



CBARR NEWS

A RECOGNIZED LEADER IN CB SOLUTIONS

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Collaboration

INSIDE THE ISSUE

Director's Column | PAGE 2

Let's Collaborate! How to Become an ECBC Partner | PAGE 3

CBARR Seeks to Expand Services, Build Relationships with New Stakeholders | PAGE 4

EPA Turns to CBARR for Realistic Training | PAGE 6

A Night at the 'Oscars' of Government Service | PAGE 10

Knowledge Management Fosters Continuity for PCAPP EDS Deployments | PAGE 11

Interagency Collaboration Boosts Mobile Analytical Capability for Delaware Civil Support Team | PAGE 12

ECBC Earns Army's Highest Safety Award | PAGE 14

ECBC Colleagues Embrace Culture of Collaboration | PAGE 15



Director's Column

It has become common understanding that as technology advances and challenges grow more complex, we must become more connected and primed to solve problems that didn't exist a few years ago. Partnerships with stakeholders across the chemical demilitarization space and within industry have bolstered our detection, protection, decontamination, and destruction capabilities. It has even provided new opportunities for our employees to grow - to both learn and lend their expertise - with organizations and respective subject matter experts who share our chemical and biological defense mission.

In this issue of the CBARR News, we take a look at how collaborating with our partners is an essential part of our success. We are able to navigate new environments, expand our technological reach and broaden our services in order to get the job done. Forging strategic alliances has proven to open lines of communication, foster innovation and produce more efficient work streams.

We cannot go it alone, which is why we've built a strong, trusted network of partners who have our back as we execute some of the most dangerous, yet meaningful, missions in CB defense. Whether it is in the field or in the lab, at fixed site locations or on the go, collaboration is the key to getting the job done. 🍷



Tim Blades
CBARR Director of Operations



On the Cover:
An EPA on-scene coordinator prepares for a simulated chemical entry during a CBARR-organized training exercise held Oct. 6-8 at ECBC's training facilities.

Let's Collaborate! How to Become an ECBC Partner

The Technology Transfer Office at ECBC offers a variety of mechanisms for government agencies, private-sector companies and academic institutions to partner with the Center.

- Cooperative research and development agreements (CRADAs)
- Technology support agreements (TSAs)
- Patent license agreements (PLAs)
- Interagency agreements (IAAs)
- Memorandum of agreement (MOA)
- Memorandum of understanding (MOU)

The technology transfer, or T2, process results in mutually beneficial partnerships where stakeholders can leverage their respective expertise and resources in order to reduce the time it takes to field a product to the end user. Other benefits include identifying dual or alternate uses for technologies, therefore increasing commercial utility and stimulating economic growth.

ECBC's CBARR Business Unit currently has nine CRADAs and six TSAs with industry partners like Battelle, URS, Parsons and CH2M Hill, as well as agreements with other government agencies like the U.S. Food and Drug Administration, the U.S. Department of Energy, and the U.S. Army Medical Research Institute of Chemical Defense.

ECBC's chemical and biological expertise, cutting-edge facilities and innovative technologies have led to the development of several high-profile capabilities, including the Field Deployable Hydrolysis System used to destroy Syria's declared chemical agent stockpile in 2014.

"The entire mission should serve as a model for how the capabilities of Department of Defense (DoD) labs can be integrated across mission spaces," Lloyd Pusey, ECBC operator, said at DoD Lab Day held at the Pentagon earlier this year.

"Chemical demilitarization innovation is unique in that we aren't really looking for breakthroughs typically seen in science and technology realms," Pusey said. "Instead, we are looking to sustain our existing competencies and to continue to build trust across communities on proven technology that has been modified for new applications. It's not groundbreaking, it's not earth-shattering, but we are constantly proving out new ideas on how to do more with less."

ECBC has made it a priority to engage with partners across federal and commercial sectors. In 2015, ECBC subject matter experts participated in several conferences, including the Defense Threat Reduction Agency Chemical Biological Defense Science and Technology Conference and the DoD Laboratory Day exhibition in May, as well as the National Defense Industrial Association conference for chemical, biological, radiological and nuclear (CBRNE) defense in July.

Senior leaders across the CBRNE defense space recognize the need to break down barriers established from traditional stove-piped functional areas of expertise. Instead, there is a shift toward a more dynamic way of working; one that leverages the technical depth of an organization like ECBC, and integrate those capabilities into a dynamic network of partners that can develop innovation solutions together. †



Did You Know?

In 2013, ECBC was awarded the George Linsteadt Technology Transfer Achievement Award for demonstrating significant accomplishments to the DoD Technology Transfer Program. The award recognized the record-breaking number of 105 agreements that were executed in fiscal year 2012, of which 65 were new cooperative research and development agreements and technology support agreements.

