts. To facilitate, the Air Force SBIR/STTR CRP team led the MDCs through a 15-week planning process. During this process, Air Force SBIR/STTR CRP provided training on how to find SBIR/STTR efforts for data mining and due diligence activities,

and helped prepare for MDC personnel for one-on-one sessions with selected technology firms. The success of each event was dependent on the respective MDC performing due diligence to identify if selected data mined technologies met the MDCs' needs.

The unique characteristic of the TIMs was that they had been hosted by the MDC at their facility to increase the opportunity to get the "right people around the table" for the real discussion needed to determine a technology fit. Establishing a Non-Disclosure Agreement prior to the meeting was encouraged, in order to allow for an immediate deep dive of the technology. All stakeholders were able to leave the room with a strong understanding of the small business's capabilities, the MDC needs, and what needed to happen next.

In 2019, Air Force SBIR/STTR CRP assisted six MDCs (Harris Corp, Northrop Grumman, Rolls Royce, Boeing, Raytheon, and Triumph) and 107 small businesses through the TIM process and facilitated 102 one-on-one sessions regarding 119 SBIR projects. Of these projects, 47% of these 119 projects are currently under review by the participating MDCs for transition potential.

Many one-on-ones from years past have begun to produce successful results. Regardless of one-on-one outcomes, small businesses have benefited from the education on how to do business with the MDC, the MDCs have benefited from government presentations and Air Force SBIR/STTR CRP interaction, and all have formed positive relationships.

SMALL BUSINESS INDUSTRY DAYS

There were no SBIDs conducted in 2019, and the Air Force SBIR/STTR Program Director has expressed intent to permanently discontinue them in their current form.

The program is considering numerous possibilities for other small business interactions that will yield more tangible, verifiable results going in the future.

2019

Year in Review

DATA MANAGEMENT (TOPICS AND AWARDEES)

Each year, participating federal agencies identify various R&D topics for pursuit by small businesses under the Air Force Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) program. Selected topics represent scientific and technical problems requiring innovative solutions. These topics are bundled together into Broad Agency Announcements that are available to interested small businesses or FedBizOpps and the DoD SBIR/STTR websites.

Upon review of topics, a small business can identify appropriate topics to pursue and offer a proposal on. The BAA letter contains all necessary information for submitting a proposal, small businesses are encouraged to follow the instructions carefully, as proposals are received, reviewed and evaluated on a competitive basis by Air Force technical experts. These experts select the best proposals, awarding contracts to the most qualified small businesses with the most innovative proposal solutions.



SPECIAL TOPICS AND PARTNERSHIPS

2019

The Air Force SBIR/STTR Center for Excellence continued experimenting with special topics, open topics and focus areas in FY2019 as it refined and streamlined its strategy for finding, evaluating and funding critical warfighting tools.

This experimentation sparked an evolution that resulted in the program using open topics and focus areas to acquire cutting-edge technology. The Air Force's desire to speed up technology transition drove these changes.

Open topics allow small businesses to submit any technology that may have an Air Force application. Focus areas identify technologies of Air Force interest such as additive manufacturing or simulator technology without seeking solutions to particular problems. Major commands and program management offices (PMO) generate focus area lists.

Starting in FY 2018, Air Force SBIR/STTR began including open and special topics in Broad Agency Announcement solicitations, which are issued three times per year. Open topics have succeeded in attracting hundreds of submissions, and resulted in dozens of contracts with small businesses.

Traditionally, SBIR has sought proposals by issuing specific topics based on a possible solutions to a particular problem. The Air Force Research Laboratory and others in the Air Force generated the SBIR topics.

Over the last two years, though, Air Force SBIR/STTR has restructured itself to function as a commercial seed fund. As part of this effort, the program introduced special topics as a way to reduce red tape and improve interactions between the Air Force, startups and small businesses.

Special topics always have included open topics, and the latter have proven extremely successful at attracting technology.

Even as topics evolved, the program began aligning Phase I contract recipients with AFWERX, the Air Force's Education and Training Command, the Defense Innovation Unit and National Security Innovation Network (formerly MD5). The role of these technology accelerators was to mentor and provide resources to

Phase I companies. The goal of teaming SBIR recipients with accelerators is to better position these companies to compete for Phase II contracts.

BROAD AGENCY ANNOUNCEMENTS

The 19.1 Broad Agency Announcement included 8 topics and three pitch days. The National Security Innovation Network (formerly MD5) managed three of those topics: Multi-Domain C2, Space Innovations and Advanced Materials for Defense. This solicitation also included an open dual-use topic, two CubeSat topics and an AETC topic.

In BAA solicitation 19.2, the program sought proposals for three open topics – Open Phase I STTR, Open Phase I SBIR, and Phase II SBIR. This solicitation also included focus areas related to solutions such as simulators. Focus areas under the open topic included: deployable, austere environment high-fidelity simulators; interoperability amongst networked simulators; cloud-based simulators; performance-based training, data collection and analysis; and artificial intelligence aided instruction in simulators. The list of focus areas was not meant to be exhaustive, and small businesses with solutions for other simulated training areas were encouraged to apply for SBIR funding.

BAA 19.3 included an open Phase I SBIR, an open Phase I STTR and an open Phase II SBIR.

Open topics differ from SBIR/STTR'S traditional approach to finding technology solutions. First, open topics are open to all solutions rather than focusing on one specific problem area, thus the companies who have been awarded a Phase I contracts represent a diverse set of problems and solutions.

A second major difference is the number of awards given under this new construct. A typical SBIR topic gives two or three Phase I awards. Open topic awards, on the other hand, can generate hundreds of Phase I contracts, which further broadens the potential set of solutions.

Another major difference from a typical SBIR topic is the research being completed is to perform a feasibility study for adapting a non-defense commercial

technology to meet specific Air Force needs. A major part of this feasibility study is finding a specific Air Force end user/customer and determining how their needs could be met by an adapted commercial solution.

While all companies entering Phase I have a notional understanding of a potential Air Force user, most will actively search out additional Air Force contracts in an attempt to find the best product/and Air Force market for their solution.

What this means in practice is that these companies will be reaching out to many people in the Air Force, attempting to find the right person whose problems can be addressed by a company's particular solution.

SUMMARY

The advent of open topics was part of the program's larger evolution that also has included special topics as well as partnerships with technology accelerators.

The Air Force SBIR/STTR program first began allocating resources toward special topics during the 18.2 Spring Broad Agency Announcement. Special topics were intended to reduce the barriers for small businesses and leverage new methods of doing business. They also allowed the program to act more as a commercial seed fund.

Among the differences from traditional SBIR/STTR proposals, the special topics involved:

- An application process that requires a five-page technical paper and a 15-slide "pitch deck," instead of the traditional 20-page technical proposal
- Phase I contract awards of varying amounts (\$50K to \$158K) and a three-month period of performance, compared to the standard \$150,000 award and nine month period of performance
- Numerous awards for each Phase I, which are typically limited to only a few awards

The six special topics introduced in the 2018 18.2 BAA were just the first step in a larger pilot project. During subsequent BAAs, the number of topics grew as the Air Force continued to experiment with ways to drive benefits for both small businesses and the warfighter.

Special topics were made possible through partnerships with such innovative organizations as AFWERX, the Air Force Research Laboratory and the Office of the Secretary of Defense's National Security Innovation Network (formerly MD5).

