

THE ENGINEERING EDGE

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ARL Greening Course Gives Civilians a Taste of Army Life

As an Army civilian, have you ever wondered what it's like to be a Soldier? Thirty-two civilians from ECBC and Army Research Laboratory (ARL) recently got a taste of Army life during ARL's semi-annual greening course.

Five ECBC Engineering employees participated in the course: Alena Bortkiewicz, Raymond Blucher, Samuel Leppert, Joseph Maheady and Amanda Mihok.

Under the leadership of ARL senior enlisted advisor SGM Kevin Connor, the course was designed to give civilian employees insight and experience in the activities, duties and responsibilities of an Army Soldier. The week-long course included lessons on physical fitness training, basic Army knowledge, marksmanship, assembling and disassembling military weapons, weapons training, vehicles and test-driving, obstacle courses and team building. Participants even got to fly in a Black Hawk helicopter and learn about aviation operations and maintenance through the Maryland National Guard. The course concluded with a graduation ceremony.

Maheady liked the helicopter ride the best, and found sighting a rifle to be the most challenging. "It takes skill to coordinate your body with the rifle to hit the target. I can't imagine how much harder it is when the target is firing back and moving," he said. "The constant physical toll that wearing body armor takes on you took me by surprise. Thirty pounds doesn't seem like a lot, but it will creep up on you real fast!"

Mihok said getting to know the Army instructors was an amazing experience. "It really put into perspective how important our jobs can be and what we do to help these people who are fighting for us. Experiencing some of the things they have to go through was awesome. It was fun, but I learned so much at the same time."



The ARL greening course gives civilians unique insight into the training experience for Army Soldiers. Credit: ARL Public Affairs

Ask a Tech Tip: Mosquitoes—How to Stop Them from Bugging

Mike Kauzlarich, of the Pyrotechnics and Explosives Branch, reveals how the techniques and lessons learned in labs can help solve your household problems. Submit a question to him at usarmy.APG.ecbc.mbx.engineering-directorate@mail.mil.

With warm weather and more time outdoors comes the battle with pesky mosquitos. Many people wonder what modern science has done to help control them—and the short answer is, not that much! But the science and chemistry of controlling mosquitos has become more important due to the increase in mosquito-borne diseases.



In previous Tech Tips, we discussed the use of products containing diethyltoluamide (DEET) on your skin, so today we will focus on actions you can take around your home. An integrated approach works best. First, eliminate standing water. If you have standing water, they will come! It only takes an inch of standing water for mosquitos to breed. Next, if you have a pool or ponds that you cannot drain, try Mosquito Dunks, which are sold at hardware stores. Mosquito Dunks are cakes that float in water and release dead spores of bacillus thuringiensis (BT) that interfere with the digestive systems of mosquito larvae. If you have a big mosquito problem, try one of the propane burning attractants. They put off carbon dioxide that attract the adults into a trap. They are expensive, but they work.

Using these tips will allow you to enjoy your backyard this summer—mosquito-free!

LEADERSHIP

Kevin Lee and Hung Pham Take On New Roles

Kevin Lee and Hung Pham have recently taken on new leadership roles in the Engineering Directorate. They explain their new positions, top priorities and immediate challenges.

Kevin Lee, Associate Director, Engineering



What is your new position?

I was named an Associate Director of ECBC's Engineering Directorate upon Nan Ramsey's

retirement. My primary responsibility is to manage the missions performed at ECBC's Rock Island site. We help the TACOM Life Cycle Management Command and the Defense Logistics Agency (DLA) procure and sustain the chem-bio items needed for our military. We also support the Joint Program

Executive Office for Chemical and Biological Defense (JPEO-CBD) on their commodity programs, as well as software development for web-based applications. Our staff monitor and investigate the status of the industrial base for military products in support of the JPEO-CBD, Army Materiel Command (AMC) and DoD. It's my job to develop and nurture the best possible work environment so that all these activities can be done as effectively and efficiently as possible.

What are your top priorities?

