

The R&T Connection Newsletter

A Publication for the Research and Technology Directorate

March/April 2009

UPCOMING CONFERENCES/ MEETINGS

April 8-9, 2009
[Recombinant Antibodies from
Concept to Clinic](#), Boston, MA

April 27-29, 2009
[Bio-IT Conference and Expo](#),
Boston, MA

May 7-8, 2009
[Joint Program Executive Office
for Chemical and Biological
Defense](#), Washington, DC
*Topic: Chemical and Biological
Defense Planning Briefings for
Industry*

June 23-25, 2009
[2009 Joint CBRN Conference
and Exhibition](#), Ft. Leonard
Wood, MO

ANNOUNCEMENTS

The **R&T Business Review** will be held on **April 29** beginning at 9 a.m. in E3150, conference room A120.

The **ECBC Mid-Year Review** will be held on **May 4** in the Berger Auditorium.

The **R&T Program Review** will be held on **May 12** beginning at 9 a.m. in E3150, conference room A120.

Message from the Director



Although we are now well into 2009, I would like to take the opportunity to comment on Research and Technology (R&T) Directorate's status within the chemical and biological community. This past winter we have had a lot of

successes of which we should all be proud. As an acknowledgement of the outstanding work that's been done—we have been recognized by our peers—with the receipt of several exceptional awards.

Congratulations to Lisa Smith of the BioDefense Branch that received an RDECOM Safety Award; Stacey Broomall, Robert Dorsey and Jerry Pfarr of the BioSciences Division recognized with Army Commendation awards for supporting the Critical Reagent Program through validation of DoD and National Guard BW Agent Detection Work; Amanda Chambers of the BioSciences Division who received the Army Modeling and Simulation (M&S) Individual Testing and Evaluation Award at the IITSEC conference; and the CB Point Detection Branch who won the Best Basic Research Award at the Chemical and Biological Defense Physical Science and Technology Conference.

These accomplishments prove that even one person can impact the chemical biological landscape and I hope that you are each inspired by them.

This year, we have also made strides in enhancing our customer relationships. As I am sure you are aware, the Joint Science and Technology Office (JSTO) contributes to more than 40% of our funding. As a result, effective business relationships are essential to executing an effective and trustworthy chemical biological program.

Recently, I was joined by senior R&T leadership for an offsite meeting with the leadership of the Joint Office of Science and Technology's Defense Threat Reduction Agency (DTRA). The meeting was extremely productive for both organizations and you should soon see high-level improvements based on the results of our discussion. Highlights from the meeting include:

- An agreement to pursue opportunities to change the relationship with ECBC from performer to partner
- An agreement to increase transparency: DTRA in regards to strategic planning and ECBC in regards to sharing highlights of the complete work portfolio
- A discussion detailing that both organizations are interested in the diversification of work and will continue conversations on how to leverage innovation

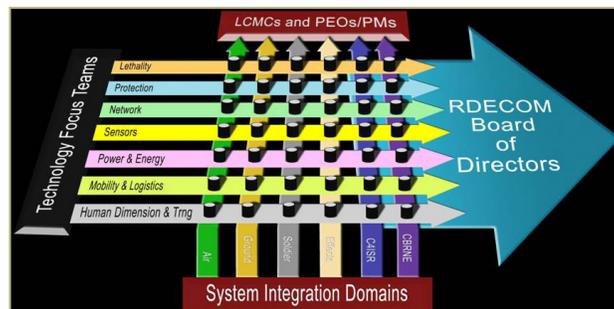
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Chemical, Biological, Radiological, Nuclear, and high-yield Explosives-Systems Integration Domain (CBRNE SID)

The Research and Technology (R&T) Directorate is leading an effort that may offer transparency to the CBRNE programs across the RDECOM service laboratories and the Department of the Army. The Systems Integration Domains (SIDs) and the Technology Focus Teams (TFTs) were the brainchild of Major General Robinson and began establishment in 2008.

