



# CBARR NEWS

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*A worldwide leader  
in CB solutions*

Edgewood Chemical Biological Center



The Chemical Biological Application and Risk Reduction (CBARR) Business Unit of the U.S. Army Edgewood Chemical Biological Center (ECBC) continues to be an integral part in developing solutions that support demilitarization efforts around the world. CBARR's scientists, engineers, technicians and operators continued to provide integrated chemical and biological solutions for customers during 2013. Our most notable accomplishments throughout the year are noted in this issue of the *CBARR News*. The significance of the work was not deterred by fiscal constraints and resource challenges, but were instead met with a steadfast resolve to work with our partners and develop solutions. We look forward to meeting the new year with innovations that will further our mission while demonstrating our core values in landscape that continues to evolve. Here's to 2014!

## INSIDE THE ISSUE

### Tech Report Published on Albania Mission

CBARR expertise led chemical demilitarization operation (P.2)



### 219 Funded Project Concludes Research

Coffee with Colleagues promotes basic research (P.3)



### CBARR 2013 Year-in-Review

A look back at milestones and accomplishments (P.4-5)



### Food, Toy and Gift Drive Delivers

26th annual holiday gift drive supports military families (P.7)



# Technical Report on Albania Mission Documents Chem Demil Expertise



**Brandon Bruey was the primary author for a recently published Technical Report documenting last year's Albania mission.**

**ABERDEEN PROVING GROUND, Md.** — A team of CBARR scientists published a technical report this December, officially documenting the work completed last year that assisted the Albanian military in successfully destroying a small stock of chemical warfare agent (CWA), including mustard, sarin and Lewisite.

"We set up a laboratory within one of the rooms in the Albanian facility where the agent was stored and outfitted it with glove boxes, analytical instrumentation and a personnel decontamination station," said Brandon Bruey, CBARR chemist. "It was a process of acquiring their chemical inventory and determining what chemicals, supplies and equipment we needed to treat, analyze and destroy the agent. We also verified successful destruction, which was performed in a technically sound, safe and environmentally responsible manner."

The report, "Analysis and Destruction of Chemical Warfare Agent Samples: Albanian Armed Forces Central Laboratory, Tirana, Albania," was authored by Bruey, John Schwarz and CBARR Director of Operations Tim Blades. The report summarized destruction procedures and supporting analytical data that was also given to the Albanian government as evidence of the safe CWA destruction. Additionally, the operation was reported to the Organization for the Prohibition of Chemical Weapons (OPCW) in accordance with the Chemical Weapons Convention (CWC), of which the United States and Albania are member states.

The collaborative effort between CBARR and the Albanian Armed Forces Central Laboratory, Logistics Brigade led to the successful destruction of 11 chemical agents during a two week period in July 2012. The operation in Albania demonstrates CBARR's ability to provide chemical solutions for customers worldwide as it leads ECBC's mission of providing CBRNE defense needs in a safe and secure manner.

"I've been a CBARR employee since August 2011 and that was my first big trip abroad. It was neat to see how CBARR is called upon to develop a solution when another country needs help meeting a chemical demilitarization challenge," said Bruey.

That call came in late 2011 when the U.S. Department of State had been

notified by the Albanian government that a small stock of CWA was discovered in the Central Laboratory. According to the technical report, representatives from the Albanian government worked through the U.S. Embassy in Tirana, Albania to supply an inventory of the toxic chemicals to be destroyed. These chemicals were present in relatively small quantities and were reportedly used previously as analytical reference standards for training Albanian soldiers on laboratory operations and specialized detection equipment.

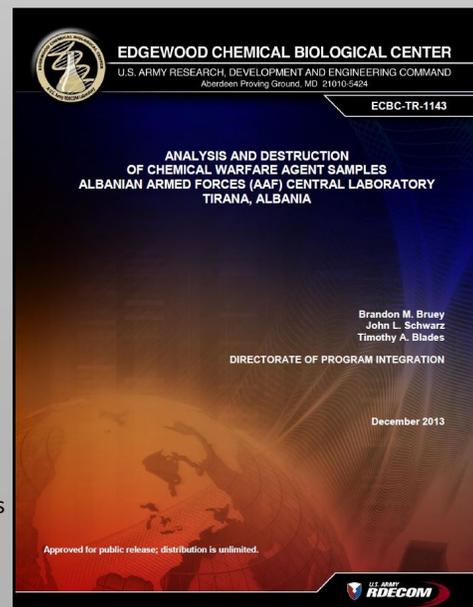
On Nov. 21, 2012, CBARR received a warm letter from U.S. Ambassador to Albania Alexander A. Arvizu, thanking the organization for a successful operation in Tirana. "Thanks to your professionalism and expertise, these hazardous chemicals are no longer a potential danger to the Albanian or American people. I have received profuse thanks from the Ministry of Defense and other Albanian government officials, and wanted to pass on their appreciation as well. Once again, thank you for a job well done!" wrote Arvizu.