First, supporting the Engineering and Center-wide strategic initiatives, which will help us identify our strengths and the areas where we can make improvements to better position us for the future. Also, continuing a high level of customer satisfaction by understanding our customers' needs, being adaptive to changes, and meeting or exceeding their expectations, even with

resource constraints. At Rock Island, we use ISO 9001-2008 to help us understand our customer requirements and measure customer satisfaction.

What are the most immediate challenges, and how do you plan to address them?

Our workforce includes many people who can retire now or very soon. I hope to help impart as much of their knowledge to the remaining personnel before they retire so we can build the next generation of leaders. We will use the integrated product team approach, where less experienced people sit in meetings with seasoned peers and learn how they have solved similar issues in the past. I am currently working on growing personnel to put in position to replace three senior leaders at ECBC Rock Island who are retirement-eligible.

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Microsoft Office 2013 Tips and Tricks: Word 2013

For the next few months, we will teach you some tips and tricks for navigating Microsoft Office 2013!

Here are some of the more common tools and commands for Microsoft Word 2013:

Microsoft

For more tips and tricks, download the Microsoft Office Quick Start Guides at <https://support.office.com/en-in/article/Office-2013-Quick-Start-Guides-4a8aa04a-f7f3-4a4d-823c-3dbc4b8672a1>.



TEST

Getting Smarter: ECBC Plans New Capabilities for SMARTMAN Mask Testing

The Simulant Agent Resistant Test Manikin (SMARTMAN) is already capable of mimicking human breathing—now ECBC scientists and engineers are planning upgrades to the system that will match the test environment to real life more closely than ever.

SMARTMAN is an anatomically correct head form used to test military and first-responder respiratory masks, such as M40s, self-contained breathing apparatus and escape masks, for permeation by live chemical agent vapors or liquids. Developed in 1999, SMARTMAN is a hollow shell made of cast zinc, with eyes, nose, ears, mouth and chin. It has an artificial esophagus and “breathes” through its mouth. The respirator being tested gets attached to the manikin, just like it would to a human head. The head form includes an inflatable rubber seal that fits around the manikin’s face. The seal is inflated to ensure the mask fits tightly on the face without leaking.

The manikin’s face is connected in several places by tubes to outside sampling ports that operate the system and collect data: one tube from the mouth to the breather pump; one tube from the center of the left eye that monitors the eye area of the mask; one

tube from the forehead above the bridge of the nose to monitor pressure; and two tubes connected to the mouth and nose area, one to monitor pressure and the other to monitor presence of chemical agent. Enclosed in an air-tight exposure chamber, the SMARTMAN is attached to instrumentation that confirms the proper face seal and integrity of the respirator and whether any agent has penetrated the mask.

“SMARTMAN enables our laboratory to provide a dynamic and realistic test scenario to challenge a variety of respiratory products against live agent, such as sarin or mustard,” said Mark Ciampaglio, chief of the ECBC Protective Equipment Test Branch team that operates the SMARTMAN. “Only the U.S. Army has this kind of capability today.”

The capability has long been used to test military masks, but since September 11, ECBC has been working with the National Institute for Occupational Safety and Health (NIOSH), to test respirators used by firefighters and other first responders.

By working closely with NIOSH and other customers, the ECBC team is currently developing the next-generation SMARTMAN. Right now, the manikin is controlled manually. The next-generation SMARTMAN will be automated, using technology and software such as LabView and Opto22 to not only collect data, but operate the system. “In real life, agent concentration can change over time; so can a person’s breathing rate,” explained John Knopp, an engineering technician who has been working with SMARTMAN since its inception. “Rather than using constant breathing rates, the automation will more closely match the test to the real-life mission of a Soldier or first responder.”

The new capability will be phased in incrementally. The first upgrades include improving the control of temperature, humidity, and challenge concentration stability within the system. An advanced breathing simulator will soon follow. Additional upgrades will be made incrementally based on funding availability.

