

PHOENIX SPARK | TRAVIS AFB, CA

TRAVIS AFB INNOVATION

December 2020





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SPARK OVERVIEW

Mission

Create and promote a culture of innovation

Vision

Empowered Airmen innovating at the speed of relevance to enhance the Team Travis mission.

Priorities

- Increase Lethality
- Return Time to Airmen
- Empower Airmen at the Lowest Level
- Reduce Cost



SPARK FOCUS AREAS

Problem Statement

Airmen have relatively little say on end products and may receive technology after its useful relevance. The United States Defense industry must immediately shift this paradigm to succeed in the era of great power competition and advance beyond our adversaries' capabilities. Travis Air Force Base's Phoenix Spark sets out to be the leader in bridging the gap between operators/users and agile organizations/companies who are motivated to rapidly develop capabilities that Airmen deserve.



Additive Manufacturing

Additive manufacturing, or 3D printing, has shown that parts can be created at the point of need instead of waiting on manufacturing timelines. Airmen can print materials on their own, minimizing costs associated with having to contract, purchase, transport, and store additional resources.



Data and Digital Environments

Cyber and Digital technologies are some of the fastest growing and changing industries today. These technologies enhance our access to information and the speed of communication which are vital to our national defense. We strive to keep our Airmen up to date and connected as these technologies change so that we don't fall behind.



Augmented & Virtual Reality (AR,VR), Automated Vehicles

Virtual Reality (VR) is an emergent technology that allow operators to be fully immersed in various training scenarios. AR, VR, XR solutions have wide applicability across every unit and have the potential to replace traditional training using legacy products. This technology has the potential to make future training easier, faster, and more accessible.



Small Unmanned Aerial Systems (sUAS)

Small Unmanned Aerial Systems (sUAS) are constantly becoming more advanced and less expensive as innovation and capability demands rapidly increase. The massive proliferation of low-cost and autonomous aviation technologies creates a paradigm shift in the way global mobility operations must be conducted. We must stay ahead of the curve of these advancements to be relevant in the field.



KEY ENGAGEMENTS

November

- 6 **OPENED PHOENIX SPARK PITCH SESSIONS:** The Spark Team opened up the Spark Lab to any prospective innovators across Travis AFB to pitch their ideas or challenges. These sessions will be every Friday at 12:00.
- 8 **NOBOUNDS TRAVIS INNOVATION CAMPAIGN 2021 OPENS:** The 60 AMW's Innovation SIF Campaign for FY21' has opened for idea submissions. These ideas, submitted through Airmen Powered by Innovations' Ideascale ([LINK](#)), will be used to allocate Travis AFB's roughly \$675K of SIF money for Airmen innovation.
- 20 **SEC/ AF VISITS PHOENIX SPARK:** Secretary of the Air Force, Barbara Barrett, visited the Phoenix Spark Team to see the progress of Air Force innovation at Travis. Secretary Barrett was given a tour of the Travis Spark lab and briefed on our top Airmen led initiatives.

December

- 14 **VIRTUAL INNOVATION COLLABORATION EVENT (VICE):** Tesseract and multiple other Centers of Excellence hosted training seminars and innovation/CPI presentations via ZoomGov to promote sharing, understanding, networking and cultural growth.

January

- 8 **SBIR Open Topic AMA:** AFVentures will host the second 21.1 SBIR/STTR AMA webinar 12:00-1:00 PM EDT.
- 14 **SBIR 21.1 Open Talk Applications Begin:** MOU between business and government customers should be submitted for new SBIR proposals.

February

- 4 **18AF/ CC TRAVIS VISIT:** Major General Kenneth T. Bibb Jr will be visiting Travis AFB and stopping by Phoenix Spark to hear about Travis AFB's Airmen led innovations and see firsthand how our base is involved in AF-wide innovation projects.



BY THE NUMBERS

SMALL BUSINESS INNOVATION RESEARCH (SBIR) TRAVIS, AFB

13 active Phase II projects totaling **\$12.7M**

INNOVATION PROJECTS

24 under Active Management

SQUADRON INNOVATION FUNDS (SIF) expected for FY21

\$675,000 expected to be used by 60th AMW
Squadrons in 2021

AIRMEN INSPIRED

2020

1000+ through FTAC, ALS, NCOA, Chief's Chats,
SLICC '20, PPE working group, X-Force, CSO
20', SBIR Initiatives, Innovation Report, AMC/
CC visit, Honorary CC visit, Sec AF Visit, and
Social Media engagements