2020
FY20 BROAD AGENCY ANNOUNCEMENT

	PRE-RELEASE	OPEN	CLOSE
SBIR 20.1 STTR 20.A	DEC 10, 2019	JAN 14, 2020	FEB 12, 2020
SBIR 20.2 STTR 20.B	APR 22, 2020	MAY 20, 2020	JUN 17, 2020
SBIR 20.3 STTR 20.C	AUG 25, 2020	SEP 23, 2020	OCT 22, 2020

SBIR|STTR BUDGETS

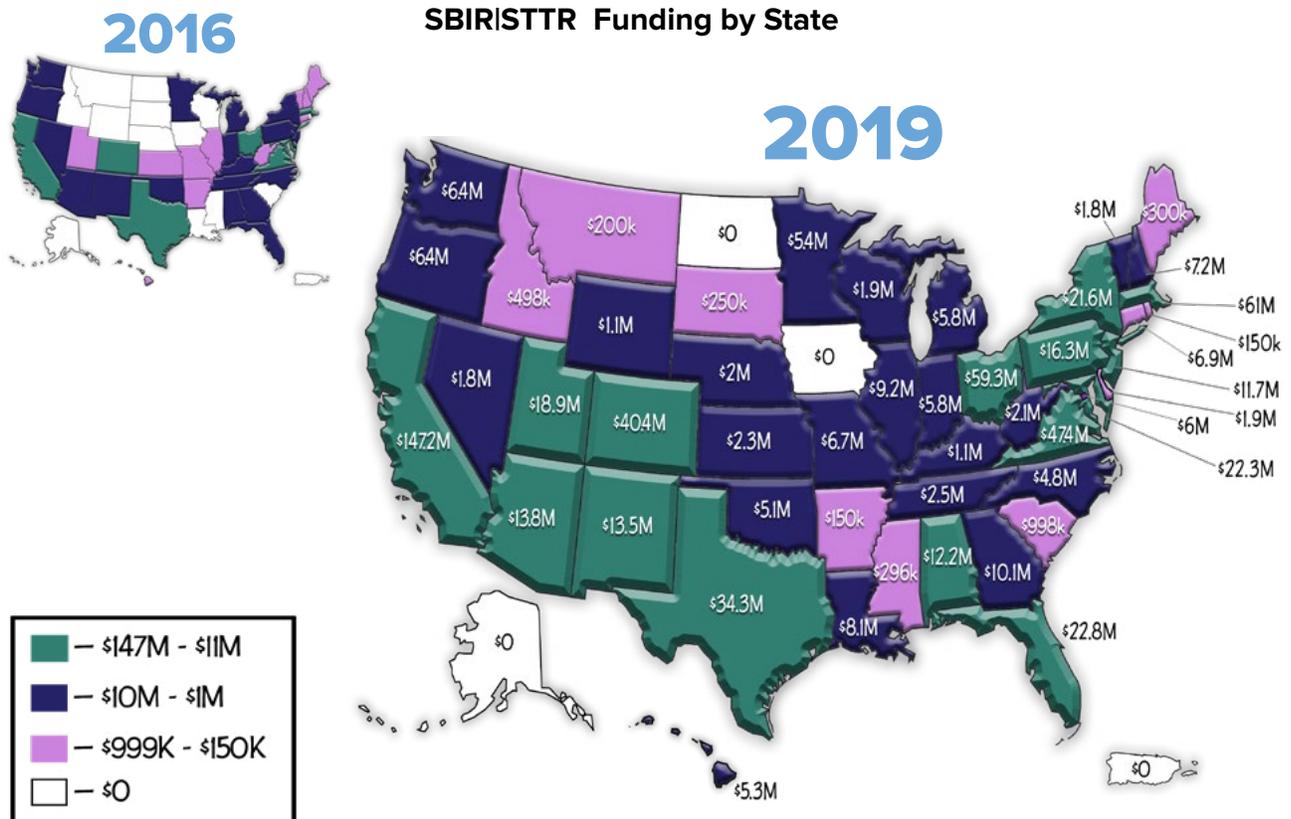
2019

Annual Air Force SBIR Budget

	BUDGET	TOPICS	SBIR PH I PROPOSALS	SBIR PH I AWARDS	SBIR PH II PROPOSALS	SBIR PH II AWARDS
FY 2016	293,832,500	167	1,910	297	447	167
FY 2017	357,458,934	157	1,926	267	410	209
FY 2018	542,849,828	218	3,534	358	370	224
FY 2019	697,548,747	198	4,721	1,211	1,188	451

Annual Air Force STTR Budget

	BUDGET	TOPICS	STTR PH I PROPOSALS	STTR PH I AWARDS	STTR PH II PROPOSALS	STTR PH II AWARDS
FY 2016	43,928,499	29	196	65	82	48
FY 2017	50,111,066	38	267	56	75	30
FY 2018	81,597,172	37	316	50	77	33
FY 2019	97,792,253	45	458	121	78	52



SBIR 2019.1 TOPICS

2019

The following Air Force topics were released during the SBIR 2019.1 BAA.

TOPIC NUMBER	TOPIC TITLE
AF191-005	Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear Air Force Stakeholder Need
AF191-006	6U CubeSat EO/IR Solutions for Operational Weather Demo
AF191-007	Rapid CubeSat Development
AF191-008	Commercial Solutions for Innovative Space Data Analytics
AF191-009	Pitch Day in Command, Control, Communications, Intelligence, and Network (C3I&N)
AF191-010	Pitch Day Investment in Battlefield Air Operations Family of Systems Technologies
AF191-011	Pitch Day Investment in Digital Technology
AF191-016	Breathing Air Manifold For Air Quality Sampling
AF191-017	Multi-Physics Modeling Software for Directed Energy Bio-effects
AF191-018	Sensor System for Real Time Observation of High Energy Laser Effects
AF191-019	Game-based Distributed, Multi-Domain Operations Teaming Environment
AF191-020	Autonomy for Supporting Strategic Reasoning about Intelligence Collection Management for Multi-Domain Operations
AF191-021	Personal Assistant for Intelligence, Surveillance and Reconnaissance (ISR) Analysts
AF191-022	Improving Transparency of Object Tracking Technology for RPA Sensor Operators
AF191-023	Nonmixing, Rapid-Escape Airlock
AF191-025	Bounding Probability of Detection Using Sonic Infrared Inspection
AF191-026	Crack Sizing from Vibrothermography Nondestructive Inspection (NDI) Image
AF191-027	Field-Level Aviation/Ground Fuel Trace Element (Metal) Analysis
AF191-028	Field-Level Detection of Metal Deactivator Additive (MDA) in Aviation Fuels
AF191-029	Field-level Aviation Fuel Contamination Analysis via Integrated Suite of Miniaturized Sensors Including Near Infrared (NIR) Spectroscopy
AF191-030	Hydrant Fuel System In-Line Aviation Fuel Quality Monitor/Analyzer for Flushing Operational Efficiency
AF191-031	Precision Aircraft Jack-to-Jig
AF191-032	Dynamic Signature System Calibration Device
AF191-033	RF Reception in Highly Reflecting Environments
AF191-034	High Power Broadband MWIR Emitters
AF191-035	Data/Model Fusion for Missile Signature Modeling
AF191-036	High Energy Atomic Oxygen Generator
AF191-037	Non-Contact Sled Position Indicator
AF191-038	Diffuse Screens for Dynamic Infrared Scene Projection Systems
AF191-039	Rain Drop Measurement System
AF191-040	Development of Test Technologies and Methodologies for Advanced Focal Plane Arrays
AF191-041	Hypersonic Sled Braking Technology