ECBC also set records in FY12 for intellectual property protection, with 24 invention disclosures, 20 patent applications, four provisional patent applications and 17 issued patents. Other agreements executed in FY12 included one patent license agreement, two joint ownership agreements and 39 agreements with other government agencies.

ECBC's Office of Research and Technology Applications (ORTA) has launched a wide range of internal outreach programs that have encouraged ECBC researchers to view their inventions as intellectual property in need of a commercial partner. The result has been the successful commercialization and fielding of ECBC technologies. The award is named in honor of Linsteadt, one of the most prolific directors for ORTA from the 1980s and is considered the pinnacle of success within the DoD for transitioning technologies.

CBARR Seeks to Expand Services, Build Relationships with New Stakeholders

International partnerships, rapid response expertise extend CBARR capabilities

Organizations today are adopting a more innovation spirit when it comes to developing and distributing products and services. The U.S. Army Chemical Biological Application and Risk Reduction (CBARR) Business Unit has its sights set on new horizons beyond the chemical demilitarization landscape, where it has honed its expertise in several key areas:

- Research design and method development
- Environmental sampling and analysis
- Chemical and biological agent handling
- Operational equipment and mechanics
- Program management and logistics

CBARR Employee Profile

Program Management and Logistics

- Management of resources and personnel
- Partnerships with government, industry and academia

Operational Equipment and Mechanics

- Material handling equipment, i.e., cranes, forklifts, excavators
- Industrial mechanics, i.e., HVAC, pumps, motors, electrical
- Trade skills, i.e., plumbing, carpentry, construction
- Transportation



Research Design and Method Development

- Equipment calibration
- Test design and study parameters
- Quality assurance standards
- Agent concentration verification

Environmental Sampling and Analysis

- Air monitoring
- Water and sediment sampling
- Mobile and fixed laboratory analysis

Chemical and Biological Agent Handling

- Personnel protective equipment
- Personnel decontamination stations
- Destruction system operations
- Agent synthesis
- Building / equipment decontamination

The trained, experienced and adaptable skill set of the average CBARR employee is one of the main reasons the business unit has been able to acquire a diverse portfolio of work within the chemical demilitarization and remediation markets. According to Brian O'Donnell, ECBC chemist, the organization is looking to take the expertise it's developed over the past 20 years and apply it to new customer needs in the domestic rapid response arena or the international CBRNE defense community. These two target areas, though divergent in customer segments, are anchored by the traditional capabilities that CBARR has become known for.

This new framing allows CBARR to become more agile to emerging customer needs across CBRNE defense disciplines. Detection, protection, decontamination and destruction capabilities are integral in responding to a national crisis or global security issues.

"We have the cleared and certified workforce, as well as the real world experience," O'Donnell said. "Right now we're taking a look at all the military needs we address and are applying that to areas of the civilian world where we're seeing the need. And we can offer these unique capabilities because of the relationships CBARR has under inter-agency agreements (IAAs) and other formal partnerships with organizations."

Domestic Response for Chem-Bio Events

Rapid response to a terrorist attack can save lives and lower casualties. According to O'Donnell, the Centers for Disease Control and Prevention, the Department of Homeland Security (DHS) and the Environmental Protection Agency (EPA) are increasingly interested in enhancing their own respective response competencies. CBARR has the real world experience helping the Army prevent and respond to chemical and biological agent incidents, including how to get rid of agent contaminated waste, and can provide these agencies with the proper training programs or the expertise to execute related operations.

"Right now we're taking a look at all the military needs we address and are applying that to areas of the civilian world where we're seeing the need"

Brian O'Donnell
ECBC Chemist

In early October, CBARR subject matter experts provided the EPA with a three-day training program for approximately 35 personnel that included classroom work on topics like agent symptomology, building remediation and detection capabilities. It also included hands-on exercises and scenario response simulations for various terrorist attacks.

A few years ago, DHS and EPA invited several CBARR personnel to attend a demonstration for decontaminating a simulated contaminated subway station. At the time, O'Donnell recalls, they were interested in Army support should a large scale event occur and mass numbers of people were affected.

"At the time, they were looking at agent dispersion within a subway system," O'Donnell said. "They used a simulant that was released into the subway to see where it would go and what it would do if a train went by and created a big pulse of air, like a piston."

According to Amy Dean, ECBC environmental engineer, DHS and EPA were impressed with ECBC's history of conducting decontamination and remediation on chemical agent-contaminated buildings, as well as its use of proper waste management protocols. These kinds of demonstrations and training programs spur dialogue between organizations looking to advance the nation's ability to respond to crises in a timely and effective manner.