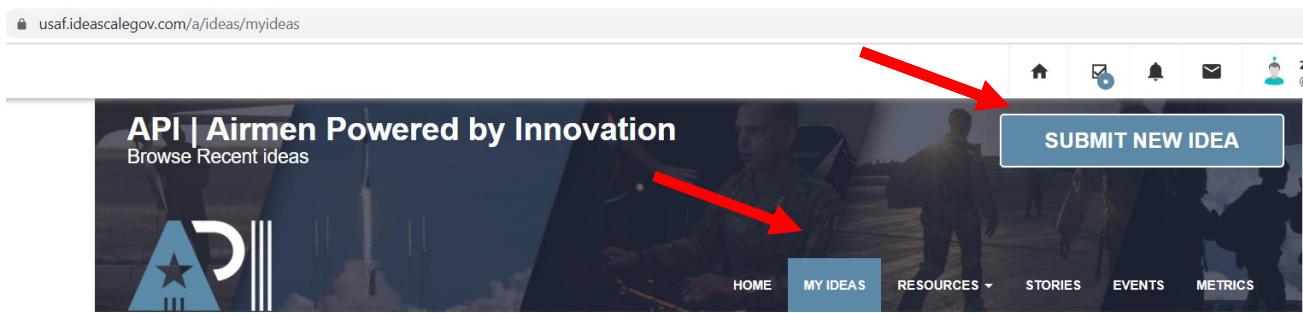


NoBounds Travis Innovation Campaign 2021

The 2021 Innovation Campaign is LIVE!

Ideas can be submitted at: <https://usaf.ideascalegov.com/>

- Login with your CAC
- Click on "My Ideas" page then go to "Submit New Idea"
- Select NoBounds Travis Innovation Campaign 2021 for your idea



Travis AFB relies on the ideas submitted through IdeaScale by everyday Airmen for base-wide innovation.

Travis Phoenix Spark needs your help to find, fund, and implement the ideas that will power the future of Travis AFB. We are utilizing the FY21 SIF funds totaling approximately \$675K available to our base.

Submitting an idea only takes a few minutes!

For questions, help, or comments please reach out to the Phoenix Spark team at:
60amw.ps.phoenixspark@us.af.mil
or
707-424-8920



Secretary of the AF visits Travis Phoenix Spark Lab

Secretary of the Air Force, Barbara Barrett, visited Travis' Phoenix Spark Lab on 20 November, 2020 as part of a base visit to check in on the progress of the base's innovation.

Secretary Barrett was shown the current Phoenix Spark lab and given an overview of our key projects around the base. Usage of 3-D printers, AR/VR technology, sUAS technology and digital initiatives were all briefed to the SecAF.

During the Secretary's visit, Phoenix Spark highlighted all of our Airmen driven small business collaborations, the Digital Airmen Initiative, and the Mattermost/AOC integration testing that Travis has conducted.

Secretary Barrett told the Spark Lab and Team Travis to keep working hard to make the Air Force a better place through innovation and collaboration and expressed her excitement for the things to come out of Travis in the future.





Easy Aerial Small Unmanned Aerial Systems (sUAS) Force Protection

Problem: Human response time to base security incidents does not compare to the high speed of sUAS that can be employed for relatively low cost. As technology improves and we encounter more advanced sUAS systems entering military airspace, we do not want to be playing catchup in this quickly advancing field.

Solution: Easy Aerial's sUAS allow rapid response to triggered visual or thermal identification and can conduct autonomous patrols that can be transmitted back to a SF command and control room. These capabilities allow for a faster and better security protocol.

Where we are: Easy Aerial is working with the Travis sUAS working group to enter a phase II SBIR contract with the 60th SFS to continue development. We are working with the 60th MXG to retrofit the drones with cameras that could help with aircraft maintenance inspection and documentation that would make aircraft inspection faster and safer.

Platform One Digital Aircrew Initiative



Problem: Aircrew all over the world operate at the edge of the AFNET and lack a secure method to (1) **collaborate** with each other and with the Air Operations Center, (2) rapidly build, accredit, and deliver squadron operations solutions **at scale**

Solution: Utilize & scale Platform One Enterprise Collaboration tools, such as Mattermost, to address secure C2 and collaboration. This solution allows accredited access to FOUO information globally with WiFi or cellular data. Simultaneously, build an end-to-end training pipeline via Tron for building a community of digitally-adept Airmen at the wings. This initiative will provide a mechanism for Airmen to learn, prototype, build, and deploy accredited applications on a military network, while paving a way to connect AMC crews to the Advanced Battle Management System (ABMS) via the EFB.

Where we are: Travis, McGuire, Charleston, and Hickam have pioneered using Mattermost to conduct C2 of operational missions at home and deployed, to include integrations testing with the 618 AOC for rapidly & securely delivering crew papers to EFBs during mission execution. These wings are also collectively building a suite of modern software for addressing squadron operations via Puckboard, and are working with ABMS to build a scalable digital training model for Airmen. These efforts were pushed forward by Gen Van Ovost for Air Force adoption via Spark Tank for long term support and funding.