TOPIC NUMBER	TOPIC TITLE
AF191-042	High Speed MWIR Laser Attenuator
AF191-043	Sledborne Event Initiator
AF191-044	High Power Broadband Ultraviolet Emitters
AF191-045	Real-time Fuel Chemistry Analysis for Hypersonic Propulsion System Ground T&E
AF191-046	Energy Harvesting System
AF191-047	Non-Intrusive and Non-Invasive Fuel Flowmeter
AF191-048	Develop a Wireless Instrumentation System (WIS)
AF191-049	Cybersecurity for Standalone Airgap Systems
AF191-051	Micro-STT Ground-to-Air Radar
AF191-052	Sea-Skimming Missile Tracking
AF191-053	Illuminators for Applications Involving Coherent Detection
AF191-054	Fast-framing SWIR Cameras for Digital-Holographic Detection
AF191-055	Antireflective YAG Surface Etching
AF191-056	Low Cost, High-Bandwidth Fast-Steering Mirror (FSM) for Aircraft Laser Systems
AF191-057	Low SWaP Tactical Beam Control System
AF191-058	Aero-Mechanical Force Emulator
AF191-059	FSO and RF Integrated Aerial Communications (FaRIA-C)
AF191-060	Collaboration and Interoperability for Distributed Mission Analysis
AF191-061	Bandwidth Constrained Electronic Warfare
AF191-062	Distributed Deep Learning and Sensing
AF191-063	Information Flow Control for Microkernels
AF191-064	Formal Methods for Automated Unit Testing
AF191-065	Network Sensing and Analytics for Low Bandwidth Cyber Protection Team (CPT) Deployment Scenarios
AF191-066	Rotary Platform Widescreen Transparency for Bird Strike Protection
AF191-067	Reliable, Rapid and Cost Effective Fabrication Techniques for Larger Scale Scramjet Engines
AF191-068	Detailed and Reduced Chemical Kinetic Model Development for Rocket Hydrocarbon Combustion
AF191-069	Diaphragm Material Optimization for Monopropulsion Systems for Spacecraft
AF191-070	Thermal Management for High Power SmallSats
AF191-071	Flexible Solar Arrays for Small Spacecraft Buses
AF191-072	Spacecraft Fault Detection Identification and Causation Using Machine Learning
AF191-073	Optimal Network Reconstitution of Multi-Domain Assets in the Presence of Failures
AF191-074	Cryogenic Radiation-Hard Read-Out Integrated Circuit Electronics Process Design Kit
AF191-075	Advanced Manufacturing and Assembly Approaches for Reduced Cost Small Satellite Constellations
AF191-076	Advanced Power Source Technologies
AF191-077	Composite Case Technology for Penetrators/Perforators
AF191-078	Develop Innovative Circular and Domed Structure Response Models
AF191-079	Next Generation Laser Designator
AF191-080	Topology Optimization for Dynamic Weapon Events
AF191-081	Innovative Multiphase Models for Enhanced Blast Effects
AF191-082	Manufacturing Methods to Enhance UHSS Casing Properties for Penetrating Munitions

TOPIC NUMBER	TOPIC TITLE
AF191-083	Auto-designer Target Generator
AF191-084	Variable Bomb Ejection Pressure Cartridge
AF191-085	Novel Lightweight Sensors for Indoor Unmanned Aerial Vehicles
AF191-086	High-Speed Environment Modeling and Simulation Tool
AF191-087	Multi-Band Seeker Antennas
AF191-088	Carbon-Carbon (C-C) Composite Process Modeling for Accurate Dimensions
AF191-089	Improved C-C Coatings for Durability in High Heat Flux Environments
AF191-090	Maintenance Data Integrity Study and Logistics Linkage
AF191-091	Physics-Based Prediction of Residual Stresses for Fatigue and Fatigue Crack Growth Life Assessment
AF191-092	AgilePod® Capability Enhancements: Wideband Multi-Function RF Sensing
AF191-093	Innovative Methods for Thermoplastic Composites on ATL/AFP
AF191-094	Thin Mat Material Foreign Object Debris (FOD) Inspection System
AF191-095	Integrated Circuit (IC) Die Extraction and Reassembly Automation
AF191-096	Low Cost Electrochemical Machining System Small Aero Components
AF191-097	Nondestructive Instrument to Determine Composite Surface Activation State in Manufacturing Environment
AF191-098	Augmented Heating of Dissimilar Metals to Improve Joinability of Friction Welds
AF191-099	Low Cost Additive Manufacturing for Cast Tooling
AF191-100	Low Distortion Repair of Thin Superalloy Components
AF191-101	Improved Seals for Hypersonic Vehicles
AF191-102	AgilePod® Capability Enhancements: LiDAR
AF191-103	Augmented and Facilitated Nondestructive Inspection (NDI) for Large Area Assessments
AF191-104	Plasma Electrolytic Oxidation (PEO) Coating for Combat Rescue Helicopter
AF191-105	Use of Sensor Technology To Impact Corrosion Management of Combat Rescue Helicopter
AF191-106	Developing Sustainable and Adaptive Small Engine Manufacturing
AF191-107	Enhanced Precursors for Silicon-Based Ceramic Matrix Composites
AF191-108	Optimizing Manufacturing of Metallic Materials by Modeling Microstructure
AF191-109	Increasing the Manufacturing Robustness of Complex Composite Geometries by Modeling the Process Variability due to the Human
AF191-110	Non-destructive Evaluation (NDE) Methods for Characterizing High Temperature Composite Surfaces and Coatings to Manufacture Improved Components for High Mach Applications
AF191-111	Non-destructive Evaluation (NDE) Techniques for Carbon-Carbon (C-C) Structures Applicable to Hypersonic Structural Materials Production
AF191-112	Carbon Nanotube Fiber Production: Improved Performance and Reduced Cost in Autonomous Vehicles and HPM Source Designs
AF191-113	Residual Stress Measurements to Aid Manufacturing of Aerospace Composite Materials

STTR 2019.A TOPICS

2019

The following Air Force topics were released during the SBIR 2019.A BAA.

TOPIC NUMBER	TOPIC TITLE
AF19A-T001	Maintaining Human-Machine Shared Awareness in Distributed Operations with Degraded Communications
AF19A-T002	3D-Bioprinted Living System for Sensor Development
AF19A-T003	Remote cardiopulmonary sensing
AF19A-T004	Intelligent Robot Path Planning System for Grinding of Aircraft Propeller Blades
AF19A-T005	Three Dimensional (3-D) Imaging for Tracking and Aim-Point Maintenance in the Presence of Target-Pose Changes
AF19A-T006	Vibration Imaging for the Characterization of Extended, Non-Cooperative Targets
AF19A-T007	Synthetic Scene Generation for Wide Application Including High Performance Computing Environments
AF19A-T008	Optimization of Sodium Guide Star Return Using Polarization and/or Modulation Control
AF19A-T009	Autonomous Decision Making via Hierarchical Brain Emulation
AF19A-T010	Virtual Reality for Multi-INT Deep Learning (VR-MDL)
AF19A-T011	Diagnostics for Performance Quantification and Combustion Characterization in Rotational Detonation Rocket Engine (RDRE)
AF19A-T012	Machine Learning Methods to Catalog Sources from Diverse, Widely Distributed Sensors
AF19A-T013	Software-Performed Segregation of Data and Processes within a Real-Time Embedded System
AF19A-T014	Next Generation Energy Storage Devices Capable of 400 Wh/kg and Long Life
AF19A-T015	Space Based Computational Imaging
AF19A-T016	Multifunctional Integrated Sensing Cargo Pocket UAS
AF19A-T017	Tunable Bioinspired Spatially Varying Random Photonic Crystals
AF19A-T018	Hardware-in-the-Loop Test Bed for Magnetic Field Navigation
AF19A-T020	Guided Automation of Molecular Beam Epitaxy for Swift Training to Optimize Performance (GAMESTOP) of New Materials
AF19A-T021	Carbon-Carbon Manufacturing Process Modeling-Aeroshells

SBIR 2019.2 TOPICS

2019

The following Air Force topics were released during the SBIR 2019.2 BAA.

TOPIC NUMBER	TOPIC TITLE
AF192-001	Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear Air Force Stakeholder Need
AF192-005	Kessel Run Pitch Day
AF192-006	Unmanned Aerial Systems Pitch Day
AF192-020	V-Band Crosslink Solid-State Power Amplifiers

STTR 2019.B TOPICS

2019

The following Air Force topics were released during the SBIR 2019.B BAA.

TOPIC NUMBER	TOPIC TITLE
AF19B-T001	Open Call for Science and Technology Created by Early-Stage (e.g. University) Teams

SBIR 2019.3 TOPICS

2019

The following Air Force topics were released during the SBIR 2019.3 BAA.

