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U.S. AIR FORCE TECHNOLOGY TRANSFER PROGRAM

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VIEWPOINT

Being Accessible



Abby Boggs
Air Force Technology Transfer Specialist

Happy New Year from the Air Force T2 Program Office! The Secretary of the Air Force, Ms. Deborah Lee James, recently stated, “We need to make ourselves more accessible and more understandable if we want more innovation.” This quote was from part of a discussion held at the Air Force Innovation Forum in San Jose, California and although the majority of the forum focused on traditional acquisition mechanisms, I feel it also applies to those of us in Technology Transfer.

This year, I challenge the T2 community to get out and meet with our scientists and engineers (S&Es), leadership, local businesses and educational institutions. That being said, here are just a few of the opportunities that can help us be more accessible and understandable:

In January, the Wargaming Center at Air University will be hosting their very first Innovation Discovery event. This is an opportunity for Air Force S&Es to receive warfighter and senior airpower innovator input from the Air Forces’ leading wargaming institute, airpower doctrine developers, Military Art thought leaders and others.

The FLC National Meeting will be held in April in San Antonio, Texas. The meeting’s educational training sessions will center on our nation’s continued focus to move federal research and development from out of the lab and into the marketplace by strengthening relationships with the private sector.

In May, we’ll be attending the DoD Lab Day held at the Pentagon. This event will showcase innovations from defense laboratories and engineering centers across the country.

As always please let us know if you have any questions or how we can assist you!



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This publication provides the Air Force, DoD and other government leadership insight into the valuable contributions that the Air Force Technology Transfer program makes to Air Force research and development activities. It can be found online at www.wpafb.af.mil/t2.

spotlight on INNOVATION

Air Force Supports Improved Method for Transporting Traumatic Brain Injury Patients

By Mindy Cooper, Air Force Technology Transfer Program

WRIGHT-PATTERSON AIR FORCE BASE, Ohio – Scientists with the U.S. Air Force School of Aerospace Medicine (USAFSAM) are playing an important part in the testing and evaluation of a novel aeromedical evacuation stretcher designed to safely transport traumatic brain and spinal injury patients in air and ground vehicles.

Ohio-based Cornerstone Research Group (CRG) developed the stretcher, which has applications across multiple services within the Department of Defense.

“Having adequate spinal immobilization is very critical when transporting patients with these types of injuries. Our wounded warfighters experience a much rougher ride back

to definitive care than we experience stateside,” explained Dr. David Burch, a biomedical engineer from the 711th Human Performance Wing, School of Aerospace Medicine, Aeromedical Research Department.

Cornerstone Research Group and USAFSAM entered into a cooperative research and development agreement (CRADA) in Fiscal Year 2013 for the testing and evaluation of the new device. Under this agreement, USAFSAM provides experts who have an in-depth understanding of medivac needs and access to C-130 and C-17 high-bays for ongoing device compatibility testing and evaluation.



Cornerstone Research Group’s aeromedical evacuation stretcher is shown during a compatibility test on a KC-135. (Photo courtesy of Cornerstone Research Group.)

“We would not be where we are now without this CRADA,” said Kristin Cable, Team Leader with CRG. “Our goal is to exceed safety requirements for use and safety. Feedback from users and access to the military vehicles for testing has been hugely beneficial.”

CRG began the design of the device under a Phase I Small Business Innovation Research (SBIR) agreement with the U.S. Army. Since military medical evacuation concerns are truly multi-service concerns, there is value in providing a stretcher design that not only meets Army requirements, but also meets the specifications for use on Air Force aeromedical evacuation platforms. Such a design could result in a common stretcher platform between the services.

The new device, compatible with both ground and air vehicles, also improves several aspects of the stretcher currently being used. First, the new device is rigid, unlike the standard NATO litters currently used, which can bend more than six inches in certain conditions. Second, a specialized mattress pad was added to eliminate bed sores which can cause ongoing problems for the patient. The new device also includes a foot replacement that can absorb shock and vibration while in transit. One of the most important things about the new design is that it meets NATO design standards for loading, altitude and vibration.

The research done under the CRADA is coordinated with the U.S. Army Aeromedical Research Laboratory, as part of an overall program run by the U.S. Army.

WHERE ARE THEY NOW

Team Awareness Kit for Android (ATAK™)

A team from the Air Force Research Laboratory's Information Directorate developed a situational awareness (SA) application that runs on commodity Android-based smartphones and tablets and provides a wide variety of mapping and other features for users. The application – known as the Team Awareness Kit for Android (ATAK™) - is able to display a wide variety of map-related information, stored on the device (i.e., offline maps), downloaded in real-time from sites like weather and Maps. It also has a selection of tools designed to facilitate real-time coordination among team members.

ATAK was designed with a variety of markets in mind, like the Department of Defense, as well as a wide variety of federal, state local, and non-profit agencies that need to share locations, text, photos, and video. The application is useful wherever a team needs to collaborate over geography, no matter the reason.

In order to get ATAK into as many hands as possible, as quickly as possible, the directorate didn't patent the technology, but instead began licensing it across markets immediately. Since 2015, the technology has been licensed by 35 entities and is being used for state and local law enforcement, emergency response, search and rescue, forest firefighting, civilian firefighting, environmental conservation. The application is also spreading into the recreation field with hunting, paintball games, private security and beer distribution.

NEW AGREEMENTS

Air Force Partners with Ohio State University for Evaluation of Stress and Development of Recovery Methods

By Jaclyn Knapp, Air Force Technology Transfer Program

WRIGHT-PATTERSON AIR FORCE BASE, Ohio – The Air Force Research Laboratory (AFRL), 711th Human Performance Wing (711 HPW), has signed a cooperative research and development agreement (CRADA) with the Ohio State University (OSU) for the rapid acceleration of human performance monitoring research, technology and tools for the battlefield.

