

# TATRC's Flying Laboratory Featured at AUSA's Innovator's Corner

In early October, the ongoing research efforts of TATRC's Operational Telemedicine Lab and two of its members, Mr. Nathan Fisher and Ms. Rebecca Lee, were thrust into the limelight of the Association of the U.S. Army (AUSA) Annual Symposium when the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ASA(ALT) requested USAMRMC to display and present the prototype "Emergency Medical Resupply & Enroute Care Unmanned Aerial Systems Research Platform" in ASA(ALT)'s "Innovator's Corner" which served as a technology display area. The Innovator's Corner displays innovative, cutting edge Science and Technology (S&T) projects, developed by or in partnership with Army laboratories including the U.S. Army Corps of Engineer's Engineer Research and Development Center, the Army's Capabilities Integration Center, the Research Development and Engineering Command, Army Research Laboratory, Armaments Research, Development and Engineering Center, and Communications and Electronics Research, Development and Engineering Center. The Innovator's Corner also provided an opportunity for attendees to learn about Army laboratories' capabilities and priorities and provided a unique and interactive forum to discuss critical technical challenges facing Army scientists and engineers. In addition to manning the booth, TATRC's Nathan Fisher was invited to formally present TATRC's current and future research initiatives aimed at leveraging Unmanned Systems as force multipliers to support medical mission areas within the Army's future Multi-Domain Battlefield concept.

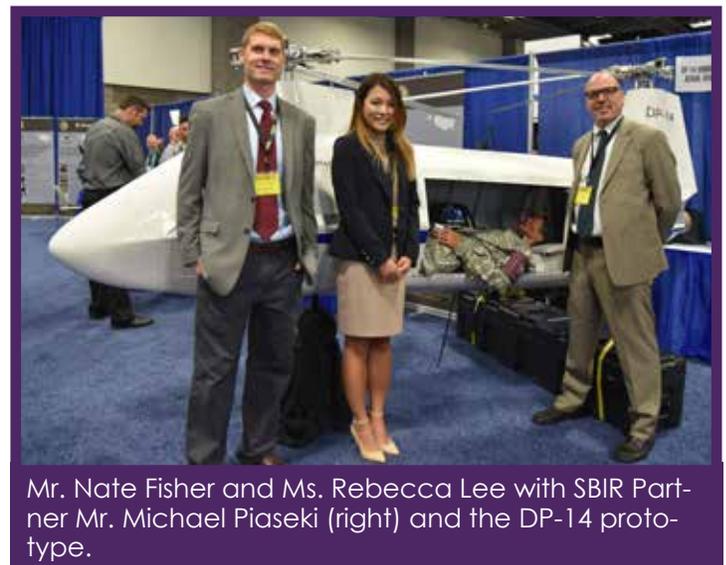
For the conference, the Dragonfly Pictures' (DPI) DP-14 research platform and Unmanned Aerial System (UAS) was on display to show how TATRC plans to use the prototype's heavy fuel tandem helicopter as a "flying laboratory" platform to test and evaluate UAS emergency medical resupply concepts and emerging enroute care prototype capabilities intended to support future UAS Casualty Evacuation missions. This Joint Program Committee-6 funded project is a joint effort between DPI, TATRC, and the U.S. Army Aeromedical Research Lab to develop the test platform and a Data Acquisition System (DAS) which will capture vehicle acceleration effects and environmental data within the interior cargo space of the UAS. In future projects, the DP-14 will be used as a "flying test bed" to validate and verify semi-autonomous and autonomous patient management systems, test communication infrastructures to enable remote patient monitoring, and command, control, and supervision of medical telemetry and patient management systems by remote experts while enroute, and to develop adaptive flight parameters for UAS based on injury profiles.

Regarding the use of unmanned vehicles for medical

evacuation, Fisher stressed to attendees that "The ideal scenario is that you have a medevac platform with a dedicated medical crew that can take care of a patient while flying en route. That's always Plan A. I like to call this Plan B. It's a situation where you can't get a medevac there in time, or there are no medevac assets available due to the threat situation or due to the fact that they are just at capacity."

The display attracted numerous Senior DoD Officials and VIP visitors including Army Chief of Staff General Mark A. Milley, Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology, Ms. Steffanie B. Ester, and former Secretary of Defense William Cohen. TATRC's research in unmanned medical resupply and casualty evacuation aligns closely with General Milley's remarks at last year's AUSA meeting discussing the use of UAS in the future medical missions as a part of the Army's Multi-Domain Battle concept. At the time, he referenced the use of robotics and autonomous systems to perform medical missions in support of dispersed units in anti-access / area denial (A2/AD) environments such as Megacities, which would be enabled by research that TATRC is performing using the DP-14. Ms. Lee quipped "AUSA provided really great visibility at all levels. It was also rewarding to see the communities be more receptive to the use of UAS for medical missions. This hasn't always been the case, so opportunities like AUSA give us a chance to inform others how TATRC is trying to leverage such capabilities in its research projects."

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Mr. Nate Fisher and Ms. Rebecca Lee with SBIR Partner Mr. Michael Piaseki (right) and the DP-14 prototype.