FOCUS AREA	DESCRIPTION
5G	Technologies enabling the 5G spectrum to increase speed over current networks, to be more resilient and less susceptible to attacks, and to improve military communication and situational awareness.
Artificial Intelligence (AI)/ Machine Learning (ML)	Systems that perceive, learn, decide, and act on their own. Machine-learning systems with the ability to explain their rationale, characterize their strengths and weaknesses, and convey understanding of how they will behave in the future.
Autonomy	Technology that can deliver value by mitigating operational challenges such as: rapid decision making; high heterogeneity and/or volume of data; intermittent communications; high complexity of coordinated action; danger to mission; and high persistence and endurance.
Biotechnology	Biotechnology is any technological application that harnesses cellular and biomolecular processes. Most current biotech research focuses on agent detection, vaccines, and treatment. Future advances in biotechnology will improve the protection of both the general public and military personnel from biological agents, among numerous other potential applications.
Cybersecurity	Prevention of damage to, protection of, and restoration of computers, electronic communications systems, electronic communications services, wire communication, and electronic communications, including information contained therein, to ensure its availability, integrity, authentication, confidentiality, and nonrepudiation.
Directed Energy (DE)	Technologies related to production of a beam of concentrated electromagnetic energy, atomic, or subatomic particles.
Hypersonics	Innovative concepts or technologies that enable, or directly support, weapons or aircraft that fly at or near hypersonic speeds and/or innovation that allows for enhancing defensive capability against such systems.
Microelectronics	Critical microcircuits used in covered systems, custom-designed, custom-manufactured, or tailored for specific military application, system, or environment.
Networked Command, Control, and Communications (C3)	Fully networked command control and communications including: command and control (C2) interfaces, architectures, and techniques (e.g., common software interfaces and functional architectures and improved C2 processing/decision making techniques); communications terminals (e.g., software-defined radio (SDRs)/apertures with multiple networks on the same band and multi-functional systems); and apertures and networking technologies (e.g., leveraging/managing a diverse set of links across multiple band and software defined networking/ network slicing).
Nuclear	Technologies supporting the nuclear triad-including nuclear command, control, and communications, and supporting infrastructure. Modernization of the nuclear force includes developing options to counter competitors' coercive strategies, predicated on the threatened use of nuclear or strategic non-nuclear attacks.
Quantum Science	Technologies related to matter and energy on the atomic and subatomic level. Areas of interest: clocks and sensors; networks; computing enabling technologies (e.g., low temperature amplifiers, cryogenics, superconducting circuits, photon detectors); communications (i.e., sending/receiving individual photons); and manufacturing improvements.
Space	Technologies supporting space, or applied to a space environment.
General Warfighting Requirements (GWR)	Warfighting requirements not meeting the descriptions above; may be categorized into Reliance 21 areas of interest.

STTR 2019.C TOPICS

2019

The following Air Force topics were released during the SBIR 2019.C BAA.

TOPIC NUMBER	TOPIC TITLE
A19C-T001	Intrinsically Interference and Jamming-Resistant High Frequency (HF) Radios
A19C-T002	Millimeter Waveforms for Tactical Networking
A19C-T003	Position, Navigation and Timing (PNT) without the Global Positioning System (GPS)
A19C-T004	Tactical Edge Sensor Processing
A19C-T005	Adaptable Tactical Communications
A19C-T006	Phased-Array Antennas for Advanced Extremely High Frequency Satellite Communications
A19C-T007	Standoff Electronic Denial
AF19C-T001	Development of Human 3D Brain Model Incorporating Microglia
AF19C-T002	Self-Correcting Multiple Source Classification and Fusion
AF19C-T003	Adaptable Cyber Defense for Autonomous Air Operations
AF19C-T004	Transfer Learning and Deep Transfer Learning for Military Applications
AF19C-T005	Time Resolved, Spatially Filtered Imaging System for Obscure Target Detection
AF19C-T006	Dynamic Bias APD Receiver Array
AF19C-T007	Human Behavior Analytics Tool (HBAT)
AF19C-T008	Monitoring and Diagnosis via Machinery Vibration Auditing
AF19C-T009	Monitoring and Diagnosis via Electrical Waveform Auditing
AF19C-T010	Open Call for Science and Technology Created by Early-Stage (e.g. University) Teams
DHA19C-001	In-Ear Hearing Protection Improvement Product
MDA19-T001	Advanced Data Association Algorithms to Address Emerging Threats
MDA19-T002	High Temperature Fracture Mechanics
MDA19-T003	Question Answering for Data Analytics
MDA19-T004	Secure Virtual Environment for Cyber Resiliency Validation
MDA19-T005	Free Electron Laser for Radiation Testing and Material Characterization
MDA19-T006	Dynamic Emulated System In Loop
MDA19-T007	Hardware Virtualization
MDA19-T008	Monte Carlo Modeling of Weapon System Tactics, Techniques, and Procedures
MDA19-T009	Monte Carlo Modeling of a Real-Time Fire Control Scheduler

TOPIC AWARD SELECTEES

2019

The following small businesses were selected for Phase I, II or III contracts during FY 2019 (Note: this list may not be complete). The awards' associated topics could have come from several solicitations however, a selection for an award does not guarantee the business won the final contract (other issues may come into play, such as meeting accounting standards, that might prevent a selectee from receiving the final contract).

FIRM	CITY	ST
202 Group LLC	Washington	DC
214 Technologies, Inc.	Venice	CA
2enovate LLC	Pensacola	FL
3D Cloud LLC	Fort Walton Beach	FL
3DLOOK, Inc.	San Mateo	CA
4th Phase Water Technologies LLC	Wilmington	DE
911 Security	Dallas	TX
a.i. solutions, Inc.	Lanham	MD
Accipiter Systems, Inc.	Wexford	PA
ACE Running LLC	Wilmington	DE
Acree Technologies Inc.	Concord	CA
Actovos LLC	Oklahoma City	OK
Adaptive Surface Technologies, Inc.	Cambridge	MA
Adlumin, Inc.	Arlington	VA
Adranos, Inc.	West Lafayette	IN
Adroit Materials	Apex	NC
Adsys Controls, Inc.	Irvine	CA
AdValue Photonics, Inc.	Tucson	AZ
Advanced Scientific Concepts LLC	Santa Barbara	CA
Advanced Silicon Group	Lincoln	MA
Advanced Simulation Technology, Inc.	Herndon	VA
Adventium Enterprises LLC	Minneapolis	MN
Adyton PBC, Inc.	Scottsdale	AZ
AeBeZe Labs, Inc.	Palo Alto	CA
Aesthetic Integration Research Corp.	Austin	TX
Aevum, Inc.	Huntsville	AL
Agile RF Systems LLC	Berthoud	CO
Agile Space Propulsion Co.	Durango	CO

FIRM	CITY	ST
AI.Reverie, Inc.	New York	NY
Air Cleaning Blowers, LLC	Highland	NY
AirShare Systems, Inc.	Miramar	FL
Akita Innovations LLC	North Billerica	MA
Allcomp Inc.	City of Industry	CA
Alphacore, Inc.	Tempe	AZ
American Boronite Corp.	Burlington	MA
AmpHP, Inc.	Park City	UT
Amsel Medical Corp.	Cambridge	MA
Anaflash, Inc.	San Jose	CA
Analatom, Inc.	Santa Clara	CA
Analytical Space, Inc.	Cambridge	MA
Anduril Industries, Inc.	Irvine	CA
Anno.Ai, Inc.	Reston	VA
ANSOL, Inc.	San Diego	CA
Applied Minds	Burbank	CA
Applied Optimization, Inc.	Fairborn	OH
Applied Training Solutions, LLC (ATS)	Hampton	VA
Aptima, Inc.	Woburn	MA
Araganteal, Corp.	Austin	TX
Archarithms, Inc.	Huntsville	AL
Architecture Technology Corp.	Eden Prairie	MN
Arete Associates	Northridge	CA
Arrow Tech Associates	South Burlington	VT
Ascend Integrated Technology Solutions, Inc.	Bel Air	MD
Ascendant Engineering Solutions LLC	Austin	TX
Ascentia Imaging, Inc.	Boulder	CO
Aspen Technologies LLC	Arlington	VA