Sketchbox 3D VR Training Augmentation



Problem: Increased student sizes and decreased instructor availability has limited the resources and man hours available for traditional training methods. Many Major Weapon Systems currently have a large backlog of students waiting for upgrades (Example: C-5 loadmaster student backlog) and are struggling to get in front of requirements to replace qualified aircrew members.

Solution: Sketchbox 3D's Virtual Reality (VR) software allows "distance learning" without the need for physical aircraft systems or multiple instructors, speeding up the loadmaster pipeline and cutting costs training on the aircraft. One instructor can teach multiple students in a VR space, where they can physically interact with training materials. The technology is fully scalable for use with other airframes with proper funding.

Where we are: Sketchbox 3D has created two training modules for proof of concept that are already being used to educate C-5M loadmaster students. Transitioning and scaling this model will require acquisitions assistance to build an SBIR Phase III contract and obtain funding for AMC-wide access to Sketchbox 3-D modules.



2020 Airmen Innovations

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Wireless Portable Heavy Duty Vehicle

Lift: Portable lifts allowing LRS Airmen to repair vehicles on-site, reducing down-time and cost while increasing mission effectiveness.



VR Forklift Trainer: Realistic fork lift training can now be done in the virtual world, allowing for more time, repetitions, and increased safety.



AR/VR Security Forces Training: Virtual scenario training that allows security forces members to train/develop situational experiences in a controlled environment.

CareStarter (EFMP): CareStarter automates and scales care management to all Exceptional Family Member Program (EFMP) beneficiaries. They empower physicians/pediatricians to focus on medical mysteries/diagnosis to deliver resources to patients and their families. CareStarter is well-equipped to assist any EFMP-focused organization engage, support, and resource the families with which they work.



Puckboard Digital Scheduling: It's difficult to maintain a working schedule without constant input or flexibility. Puckboard aims to apply digital collaboration to make scheduling an easier solution that can easily disseminate information to applicable members.



Mesh Radio Flight Line WIFI: The Mesh network enables adaptive edge connectivity (with encryption) including Wi-Fi, 4G LTE and eventually 5G and assures that the flight line can always adapt to new technology. Establishing dependable wireless capability on the flight line will enable maintainers to read/write the most current data available to G081 without work disruption or time latency. This technology also opens the door for more robust technology solutions in the future.

ARES Security Base Assessments: Develop, install and demonstrate a prototype AVERT Virtual Tabletop and AVERT Virtual Reality Training solution at Travis AFB. Evaluate the use of AVERT Virtual Tabletop and AVERT Virtual Reality Training to improve security training effectiveness and fit to Travis AFB Security needs.

Enduovo AR/VR Medical Training: Virtual ORs created in deployed environments allow our Airmen the ability to practice medical readiness anywhere in the world. Medical staff can use equipment that is not physically located on site or perform medical tasks in VR, reducing risk and saving time in real world scenarios.

Robotire: Changing tires on fleet vehicles often takes a significant amount of time and manpower and is inherently unsafe. However, robots can do the same tasks in a fraction of the time! With the help of Robotire, LRS hopes to better fulfill maintenance and tire repairs on vehicles.



INNOVATION PIPELINE

Airmen-Led Innovation Projects

C-5M Jump Seat Ipad Mounts

Maj Millie Hale, 22nd AS

Problem: C-5M Pilots sitting in the jump seat have no place to mount an iPad during flight.

Solution: 3D designed mounts that clamp on to existing metal bars in the C-5M allow pilots sitting in the jump seat to hands-free use an iPad for viewing in flight.