Bruey said that he believes the work CBARR does serves a real world importance, no matter the mission. Chemical demilitarization has become increasingly well-known by the general population over the past few months. The chemical weapons attack in Syria last August has led to international efforts by the OPCW to rid the country of its chemical weapons. Destruction of CWA supports the OPCW's mission to rid the world of such hazards.

"It takes a huge team effort to make these missions happen," said Bruey. "It's not just one person and any one group. These projects are successful because there are a lot of people involved in the planning process. We're just doing our one little piece, but it is kind of cool that our one little piece is something that no one else can do."

ECBC first supported the Albania chemical weapons elimination program in 2005, in conjunction with the Defense Threat Reduction Agency. The multi-phase project was conducted over several phases and took 2.5 years to complete, from assessment to final demolition. More than 16 metric tons of chemical agent stored in 746 canisters and vials were destroyed between Feb. 1, 2007 and July 11, 2007. Destruction facilities were dismantled and ECBC demobilization was completed on Nov. 20, 2007. The effort resulted in more than 52,000 total man-hours from ECBC personnel, who analyzed more than 5,000 liquid and vapor samples onsite.

The safe and successful chemical demilitarization mission was confirmed by the OPCW and Albania became the first nation to completely and verifiably destroy all of its chemical weapons. According to the OPCW website, this disarmament campaign was conducted to fulfill Albania's obligations under the CWC.



# The Rapid Detect-Identify-Decontamination Kit Concludes 219-Funded Basic Research

## *Coffee with Colleagues showcases collaborative efforts*

**ABERDERDEEN PROVING GROUND, Md.** — On Dec. 12, CBARR showcased the results from its 219-funded project at the fourth annual Coffee with Colleagues event hosted by ECBC's BioSciences Division in the Research and Technology Directorate. The Rapid Detect-Identify-Decontamination Kit was one of 60 posters highlighting ongoing research and development efforts across the Center and gave colleagues a chance to share their work and expertise in an informal setting.

The Rapid Detect-Identify-Decontaminate Kit was designed for the decontamination of suspected areas where spore-forming bacteria may be present inside a military or commercial aircraft. It contains hand-held detector assays, personnel protective gear and decontamination materials. ECBC utilized its own resources to test the effectiveness of the kit, including test beds and biological decontamination methodologies, C-130 cargo aircrafts and barcoded spore technology. Conceptual model design and animation was also used for the kit prototype, which offers a developing solution for the hazard mitigation arena.

"Our goal was to detect a spore contaminant in a suspected area, identify its presence using hand-held assays, decontaminate the areas using a surface decontaminating foam and clear the area of the contaminant after the decontamination process," said Debbie Menking, project manager. "As a result of the testing, we achieved what we set out to do by demonstrating proof-of-concept for a novel hazard mitigation kit that detects-identifies and decontaminates biological contaminants in aircraft interiors. Moving forward, we recommend replacing the hand-held assays with a commercial-off-the-shelf electro-chemical detector that will improve assay sensitivity."

