

THE ENGINEERING EDGE



ECBC ENGINEERING
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EDGEWOOD CHEMICAL BIOLOGICAL CENTER

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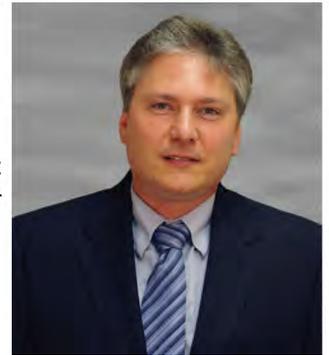
Leadership Interview Series: *Chris Ritchey, PDMB Branch Chief*

In this month's Engineering Edge Leadership Interview Series, we talked to Chris Ritchey, Branch Chief for the Product Data Management Branch, about his role and got him to share his thoughts on leadership

Engineering Edge: What has been your work history with ECBC and the Engineering Directorate?

Chris Ritchey: I have been the Product Data Management Branch Chief since August 2001. I originally came here through the Army Material Command (AMC), Texas' Red River intern program. I went to Texas A&M

and earned a master's degree in industrial engineering. I started an internship working at the Technical Data Division where I worked with draftsmen, taking drawings and putting them in the computer. Eventually, I decided that it was time to move on from this position, and I started helping with systems administration work. I learned how to become a systems administrator, and then **(Continued on page 5)**



Team Spotlight Series: *Rapid Technologies and Inspection Branch*

In this month's Engineering Edge Team Spotlight, we talked to Rick Moore, Branch Chief for Rapid Technologies and Inspection Branch, about his team and got him to share his thoughts on the Branch.

Engineering Edge: What are the overriding goals of your team?

Rick Moore: In a nutshell, the capabilities we provide include rapid prototyping, reverse engineering and parts inspection. Rapid prototyping, or 3D printing, is a means for us to output three dimensional files into actual physical parts. This is basically done as proof-of-concept testing for engineers. If the

engineers model something they can print it out to test the item's form, fit and function.

Reverse engineering is done through 3D non-contact laser scanning. During this process we use laser scanners to capture the geometry of physical parts and bring them into a virtual environment. This allows us to replicate an item or further enhance the item in this virtual environment.

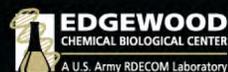
We also have the capability to do touch probe reverse modeling. This type of reverse modeling allows you to use a seven access portable Coordinate Measuring Machine (CMM) to reverse model parts directly in a Computer Aided Design (CAD) environment. Our part inspection capability is used for quality assurance or quality control. **(Continued on page 2)**

Teresa Dorman Wins BFEB Outstanding Woman of the Year, Individual Award

Engineering Edge: Can you give us some background on the award?

Ed Bowen: The Baltimore Federal Executive Board presents awards to outstanding individuals and teams. This year, I decided to nominate Teresa Dorman for the Outstanding Woman of the Year, Individual award because of her amazing work as the Federal Career Intern Program (FCIP) coordinator for the Engineering Directorate. Randy Laye and Nick Yura wrote supporting letters for Teresa's nomination package.

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Team Spotlight

(Continued from page 1)

Part inspection is a means of verifying that parts from the machine shop have been built to drawing specifications and standards.

We also do model making services and silicone molding eurothane casting. Brad Ruprecht currently is doing composite layups of carbon fiber parts for Unmanned Aerial Vehicles (UAV).

EE: What are some current highlights of your team/projects?

RM: As far as cool projects go, we're working on the UAVs. Our Branch is building a whole line of scaled models for the Joint Program Manager (JPM). We're building five scaled models at 1/12 scale. We're also working on the Fox Striker M-56, which is a smoke generator; the M58, which is a smoke generating track vehicle; and the Joint Urgent Operational Needs Statement System (JUONS). JUONS is a Quadruple Container (QUADCON) box made to store a number of supplies. It's like a mini storage shed for things that get shipped overseas.

EE: What would you say your Branch's largest accomplishments have been over the years?