International Support for Identified Needs

On the heels of the successful destruction of Syria's declared chemical agent stockpile onboard the MV Cape Ray in the summer of 2014, CBARR has become a consistent point of contact for the Organisation of the Prohibition of Chemical Weapons and the United Nations. Right now, CBARR is currently supporting a capabilities study for various locations in Asia.

"We look at existing technologies to determine if they are capable of eliminating different chemical and biological stockpiles that countries may have, should different scenarios arise," said Rob Malone, an ECBC chemist. "We then analyze whether or not we can address emerging needs with the capabilities that we currently have, and identify areas where there is a gap in capability."

According to Malone, CBARR's role has the potential to expand from preliminary research and planning support to providing technical expertise for waste management and hazardous waste contracts. 📌



***EPA Turns
to CBARR
for Realistic
Training***

Two on-scene coordinators from the Environmental Protection Agency donned protective gear and entered what looked like a typical single-family home to examine and remove what could possibly be a homemade chemical weapons lab.

However, for the on-scene coordinators, this was no ordinary day on the job. This event was staged during a three-day training session Oct. 6-8 provided by Edgewood Chemical Biological Center's (ECBC) Chemical Biological Application and Risk Reduction (CBARR) unit, under the direction of ECBC's training team leader, biologist Carrie Poore, Ph.D.

Training the Nation's Environmental Clearinghouse

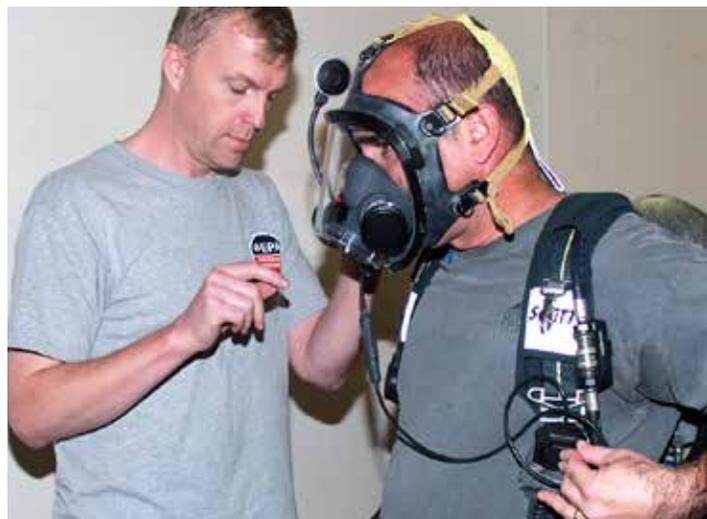
The EPA came to ECBC with a plan to expand the agency's reach to include handling and disposal of chemical and biological warfare agents. The EPA is the agency designated by the U.S. Government under the National Contingency Plan and National Response Framework to assess, monitor and lead with site recovery at incidents that may include chemical and biological agents.

ECBC not only specializes in identifying and removing chemical and biological hazards, but the Center is also an industry leader in training other organizations on the processes involved. CBARR instructors were able to customize a chem-bio agent response and recovery course for the EPA, which was held at one of ECBC's training sites at Aberdeen Proving Ground in Maryland.

A group of 38 on-scene coordinators attended a day of classroom instruction, followed by two days of hands-on training. The classroom portion of the training covered advanced instrumentation required to identify the presence of chemical and biological agents; how to perform environmental sampling and complex site characterization; identifying and decontaminating closed spaces; and best practices for personal protection equipment selection and decontamination.

"ECBC has done everything in the field that it taught to the class of EPA on-scene coordinators," said Brian O'Donnell, CBARR senior project manager and one of the organizers of the EPA training session.

"This training offered us something we don't usually get-very specific instruction in chemical and biological agent response and recovery techniques taught by people who have done it all" **Charlie Fitzsimmons**
EPA on-scene coordinator



Above: EPA on-scene coordinators check for proper protective mask fit while gearing up for a simulated chemical agent entry.

Left: An EPA on-scene coordinator prepares for a shift in the personnel decontamination station.

Creating a Realistic Scenario

Attendees, wearing the highest level of personal protection equipment called Level A, then spent the next two days training inside a warehouse at ECBC that has been reconfigured to represent a single-family home. The training was designed to simulate how to respond to the call of a chemical warfare agent laboratory inside a residence.