The goal is to increase the flexibility of the system in order to provide better solutions to the customer. “We pride ourselves on our ability to adapt to a wide range of customer and test requirements,” said Ciampaglio. “This flexibility, combined with reach-

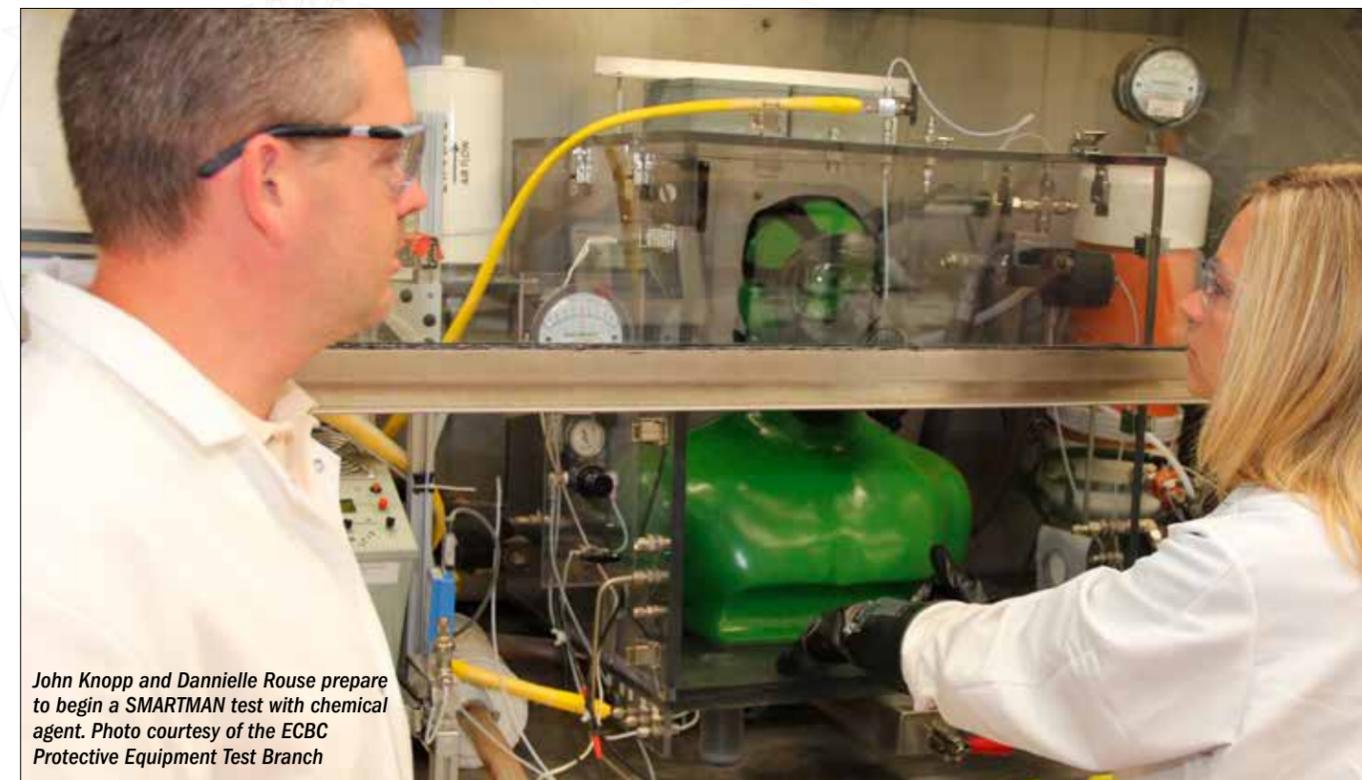
back support at ECBC that includes almost 100 years of experience with respirator design, development, and testing, are advantages we offer to all of our customers.”

Another significant advantage of working with ECBC is accessibility to the SMARTMAN test facility. Customers are welcome to tour the facility and observe their tests, so they can make adjustments and provide feedback while the tests are in progress.

The feedback from customers is exactly what influences advancements to the test process. “We have always been inspired to automate the SMARTMAN system, but now we’re seeing it as a necessity for our customers,” said Knopp. “Technology has caught up with our inspiration, and we’re ready to use that technology and our experience to create the next-generation system.”