RM: One of our biggest accomplishments, in a broad sense, is the fact that we're the most comprehensive additive manufacturing center within the DoD. In a more specific sense, we have worked on projects with Rapid Equipping Force (REF) in 2006. We were reverse engineering an Improvised Explosive Devices (IED) for reports and actually building physical inert training aids for soldiers. Reengineering IEDs and rebuilding them allows soldiers to use the models as a visual training aid they can physically hold. During this time we were able to create 30 different IED configurations in about four weeks. These configurations were immediately shipped to Kuwait. This project has had the biggest impact on our Branch because of the fact that the configurations were a direct part of the Overseas Contingency Operation. Through our work we were able to play a part in helping to prevent soldiers from getting injured or killed.

EE: What is a typical day for a team member?

RM: Most of our rapid prototyping machines are unmanned so we run builds overnight. The first thing one of my guys would do in the morning is attend to the parts built the night before by unloading them out of the machine and performing post-processing and cleaning the parts in order to deliver them to the customer. The rest of the engineers in ADM input part requests through our Project Financial Manager (PFM) and that's how they order parts. So from there we move ahead in our work based on the PFM requests we receive.

We're like an on-call group. Every day is different, and we work on new things every day. Our Branch never actually knows what we're going to end up working on until the day arrives and the requests come in.

EE: What do you consider to be the most challenging aspects of working on your team? What have you done to overcome those challenges?

RM: The most challenging aspect has to do with the fact that we're never doing the same thing every day. Everyone on the team is cross-trained on nine machines and reverse engineering equipment. All of the guys know how to run each machine, and I actually have more machines than I have staff. The challenging part is keeping up with the request loads and deadlines while also being proficient at all of these technologies. Sometimes it entails working extra hours to wait until a machine is done with a part. And it also means coming in on scheduled days off. The guys are more than willing to do it because they know it needs to be done to keep up with the workload. Cross-training is definitely another way to overcome that. Also, on certain projects like scaled model making, I will pull talent from other teams to do cross-team collaboration. I may pull one or two of the guys from the Modeling and Animations Branch to do the CAD modeling of some of the scaling for our projects.



EE: What are some of the most critical skills needed to succeed on this team?

RM: You need a little bit of everything. We're very customer oriented, so you need good customer skills. You also need good mechanical aptitude and good computer skills, as well as good hands on skills and a strong work ethic.

EE: What does the future of your team look like? Any specific plans?

RM: We are always looking out for the latest and greatest in cutting-edge technology. In order to find the next big thing in reverse engineering technologies, we attend a lot of conferences that highlight new and evolving capabilities and technologies. We usually will pursue those items if we have a need for that particular capability, and we're always looking for new equipment. We're also always looking to expand our business and we have doubled our workforce. As long as the projects and funding keep coming in, we can continue expanding capabilities. When we move in 2011 to our new facility in Downer Hall, we can start thinking about purchasing more equipment. ⚙️

Security Tip: Active Shooter Response Training Online

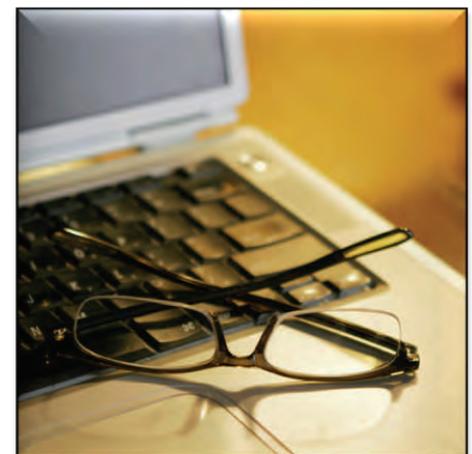
A few weeks ago, the Directorate of Emergency Services offered training classes for the APG workforce to assist with preparations or awareness of Active Shooter situations.

The training was designed to help the individual employee work through and consider various actions that can or should be considered should they be faced with a workplace emergency. Attendance at the training sessions may have been hampered by duty commitments, but this training is critical to senior Army leadership.

Working in conjunction with various other organizations, we've been able to place the training on the APG website e-Learning module. The training can be accessed via the web link below, and once completed, employees can obtain acknowledgement that they have watched the training via the e-Learning site. That acknowledgement can then be provided to organizational training coordinators and/or security representatives.

For those personnel that were unable to attend one of the previous training sessions, this on-line session is highly encouraged. The information in that training just might save someone's life.

To access the training modules, visit: <http://www.apg.army.mil/apghome/sites/installation/elearning.cfm>. ⚙️



ADM Participates in National JSHS Winners Tour



The Advanced Design and Manufacturing (ADM) Branch participated in hosting a tour of 22 National-level Junior Science and Humanities Symposium (JSHS) program regional student winners on April 29.