Members of the CBARR team prepared a mock scenario in which terrorists were making mustard agent inside the house. As they were loading mustard agent into fire extinguishers to be used in a planned terrorist attack, one fire extinguisher was over-pressurized and it erupted, spreading mustard agent throughout the house. In the scenario, one of the terrorists ran out of the house with the leaking fire extinguisher, dropping it in the driveway.

The exercise began with a handoff of responsibility to the EPA team from a National Guard civil support team, which, varying by state, may be the team that performs the initial site reconnaissance. In an actual situation, the civil support team shares its observations with the on-scene coordinators assigned to the incident and remains available to provide further resources if needed.

“Duplicating the transfer of command from the civil support team to the EPA was a unique aspect to this exercise and made it even more realistic,” according to one EPA observer, Nancy Abrams.

The first team of on-scene coordinators made the initial entry into the contaminated area, surveyed the scene and identified the presence of chemical warfare agents. They delineated the contamination spots using hand-held monitors, communicated locations to the command post outside and marked them with tape before performing gross decontamination.

The next team of entrants identified the closed spaces and opened them with dislodging equipment they brought in with them. They then used their monitoring devices to identify which ones were contaminated and performed decontamination.

A third team used plastic sheeting and tape to tent the supposedly decontaminated spots and used air-monitors to see if any agent remained. The team also monitored the growing bag of waste in the hot zone where all of the teams had placed contaminated items. Every entry was followed by medical monitoring of the entrants, duplicating standards practiced in actual incident responses.

“This training offered us something we don’t usually get - very specific instruction in chemical and biological agent response and recovery techniques taught by people who have done it all,” said Charlie Fitzsimmons, an EPA on-scene coordinator posted at Fort Meade, Md. “Theory can’t replace the ECBC instructors’ on-the-ground experience. They have tried and true methods we can adopt.” ➤



Above: EPA personnel are decontaminated after entering a simulated home chemical weapons laboratory.



Above: EPA personnel enter a simulated home chemical weapons laboratory.



Below: An EPA on-scene coordinator monitors the vital signs of a team member after a simulated chemical agent entry.



The Importance of Planning

The true value of ECBC's real-world experience is the organization's ability to address the unexpected – before it happens. The CBARR instructors stressed the importance of thorough planning, and how small details can have a major impact when overlooked during the response and recovery process.

“Inefficient planning can create big problems,” said O’Donnell. “For example, when closing demilitarization facilities around the country, we learned that we required many more work planners than originally forecasted. The work planners have the important task of identifying, planning, and detailing the work to be conducted by each entry team. If the plans are wrong, or we are simply not ready to support the entries, work is not accomplished. In the case of recovering a civilian asset, this problem can quickly turn a chemical or biological incident into an economic disaster if the asset, such as a subway, is delayed in being re-opened.”

Not having enough polyethylene drums to contain contaminated material or enough roll-offs to remove the waste, are examples of issues that can derail an otherwise properly executed team response. Another example is not providing advanced coordination with all of the jurisdictions that trucks carrying chem-bio waste will have to pass through between the site of the incident and the waste disposal facility. Neglecting to coordinate with local jurisdictions can create concern among local residents and officials.

Building a Bond Between Organizations

The partnership between the EPA and ECBC is an example of the work the Center has been doing with governmental and commercial clients around the world

for the past 17 years. The CBARR unit has supported the closure of four U.S. chemical stockpile sites, assessed and monitored chemical warfare agent storage sites on mountainsides in Albania, and searched the ocean floor for chemical munitions off the coast of Hawaii.

Most recently, CBARR gained worldwide attention as it was assigned by the U.S. government to destroy Syria's declared chemical weapons stockpile, which took place aboard a U.S. Maritime Administration cargo ship in international waters.

“Not every government agency with a responsibility for chemical and biological incidents knows that we can enhance their capabilities,” said Rob Malone, ECBC exercise planner. “We have started to foster a solid relationship with the EPA and are getting the word out to all the EPA regions and headquarters that ECBC has highly trained people and specialized equipment that they can draw on for training and chemical and biological response support whenever they need it.”

Abrams, a program analyst from EPA headquarters, is responsible for evaluating the readiness of each EPA region's on-scene coordinators. The personnel who participated in this training session were from EPA Region III in the Mid-Atlantic U.S., with one representative from the EPA's Region V, which covers the Great Lakes region.

“It's very helpful for the EPA and ECBC to get to know each other's capabilities,” Abrams said. 🍷

A Night at the 'Oscars' of Government Service

Tim Blades a finalist for 2015 Service to America Medal for National Security and International Affairs

It's considered the "Oscars" of government service for its rigorous selection process. Nearly 500 people were nominated, and only 30 people were named finalists for the Samuel J. Heyman Service to America Medal. Tim Blades, CBARR Director of Operations, was one of those finalists, and attended the awards gala that took place on Oct. 7 at the Andrew W. Mellon Auditorium in Washington, D.C.