FIRM	CITY	ST
Astrolabe Analytics, Inc.	Seattle	WA
Asylon, Inc.	Philadelphia	PA
Asylum Labs, Inc.	Capitola	CA
Asymmertic Technologies	Columbus	OH
ATA Engineering, Inc.	San Diego	CA
ATC - NY	Trumansburg	NY
A-Tech Corp. (dba Applied Technology Associates)	Albuquerque	NM
Athenium LLC	Dover	NH
ATLAS Space Operations, Inc.	Traverse City	MI
Atmospheric and Space Technology Research Associates	Louisville	CO
Atrevida Science (Modern Energy) (dba Hall, Claudia Maldonado)	Clarence Center	NY
Auctus Blue LLC	Saint Petersburg	FL
Aurora Information Technology, Inc. (dba CloudVisit)	Cold Spring	NY
Averatek Corp.	Santa Clara	CA
Aviation Resources and Consulting Services LLC (ARCS)	Cookeville	TN
Avilution LLC	Madison	AL
Aviture, Inc.	Austin	TX
Awayr	Salem	MA
Baker Engineering and Risk Consultants, Inc.	San Antonio	TX
Baker Street Scientific	Rome	GA
Bambu Vault LLC	Lowell	MA
Barrier Group LLC, The	Anoka	MN
Barron Associates, Inc.	Charlottesville	VA
Battle Sight Technologies	Dayton	OH
Bazze and Co. LLC	Arlington	VA
Beacon Interactive Systems	Waltham	MA
Bear Systems	Boulder	CO
Betaflix, Inc.	Ruston	LA
BetterUp, Inc.	San Francisco	CA
Biconvex	Alexandria	VA
Bionic Lift	Moseley	VA
Black Swift Technologies LLC	Boulder	CO
BlackHorse Solutions	Herndon	VA
Blade Diagnostics Corp.	Pittsburgh	PA

FIRM	CITY	ST
BlazeTech Corp.	Woburn	MA
Blue Canyon Technologies, Inc.	Boulder	CO
Blue Cedar Networks, Inc.	San Francisco	CA
Blue Force Technologies, Inc.	Morrisville	NC
Blueforce Development Corp.	Newburyport	MA
Bluestaq LLC	Colorado Springs	CO
BluHaptics, Inc. (dba Olis Robotics)	Seattle	WA
BotFactory, Inc.	Long Island City	NY
Boulder Environmental Sciences and Technology	Boulder	CO
Bowerbags LLC	Arlington	VA
BrainGu	Grand Rapids	MI
Branch Technology	Chattanooga	TN
Brandon	Redmond	WA
Braxton Technologies LLC	Colorado Springs	CO
BRHMS LLC	Houston	TX
BrightBean Labs LLC	Denver	CO
C3 IoT, Inc.	Redwood	CA
C5T Corp.	Scott AFB	IL
Camgian Microsystems Corp.	Starkville	MS
Canton Group LLC	Arlington	VA
Capella Space Corp.	San Francisco	CA
Cardiac Motion LLC	Sacramento	CA
Carestarter Technologies, Inc.	Cedar Creek	TX
Carver Scientific, Inc.	Baton Rouge	LA
Casey Corp. Defense	Stillwater	OK
Catamaran Solutions, Inc.	The Woodlands	TX
Cateni, Inc.	El Segundo	CA
Celadyne Technologies, Inc.	Austin	TX
Cell Surgical Network Corp.	Rancho Mirage	CA
Celtec Technologies, Inc.	Rochester	NY
Centeye, Inc.	Washington	DC
Cerium Laboratories	Austin	TX
CFD Research Corp.	Huntsville	AL
Chandah Space Technologies	Sugar Land	TX
Chandler Automated Systems LLC (dba Vigilant Technologies)	Chandler	AZ
Charles River Analytics	Cambridge	MA

2019

FIRM	CITY	ST
Chesapeake Technology International Corp.	California	MD
Chooch Intelligence Technologies Co.	San Francisco	CA
Citadel Defense Co.	San Diego	CA
Cityflag, Inc.	San Antonio	TX
Clairvoyant LLC	Chandler	AZ
ClimaCell	Boston	MA
CloudBolt Software, Inc.	Rockville	MD
Cobalt Speech and Language, Inc.	Tyngsboro	MA
CODA Labs LLC	Niceville	FL
Cole Engineering Services, Inc.	Orlando	FL
Combat Power Solutions	Apex	NC
Combustion Research and Flow Technology, Inc.	Pipersville	PA
Combustion Science and Engineering, Inc.	Columbia	MD
Compass Technology Group LLC	Alpharetta	GA
Composites Automation	Newark	DE
CompuTherm LLC	Middleton	WI
Constellation Network	San Francisco	CA
Consul Systems	Ashburn	VA
Convergent Manufacturing Technologies US	Seattle	WA
Core Parts LLC	Mesa	AZ
Corvid Technologies, LLC	Mooresville	NC
Cosmic Advanced Engineered Solutions, Inc.	Colorado Springs	CO
Craft Artisan Design, Inc.	El Cajon	CA
Creare LLC	Hanover	NH
CromTec Cyber Solutions	Houston	TX
Crow King Studios LLC	Baton Rouge	LA
CrowdAI	Mountain View	CA
Crowdbotics Corp.	Berkeley	CA
Custom Manufacturing and Engineering, Inc.	Pinellas Park	FL

FIRM	CITY	ST
Cyber COAST LLC	Arlington	VA
D-2, Inc.	North Falmouth	MA
DAngelo Technologies LLC	Beavercreek	OH
Dark Wolf Solutions	McLean	VA
DE Technologies, Inc.	King of Prussia	PA
Decisive Point	Cold Spring	NY
DeepSig, Inc.	Arlington	VA
Defense Research Associates, Inc.	Beavercreek	OH
Delta Development Team LLC	Tucson	AZ
Design Interactive, Inc.	Orlando	FL
DexMat	Houston	TX
D-FTL Labs Corp.	Amherst	MA
Dimension Technologies, Inc.	Rochester	NY
Distat Co.	Kennett Square	PA
Dogwood Logic LLC	Blacksburg	VA
DSoft Technology Co.	Colorado Springs	CO
DSQUORUM, LLC (dba Data Society)	Washington	DC
DUJUD LLC	Atlanta	GA
Dynamic Dimension Technologies	Westminster	MD
Dynamic Ideas	Belmont	MA
Dynepic	Charleston	SC
Eastern Foundry	Arlington	VA
Eastman Sciences LLC	Arlington	VA
Echo Ridge, LLC	Sterling	VA
Echodyne Corp.	Kirkland	WA
Eclipse Energy Systems, Inc.	St. Petersburg	FL
ECSquared	Wilmington	DE
Edaptive Computing, Inc.	Dayton	OH
Edlore, Inc.	DanaPoint	CA
Edward Pope Dr (dba MATECH)	Westlake Village	CA
Efiia Consulting LLC	Falls Church	VA
Elder Research, Inc.	Charlottesville	VA

2019

FIRM	CITY	ST
Electro Magnetic Applications, Inc.	Lakewood	CO
Electronics of the Future, Inc.	Vienna	VA
Element 119 LLC	Thomaston	CT
Elphel, Inc.	Magna	UT
EMAG Technologies, Inc.	Ann Arbor	MI
Emagine IT, Inc.	Fairfax	VA
Embodify, Inc.	Vienna	VA
Endectra LLC	Ann Arbor	MI
Energy Onvector LLC	Camden	NJ
EngeniusMicro LLC	Huntsville	AL
Entheleon Technologies	Palo Alto	CA
Enveil	Fulton	MD
Enview	San Francisco	CA
Epirus, Inc.	El Segundo	CA
esc Aerospace US, Inc.	Orlando	FL
ESTAT Actuation	Pittsburgh	PA
ETC International LLC	Virginia Beach	VA
Event 38 Unmanned Systems, Inc.	Akron	OH
Ever AI	San Francisco	CA
EVOKE NEUROSCIENCE	New York	NY
Exciting Technology LLC	Dayton	OH
Exo-Atmospheric Technologies	Brookfield	WI
Exosonic, Inc.	San Jose	CA
Experimental Design and Analysis Solutions, Inc.	Spring Hill	TN
FAAC Inc., a wholly owned subsidiary of Arotech Corp.	Ann Arbor	MI
Fairmount Technologies LLC	Wichita	KS
Falconry	Sunnyvale	CA
Faraday Technology, Inc.	Englewood	OH
FASTPORT, Inc.	Lowell	MA
Feanor Enterprises LLC	Arlington	VA
FGC Plasma Solutions	Weston	FL
Fiber Dynamics, Inc.	Wichita	KS