The event was part of ECBC's continued support of the JSHS program after seven employees provided their expertise as virtual and on-site judges at the Maryland regional JSHS earlier this year.

Mark Schlein, ADM's Division Chief, and his team took the NJSHS students on a tour through the ADM Facility and captured their attention by educating them about the multi-disciplinary capabilities and state-of-the-art laboratory equipment.

Furthermore, Schlein illustrated ECBC's improvement process of industry vehicles, such as the Mine Resistant Ambush Protected vehicle and the Heavy Equipment Truck, for the protection of the Warfighter in the field.

"Working on four to five projects at any given time, our key to success is implementing an ideal mix of old and new technologies and creating elegant and simple solutions," Schlein said.

"At the end of the day, our main goal is to save as many lives as possible," he said.

The JSHS program encourages high school-level students nationwide to pursue science, technology, engineering and mathematics (STEM) careers enabling them to compete for scholarships and receive public recognition for their research results.

Opening the doors of the Sample Receipt Facility (SRF) to students for the first time, ECBC offered the NJSHS group the once-in-a-lifetime opportunity to tour the inside of the only building where the U.S. Army, the Federal Bureau of Investigation and the Department of Homeland Security will work hand-in-hand.

"I have been working on the biological analysis of potatoes," said NJSHS student Akshai Baskaran from Washington State. "ECBC's facilities are absolutely fascinating and have exceeded my expectations. I would love to work at a place like this one day."

The NJSHS competition regional winners conducted in-depth research and experimentations on STEM-related topics such as bio alternatives to fuel, cancer cell research, marine toxicology, bovine mastitis, agent fate, and soil toxicology and its effects on plants.

Mary Doak, ECBC's Educational and Community Outreach Manager, who escorted the group for the day, was impressed by the students' projects "The topics of their research make me think that they could start working in our labs today."

Only a few days after their ECBC visit, the NJSHS students introduced their project results at the 48th National Junior Science and Humanities Symposium — sponsored by the U.S. Army, Navy and Air Force — in Bethesda, Md. Before leaving ECBC, they briefly met Associate Technical Director James Baker, Ph.D., who has been a vital part of the Center for more than four decades.

"On behalf of ECBC, I wish you all the best of luck and hope to see you at the Center again soon," Baker said. ⚙️

ECBC Engineering Directorate HR Tip of the Month: New Self Nomination Process for Department of the Army Vacancies

Effective June 10, 2010, Headquarters Department of the Army (HQDA) will implement a change to the current self-nomination process for applicants who self-nominate for Army vacancy announcements. Below you will find the new procedure so that you may publicize the event throughout your serviced organizations.

- Currently, an applicant self-nominates by clicking on the "Self Nominate" link at the bottom of each Army vacancy announcement.
- Upon clicking the "Self Nominate" link, the Self Nomination Form appears and applicants must enter their name, telephone numbers, e-mail address and social security number.
- Effective June 10, in order to self nominate for Army jobs, all applicants must have an established Army Resume Builder account and will be required to enter their Army Resume Builder password, social security number and e-mail address on the self-nomination form. An applicant will no longer have to enter his/her name or phone number, since this information already exists in the applicant's Army Resume Builder account.

The reason for this change is to add another level of security to protect applicants from having their personal job record history shared with others who have obtained the applicant's SSN.

We do not anticipate this to be a significant issue since the majority of applicants self-nominating for Army positions already have an Army Resume Builder & ANSWER account. For applicants who do not, they must establish a new account in the Army Resume Builder & ANSWER tool under the "New Users" link. The applicant does not have to use the tool to create and submit his/her resume, but must at least complete the new users registration page.

After the new process is implemented on June 10, we expect that some applicants with an established Army Resume Builder & ANSWER account may have forgotten their password. If forgotten, an applicant can click on the "Forgot your Password?" link, enter his/her name and SSN, and receive their password by e-mail. The password is sent to the e-mail address that was entered when the applicant completed their initial registration and is received in a matter of seconds. If the applicant does not have an e-mail address, he/she can retrieve their password by contacting the CRPC helpdesk. ⚙️



FOR MORE INFORMATION ABOUT YOUR HR POLICIES, PLEASE CONTACT ENGINEERING HR REPRESENTATIVE SABRE HARPER AT EXT. 5-2722.