"Having the opportunity represent the CBARR team that destroyed Syria's chemical agent was a great honor," Blades said. "Being among the finalists for the Service to America Medal validates what I've said of our team all along — they're among the best of the best."

The high-profile event, also known as the Sammys, recognized winners in several categories, including Federal Employee of the Year, Career Achievement, Call to Service, Citizen Services, Homeland Security and Law Enforcement, Management Excellence, Science and Environment, and National Security and International Affairs. This year, the program also included an inaugural People's Choice Award, where voters gave their top picks for winners using a special Facebook Poll.

Blades was nominated alongside Paul S. Gilmour of the U.S. Maritime Administration for the National Security and International Affairs category. Together, they led an interagency team that included the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) and the U.S. Army Chemical Materials Activity (CMA) to destroy Syria's declared chemical agent stockpile at sea—the first in the history of chemical demilitarization.

"It's a tremendous honor to be recognized," Blades said. "This nomination is a reflection of the hard work and dedication our ECBC/JPEO-CBD/CMA team demonstrated on a mission that had never been done before. Our collaborative leadership, interagency partnership and technical expertise were all things that contributed to the safety of our crew and the successful completion of an extremely complicated and dangerous mission."

The 2015 Selection Committee was comprised of diverse group of leaders representing government, business, entertainment and media, and the non-profit communities. They carefully reviewed and selected award winners based on how well the nominees fostered innovation and demonstrated leadership in their pursuit to make meaningful impacts in their respective public service field.

The winner of the 2015 Service to America Medal for National Security and International Affairs was Mia Beers, director of the Humanitarian Policy and Global Engagement Division, U.S. Agency for International Development, and the U.S. Ebola Disaster Assistance Response Team. As Ebola raged through West Africa in 2014—killing thousands of people and devastating communities—Beers led a 40-person team and coordinated thousands of U.S. personnel from five federal agencies serving in Guinea, Liberia, Mali and Sierra Leone in response to this global crisis. 🍌





Knowledge Management Fosters Continuity for PCAPP EDS Deployments

After Action Reviews and Pre-Deployment Meetings Provide Forum for Internal Improvements



Project managers have the challenging job of multi-tasking responsibilities that, more often than not, come with their own timelines and checklists of things to do. From tracking real-time changes in mission operations and completing safety inspections to accounting for training certifications and scheduling, everything must be documented and organized to keep internal process running smoothly.

CBARR's project managers (PMs) for the mission to destroy stockpile munitions at the U.S. Army Pueblo Chemical Depot (PCD) in Colorado are responsible for a diverse crew operating the U.S. Army Chemical Material Activity's Explosive Destruction System (EDS). Regular crew rotations are needed due to the length of the project and the requirement for different skill sets at various points in the project timeline. To adapt to changes along the way, the PMs have incorporated several best practices of knowledge management to ensure the right information is reaching the right people at the right time.

"One of the difficulties is our rotations are very dynamic," said Dennis Bolt, CBARR PM. "There are always new personnel coming aboard that need the required training certifications, and most times, they are coming from other chemical demilitarization sites around the country."

CBARR has sent 12 rotations of deployed personnel to the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) and completed 86 EDS operations that have destroyed a total of 407 munitions as of Nov. 2, 2015. According to Bolt, each rotation includes an average of 21 people, including operators, crew chiefs, laboratory and monitoring personnel, project managers, and site safety and environmental personnel. Each team member must complete required and specialty training, which can include 38 different classes that need to be updated as frequent as every three weeks. Acquiring these certifications prior to deployment is a critical component that ensures the safety and surety of each EDS operation that occurs onsite.

Since the start of PCAPP EDS operations last March, ECBC has been conducting After Action Reviews (AARs) with CMA's Recovered Chemical Materiel Directorate. The goal of these meetings is to capture lessons learned from a crew that has recently returned from

Pueblo, record the current and/or on-going challenges, and document the recommended solutions. AARs also track things that are going well throughout the mission in order to continue to execute on these practices. These insights are then distilled by the PMs into the next rotation's pre-deployment briefings prior to their departure.

"The pre-deployment briefings get everyone in the right mindset for the mission and what they can expect for the next 25 days at PCAPP," said Satchell Doyle, CBARR PM and training coordinator. "There's a lot that can change between each rotation and this is a forum where the technicians and operators can ask questions about the changes, as well as make recommendations to improve internal operations."