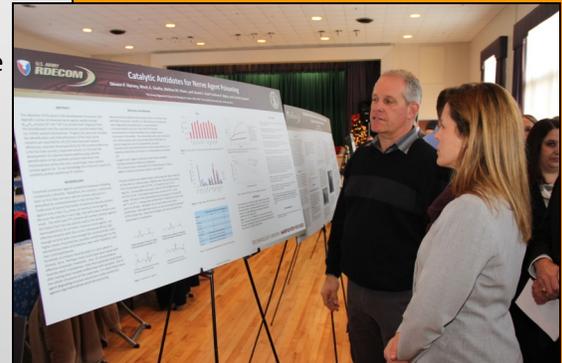
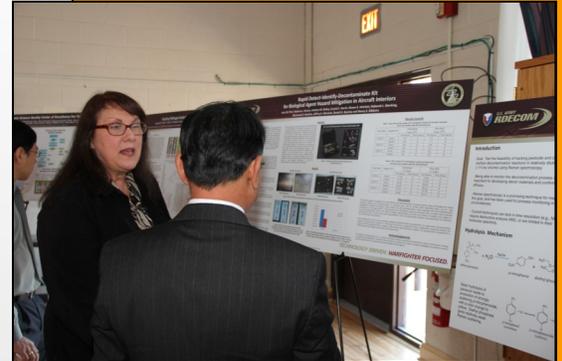
The concept for the Rapid Detect-Identify-Decontaminate Kit was the result of a previous multi-directorate collaboration between Menking and Sofi Ibrahim, Ph.D., a microbiologist who conducted decontamination biological efficacy assessments at ECBC for the Joint Project Manager-Protection. Now, the methodologies and success from that project have grown into another cross-directorate opportunity that explored decontamination efficacy inside aircraft.

"Leveraging momentum from the decon testing in order to take it to the next level was our goal. The Section 219 funding provided the means to drive the development of the proposed kit using tri-directorate assets to explore how effective a Detect-Identify-Decontaminate process could work against biological agent hazards inside an aircraft," Menking said.

Section 219 funding originated from the National Defense Authorization Act of 2009, which allows military and government research laboratories to generate revenue as an indirect fee to help finance the overall cost of a given project. The proposed kit was awarded funds from the FY13 ECBC 219 funding. The kit was one of nine ECBC projects that effectively met ECBC's objective of maintaining awareness of emerging threats and met the required proposal criteria: innovation, collaboration and potential transition to the warfighter.

"It was exciting to experience the vitality and creativity generated as talented scientists and engineers came to the table energized by a common goal," said Menking. "We brainstormed and fed off each other's ideas to make a better product in the end."

*ECBC scientists and engineers gather at the 2013 Coffee with Colleagues event on Dec. 12 to discuss the findings of their basic research projects. Debbie Menking (pictured below) talks about the Rapid Detect-Identify-Decontamination Kit.*



# A LOOK BACK: 2013 CBARR Year in Review

## Major Accomplishments and Milestones

### Support to the Food Emergency Response Network (FERN) January 2013

CBARR provided chemical analysis support for South Dakota State University (SDSU) in January 2013. Connected through FERN, CBARR laboratories investigated a meat sample that may have been contaminated with Ivermectin, an anti-parasitic agent typically used in pesticides. SDSU sent the meat samples to ECBC where CBARR personnel created and verified testing methods in a two-week turnaround time and determined there were no hazardous levels of the chemical present. Out of 10 laboratories in the country that responded to SDSU's FERN request for chemical testing abilities, ECBC was the only one awarded the work.



### Patent Awarded for the Mobile Power Distribution System (MPDS) April 2013

April 2013

The MPDS is a transportable power distribution technology used for various types of work that require electrical power for use in a field or outdoor space, such as construction or environmental remediation sites. Jeff Gonce, field maintenance branch chief for CBARR, developed the technology and received a U.S. Patent for the technology on April 23, 2013. Gonce developed the system after recognizing the need to have a transportable power solution that could be deployed to multiple sites and reduce the amount of time it took to generate power to all necessary pieces of equipment. The MPDS enables recycling of equipment, saving on cost and resources. The technology is currently available in two configurations: trailer-mounted and skid-mounted.



### U.S. Army Leaders Visit ECBC for Team CBRNE demo March and May 2013

The Hon. Heidi Shyu, the assistant secretary of the Army for Acquisition, Logistics and Technology, visited ECBC on May 1 to tour facilities, meet with subject matter experts and share lunch with employees in order to gain first-hand knowledge about the organization's mission to the Army and national defense community. The visit included an Edgewood Area Team CBRNE overview meeting that included leadership from ECBC, Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD), 20th Support Command, Army Medical Research Institute of Chemical Defense, Public Health Command, Chemical Materials Activity and Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA). On March 28, The Under Secretary of the Army, Joseph W. Westphal, Ph.D., visited ECBC twice as part of a WMD elimination demonstration in conjunction with JPEO-CBD.