FIRM	CITY	ST
FiberQA LLC	Old Lyme	CT
Figure, Inc. (dba Figure Engineering)	Lorton	VA
FireHUD, Inc.	Norcross	GA
FishEye Software, Inc.	Maynard	MA
Fitbot, Inc.	Boulder	CO
FitChimp, Inc. (dba FitRankings)	Austin	TX
FlightProfiler LLC	Cincinnati	OH
Flightwave Aerospace Systems Corp.	Santa Monica	CA
Flite Advantage Simulation and Training LLC	Spring Hill	FL
Fontus Applied Technologies	Plainsboro	NJ
Fortifyedge, Inc.	cambridge	MA
Fourth State Communications LLC	Cheyenne	WY
G. A. Tyler Associates, Inc. (dba the Optical Sciences Co.)	Anaheim	CA
G2 Ops, Inc.	Virginia Beach	VA
Galois, Inc.	Portland	OR
Gardner International LLC	Arlington	VA
GasTOPS, Inc.	Huntsville	AL
Gecko Robotics, Inc.	Pittsburgh	PA
GeneCapture, Inc.	Huntsville	AL
General Lasertronics	San Jose	CA
Genesis Systems LLC	Kansas City	MO
GeoOptics, Inc.	Pasadena	CA
Geosite, Inc.	Stanford	CA
GeoSpark Analytics	Herndon	VA
Get Help Now LLC	Deerfield Beach	FL
Ghost Display Technologies LLC	Stillwater	OK
GhostWave, Inc.	Columbus	OH
Gigavation, Inc.	Lincoln	MA
Global Circuit Innovations, Inc.	Colorado Springs	CO

2019

FIRM	CITY	ST
Global Technology Connection, Inc.	Atlanta	GA
GoHypersonic, Inc.	Dayton	OH
Goodman Technologies LLC	Albuquerque	NM
Graffiti Enterprises LLC	Somerset	NJ
Greetly, Inc.	Denver	CO
GreyCliff Industries, Inc.	Kettering	OH
Greyman Group LLC	Virginia Beach	VA
Greystones Consulting Group LLC	Washington	DC
Grypmat, Inc.	Celina	OH
Guided Particle Systems	Pensacola	FL
Guidestar Optical Systems, Inc.	Longmont	CO
H. F. Webster	Rapid City	SD
HAAS, Inc.	Chicago	IL
Hadron Industries, Inc.	Concord	NH
Hanover Technologies LLC	Arlington	VA
HarpoonX LLC	Menlo Park	CA
Hart Scientific Consulting International LLC	Tucson	AZ
Hedgefog Research, Inc.	San Pedro	CA
HHITT, Inc.	San Francisco	CA
Higher Ground	Palo Alto	CA
Hill Engineering LLC	Rancho Cordova	CA
Hybrid Communications, Inc.	Lenexa	KS
Hydosat, Inc.	Washington	DC
Hydrostasis, Inc.	San Diego	CA
HyPerComp, Inc.	Westlake Village	CA
IBC Materials & Technologies	Lebanon	IN
ICR, Inc.	Aurora	CO
Idaho Scientific LLC	Boise	ID
IERUS Technologies, Inc.	Huntsville	AL
Illumination Works LLC	Beavercreek	OH
Imbellus, Inc.	Los Angeles	CA
IMSAR LLC	Springville	UT

FIRM	CITY	ST
In8development, Inc.	Camas	WA
IncludeFitness, Inc.	Cincinnati	OH
Information Systems Laboratories, Inc.	Poway	CA
Ingalls Information Security LLC	Woodworth	LA
Innoflight, Inc.	San Diego	CA
Innovative Advanced Materials, Inc.	Hampton	GA
Innovative Scientific Solutions, Inc.	Dayton	OH
Innovative Weld Solutions, Ltd.	Beavercreek	OH
InnoVet LLC	Dover	DE
Intact Partners, Inc.	Tallahassee	FL
Intelesense Technologies	Fremont	CA
Intelligent Automation, Inc.	Rockville	MD
Intelligent Concrete LLC	Elbert	CO
Intelligent Fiber Optic Systems Corp.	Santa Clara	CA
Intelligent Models Plus	Alexandria	VA
Intellisense Systems, Inc.	Torrance	CA
Intentionet, Inc.	Redmond	WA
INTER Materials LLC	Midlothian	VA
Interphase Materials, Inc.	Pittsburgh	PA
Introspective Systems LLC	Portland	ME
Ionic Security, Inc.	Atlanta	GA
IRGLARE	Orlando	FL
Irvine Sensors Corp.	Costa Mesa	CA
Ithaca Solutions LLC	Arlington	VA
Jackson Bond Enterprises LLC	Dover	NH
Jamestown Group LLC	Arlington	VA
Jedburgh	Arlington	VA
Jio, Inc.	Chicago	IL
Joby Aero, Inc.	Santa Cruz	CA
Just Bounce It LLC	Washington	DC
Kairos Research	Fairborn	OH
Karagozian and Case, Inc.	Glendale	CA
Kennon Products, Inc.	Sheridan	WY

2019

FIRM	CITY	ST
Kent Optronics, Inc.	Hopewell Junction	NY
Kestrel Technology LLC	Palo Alto	CA
Keystone Synergistic Enterprises LLC	Port Saint Lucie	FL
Kimora Solutions	Chesapeake	VA
Klatt Works, Inc.	Dublin	CA
Knowledge Based Systems, Inc.	College Station	TX
Kubos Corp.	Denton	TX
Kymeta Government Solutions, Inc.	Redmond	WA
LaunchBay LLC	Chelmsford	MA
Launcher, Inc.	Brooklyn	NY
LaunchPath Innovation LLC	North Charleston	SC
Lenoir Sciences LLC	Arlington	VA
Leo Aerospace	Gardena	CA
Liftwave, Inc.	Somerville	MA
Lilt, Inc.	San Francisco	CA
Linc Research, Inc.	Huntsville	AL
Liquid X Printed Metals	Pittsburgh	PA
LR Technologies, Inc.	Rockville	MD
LSP Technologies, Inc.	Dublin	OH
Lucid Circuit, Inc.	Santa Monica	CA
Lumineye, Inc.	Boise	ID
Luminit Government Services LLC	Torrance	CA
LumiShield Technologies, Inc.	Pittsburgh	PA
Luna Innovations, Inc.	Roanoke	VA
Lunar Resources, Inc.	Houston	TX
LVL Technologies, Inc.	Austin	TX
Lyapunov Technologies LLC	Wilmington	DE
Lynntech, Inc.	College Station	TX
MainStem (dba BlackLynx Services)	Fulton	MD
Mainstream Engineering Corp.	Rockledge	FL
Management Sciences, Inc.	Albuquerque	NM
Mantis Composites, Inc.	San Luis Obispo	CA

FIRM	CITY	ST
Manufacturing Techniques, Inc. (MTEQ)	Kilmarnock	VA
Manufacturing Technology, Inc.	South Bend	IN
Mapout, LLC	Apex	NC
Marc Perez	San Marcos	CA
Maren-go Solutions Corp.	Vancouver	WA
Materials Research and Design	Wayne	PA
Materials Sciences LLC	Horsham	PA
MaXentric Technologies LLC	Fort Lee	NJ
MCP GOPV	San Marcos	CA
McQu, Inc.	Fredericksburg	VA
Metis Design Corp.	Boston	MA
Metis Technology Solutions, Inc.	Albuquerque	NM
MetroLaser, Inc.	Laguna Hills	CA
Metron, Inc.	Reston	VA
MicroLink Devices	Niles	IL
Military Pilot Supply of Texas, Inc. (dba Fly Boys)	Spring	TX
Mira Labs	Los Angeles	CA
Mobius Logic, Inc.	Falls Church	VA
Monkton, Inc.	Vienna	VA
MZA Associates Corp.	Albuquerque	NM
Nalu Scientific LLC	Honolulu	HI
NanoCoatings, Inc.	Rapid City	SD
NanoflowX	Commerce	CA
Nanohmics, Inc.	Austin	TX
NanoSonic, Inc.	Pembroke	VA
NanoVMs, Inc.	San Francisco	CA
NAVSYS Corp.	Colorado Springs	CO
NeuroFlow, Inc.	Philadelphia	PA
NeuroTrainer, Inc.	San Francisco	CA
Neuvokas Corp.	Ahmeek	MI
New Eagle Consulting LLC	Ann Arbor	MI
NextGen Aeronautics, Inc.	Torrance	CA