National Eye Injury Prevention Month

July has been officially recognized as Eye Injury Prevention Month. For this reason, a focus is placed on protecting your eyes in various environments, namely the workplace.

Eye injuries of all types occur at a rate of more than 2,000 per day. In particular, an estimated 1,000 eye injuries occur in American workplaces alone. The Bureau of Labor Statistics (BLS) found that almost 70 percent of the eye injuries studied occur from falling or flying objects, or sparks striking the eye.

The best ways to prevent injury to the eye is to always wear the appropriate eye protection. Surprisingly, the BLS reports that approximately three out of every five workers injured were either not wearing eye protection at the time of the accident or wearing the wrong kind of eye protection for the job. To be effective, eyewear must fit properly and be designed to effectively protect workers while they work. It is estimated that over 90 percent of eye injuries are preventable with the use of proper safety eyewear. The Occupational Safety Health Administration has standards that require employers to provide their workers with the appropriate eye protection.

In addition to the proper safety eyewear, early detection and treatment of eye conditions and diseases are essential to maintaining good vision at every stage of life. If eye problems such as visual changes, pain, flashes of light, seeing spots, excessive tearing, and excessive dryness occur, you should see an eye doctor.

For more information about eye injury prevention please visit Federal Occupational Health (FOH) Departments website at:

<http://www.foh.dhhs.gov/public/NYCU/eyeinjury.asp> . ⚙️

Safety Information: Tick Identification and Testing

Because of the large amount of ticks around the area, ECBC wants you to be aware of tick identification and testing. The U.S. Army Public Health Command (PHC) Entomological Sciences Program does free tick identification for all DoD personnel, including civilians.

PHC Entomological Services Program can accurately identify tick species and test the tick for the organisms that cause Babesiosis, Human Granulocytic Ehrlichiosis (HGE), Human Monocytic Ehrlichiosis (HME), Lyme disease, Rocky Mountain spotted fever, and Southern Tick-Associate Rash Illness (STARI).

If you find a tick attached to your body and would like to have it tested, you should:

- Remove the tick by grasping it's mouthparts with pointed tweezers and pulling back slowly.
- Preserve the tick by placing it in a clean, dry jar, vial, Ziploc bag, or other sealed container.
- Arrange to take the tick to Bldg E5800.

For more information, contact the Entomological Service Program at ext. 5-3613. ⚙️



Dorman

(Continued from page 1)

Laye and Yura were both very eager to recommend Dorman because of their positive working experiences with her in the past when hiring interns.

EE: What was your main motivation to nominate Dorman for this award?

EB: What Dorman does and why we nominated her is because she has taken on the entire intern hiring process from the initial stage of the job fair up through bringing the young interns on board – she has revolutionized the process. She works both “sides of the table”: the potential hire and the Engineering Directorate. She sets up multiple interviews so the person can see a variety of positions. She may bring in some candidates to see the test side of things with Do (Nguyen), go to other areas, or to the PMs to see what everyone does. This gives the potential candidate a really good introduction to the Directorate, so they can also see where they may like to work. This also gives the team leader a chance to see a number of candidates and pick the one they like best; it really benefits both sides.

EE: How do you feel about Dorman receiving the bronze award?

EB: She was a step above all of the nominees. I think she should have gotten the gold; she does a fantastic job. The reason that she popped into my head for this award is because of all of the positive feedback I receive in relation to the work she does within the Directorate. I had heard from multiple team leaders about the quality of service that she provides.

It was not hard to nominate her; I just received so many unsolicited compliments on her great and thorough work.

Engineering Edge: Can you tell me about the work you did to receive this award?

Teresa Dorman: The majority of my work was focused on recruiting interns, filling all of the Directorate’s intern positions. The work that I’m doing now was previously done by a staff of four people. All of the functions that take place when hiring an intern fall under my responsibilities. From contacting the interns, to administrative tasks, to coordinating schedules — I take care of it all.

EE: How were you able to benefit from the Awards Workshop?

TD: The workshop took place at Martin’s West. Throughout the day there was a series of four workshops to participate in. There were several guest speakers, namely U.S. Senators Barbara Mikulski and Paul Sarbanes, and keynote speaker Allie Latimer, the highest ranking female in the FBI.