## CBARR Chosen to Operate EDS at Pueblo Pilot Plant April 2013

PEO ACWA announced on April 18 that the Explosive Destruction System (EDS) was chosen to support the Pueblo Chemical Agent Destruction Pilot Plant (PCAPP) at the Pueblo Chemical Depot, Colo. CBARR operators, technicians and chemists are qualified to operate the system, which is needed to destroy chemical munitions that cannot be easily processed through the PCAPP. Unlike an open detonation, which uses explosives to destroy chemical agent, the EDS instead seals the munitions inside a steel chamber, then uses explosives to access the contents and expose the agent for neutralization.



## GPL Monitoring Completed at Umatilla May 2013

Supporting a larger quest to establish a legacy of environmental responsibility in northeast Oregon, CBARR has safely sampled, monitored and analyzed 58 hazardous waste management units, or igloos, at the Umatilla Chemical Agent Disposal Facility (UMCDF). CBARR began the General Population Limit (GPL) monitoring project in November 2012 and finished in May 2013. Real-time Analytical Platforms (RTAPs) are mobile vehicles equipped with Depot Area Air Monitoring Systems (DAAMS) and Miniature Continuous Air Monitors (MINICAMS), and were used onsite to examine the interior atmosphere for potential hazards.

## The FDHS is Completed After Six-Month Fast Track Acquisition June 2013

On June 27, ECBC and the Defense Threat Reduction Agency (DTRA) signed a technology transfer agreement with JPEO-CBD, signifying advanced development and future integration of the FDHS into the Chemical Biological Defense Program Portfolio. The new WMD elimination technology was produced by ECBC in six months after an intense research, design and fabrication process. CBARR's operators, maintenance and safety experts were utilized from the start, to ensure the FDHS could be safely transported and functionally perform in operational environments. The FDHS is a self-sufficient system that includes power generators and a laboratory that is fully capable onsite. The FDHS can neutralize bulk amounts of known chemical warfare agents and their precursors at a 99.9 percent destruction efficiency rate.



## Partnership with JPM E Results in New Training Course August 2013

A new personnel decontamination station (PDS) training course was developed in conjunction with the Joint Project Manager for Elimination (JPM-E). In 2012, JPM-E identified a number of courses that chemical workers are required to take on an annual basis to retain their qualifications. According to the Occupational Safety and Health Administration (OSHA) standards, operators must learn new techniques and methodologies for reacting to hazards. The PDS training course got a recent upgrade that turned the annual required training into a robust three-day program of classroom instruction and hands-on exercises.

# ECBC CONNECTION

CONGRATULATIONS TO THE FOLLOWING ECBC AWARD WINNERS!



**Ms. Suzanne Milchling**  
**Chesapeake Science & Security Corridor (CSSC) Defense Community Leadership Award**

**D.G. Parekh**

**2013 George Linsteadt Technology Transfer Achievement Award, DoD**

**Dr. Shannon Fox and Mr. Adolfo Negron**

**2013 Federal Laboratory Consortium (FLC) Mid-Atlantic Regional Award for Excellence in Technology Transfer**

**Dr. Sue Bae and Dr. Mark Winemiller**  
**U.S. Department of Agriculture Secretary's Honor Award**

## What's the Word? Contact us!

Send us your feedback. For article suggestions, questions or comments please contact CBARR Communications Officer Kristen Dalton at [kristen.a.dalton.ctr@mail.mil](mailto:kristen.a.dalton.ctr@mail.mil)

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# DECEMBER forecasts

# WEATHER AROUND THE WORLD



CBARR LOCATIONS	AVG. HIGH (F)	AVG. LOW (F)	AVG. PRECIP. (in)
Aberdeen Proving Ground, Md.	45	30	3.58
Pine Bluff Arsenal, Ark.	54	34	5.77
Washington, D.C.	47	33	3.05
Deseret Chemical Depot, Utah	39	23	1.67
Umatilla, Ore.	40	30	1.10
Redstone Arsenal, Ala.	54	34	5.77
Melbourne, Australia	75	57	0.78



## ECBC Technology Transfer Wins Top DoD Honor

**George Linsteadt Award recognizes significant contributions to federal, state and private partnerships**

**ABERDEEN PROVING GROUND, Md. –** ECBC was awarded the 2013 George Linsteadt Technology Transfer (T2) Achievement Award on Dec. 3 for demonstrating significant accomplishments to the DoD Technology Transfer Program. John Fischer, Ph.D., director of Defense Laboratories Enterprise for the Office of the Assistant Secretary of Defense for Research and Engineering presented the award to Dhirajlal Parekh, ECBC's Office of Research and Technology Applications (ORTA).



