Chemist helps bolster Army's detection of emerging threats

U.S. Army

ABERDEEN PROVING GROUND, Md. (Aug. 23, 2012) -- U.S. Army scientists are researching improved technology to detect chemical hazards to ensure the safety of Soldiers against emerging threats.

Rod Fry, a chemist with the U.S. Army Research, Development and Engineering Command, is helping to lead the effort for RDECOM's Edgewood Chemical Biological Center.

ENLISTED SOLDIER BECOMES RESEARCHER

Fry described his atypical path that led to a career as a scientist conducting sophisticated military research.

"Throughout high school, I was never a very good student. I wasn't very focused," he said. "After high school, I had very little interest in going to college, [so] I enlisted in the Army as I was a combat medic."

"I initially went in as a Reservist. It's great work, very hard work. I was working 70-plus hours a week at a couple of different jobs. I realized what my life may end up being like if I didn't go to college. The Army whipped me into shape."

Because science and math came easy to him and his brother was studying chemistry, Fry began his academic career in chemistry and quickly fell in love with the subject. He earned a bachelor of science in chemistry with minors in mathematics and military science from the State University of New York at Brockport.

Fry then completed a doctorate in physical chemistry from Penn State University, followed by a post-doctoral position for a year-and-a-half at Los Alamos National Laboratory in New Mexico.

The chance to re-join the Army, now as a scientist, to protect Soldiers from dangerous chemical threats enticed Fry to pursue a position at ECBC, he said.

"During my post-doctoral position at Los Alamos National Laboratory, I was working on a materials synthesis project," Fry said. "It was interesting, but it didn't have much of an excitement factor associated with it.

"When I heard about this job opportunity at ECBC, the thought of working with chemical warfare agents to help the warfighter sounded like a very exciting opportunity. I previously was enlisted in the Army, so it was an opportunity to work

again with an organization that I knew a lot about."

After two years of working for a defense contractor supporting ECBC, Fry took a position as an Army civilian three-and-a-half years ago. He has supported the center's Engineering Test Division for the last year-and-a-half as a scientific consultant focused on emerging threats.

"It takes a very special chemist to want to work with these compounds. Plenty of chemists would be too fearful to get in the lab and do the work needed to protect the warfighter," he said.

IMPROVING CHEMICAL DETECTORS

The Army initiated the Multi-Mission Multi-Threat Detection, or M3TD, program to improve the performance of chemical detectors against enduring and emerging threats. ECBC is working with the Joint Project Manager for Nuclear, Biological and Chemical Contamination Avoidance and private industry on the project.

For the last year Fry has focused on the M3TD program by coordinating efforts across ECBC's Research and Technology, Engineering, and Program Integration directorates to ensure the organization successfully executes the detector testing.

M3TD allows companies that manufacture chemical-agent detectors to use Army expertise and laboratories to test their detectors against a broad range of chemical challenges, he said.

"The program provides an opportunity for a large number of companies that develop chemical-agent detectors to improve their technical knowledge base, and update and improve their technologies toward enduring and emerging threats," Fry said. "The focus is developing the next-generation chemical detector that the Warfighter can use to detect the full range of chemical threats."

JPM NBC-CA purchased 19 detectors from 16 participating companies for testing. The program has two phases -- data collection and technology assessment.

After data collection is completed, the companies can add the spectral data to their detector libraries and improve their algorithms in an effort to detect and identify enduring and emerging threats. JPM NBC-CA will then assess the detectors, with continued ECBC support, for technical and performance maturity in the technology assessment phase.

EXPANDING SCIENTIFIC REACH TO SUPPORT SOLDIERS

The strong reputation of ECBC scientists and engineers throughout the scientific community prompted Fry's interest in the organization.

"There was a bit of an excitement factor associated with coming to work for ECBC, but I also knew about the reputation of ECBC," he said. "Colleagues of mine from grad school work here, so I had that connection. [It was] an opportunity to work with

a lot of top-notch scientists in addition to state-of-the-art analytical platforms and instrumentation. After my initial interview, I was sold."

Fry also emphasized that he has been allowed to expand his scientific focus beyond his specific area of expertise within chemistry. This freedom creates better capabilities and solutions for the end user -- Soldiers.

"The opportunity to work at ECBC has been quite different from what I originally expected. Most chemists who get their PhD will have their niche where they are often a world expert in a certain topic," he said. "I wanted to push my comfort level and get into the engineering side of [chemical and biological] defense. It's been an excellent opportunity if you don't want to focus on a very narrow portion of the bigger picture.

"It's easy to work for ECBC, earn the respect of the people here, and then branch out and get involved in any project that you want to. I haven't been told, 'You're a chemist. You don't really fit on this project.' I have been embraced, and they often find ways to tap into the knowledge you have from your previous background and use your different perspectives to help achieve a better product for the warfighter."

Source URL (retrieved on *03/29/2015 - 5:30am*):
http://www.ecnmag.com/news/2012/08/chemist-helps-bolster-armys-detection-emerging-threats?qt-video_of_the_day=0