THE 2007 FLC MID-CONTINENT REGION ANNUAL AWARDS
Nomination Form

Please note the specific criteria for the nominated award.

I nominate the following individual, technology, or organization for the following award (please √):

□ Regional Laboratory Award
□ Representative of the Year Award
□ Notable Technology Development Award
□ Regional Partnership Award
□ Outstanding Service Award
X Excellence in Technology Transfer

DESCRIPTIVE TITLE OF NOMINATED TECHNOLOGY TRANSFER:
Flash-Bang

☐ Regional Laboratory Award
☐ Representative of the Year Award
☐ Notable Technology Development Award
☐ Regional Partnership Award
☐ STEM Mentorship Award (New Category!)
☒ **Excellence in Technology Transfer**

Nomination submitted by: Jackie Kerby Moore
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BASIS FOR THE NOMINATION
Background and Technology Transfer Process

A1. Description of Technology and Transfer (30 points)

What technology was transferred?

Flash-Bang Fuel Air Diversionary Device

Briefly describe features of the technology, benefits, and limitations.

Diversionary devices — called flash-bangs — are nonlethal devices used by law enforcement and the military to temporarily distract or disorient an adversary. Like a grenade, the device is activated by pulling a pin. When thrown, the device, about the size of a small soda can, creates a loud bang and an intense flash of light. Flash-bangs can be used in hostage rescues, room-clearing, crowd control, and other specialized operations. When the device is deployed, a cloud of aluminum powder is expelled and ignited by a gas generator, resulting in a disorienting explosion (bang) and intensely bright light (flash), but without any shrapnel. The body of the device itself does not explode, making the operation safer for the person deploying the item and for anyone in the area of deployment, which lessens the likelihood of injury and also the severity of the consequences should a mishap occur.

Who or what was the recipient of the transferred technology?

Sandia licensed its safer flash-bang technology to Defense Technology Corporation of Casper, WY. The technology was originally licensed in 2002 to a company that failed to bring the product to market.

Why was the technology needed?

Diversionary devices provide law enforcement and the military a less lethal way to control certain adversarial situations. With American soldiers at war in foreign lands and American law enforcement officers at war here at home, the flash-bang device provides one more weapon in their arsenals to help them achieve their mission to keep our country, its citizens, and their way of live safe from harm. This current technology also addressed the limitations of the original technology.

What problem was solved by the technology?

The new technology gives law enforcement and the military a nonlethal way to manage adversarial situations but without the limitations seen in the original technology. The original flash-bang diversionary device, developed at Sandia more than 20 years ago, was intended for limited, specialized applications and could cause serious injuries with improper use. The new technology addressed those issues to produce a device that is far safer for those who use it and for those near it when it activates. Unlike the older technology, the new one can be made into different styles appropriate for a variety of applications; economical, refillable versions can also be made for training purposes.

A2. Initiation of Technology Transfer Partnership (5 points)

Was the partnership for the technology initiated by the laboratory, the company or other entity?

The partnership was the result of a broad public announcement (advertisement) that the technology being developed at Sandia was available for licensing.

What were the roles and expectations of each partner?

Sandia wanted to find a commercial company that would be successful in manufacturing the device, to sell the device to meet the needs of government customers, and to replace the commercially available competing product that had a poor safety record. The licensee recognized the enhanced safety aspects of the Sandia technology over existing products and desired to capture a large portion of the market because of it.

A3. Technology Transfer Processes and Innovations Used (5 points)

What technology transfer processes were used to transfer the technology?

A commercial license was negotiated by Sandia and the Defense Technology Corporation of America.

To what extent did the federal laboratory fund the technology transfer effort?

Sandia developed the technology through internal funding.

Describe any innovation or creativity demonstrated by the nominee(s) in transferring the technology.

The nominees invented the technology, developed the fabrication process to produce the devices, and demonstrated proof-of-concept functionality. Sandia National Laboratories' Licensing and Intellectual Property Management department initiated the licensing process, which included announcing the availability of the technology and hosting meetings with companies interested in it; requesting and evaluating business plans; and choosing viable candidates from the submissions

A4. Time Frame Challenges (5 points)

What was the time frame for the transfer?

The technology was developed in 1998, and a patent application was developed. A patent was issued by the USPTO in July 2001. The first commercial license agreement was issued in November 2002 to a small business that was not successful in commercializing the technology, and the license was terminated in September 2005. The technology was again publicly advertised as available for licensing, which resulted in a number of expressions of interest that were narrowed down to the current licensee, with the agreement being executed in March 2008.

A5. Patents (5 points)

Are there any pending patents or patents involved in this technology transfer?

United States Patent #6253680, "Diversionary Device," issued on July 2001.

Results

B1. New Relationships Formed as the Result of the Transfer (5 points)

Defense Technologies manufactures a number of products supporting law enforcement and anti-terrorist organizations. Sandia and DT may explore other areas of interest for collaboration opportunities.

B2. Outcome of the Technology Transfer Effort (45 points)

The major outcome of this technology transfer effort is a safer, better, and more economical product in the hands of our law enforcement and our military. Conventional diversionary devices use an explosive mixture (flash powder) that is regulated as a high explosive. Our device uses fuel (aluminum powder) and air, completely eliminating the hazards associated with handling flash powder and making manufacturing, transportation, and storage safer and more economical. It is safer, reducing the hazards to the operator as well as to civilians who are near when it activates. And finally, it is an example of green technology that is better than the device it replaced. We replaced Potassium perchlorate, which is a serious source of ground water pollution, with air, completely eliminating the water pollution problem in both manufacturing and use of the device.

What was the result of the technology transfer effort?

The result of this technology transfer effort was a commercial license agreement.

What agreements are pending and/or final regarding this technology?

A commercial license agreement was executed March 2008.

What are the tangible benefits of the transfer?

The benefit is a safer product that significantly reduces bodily injury to the user and to civilians and eliminates ground water pollution seen with the older device.

What future benefits are expected from the transfer?

Sandia will realize license and royalty income as a result of this transfer. And, assuming the licensee is successful, the company will continue to interact with Sandia on other licensing and collaborative efforts and interests.

Photos for the Flash-Bang Technology Transfer Entry from Sandia National Laboratories

Inventor Mark Grubelich with Lt. Chris Dallas and Tristan DeSantis of Sandia's Protective Force.
(SNL Photo by Randy Montoya)

Safer and more effective flash-bangs help military and law enforcement personnel.

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under Contract DE-AC04-94AL85000.