"It is a tremendous honor to be recognized by the Department of Defense for our efforts in technology transfer," said ECBC Director Joseph D. Wienand. "During a time of declining federal budgets, technology transfer is more important than ever, allowing ECBC to capitalize on our vast research and development infrastructure to establish mutually beneficial partnerships that stimulate the economy and further our mission in chemical and biological defense."

ECBC has consistently leveraging the speed and agility of industry to transition Army-developed technology directly to the Warfighter and first responders. In addition to CRADAs and TSAs, other principal T2 mechanisms include patent license agreements (PLA) as well as agreements with other government agencies such as interagency agreements (IAA), memorandum of agreement (MOA) and memorandum of understanding (MOU). For more information about Technology Transfer at ECBC, click [here](#).

## ECBC Celebrates Spirit of Giving with 26th Annual Food, Toy and Gift Drive

### Twenty-one military families and two local charities supported in event

**ABERDEEN PROVING GROUND, Md.** – The excitement and thrill of waking up as a child on Christmas morning to see what Santa left under the tree is a memory that reverberates in the hearts of many. As part of the 26th Annual Aberdeen Proving Ground (APG) Edgewood Food, Toy and Gift Drive held on Dec. 12, ECBC and other APG organizations lifted spirits in the community this holiday season.

The organizations collectively sponsored wish lists for 21 military families from the U.S. Army 20th Support Command and the 22nd Chemical Battalion, ensuring that the thrill of receiving gifts will also be a memory for those who may not be able to put toys under the tree or have hot meals this December.

ECBC's Berger Auditorium was overflowing with gifts and holiday cheer as Engineering Director AJay Thornton thanked those who were able to donate food and toys, or volunteer their time in organizing this year's drive. "Despite the troubles we have experienced on APG this year, our community workforce is always willing to step up," said Thornton. "It is better to give than receive, and we are making a difference in someone's life."

The Center and the other commands located on APG Edgewood, Md., came together to celebrate the spirit of giving. In addition to donating to families of the two Army commands, food and toy donations also went to two charity organizations in the local community: Extreme Family Outreach and the Edgewood Sharing Table.

Extreme Family Outreach is an organization that provides after school and summer programs for youth in the communities surrounding APG, including Edgewood, Joppatowne and Havre de Grace.

"A toy is a tool that opens doors to the children and families and provides us the opportunity to build a relationship with them," said Extreme Family Outreach co-founder Marlyn

Gambrill. "Without the donations and support, we would not be able to reach out and help rewrite a child's story."

Gambrill's statement also rang true for all of the volunteers that worked tirelessly collecting the items for the drive this year. The three ECBC employees spearheading this year's collection – Beth Hirsh, Stella Lee and Janna Madren-Whalley – all echoed the reason they participate in the drive: the kids. They

said that no matter how much or how little is collected, it still helps someone and that is enough for them to organize the event during the holiday.

Lee, who has been participating in the drive since she was hired as an ECBC intern in 1991, was raised in a giving family and hopes to instill that value into her own children. "Once my siblings and I were older, my Mom suggested instead of buying each other presents that we adopt a family and give to them instead," Lee shared. "I hope and pray my children will always be generous and experience the joy of giving."

Many like Lee in the APG Edgewood community embraced the spirit of generosity the season brings and were able to donate food and toys to the Edgewood Sharing Table, which is a non-profit coalition of churches that reaches out to citizens in need by serving a hot meal and providing a bag of groceries to each family.

"The ECBC donations will help supply the meals and groceries we provide to families in the community," said Andy Roach, Edgewood Sharing Table secretary. "At our Christmas dinners, we will let each child pick one toy, and then the parents can come through and pick one or two toys for them to put under the tree on Christmas morning."

Participating organizations included ECBC, local members of the Department of Emergency Services, the Joint Program Executive Office for Chemical and Biological Defense, the Program Executive Office, Assembled Chemical Weapons Alternatives, and the U.S. Army Chemical Materials Activity.



*Top: The 26th Annual Food, Toy and Gift Drive benefitted 21 military families from the U.S. Army 20th Support Command, the 22th Chemical Battalion.*