2019

FIRM	CITY	ST
NextGen Federal Systems LLC	Morgantown	WV
NNData	Fairfax	VA
Node Centric Solutions LLC	Monument	CO
Nokomis, Inc.	Charleroi	PA
NOMAAD, Inc.	Marina Del Rey	CA
Non-Contact Technologies LLC	Tulahoma	TN
North American Wave Engine Corp.	Hyattsville	MD
Northstrat, Inc.	Sterling	VA
Notos Technologies LLC	Brookhaven	GA
nou Systems, Inc.	Huntsville	AL
Novaa, Ltd.	Dublin	OH
NOVI LLC	Arlington	VA
Novo Space, Co.	Cambridge	MA
NP Photonics, Inc.	Tucson	AZ
NPS Radar LLC	San Ramon	CA
Nuance Inc.	Chicago	IL
Numerica Corp.	Fort Collins	CO
nVision Technology, Inc.	Norton	OH
Oakman Aerospace, Inc.	Littleton	CO
Ocupath	Oklahoma City	OK
OFFSET3 LLC	Falls Church	VA
Oleolive LLC	Shreveport	LA
Omega Optics, Inc.	Austin	TX
Omelas	Washington	DC
Omitron, Inc.	Beltsville	MD
OmniScience LLC	Denver	CO
Omnispace	McLean	VA
Onclave Networks, Inc.	Ashburn	VA
Onebrief, Inc.	Austin	TX
Oort	Harvard	MA
Operant Networks, Inc.	Santa Rosa	CA
Opterus Research and Development, Inc.	Fort Collins	CO
Optimal Solutions, Inc.	Bridgewater	NJ

FIRM	CITY	ST
Optimal Synthesis, Inc.	Los Altos	CA
Optivolt Labs, Inc.	Chicago	IL
Opto-Knowledge Systems, Inc. (OKSI)	Torrance	CA
Opus 12, Inc.	Berkeley	CA
Orbit Fab	Santa Clara	CA
Orbit Logic, Inc.	Greenbelt	MD
Orbital Insight, Inc.	Palo Alto	CA
Orbital Mechanics Corp.	Lyons	CO
Orbital Micro Systems, Inc.	Boulder	CO
Orbital Research Inc	Cleveland	OH
OSSO VR, Inc.	Belmont	CA
Pandata Tech, Inc.	Houston	TX
Parabilis Space Technologies, Inc.	San Marcos	CA
Paragraine Systems LLC	San Diego	CA
Parallel Wireless, Inc.	Nashua	NH
Paramount Innovative Solutions LLC	Shreveport	LA
Pear Sports LLC	Newport Beach	CA
Pecos Wind Power	Somerville	MA
Pendar Technologies LLC	Cambridge	MA
Perceptronics Solutions, Inc.	Sherman Oaks	CA
Peregrine Falcon Corp.	Pleasanton	CA
Permuta Technologies	Springfield	VA
Phase Sensitive Innovations, Inc.	Newark	DE
Photon-X, Inc	Kissimmee	FL
Physical Optics Corp.	Torrance	CA
Physical Sciences, Inc.	Andover	MA
Pilot AI Labs, Inc.	Palo Alto	CA
PIQNIQ, Inc.	Redwood City	CA
Pison Technology, Inc.	Brookline	MA
PlaneEnglish LLC	Pittsburgh	PA
Plasma Processes LLC	Huntsville	AL
PlateJoy	San Francisco	CA
Plugnix LLC	Baltimore	MD

2019

FIRM	CITY	ST
Polysentry, Inc.	Washington	DC
Powdermet, Inc.	Euclid	OH
Power Fingerprinting, Inc.	Vienna	VA
Powers Communications LLC	Bethesda	MD
Praeses LLC	Shreveport	LA
Praxis, Inc.	Arlington	VA
Precision Combustion, Inc.	North Haven	CT
Prevailance, Inc.	Virginia Beach	VA
Prime Solutions Group, Inc.	Goodyear	AZ
Primer Technologies, Inc.	San Francisco	CA
Primo Wind	San Diego	CA
Princeton Microwave Technology, Inc.	Mercerville	NJ
Printed Circuits Corp.	Lilburn	GA
Priomatics, Inc.	Covington	OH
Prizm XR	Cold Spring	NY
Propulsion Science and Technology, Inc.	Langhorne	PA
Protection Engineering Consultants LLC	San Antonio	TX
Pueo Business Solutions LLC	Fredericksburg	VA
Pumpkin, Inc.	San Francisco	CA
Pvilion, Inc.	Brooklyn	NY
PW Communications	Rockville	MD
QC Ware	Palo Alto	CA
QED Secure Solutions	Coppell	TX
Qualtech Systems, Inc.	Rocky Hill	CT
QuickFlex, Inc.	San Antonio	TX
R2 Space, Inc.	Fairfax	VA
R3 Printing, Inc.	New York	NY
Radarlock Labs	Sewickley	PA
Radial Research and Development, Ltd.	Dayton	OH
Radiation Monitoring Devices, Inc.	Watertown	MA
RAM Laboratories, Inc.	San Diego	CA

FIRM	CITY	ST
Rapid Imaging Technologies LLC	Middleton	WI
RavenOps, Inc.	San Francisco	CA
Ravn, Inc.	San Francisco	CA
RBC Signals LLC	Redmond	WA
re:3D Inc	Houston	TX
Reality Smash, Inc.	Costa Mesa	CA
Real-Time Analyzers, Inc.	Middletown	CT
Real-Time Innovations	Sunnyvale	CA
Red Six Aerospace, Inc.	Venice	CA
ReFirm Labs, Inc.	Fulton	MD
Reflex Red Storm LLC	Missoula	MT
ReliaCoat Technologies LLC	East Setauket	NY
Remote Health Solutions LLC	Powhatan	VA
Renaissance Services	Fairborn	OH
Resolution Imagery LLC (dba Moth + Flame)	Colorado Springs	CO
Resolution Technology Analytics LLC	San Antonio	TX
Resonant Sciences LLC	Dayton	OH
Reveal Technology, Inc.	Woodside	CA
Rheaply, Inc.	Chicago	IL
ROCCOR LLC	Longmont	CO
Rochester Scientific LLC	El Cerrito	CA
Rocket Communications	San Francisco	CA
Rose-Field, Inc.	El Segundo	CA
Roy Operating Company LLC	Thibodaux	LA
Rozin Security Consulting LLC	Minneapolis	MN
RPX Technologies	Stillwater	OK
Ryzing Technologies LLC	Staunton	VA
SA Photonics, Inc.	Los Gatos	CA
Sabel Systems Technology Solutions LLC	Gainesville	VA
Saber Astronautics	Boulder	CO
SAFE Health	Los Angeles	CA
Salty Cloud, PBC	Austin	TX

2019

FIRM	CITY	ST
SameGrain, Inc.	Ellicott City	MD
SaraniaSat, Inc.	Tujunga	CA
Satellite Services, Inc.	Dublin	CA
Sayari Analytics	Washington	DC
sci_Zone	Holland	MI
Scientific Applications and Research Assoc., Inc.	Cypress	CA
Scientific Forming Technologies Corp.	Columbus	OH
Scientific Systems Company, Inc.	Woburn	MA
Sciperio, Inc.	Orlando	FL
Securborator, Inc.	Melbourne	FL
SecureLogix Corp.	San Antonio	TX
Securisyn Medical, LLC	Highlands Ranch	CO
Segue Technologies, Inc.	Arlington	VA
Sehlke Consulting LLC	Arlington	VA
Semicyber LLC	McLean	VA
Sensing Strategies, Inc.	Pennington	NJ
SensorHound, Inc.	West Lafayette	IN
Sentecor	Tremonton	UT
Serenity LLC	Dunwoody	GA
Shear Form, Inc.	Bryan	TX
Shift Labs, Inc.	Seattle	WA
Shocktech, Inc.	Mahwah	NJ
Siege Technologies, LLC	Manchester	NH
Silicon Mountain Technologies	Arvada	CO
SIMBA Chain, Inc.	Plymouth	IN
SIMETRI	Winter Park	FL
SimpleSense, Inc.	Erie	PA
Sitch Ai	Huntington Beach	CA
SitScape Inc.	Tysons	VA
SKETCHBOX, Inc.	San Francisco	CA
Slingshot Aerospace, Inc.	El Segundo	CA
Smart Diagnostics Systems LLC	Columbia	MO