EE: What motivated you to accomplish the work you do with hiring interns?

TD: I really enjoy what I do, and I love working with the college students. They’re such nice kids and they’re so grateful. I like to go the extra mile to help them. I feel like it’s my job to guide them through the entire process, to let them know not to panic because we don’t want to lose the qualified candidates. They’re all very smart kids, very nice and have good personalities. ⚙️

Leadership Series

(Continued from page 1)

(Mark) Schlein brought me over in 1993 during their (Advanced Design and Manufacturing Division) reorganization. I did systems administration work for ADM for about eight and a half years.

Toward the end of that period in my career, Mike Cantrel did Product Data Management Systems (PDMS) for the Center and basically stored all data for the Center. He set the storage system up and I supported him by setting up the server. I got the database up and running. I was familiar with how the hardware was set up, so once that was up and running there was an opportunity to lead the team that managed the server. I started leading that team in 2001.

EE: What kind of responsibilities do you have as the Branch Chief?

CR: My biggest responsibilities are supervising the Branch members. I have to manage the finances and make sure we're funded. My office works with the budgeting office to make sure everyone gets paid and that we have enough work.

I'm very much a hands-on leader. I still do computer programming, web design and web scripting – a lot of the same stuff that the programmers do. My team is made up of half programming and half configuration management to support engineering. I also represent the Center as part of the AMC charter Product Data and Engineering Working Group activities. Part of my responsibility is setting priorities and developing procedures for the team.

EE: What are some of your recent accomplishments?

CR: I think continuing what the previous leader started has been one of my bigger accomplishments. He set a foundation for the system and since then, we've taken it farther than even what he envisioned with the work we've done to support teams. The big accomplishment for all of ECBC is the change management process we've created. We've set up a workflow process to review procurement package input.

As part of the process, we review the data to make sure everything is up to date. It's the workflow processes that allow procurement to review information, so if something is obsolete or has been changed we know before it is sent out for acquisition. We've also done some workflows for testing the Joint Service Aircrew Mask (JSAM) Rotary Wing and the Fixed Wing's incident reporting.

We didn't have those capabilities before, and now we've grown our expertise and taken our abilities further.

Most of what we do is support other teams. We developed a personnel database with Mike Brown that has a web-based interface, MySQL and Common Access Card (CAC) log-in, shows certifications, education levels, roles, degrees, etc. It keeps track of enough information so that if someone has a need they can search through this database. Our group finds the optimum workforce, capturing all the skill sets of all employees. If someone wants a new job within ECBC this database helps them see what positions are available.

EE: What makes you excited about ECBC and the Engineering Directorate? What makes you excited about your particular role?

CR: I am excited by things like the amount of opportunities that are now available because of the Base Realignment and Closure (BRAC).

The Communications-Electronic Command (CECOM) is moving down with BRAC, and they can't move their server with them, so they want to put all of their data on our server. ECBC as a whole will have the opportunity to partner with CECOM in a number of ways. There are lots of opportunities for partnering in general because of BRAC.

EE: What career advice would you offer to members of the Engineering workforce that want to advance within the organization?

CR: In the general sense, I think ECBC has been a very team oriented organization. If you want to get anywhere you have to be a team player. If you are disgruntled you don't get anywhere because you're not being a team player.

If you want to succeed in terms of finances, career growth or just be happy in your position you have to be a team player, especially anyone who wants to be in a leader position. Keep your eyes open and look for the opportunities.

They have the mentor/cohort program — when you see those announcements you have to jump on them and get your supervisor to support you. Don't give up if you don't get in the first time. There is also the opportunity to continue your education. If your studies are job related you can be reimbursed for it. Right now, I'm at the Naval Post-Graduate Program. ⚙️

Employee Summer Fitness Challenge



The Engineering Directorate workforce is welcome to participate in the 2010 Summer Fitness Challenge from June 13, through Sept. 11, to encourage employee fitness and reduce stress. The three-month challenge is a friendly, inter-office competition among coworkers as a summer incentive to improve or maintain personal fitness.

The event offers coworkers a fun opportunity to challenge each other and win prizes for good and improved health. Program participants compete on teams of approximately 15 people, keeping track of points every two weeks. At the end of the competition, prizes will be awarded in the categories for the team with highest average points achieved, the individual with the most points achieved, and most improved team and individual.