Dannielle Rouse mounts a mask to a clean manikin to perform a qualitative leak check of the mask. Photo courtesy of the ECBC Protective Equipment Test Branch



John Knopp and Dannielle Rouse prepare to begin a SMARTMAN test with chemical agent. Photo courtesy of the ECBC Protective Equipment Test Branch

STRATEGY IN FOCUS

Engineering Directorate Reorganizes to Adapt to Customer Needs

Engineering Director Mike Abaie held a Directorate town hall on June 16 to discuss organizational changes that will position the workforce to become more adaptive, collaborative and innovative. Those changes included a new Associate Director position, a realignment of a few existing Divisions, and a commitment to using the Balanced Scorecard as a tool to measure operational progress.

“It took me a while to get familiar with the organization, so thank you for welcoming me with open arms,” said Abaie, who was named Director of Engineering in December. He has spent the last six months learning

about the Center, understanding the Directorate’s capabilities, and thinking about the incremental improvements necessary to maintain a cutting-edge engineering expertise in the chemical and biological defense arena.

“I wanted to get a feel for the organization and understand how we align to the rest of ECBC, RDECOM and our customers. At the end of the day, I want us to have a broader, more robust customer base that we can offer a diverse portfolio of capabilities,” Abaie said.

To achieve that goal, the Engineering Directorate added a new Associate Director position. Mark Schlein is now Associate Director for Material Management, overseeing the Directorate’s work in acquisition, logistics and rapid prototyping. “The Army is looking to rapid prototyping

to reduce risk and get items to the field faster,” said Abaie, “and our advanced design and manufacturing capability is a major strength that has gotten visibility for the Center.” Under Schlein, the former Advanced Design and Manufacturing Division has split into two new divisions—the Production Realization Division that will be headed by Lester Strauch, and the Systems Engineering and Acquisition Division that will be run by Kevin Wallace. The Acquisition Logistics Division, led by Chief Mike McKenna, also falls under Schlein’s purview.

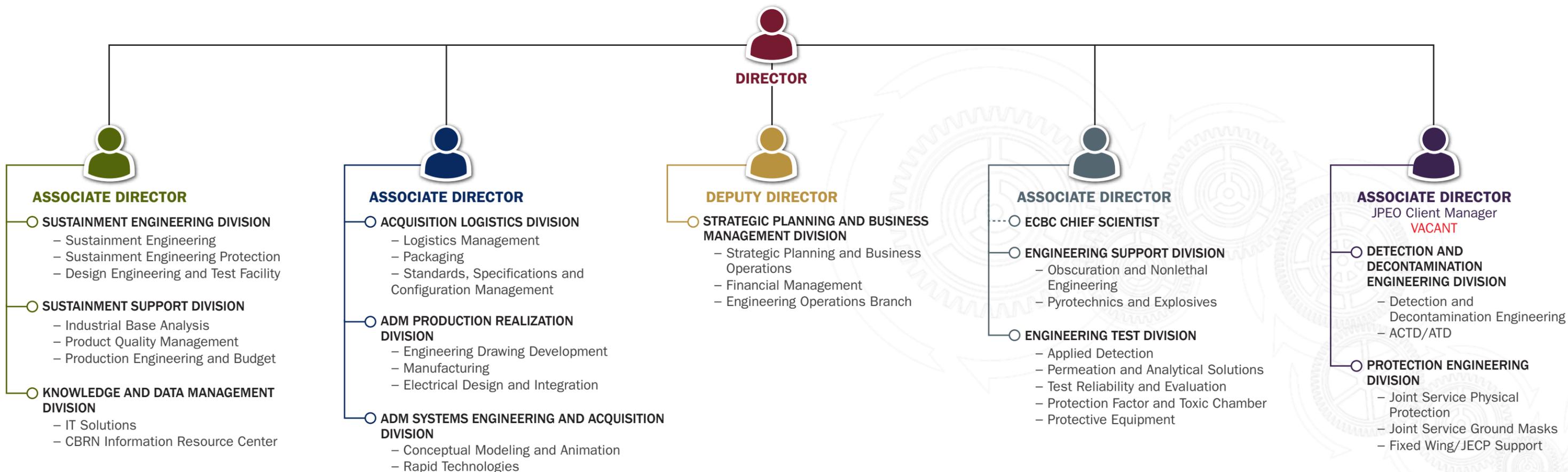
The Associate Director position for the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) Client Manager is currently vacant, with plans to fill the job within the next six to nine months before finally selecting a permanent Associate Director.