Creating an environment that promotes bottom-up insights as much as it does top-down oversight is what makes CBARR's culture one of collaboration effective. As one team is leaving, another team is gearing up to arrive, and being deliberate about when and how communication occurs demonstrates how powerful knowledge can be when shared. According to Doyle, the pre-deployment briefings have not only been beneficial to him as a PM but also for the CBARR crew chiefs responsible for enforcing safety procedures that benefit the technicians and operators handling dangerous material.

As of Nov. 2, 2015, there were 153 items left to be destroyed at the PCAPP EDS site. Operations are currently under way to destroy 155mm munitions, which are larger in size, heavier in weight and contain more mustard agent than previously destroyed items.

"Every time we start a new destruction campaign, whether it is the Department of Transportation bottles, the 105mm munitions or the 155mm items, there's going to be a learning curve," Bolt said. "We're on the front end of that learning curve right now with the 155mm projectiles, so we'll have a slow ramp up of destroying three or four munitions in one shot, to the maximum yield of six munitions."

The PCAPP EDS site recently passed a Department of the Army Inspector General inspection and an environmental safety inspection, as well as a Surety Management Review that ensures all safety and surety regulations are compliant, and standard operating procedures are executed properly. 🍌



Below: The 31st CST's Analytical Laboratory System can identify chemical warfare agents on-scene.

Interagency Collaboration Boosts Mobile Analytical Capability for Delaware Civil Support Team

Large-scale events require high levels of security across multiple agencies, each with a heightened sense of vigilance and responsibility. In order to bolster its mobile analytical capabilities, the 31st Civil Support Team (CST) in Delaware has partnered with ECBC's Environmental Monitoring Laboratory (EML) in an intensive work-study program designed to advance the CST's technical depth of expertise across a variety of platforms.

CSTs are a National Guard resource that provide local and state authorities with the skills and expertise to prevent and/or respond to weapons of mass destruction events that are chemical, biological or nuclear related. Captain Robert "Dale" Annis is the science officer for the 31st CST, and is responsible for the Analytical Laboratory System—a six-wheeled truck that contains a full suite of analytical equipment needed to accurately identify agents and hazardous substances. It is his job to quickly assess the sample in question, and determine the current or projected consequences in relation to the situation in which it was collected.

"While on scene, my first concern is whether I can I clearly determine if the sample is WMD-related or if it requires deeper analysis. If it does, I need to know which government agency to send it to for further research," said Annis, who has been on the Delaware CST for more than 10 years. Since January, he has participated in a work study program with ECBC's EML, the first lab in the United States to meet requirements set forth by the Department of Defense Environmental Laboratory Accreditation Program for testing chemical warfare material.

"I've worked with at least five different analysts in the lab learning new test methods with the depot area air monitoring systems, developing agent standards, and using advanced software on the equipment. It's been an incredibly valuable experience," Annis said.

The hands-on experiential learning with ECBC experts has helped Annis enhance the qualitative services of the Analytical Laboratory System. By learning the quantitative methods utilized by the EML, Annis has greatly increased his ability to recognize the spectra produced by traditional chemical warfare agents thus increasing his ability to rapidly identify those agents. Boosting this capability is an advantage for the CST, which is often deployed for occasions that draw large crowds of people, the Presidential inauguration, professional sporting events, the Papal visit, or music concerts, where rapid answers are critical to civilian emergency managers.

Now, when Annis is on the scene and the mobile laboratory equipment is analyzing unknown samples, he can identify potential chemical warfare agents more quickly and more accurately, based on spectra he is now looking for. In addition to saving time, this also saves money. Instead of forwarding the sample for further analysis to a fixed laboratory, the CST can conduct more advanced sample analysis right at the given location. The CST unit is a critical decision point in the rapid response process, and as a result of more targeted extraction methods, can better advise response measures and determine the appropriate level of support needed depending on the scope of the sample.

"The knowledge that I've gained and the network that I've built has been a huge benefit of my experience," said Annis. "This kind of interagency partnership reminds me that we're all on the same team and in the end, it's all our home that we're trying to protect." 

The Most Important Piece of Equipment

The CST's Analytical Laboratory System includes a broad range of equipment and capabilities, such as gas chromatography—mass spectrometry, Fourier transform infrared spectroscopy, polymerase chain reaction, electrochemiluminescence antibody testing for toxins, and pathogens.

The first time Annis visited ECBC was in 2006, when his team took part in ECBC's Advanced CBRNE Training Program, led by ECBC biologist Carrie Poore, Ph.D. The program pairs external organizations with ECBC's subject matter experts in a unique relationship that allows the scientists and engineers to share their knowledge, experience and talents through classroom learning, as well as hands-on exercises in a private neighborhood setting with actual chemical and biological production equipment and clandestine labs. ECBC has customized training objectives based on the CST unit's needs, and it was Poore who ultimately facilitated the EML work study partnership.