The TFTs are chaired by Senior Executive Service (SES) leaders representing all areas of Army programming (see graphic). The TFTs are responsible for providing awareness and assessments of technologies as an honest broker, as well as formulating a strategy to optimize technology investments.

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New Technology Stands Out in the Mass Spec Community

Solving an outbreak of an unidentified human pathogen is historically, a painstaking task for even the most sophisticated technologies and laboratories. However, Edgewood Chemical Biological Center (ECBC) scientists customized a ground-breaking technology that could not only detect and identify the pathogen but could do so in half the time of traditional methods.

The technology—Proteomics Mass Spectrometry—made of both an Integrated Virus Detection System (IVDS) pre-processor and a LTQ Mass Spectrometer, has been in the works for several years by Research and Technology's (R&T) CB Point Detection Branch, recently earning them national attention as the Best Basic Research Award recipients at the DTRA-sponsored Chemical and Biological Defense Physical Science and Technology Conference. The innovation also earned them a personalized invitation to participate in the American Chemical Society meeting in August that will feature their discovery in the ACS Biodetection using Mass Spectrometry session.

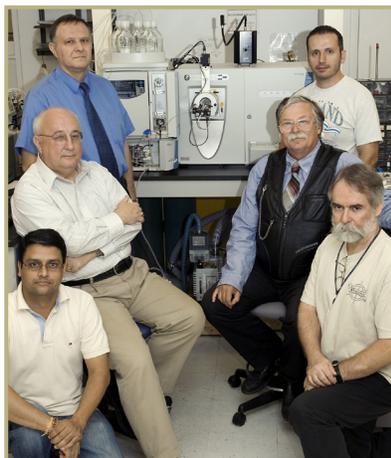
The difference between this procedure and other mass spectrometry methods is that peptides are analyzed, and sequences compared to the database. Another key to the technology is that, after a sample is processed and run on the system, analysis is completely computer-based. A bonus, because it directs multiple probes against a single sample without having to run several traditional diagnostic tests, and it automatically stores all sample information into a database that can be used for future identification. Additionally, the processed sample can be placed within a phylogenetic tree, that will provide information on the

sample's nearest relatives. The data provides a clear indication of the sample's lineage, even if it is truly an unknown organism. Microbes that are not in the database can be stored and then re-examined after sequencing, since it is simply a computer file.

"We are doing with software what people used to do with wet chemistry," said the technology's lead scientist, Dr. Charles Wick.

"We are not limited by having to target something to find. We can detect multiple microbes in a sample, a frustrating limitation of genomic methods," said Wick. "Strain-level identification is made for sequenced microbes and identification to the nearest neighbor for un-sequenced microbes—we have a technology that is not limited in its detection capabilities."

The team fine-tuned their instruments by conducting research using honeybees—an effort that distinguished them as the first to detect the Varroa Destructor Virus in North America, previously only identified in Europe. The North American detection of the virus enables organizations like the United States Department of Agriculture to provide guidance for quarantining and managing the bee colonies to prevent further spread, and serves as an example for detection and identification for the Centers for Disease Control and Prevention and others to do likewise with human pathogens.



The CB Point Detection Branch poses next to their Mass Spectrometer (left to right) Samir Deshpande (Science and Technology Corporation), Dr. Charles Wick, Alan Zulich, Dr. Rabih Jabbour (SAIC), Dr. Michael Stanford, and Patrick McCubbin (OptiMetrics Incorporation).

"The invention and discovery of this technology took great imagination, determination, teamwork and the perseverance of a talented and multi-disciplined team. I am very impressed with their effort." said R&T Director Joseph Corriveau as he summarized the achievement.