The Detection and Decontamination Engineering Division led by Humberto Galarraga, and the Protection Engineering Division led by Jorge Christian, fall under this Associate Director.

Due to increased competition across the DoD, the Environmental and Field Test Branch has been dissolved, and the capabilities, facilities, and workforce have been absorbed by other branches in the Engineering Test Division.

Abaie reinforced the usability of Balanced Scorecard as the foundation for the Directorate’s overall strategy, and plans to meet with each Joint Project Manager on their 30-year outlook, needs, and support requirements.

All organizational changes took effect July 1.



AWARD

Engineering Directorate Honors

Congratulations to the following members of the Engineering workforce who were honored at the Directorate Town Hall on June 16:

5 Years of Service

- Ryan Adams
- Daniel N. Beasley
- Sally S. Biberos
- Nicole L. Brown
- Jason D. Gitlin
- Jonathan W. Grzeika
- Lee M. Haviland
- A'lexious O. Hayes
- Thomas M. Hughes
- Stephen F. Iannelli
- David B. Love
- Nicholas J. Merrill
- Steven E. Miller
- William J. Spangler Jr.
- Heather L. Trisch
- Jeremy Urban
- Juanita Villaneueva
- Christopher A. Waltrip
- Douglas E. Wilke

10 Years of Service

- Gregory A. Carter
- Anne R. Hise
- Christine D. Hoppe

- Robert M. Mays
- Valerie R. McCarty
- Chad Bennett McKee
- John A. Sparks
- Floyd E. Taliaferro IV
- Dana L. Trzeciak

15 Years of Service

- Nicole K. Fletcher

20 Years of Service

- Donnie J. Green

25 Years of Service

- Mary Beth Busch
- Margaret R. Freeman
- Romel J. Gallamozza
- James G. Gilley III
- Roger L. Griffin III
- Sheri D. Jeric
- Scott C. Lubag
- Linnette Martinez
- Michael J. McKenna
- Thoai N. Gguyen
- Timothy Pedrick
- Queen E. Wimberly

30 Years of Service

- Sharon M. Angelucci
- Kathleen M. Guthrie
- Shirlene M. Jackson
- Lisa A. Silks
- Henry J. St. Pierre

35 Years of Service

- Michael F. Kauzlarich

40 Years of Service

- Susan J. Norris

SES Notes

- Kevin Fritz: Assistance with SHARP Education
- Kevin Washok: Assistance with SHARP Education

Letter from Federal Reserve of Dallas

- Donald Kilduff
- John Clayton
- David Love



Mary Beth Busch receives 25 year service award from Mike Abaie. Credit: ECBC Public Affairs



David Love receives five year service award from Mike Abaie. Credit: ECBC Public Affairs

Certificates of Appreciation

- Michael J. Allerton
- David B. Alter
- Thu-An Kecskes

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LEADERSHIP

Kevin Lee and Hung Pham Take On New Roles

Hung Pham, Chief, Sustainment Support Division



Tell us about your new role.

As Chief of Sustainment Support Division, my role is to provide industrial base and product quality management support to a diverse group of customers, including DoD, AMC, DLA, JPEO-CBD and TACOM Life Cycle Management Command. My Division also supports the Rock Island site in the areas of safety, facilities planning, and personnel management. I

continue to serve as the ISO Management Representative, responsible for maintaining the quality management system that covers all missions at our site.

What are your top priorities?

Supporting our customers is always my highest priority. The Division has been very successful in expanding services to current and new

customers, and we want that to continue. Also, building a workforce with the appropriate skills and abilities to meet our strategic requirements and maintain our level of performance. Finally, ensuring a safe and efficient operational environment at Rock Island is a daily focus.

What are the most immediate challenges, and how do you plan to address them?

Adjusting to the changes in leadership at Rock Island, including my own position, is my most immediate challenge. Good communication and feedback is of utmost importance. I like to maintain communication with every person in my Division, including contractors; team meetings and daily interactions across the Division will help keep everyone informed. Also, we are replacing the heating and cooling systems in all of our office areas this summer. Our goal is to minimize disruptions to our normal business, while ensuring the safety and comfort of our employees.