"Not only am I relying on ECBC's expertise while I'm there training, but also when I'm on site somewhere and have a question," Annis said. "Out of all the equipment in the back of this truck, the most powerful piece I have is the telephone that's hanging on the wall. I'll call up ECBC and say, 'This is what I'm seeing, and this is what I'm thinking. Does this make sense?' That kind of reach back is absolutely critical."

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Capt. Robery 'Dale' Annis
31st Civil Support Team

Rapid Response Roles and Responsibilities

The CST is on standby 24/7, ready to respond to a WMD chemical, biological or nuclear event. The unit is composed of 22 people, including seven officers and 15 enlisted personnel from the Army and Air National Guard. Personnel are divided into five functional groups:

- Command leadership
- Communications
- Surveyors (Sample Collection)
- Medical
- Logistics

The CST has a number of vehicles that can be deployed up to 250 miles and within three hours, as well as a smaller crew that can deploy within 90 minutes of notification. Vehicles include:

- Command vehicle
- Operations van
- Communications vehicle (Unified Command Suite with satellite communications)
- Analytical Laboratory System
- Medical Recovery Vehicle (supports medical team)
- Other general purpose vehicles 🚚



ECBC Earns Army's Highest Safety Award

Safety is the cornerstone of sustainability, whether it is conducting experiments in the laboratory or chemical demilitarization operations in the field. On Sept. 10, ECBC was recognized by the Department of the Army for its commitment to a culture of safety, as best demonstrated by destroying more than 600 tons of Syria's declared chemical weapons stockpile at sea in 2014.

The highly complex mission was successfully completed 20 days ahead of schedule and without any reportable accidents or releases to the environment. In a ceremony held at Aberdeen Proving Ground, the Director of Army Safety Brig. Gen. Jeffrey Farnsworth presented the 2015 Director of the Army Safety Risk Management Award to ECBC Director Joseph Corriveau, Ph.D. It was the first time any organization at APG has received this award, which is considered the Army's highest safety and risk management honors.

"It takes proactive management, and the ability to collaborate and innovate, to complete a highly complicated, never-been-done-before mission such as this," said Farnsworth. "It is a tremendous achievement and a credit to the professionalism and expertise of ECBC."

Each year, the Army selects a unit or individual for the award in recognition of a significant contribution to Army readiness through risk management. ECBC was recognized for maintaining a perfect safety record while installing its land-based Field Deployable Hydrolysis System inside the limited hold of a cargo ship, and then successfully destroying the chemical agent at sea in just 42 days of operation.

Risk management is defined as the Army's principle decision-making process used to identify and assess hazards, determine and control risks, and ultimately prevent both accidental and tactical losses.

ECBC drew on its history of implementing and adhering to toxic chemical agent safety standards set by the Department of the Army, as well as regulations set forth by the Occupational Safety and Health Administration, to ensure the safety of all those working on the mission. As a result, ECBC alleviated the international community of a serious long-standing chemical weapons threat, and contributed to making the world a safer place.

"Safety is integrated into all of our programs at multiple levels," said George Collins, ECBC safety director. "Creating and maintaining a culture of safety is a collaborative effort across the Center. It's the common denominator in everything we do."

ECBC has an extensive risk management and chemical and biological surety program. All personnel working with chemical and biological agents receive regular safety and health training, while those with direct access to such material are certified in a Personnel Reliability Program (PRP). The PRP includes extensive background checks, random drug testing, intensive security and safety training, and regular medical surveillance.

ECBC's dedication to safety didn't stop once the mission was over, however. Post-operation, CBARR environmental monitoring experts conducted final sample collection and analysis to confirm the MV Cape Ray had been properly decontaminated and certified free of mustard agent to the general population limit. This was the last step before DoD could provide certification to the U.S. Maritime Administration so the Cape Ray could be returned to Reduced Operating Status. 🇺🇸

ECBC Colleagues Embrace Culture of Collaboration

There's no question that chemical and biological threats will continue to evolve and grow more complex. As they do, it will require a new way of working among scientists, engineers and field operators – one that tackles common challenges with multiple layers of technical expertise and a broad range of diverse perspectives.

ECBC is seeking to build an infrastructure that can support a new network of information sharing where employees can freely share ideas and collaboration is commonplace. Fostering an environment that empowers employees to pursue high-risk, high-reward ideas – whether it is through small, gradual evolutionary developments, or radical revolutionary breakthroughs – are foundational to an innovative culture that sustains the future growth and health of ECBC.