Participants choose what activity they want to participate in to include, but not limited to, walking, running, bicycling, weight training, aerobics, swimming, softball, horseback riding, Yoga, and bowling.

Prize eligibility registration ended June 13, but all are encouraged to take the challenge and have fun.

The voluntary, grass-roots program is not sponsored nor recognized by RDECOM, ECBC, or any other organization on Post. Participation is solely on your own time and no administrative leave can be granted. If you are planning to participate during work hours, employees must obtain supervisor's approval to take leave or modify your work schedule to participate during duty hours.

Get inspired to get up and move regularly with co-workers and make this a truly healthy summer. Get out, get moving, have fun. The challenge is on!

For more information about the Summer Fitness Challenge, contact Holly Shisler at

holly.shisler@us.army.mil. ⚙️

WHY I LOVE Balanced Scorecard: A Conversation with Jim Genovese



The Engineering Edge talks with Jim Genovese to understand why he joined the Balanced Scorecard (BSC).

Engineering Edge: How did you first hear about the BSC?

Jim Genovese: I heard about the BSC through Bill Klein. Because I create a number of inventions and work on the Invention Evaluation Committee, Bill asked me if I would you like to help with an innovation related initiative.

EE: What initiative are you involved with?

JG: The initiative that I work on with the Engineering Directorate is, P5 Incentivizing Innovation.

EE: What has been the focus of this initiative group?

JG: The initial focus of this group was to examine how we could get the community of scientists and engineers from the Engineering Directorate to be more aware and interested in intellectual property. We wanted to increase their awareness of the benefits to both themselves and the government of protecting intellectual property.

EE: How long have you been a part of the BSC?

JG: I have been with this initiative since the BSC first started in the Directorate, so approximately five years.

EE: What were some of your highlights while developing this initiative?

JG: One of the things that we initially wanted to do was to target inventors and scientists and to really get them interested in submitting their ideas. In order to accomplish this, we thought a good first step was to increase the monetary awards for patents and submissions. While we were successful [in starting this effort], it took a few years to get the different decision makers to come to agree on a decision paper that was positively reviewed and signed. The decision paper's approval allowed inventors to receive almost twice as much money as they did before.

We decided that the incentive offers need to be increased because the original regulations only allowed so much funding. The original regulations dated back about 20 years, so it clear that it was time to reevaluate the incentive values. As twenty years passed, the value of intellectual property has increased and we needed to take that into consideration. We are increasing the incentives for both those who submit invention disclosures and those who get patents issued.

EE: What inspired you to get involved?

JG: Right now I have close to 30 patents, I am also a chairman and member of the Invention and Evaluation Committee as well as the Leader of the IDEA team. Because of all the roles I hold it is important to me to get new ideas out into the field. By incentivizing invention disclosures and patents we will be able to get more benefits from existing technology.

EE: What has been the most rewarding part of working on the BSC?

JG: I think we're going to see rewards due to the metrics that we're establishing for this initiative. Because of the BSC program's organization and measurement system, I'm confident that we will see a definite increase in invention disclosures and patents.

The organization or set-up of the BSC program has been very beneficial to me. It allowed us to stay focused because we started by setting up short-term objectives and initiatives in order to reach long-term goals. The BSC measures through very specific metrics how the initiative is doing so that you can track your progress and reassess your accomplishments over time.

I am also involved with a very similar initiative for the Center. I'm on Initiative IP8A. Right now we're thinking that we want to take our success stories to the other RDEC's to show them what we're doing and to see if it's an approach they can all take. We really want to get our partners to communicate with each other and work together, and the BSC is great tool that every organization should be using. ⚙️

The Engineering Edge

The Engineering Edge is the ECBC Engineering Directorate's monthly newsletter. It is produced for ECBC staff as part of the Balanced Scorecard Initiative. Unless otherwise noted, all stories, photographs and graphics are produced by the Engineering Directorate's Strategic Planning and Business Operations Branch.

Submissions: We need your stories, photographs, comments and suggestions. If interested, contact *The Engineering Edge* staff concerning ongoing and future products and submissions to *The Engineering Edge* Newsletter. Submit your stories or ideas via e-mail to ed.bowen@us.army.mil.