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Message from the Director

- An agreement to revamp the proposal process and improve the funding process and a discussion of challenges caused by forward funding
- The need to better capture and display core capabilities of all of the service labs
- An agreement to work collaboratively on challenges that will be imposed by BRAC

I will keep you posted on these actions as they develop. As always, I want to hear from you. If you have suggestions, comments or questions about the directorate and how we can continue to improve going forward, please send them to the R&T Communications Officer at reynolds.keisha@us.army.mil. Again, thank you for all that you do in making the R&T Directorate successful.



ECBC met with Joint Science and Technology Office (JSTO) representatives to discuss ways to enhance optimize relationships. (left to right) R&T Director Joseph Corriveau, R&T Deputy Director Stephen Lawhorne, R&T Business Manager Dennis Kravec, Chief, Physical S&T, Chemical and Biological Technologies Fred Crowson, Special Assistant at DTRA John Connell, and Director of Chemical and Biological Technologies Darrell Galloway.

R&T Employees on the Move

Awards:

Amanda Chambers, an R&T employee of more than five years, has won the Army Modeling and Simulation (M&S) Individual Testing and Evaluation award at the IITSEC conference. Chambers was awarded for the work she completed in testing and evaluation of Fowlpox as a non-pathogenic simulant for Variola Major, the virus that causes the disease smallpox.



Simulants allow scientists to work with substitute non-pathogenic materials that behave like their pathogenic counterparts. In this case, Chambers' two-and-a-half years of research revealed that under specific conditions, Fowlpox behaves the same as Variola Major, which is no longer found in nature, however biological weapons using the virus are possible. For those reasons, a Smallpox vaccine is essential to warfighters and other at-risk personnel—Chambers' research puts scientists one step closer to that goal.

"It was nice that all of the hard work paid off to a positive result," said Chambers. "It opened a new avenue to simulant work—which is the whole goal of using simulants—to find something that's not pathogenic, and we did that with Fowlpox."

Chambers wanted to share her appreciation and thanks with: Dr. Steven Harvey, Dr. Jorge Maciel and Melissa Dixon.

Congratulations to R&T staff members selected as finalists in the Excellence in Federal Career Awards Program: **Dr. Vipin Rastogi** in the category Outstanding Professional (Non-Supervisory) Technical, Scientific and Program Support and **Ms. Lalena Wallace** in the category of Outstanding Para-Professional, Technical, Scientific and Program Support. Award recipients will be announced at a luncheon on May 1.

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Chemical, Biological, Radiological, Nuclear, and high-yield Explosives-Systems, continued

The TFTs also provide recommendations to the RDECOM Board of Directors. The SIDs' primary purpose is to interface with the Army's LCMCs, PEOs and PMs across specific functional areas (see graphic on pg. 1).

The CBRNE SID, led by R&T Director Dr. Joseph Corriveau, is intended to integrate all the CBRNE-related system capabilities and needs to reduce the duplication of work so that the command can have comprehensive visibility of its Science and Technology portfolio and enhance sound decision-making.

"It will give the command more visibility into what's going on across all of the labs," said John Giesecking, the Associate Director for CBRNE Integration. "The bonus is that we may gain insights into other government agency efforts and leverage work being done by the DoD Chemical Biological Defense Program, FBI and Homeland Security."

Giesecking became the Associate Director for CBRNE Integration in February. "Although I enjoyed my last job at the Chemical Materials Agency, I became really interested in the chemical biological defense

R&T Staff Updates

Welcome to New Staff:

- **Zachary B. Zander** joined the CB Protection and Decontamination Division as a Research Chemist on January 5, 2009.
- **Matthew J. Shue** joined the CB Protection and Decontamination Division as a Interdisciplinary Research Chemist/Research Biologist on January 5, 2009.
- **Dr. Frederic J. Cox** joined the CB Protection and Decontamination Division as Branch Chief for the CBR Filtration Branch on February 17, 2009.
- **Michelle Hover** joined the CB Protection and Decontamination Division as a research chemist on February 17, 2009.
- **Dr. James P. Carney** joined the Biosciences Division as a research biologist on February 17, 2009.
- **Todd M. Sickler** joined the BioSciences Division as a biologist on February 17, 2009.
- **Dr. Jason M. Edmonds** joined the BioSciences Division as a research biologist on February 17, 2009.