FIRM	CITY	ST
Smarter Reality LLC	Round Rock	TX
Soar Technology, Inc.	Ann Arbor	MI
SoftInWay, Inc.	Burlington	MA
Solid State Scientific Corp.	Hollis	NH
Somewear Labs, Inc.	San Francisco	CA
South 8 Technologies, Inc.	San Diego	CA
Space Micro Inc.	San Diego	CA
Space Sciences and Engineering (dba PlanetiQ)	Golden	CO
SpaceWorks Enterprises, Inc. (SEI)	Atlanta	GA
Spark Thermionics, Inc.	San Francisco	CA
SparkCognition, Inc.	Austin	TX
Spectral Energies LLC	Beavercreek	OH
Spectral Labs, Inc.	San Diego	CA
Spire Global, Inc.	San Francisco	CA
Srico, Inc.	Columbus	OH
Stalwart Technologies, Inc.	Herndon	VA
STAR Dynamics Corp.	Hilliard	OH
Stardog Union	Arlington	VA
Startup Community, Inc.	Las Vegas	NV
Steel Modular, Inc.	Beverly Hills	CA
Stellar Science, Ltd. Co.	Albuquerque	NM
Stottler Henke Associates, Inc.	San Mateo	CA
Strategy Robot, Inc.	Pittsburgh	PA
Stratio, Inc.	San Jose	CA
Streamline Automation LLC	Huntsville	AL
Strive Tech, Inc.	Bothell	WA
Summation Research, Inc.	Melbourne	FL
Superior Handling Equipment LLC	Ormond Beach	FL
SurfEllent LLC	Spring	TX
SURGIBOX, Inc.	Brookline	MA
SURVIVR PBC	Richardson	TX
Swarm Technologies	Los Altos	CA
Swift Textile Metalizing LLC	Bloomfield	CT

2019

FIRM	CITY	ST
Synapse Technology Corp.	Palo Alto	CA
Synapttech LLC	Colorado Springs	CO
Systima Technologies, Inc.	Kirkland	WA
Tack Mobile LLC	Denver	CO
Taekion	Boulder	CO
TallannQuest LLC (dba Apogee Semiconductor)	Sachse	TX
Tau Technologies LLC	Albuquerque	NM
Taylor-Winfield Technologies	Youngstown	OH
TDA Research, Inc.	Wheat Ridge	CO
Tech Valley Sensor, Inc.	Troy	NY
Technical Directions, Inc.	Ortonville	MI
Technology Service Corp.	Arlington	VA
Tectus Corp.	Saratoga	CA
TELAZTEC LLC	Burlington	MA
TELEGRID Technologies, Inc.	Florham Park	NJ
TERA-print LLC	Evanston	IL
Tethers Unlimited, Inc.	Bothell	WA
Texas Research Institute Austin, Inc.	Austin	TX
The Design Knowledge Co.	Fairborn	OH
The Futurist Institute of America LLC	Austin	TX
The Kenific Group, Inc.	Fairfax	VA
The Perduco Group, Inc.	Beavercreek	OH
The Stratagem Group, Inc.	Aurora	CO
Third Dimension Technologies	Knoxville	TN
Thomas J. Smith LLC	Austin	TX
Thrust Vector LLC	Austin	TX
Tier 1 Performance Solutions LLC	Covington	KY
Titenn, Inc.	Oviedo	FL
Tomahawk Robotics	Melbourne	FL
Torrey Pines Logic, Inc.	San Diego	CA
TOTALSIM LLC	Dublin	OH
Traclabs, Inc.	San Antonio	TX
Train-With, Inc.	Half Moon Bay	CA

FIRM	CITY	ST
Trek10	South Bend	IN
TriboTEX LLC	Colfax	WA
Triton Systems, Inc.	Chelmsford	MA
Trumbull Unmanned LLC	Houston	TX
Trusted Science and Technology, Inc.	Bethesda	MD
TutorGen, Inc.	Mars	PA
Tyvak Nano Satellite Systems	Irvine	CA
UBIHERE, Inc.	Columbus	OH
UbiquitiLink, Inc.	Falls Church	VA
UES, Inc.	Dayton	OH
Ultramet	Pacoima	CA
Union Global, Inc. PBC	Washington	DC
Universal Synaptics	Roy	UT
Ursa Major Technologies, Inc.	Berthoud	CO
Van Hoose Associates, Inc.	Dayton	OH
Vcrsoft LLC	Plano	TX
Vection Group, Inc	West Hollywood	CA
Vennli, Inc.	South Bend	IN
Veramine, Inc.	Bothell	WA
VertiPrime Government Services	Frisco	TX
Vescent Photonics LLC	Arvada	CO
VEXTEC Corp.	Brentwood	TN
viaForensics LLC	Oak Park	IL
Viidrov, Inc.	New York	NY
Virtual EM, Inc.	Ann Arbor	MI
Virtualitics	Pasadena	CA
Virtuvia LLC (dba CoachMePlus)	Buffalo	NY
Voi, Inc.	Hanover	NH
Voxel Innovations	Raleigh	NC
Voyager Space Technologies, Inc.	San Diego	CA
VR Rehab, Inc. (VRR)	Clermont	FL
VRC Metal Systems LLC	Rapid City	SD
VRglux, LLC	Atlanta	GA

2019

FIRM	CITY	ST
Wandr Studio LLC	Los Angeles	CA
Weaver Labs LLC	Stillwater	OK
Westlight Networks, Inc.	Palo Alto	CA
Whooster, Inc.	Buda	TX
Wind Talker Innovations	Fife	WA
Wolfcom Enterprises	Pasadena	CA
Worker Studio LLC	Westminster	CO
X-Biomedical LLC	Wayne	PA
Xenesis	Lisle	IL
Xiotech (Proposed under Axellio, Inc.)	Colorado Springs	CO
XL Scientific, LLC (dba Verus Research)	Albuquerque	NM
Yet Analytics, Inc.	Baltimore	MD
Your6, Inc.	Austin	TX
Z Advanced Computing, Inc.	Potomac	MD
Zansors LLC	McLean	VA
Zenith Aerospace	Palo Alto	CA
Zephyr Software LLC	Barboursville	VA
ZIPR SHIFT	Mentor on the Lake	OH
Ziuli Holdings LLC	Monroe	LA
ZKxKZ LLC	Lexington	MA



TECH WARRIOR

ENTERPRISE

2020 EVENTS

Tech Warrior Enterprise, in the interest of aligning with investments being made across the Air Force SBIR/STTR landscape, is working with strategic partners with expertise in cyber, quantum computing, space, medical and tactical technology development arenas to deliver a variety of carefully curated Tech Warrior OPS events in 2020. In addition to undertaking vigorous one-on-one Tech Warrior Connect events and interactions, here is the tentative schedule of events for Tech Warrior OPS in 2020.

FEBRUARY 2020

- 21 February - Ask Me Anything Zoom Event

MARCH 2020

- 9-13 March - Air Force Pitch Bowl - location TBD

APRIL 2020

- 13-19 April - TW Ops set up in OK
- 20-24 April - TW Ops Event in OK

MAY 2020

- 4-8 May - Mini Ops event with T3 at 444 in Dayton, OH

JULY 2020

- 20-24 July - Space Ops Event, Colorado Springs, CO

AUGUST 2020

- Ask Me Anything Zoom Event - date TBD

SEPTEMBER 2020

- Cyber Ops Event - dates TBD

OCTOBER 2020

- TW Ops Event at NCMR in Fairborn, OH - dates TBD



*Connecting the Air Force
to Small Business Technologies
at the Speed of Innovation*