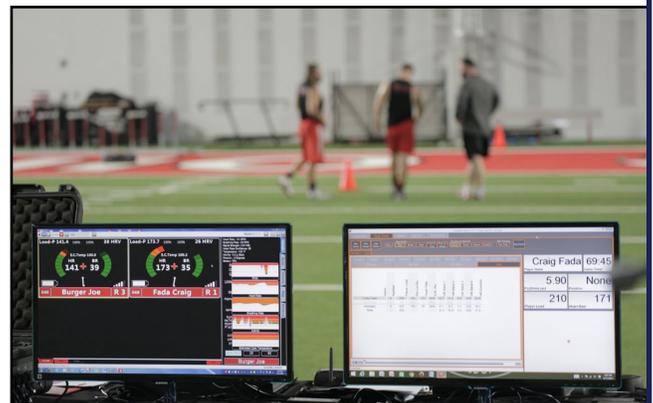
This collaboration will provide the 711th HPW access to immediate, continuous data so appropriate procedures can be developed using Division 1 athletes that exhibit similar strength, power, and mentality as Special Operations warfighters.

The collected information results in a daily report for measuring stress and recovery states and determining the future workloads and specific recovery modalities to help athletes and ultimately warfighters. The data collected for personalized recovery are based off of real-time exertion, daily readiness and heart rate variability (HRV) technology.

“Ohio State is a very evaluation-friendly program,” said OSU football coach, Urban Meyer, via Instagram. “And that means if it's not the very best – and that includes hydration, nutrition, training – then we're going to get the very best. That goes for the full-time sports psychologist to the hydration and nutrition, and working directly with the Air Force.”

The 711th HPW's primary intent is to assist with personalized recovery of both uninjured athletes and warfighters like Special Operations that consistently train hard and are always prepared for a game or mission. OSU operates and maintains the technology and receives daily sports science reports and analytics from AFRL researchers.

“As a result of this agreement, the 711th HPW has access to all of the data collected and can directly transfer it into extremely useful analytics and reports for the coaches,” said Dr. Josh Hagen, 711th HPW, Signature Tracking for Optimized Nutrition and Training Team Lead. “In turn, we can learn and develop advanced sports science analytics and methodologies that are directly applied to the Department of Defense. That's the goal of CRADAs: each side collaborates and brings something of value to the table.”



Real-time performance monitoring technologies streaming physiological data during training. (Photo courtesy of The Ohio State University Athletics)

meet the ORTA



KRISTEN SCHARIO



Technology transfer agreements are facilitated by the Air Force Technology Transfer Program Office and its affiliated Office of Research and Technology Applications (ORTA). An ORTA is embedded at many Air Force research locations and is typically one individual serving an entire location or directorate. Without the diligent work of the ORTAs, technology transfer wouldn't be possible. This interview features Ms. Kristen Schario, who has served as an ORTA for 25 years and is currently with AFRL's Aerospace Systems Directorate! Read on to learn more about Kristen and her experiences.

How many T2 agreements were signed in AFRL/RQ during FY16?

113

Why do you think you were able to put so many agreements in place?

Most of the agreements were Information Transfer Agreements (ITAs). ITAs are a fairly new agreement (created in 2014) that allow us to share software with industry, academia and other government agencies while protecting security and IP rights.



Kristen Schario (pictured on the right) receives an award from Dr. Melissa L. Flagg, Deputy Assistant Secretary of Defense for Research. (photo by Abby Boggs)

In 2016, you were the recipient of the 2016 Department of Defense George Linsteadt Technology Transfer Achievement Award. This recognizes significant accomplishments in DoD Tech Transfer. What are your thoughts on winning the award?

This award is a great honor, and is shared with my entire directorate - the supportive leadership team, the great scientist and engineers – and also with the patent attorneys, T2 colleagues, entrepreneurs, and outside partners that I have been fortunate to work with over the years. Technology transfer is about connecting with people, working as a team, and offering opportunities for partners inside and outside the laboratory.

What do you like about your job?

I like learning about all the technologies with which people are collaborating or trying to commercialize. Staff people are usually stuck in their offices all the time, so I like being able to go out to the labs and see new inventions or technologies for which they are seeking a partner. And every agreement presents a new challenge, some more difficult than others, which means there are always new things to learn. It's so much fun when one of the S&Es wants

to do something that no one else has done before and we have to figure out how to do it.

What are your biggest challenges?

Lawyers! Haha. just kidding. The biggest challenge is time – there are a lot of people in RQ with ideas on what they want to do – whether it is an invention that want to develop and license, or a new collaboration, or an overarching collaboration that involves multiple organizations. Everything takes time, so it can be difficult to be responsive to *everyone*.

How would you like to see the Air Force Technology Transfer program grow in the future?

It is important to remember that the program needs to meet the needs of the organizations. It is an enabler for so many things that drive technology development for the warfighter. I would like to see the understanding of T2, and what it can do for the organization, grow and develop so that it becomes an integral part of our strategic planning. In some cases, that is already happening.

What advice can you give other ORTAs?

Be bold! Treat every challenge as an opportunity to create something new (and then share the results with the rest of the AFT2 team!). We can accomplish a lot more together than as individual organizations. Focus on the mission of your organization and identify ways in which T2 can help with that mission. No two organizations in the Air Force will have the same priorities for their T2 program – you need to focus on the aspects of T2 that will help achieve the most. Network! Go to every T2 conference or event possible – the people you meet may have answers for whatever challenge you are currently trying to solve. It's easier to call someone you have met and ask questions, and you are more likely to get a response if you are someone they have met.