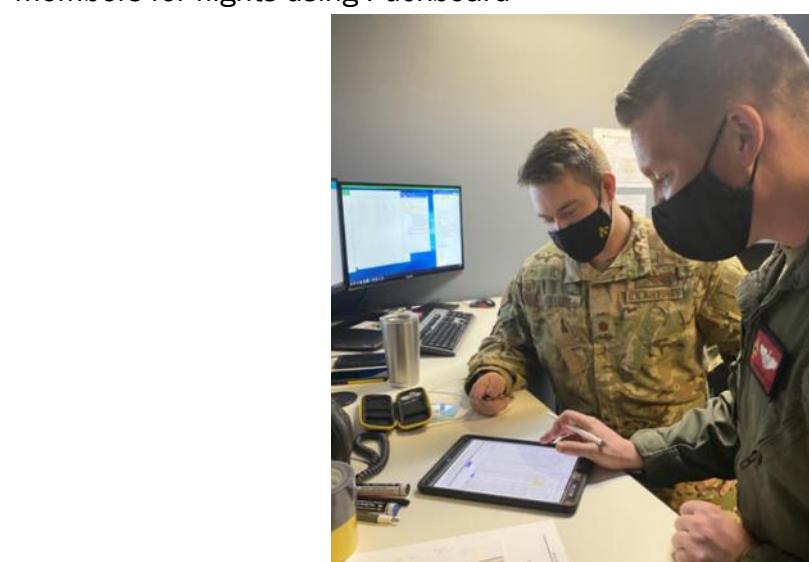




Capt Zach Morrow, Capt Marcial St John, Capt Kelsey Dees, and Capt Drew Dela Cruz (Ops Team members) in front of the 21st's digital scheduling board



Capt Byron Doan (Ops Team members) schedules crew members for flights using Puckboard



Maj Sam Bexten and Maj Dusty Miller (21 AS ADOs) review a digital binder before digitally signing flight

October INNOVATOR SPOTLIGHT

21st AS Operations Team

Digital Scheduling/Aircrew Binders using Puckboard and Mattermost

2020 has highlighted the need for remote work capabilities and the 21st AS Ops Team has made a major push to digital scheduling and mission paperwork to ensure mission success during dispersed ops.

As early adopters of Puckboard, a digital scheduling program, the 21st AS has been able to shape its future capabilities and required functionality. Puckboard saves countless scheduling man-hours and also allows all squadron members to securely view their flying schedule anywhere, anytime... even from their cell phone!

The 21st Ops Team also transitioned from physical paper mission binders to utilizing Mattermost, a secure DoD chat platform, to deliver full digital aircrew binders containing necessary flight documents. Ops, SARM and ADO offices have converted the 21st Airlift Squadron to fully digital ops!

The 21st AS has been fortunate to receive help/best practices from the 6th ARS, 9th ARS and 22nd AS, who are also working to be fully digital. Thanks to all the hard work from Puckboard and Mattermost and the collaboration between squadrons.

November

INNOVATOR SPOTLIGHT**Major Tanya Destinhill**

CareStarter

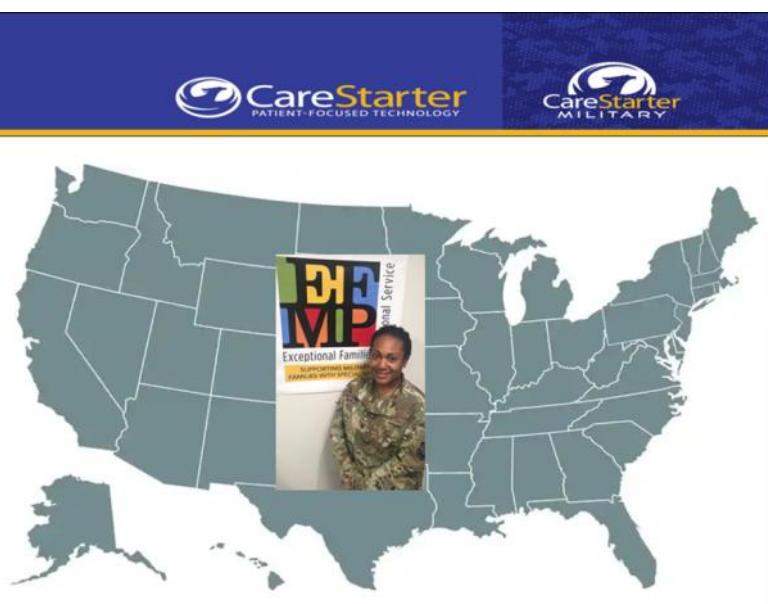


Major Tanya Destinhill arrived at Travis AFB in 2018 as the Healthcare Integrator. She quickly realized the process for gathering information and obtaining resources for patients was increasingly difficult. The process relied heavily on individuals routinely updating medical records and the man hours required to update the records was quite high.

Maj Destinhill was looking for ways to improve the efficiency of this outdated process when she made a connection with the CareStarter team through the Phoenix Spark lab. She worked with CareStarter to develop a tool that will provide greater access to care for EFMP families while reducing the workload for EFMP case managers.

CareStarter is now a digital tool approved by Congress to enable all Exceptional Family members to connect to a drastically expanded network of resources. This is a significant achievement for military families who are constantly on the move to receive the care they need.

Thanks for the hard work and initiative!



OUTREACH

Spark Revolution Podcast

Episode #4: The fight against Covid-19!

FTAC Innovation Introduction

Every other Friday at 1400, Spark Lab

Innovation Slack Channel

Please send us an email below to the org box on how you can contribute to be added.

SOCIAL MEDIA



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