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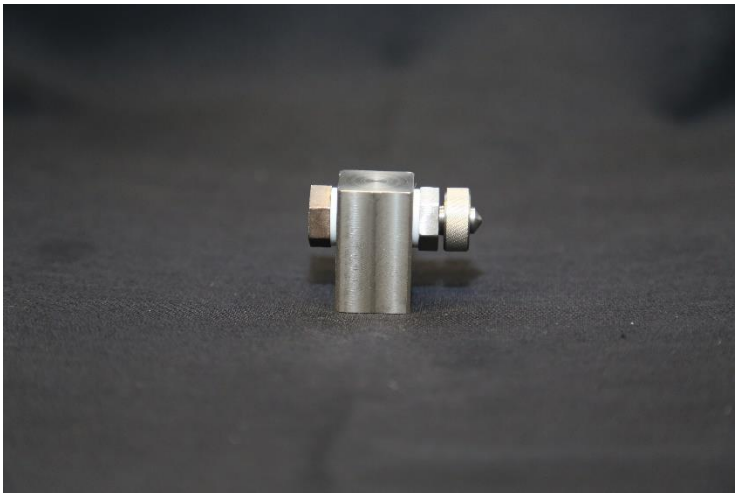
The Combat Capabilities Development Command (DEVCOM) Chemical Biological Center, formerly known as the U.S. Army Edgewood Chemical Biological Center, is the Army's principal research and development center for chemical and biological defense technology, engineering and field operations. The headquarters of the DEVCOM Chemical Biological Center is located at the Edgewood Area of Aberdeen Proving Ground, Maryland.

For Information: Richard Arndt, 410-436-1479 13 January 2021

DEVCOM CBC Invention Contributes to COVID-19 Research

By Jerilyn Coleman



The micro-atomizer is a device that produces an aerosol spray on a very small scale for studying aerosolized particles inhaled by humans.

Aberdeen Proving Ground, MD – A device patented by researchers at the U.S. Army Combat Capabilities Development Command Chemical Biological Center (DEVCOM CBC) is being commercialized as a tool in the study of COVID-19.

The micro-atomizer, U.S. Patent 8,882,085, is a device that produces an aerosol spray on a very small scale for studying aerosolized particles inhaled by humans. The micro-atomizer has a .005 in diameter sample pass through -- slightly larger than a human hair. This invention allows scientists to scale things down into a much smaller space to model what would happen on a larger scale.

DEVCOM CBC biologist Michael Horsmon, senior engineering technician Richard Kreis, and retired Army scientist Charles Crouse are the inventors behind the micro-atomizer. This product was developed to enable detection, protection and decontamination technology development geared toward protecting the warfighter from toxic chemical agents by simulating those agents on a micro level using aerosol spray.

While the micro-atomizer was developed as a research tool in chemical agent protection, it can also be used to simulate human sneezing, hacking or coughing. This will enable researchers to model the COVID-19 flow that would be expelled by someone who already has it. According to Kreis, "by allowing the molecules to get down to the same size as you would with COVID-19, it is easy to replicate continuously, repeatedly and accurately."

Techlink, the DoD's national partnership intermediary for technology transfer typically reviews all government patents and publicizes technologies that are ripe for commercialization. "We were notified by our partner, Techlink who's in Montana, that

there was interest in this patent. Our office investigates the status of patents and if there are existing prototypes. When we investigated, we learned that there were no more prototypes, so we went to the Research and Technology Directorate and asked them if they were willing to fund a few more prototypes because of the commercial interest and they agreed," said Matt Jones of the Center's Technology Transfer Office.

The test was a success and the company signed a patent license agreement this year. The inventors are currently focusing on reproducing the micro-atomizer and building the product consistently. The goal is to commercialize it so that it is available worldwide. "Universities, industry and other government agencies can use the micro-atomizer and it can be used in fields ranging from aerobiology, toxicology, and maybe even generating aerosols of coding materials for protection of surfaces. It has a wide range of uses," Horsmon said.

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