



News Release

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For Information: Don Kennedy, 410-436-7118

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ECBC Receives FLC Award for TAC-BIO

ABERDEEN PROVING GROUND, Md. – The U.S. Army Edgewood Chemical Biological Center (ECBC) has received an Award for Excellence in Technology Transfer from the Federal Laboratory Consortium for its work on the Tactical-Biological Detector (TAC-BIO). The TAC-BIO program resulted in five patents addressing state-of-the-art optics and optical interrogation techniques. In addition, it also provides a biological agent detector that costs nearly 10 percent less, is 50 percent smaller, weighs 80 percent less and uses only four percent of the energy.

The TAC-BIO is a biological agent sensor developed at ECBC that is low-cost, low-power and compact in size. It is designed to rapidly detect the presence of an airborne biological threat and to provide an early warning to minimize exposure and casualties to our Armed Forces. The device exploits the scientific principle that biological aerosols will fluoresce and scatter light when exposed to ultra violet (UV) light. These signals can be used to detect the existence of a threat.

Prior to the TAC-BIO, most biological agent detectors used large and costly UV lasers to extract optical signals from threat aerosols. However, a shift toward a low-cost detector began in 2002 when John Carrano, Ph.D., led an effort within the Defense Advanced Research Projects Agency (DARPA) to develop Semiconductor Ultraviolet Optical Sources (SUVOS), a type of light-emitting diode that could replace the larger and more costly UV lasers.

TAC-BIO began with funding from DARPA to explore the potential of designing a biological agent detector based on SUVOS technology. Funding from the Defense Threat Reduction Agency allowed ECBC scientists and engineers to advance the design toward a mature, Technology Readiness Level 6 product.

The effort was supported by the Center's Chemical Biological Systems Integration team within its Research and Technology Directorate and the Advanced Design Manufacturing team within its Engineering Directorate. The team was led by Division Team Leader David Sickenberger and included six other ECBC employees.

“I’m very proud of the work our team has done on the TAC-BIO and the paradigm shift it has driven to low-cost biological agent detectors,” said Sickenberger.

ECBC transitioned the TAC-BIO into industry, specifically General Dynamics and Research International, Inc., in 2009 and 2010 respectively. Collaboration among the organizations was made possible through three technology transfer mechanisms that helped industry access the Center’s expertise and facilities: a patent licensing agreement; cooperative research and development agreement; and partnership intermediary agreements.

The ECBC Technology Transfer team played an integral role in these transitions by managing the licensing process. The team engaged a Department of Defense partnership intermediary, TechLink, for resources on publicizing the availability of such a system to interested industry organizations.

“Commercialization of the TAC-BIO by our partners is the culmination of many years of effort by the inventors, and their cooperation with the Technology Transfer Team to enable an expedited path to commercial success,” said Technology Transfer Team Lead Dhirajlal Parekh.

Efforts to improve the product are ongoing. Work continues to make the product simpler, more durable in all weather conditions and more capable. Other potential licensees continue to be interested which will allow for further modification of the TAC-BIO system prior to wide distribution and fielding.

ECBC has been recognized as a critical national asset in the chemical biological defense community and their innovative workforce evolves CBRNE defense technologies and capabilities worldwide.

For more information about ECBC, visit <http://www.ecbc.army.mil/>.

ECBC is the Army’s principal research and development center for chemical and biological defense technology, engineering and field operations. ECBC has achieved major technological advances for the warfighter and for our national defense, with a long and distinguished history of providing the Armed Forces with quality systems and outstanding customer service. ECBC is a U.S. Army Research, Development and Engineering Command laboratory located at the Edgewood Area of Aberdeen Proving Ground, Maryland. For more information about the Edgewood Chemical Biological Center, please visit our website at <http://www.ecbc.army.mil> or call (410) 436-7118.