“A big part of innovation is having the structure on the front end to be able to make the changes you're looking for, and allowing employees to ideate with substance,” said Deb Menking, project manager for CBARR.

Menking sits on one the Innovation Goal team that is a part of ECBC's strategic planning initiatives. Representatives across each of the Center's three directorates: Research and Technology (R&T), Engineering, and Program Integration, have a seat at the table to ensure the various perspectives are accounted for since each come in at different points in the acquisition lifecycle.

“We are a service center,” Menking said. “We recognize there is a need to break down barriers that exist by pulling together the personnel and resources to begin exploring what the future of chemical and biological defense could look like at ECBC.”

According to Menking, one of the ways ECBC is looking to achieve a supportive organizational infrastructure is by creating a network of knowledge sharing tools, programs, resources

and events designed to help employees turn their best ideas into real, meaningful opportunities for advanced maturity and development with external partners.

The annual Coffee with Colleagues event is an example of how ECBC is encouraging collaboration across traditional capability stovepipes. This year the event is open to all ECBC employees, regardless of directorate alignment, whereas in past years the event was mainly open to R&T colleagues. The decision to be inclusive was an easy one, Menking said, but it was not without its growing pains.

“As with anything in innovation, growth is a critical part of the learning process. For the first time in the history of the event, the planning committee decided to introduce Engineering and Program Integration into the mix in order to show the full breadth of the acquisition lifecycle. But that also meant we had to create a new poster category called “Design and Operations” to house the Engineering and DPI posters, as well as, adjust the presentation format, particularly the templates used in the poster session.”

Because CBARR is at the end of the acquisition lifecycle, the poster templates used for standard science research didn't accurately capture the capabilities found in field operations. Menking redesigned the framework to add three additional categories that best illustrated CBARR's diverse capabilities: Process-Driven, Quality-Driven, and Design, Develop, Deploy.

CBARR has 13 posters it will be sharing at the center-wide Coffee with Colleagues event slated for Dec. 9. More than 150 ECBC employees are expected to exhibit posters at the event. Menking worked with project managers and subject matter experts to turn published technical reports and current projects into compelling visual posters that can be presented to their fellow ECBC employees. 📌

Example Projects

Process-Driven: “Hazardous Waste Removal Operations Conducted in Support of the BZ Agent/Munitions Disposal Facility Remediation Project”

In partnership with the URS Corporation, ECBC identified, removed and disposed of hazardous materials from a former BZ Agent/Munitions Disposal Facility located at Pine Bluff Arsenal in Arkansas. ECBC first had to remove the hazardous material and waste, conduct sample collection, characterization and analysis, and render the equipment and areas clear of hazards to the appropriate levels before packing and shipping materials according to regulatory requirements to a disposal facility. This process enabled the safe demolition of the facility.

Quality-Driven: “An ECBC Experience – Achieving the DoD Environmental Laboratory Accreditation Program for Chemical Warfare Agents”

CBARR's Environmental Monitoring Laboratory recently became the first laboratory in the United States to meet requirements set forth by the Department of Defense Environmental Laboratory Accreditation Program (ELAP) for testing chemical warfare material. Since receiving the accreditation, the DoD ELAP Program provides EML with the appropriate requirements for chemical agents and degradation products.

Design, Develop and Deploy: “Destroying Syria's Chemical Stockpile Aboard the MV Cape Ray: FDHS Design and Deployment”

The Field Deployable Hydrolysis System (FDHS) was a fast-track acquisition project that began in February 2013. By late 2013, with no nation willing to permit Syrian chemical agents to be destroyed on its soil, the team quickly adapted and installed two FDHS units aboard the 648-foot U.S. Maritime Administration Ready Reserve ship, the MV Cape Ray.

Science-Driven: “Rapid Collection-Detection-Decontamination Kit for Biological Agent Hazard Mitigation in Aircraft Interiors”

Aircraft decontamination is a complex, challenging process in the aftermath of a biological attack. Returning assets to an active status requires the decontaminants used are effective, yet nondestructive to aircraft interior surfaces, sensitive equipment and electronics. The kit was designed to decontaminate spore-forming bacteria in suspected areas on an aircraft, and testing was conducted at ECBC facilities. CBARR test beds and biological decontamination methods and barcoded spore technology were used in multiple experiments aboard a pair of ECBC-owned C-130 aircrafts.



What's the Word? Contact Us!

Have a story for the CBARR News? Send article suggestions, questions or comments to the ECBC Public Affairs Officer Richard Arndt at richard.m.arndt.civ@mail.mil.

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