Welcome to Returning Staff:

- **Dr. David Tevault** retired in January as acting division chief for the Chemical Sciences Division and was rehired as chief scientist for Chemical Sciences.
- **Chris Keiser** was formerly part of the Civil Assessment Team and has rejoined ECBC as an R&T employee working on the NBC Battlefield Management Team within the CB Information Technology Systems Division.

Farewell:

R&T bids a fond farewell to **Dr. Raymond Mackay** who retired in March most recently serving as Scientific Advisor for R&T. Dr. Mackay was also formerly the R&T Director.

business area during an ECBC detail with Jean Reed, the Deputy Assistant to the Secretary of Defense (Chemical and Biological Defense). In that position, Giesecking was the senior analyst responsible for coordinating the Chemical Biological Defense Program (CBDP) Overarching Integrated Process Team Meetings, which provided program oversight to the CBDP.



Giesecking is a 2005 graduate of the Naval Postgraduate School and earned a Master's Degree in Program Management. He also holds Acquisition Level III certifications in program management (PM), systems planning, research development and engineering (SPRDE) and logistics management (LOG). Giesecking obtained a Bachelor of Science degree in chemistry from John Marshall University.

"It's exciting to be educated in the chemical biological business area and to help develop the CBRNE SID," said Giesecking, "It is also challenging," he added. "The structure and processes for all of the SIDs are still pretty new and so the work is constantly evolving however, I look forward to the innovative work ahead."

The R&T Connection Newsletter Scrapbook

R&T Employees Share Their New Year Resolutions, Check Out Their Progress...

At the start of the year, R&T employees shared their New Year resolutions with R&T Connection Newsletter. Check out what they expected to conquer in 2009 and their progression towards their goals.

Planned Resolution: BioSurety Specialist **Carole Andrews** has worked for R&T for 21 years and in her own words, she is a self-proclaimed, "jacktress of all trades and mistress of none." As for new year resolutions, Andrews jokes, "I think all New Year's resolutions should be banned and anyone who makes them should be punished to the fullest extent of the law. A lot of people make them with good intentions but most people, including myself, don't carry them through."

Update: "What I anticipated to do was to be a quieter, gentler soul. Well, 'that' certainly dropped off the radar screen! Now I have some irons in the fire to see where I can go from here. But it won't be quieter!!!"

Planned Resolution: **Renu Rastogi** has worked for R&T for two years as a technical writer/ editor. "My New Year's resolution is to finish one scrapbook about my trip to Edinburg, Scotland."

Update: "I've managed to finish two pages and have about 300 more pictures to do."

Planned Resolution: Budget Technician **Rhonda Sanders** has worked for R&T for one year. "My New Year's resolution is to focus more on home projects," she said. "We have a lot of works in progress that I'd like to finish. I also definitely want to keep our family bond tight through more Sunday dinners and movie nights for example."

Update: "The first part of this New Year has definitely been focused on strengthening our family bond. With recent family emergencies we have become committed to teamwork, reflection, faith and determination to overcome the adversities that we've faced. Frankly, at this point, I can honestly say that I don't care if we EVER finish the home projects or works in progress that we have started! Yes, this New Year has indeed caused me to count my blessings and helped me to focus and remember what the most important things in life truly are!"

Planned Resolution: **Dr. Ilona Fry** is a principal biochemist and a contractor through SAIC and has been with R&T for 17 years. "My New Year's resolution is to lose weight and get fitter."

Update: "I lost five pounds so far, and I am getting fitter so I can enjoy the upcoming spring bicycling weather. I plan on riding to work when I can so I can save gas, reduce my carbon footprint, get even fitter and lose more weight."



Carole Andrews



Renu Rastogi



Rhonda Sanders



Dr. Ilona Fry