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News Release

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ECBC attracts talented STEM professionals, MUSIP students for third consecutive year

ECBC arms students with hands-on skills for future science, technology, engineering and math (STEM) careers during its Minority Undergraduate Summer Internship Program (MUSIP)

Aberdeen Proving Ground, Md. ─ The U.S. Army Edgewood Chemical Biological Center (ECBC), also known as the premier national resource for chemical and biological defense, recently celebrated the successful completion of research projects conducted by ten students during this year's ten-week MUSIP initiative.

For the third consecutive year, ECBC's Workforce Management Office and Diversity Advisory Committee have collaborated with the U.S. Army Research, Development and Engineering Command's Minority College Relations Program to select highly skilled engineering, biology and chemistry students to participate in the program.

"MUSIP has proven to be a valuable opportunity for both participating students and the Center," said the ECBC's MUSIP Coordinator Diane Bratton. "For the first time in 2011, we hired students as temporary government employees through the Student Temporary Employment Program, also known as STEP. And, some of our mentors at ECBC plan to bring MUSIP alumni back as STEP students this fall and during the holiday break."

Supported by the Oak Ridge Institute of Science and Education, ECBC established MUSIP in 2009, aiming to provide underrepresented minority undergraduates with the opportunity to enhance their education with relevant experiences in the science and engineering field.

Working with world-class subject matter experts on challenging research projects allowed sophomores and juniors from colleges across Maryland to develop cutting-edge solutions that help keep the warfighter and our nation safe.

"The project that the MUSIP students conducted in support of our team this summer has been beneficial to all involved," said ECBC Chemist John Schwarz. "While gaining valuable hands-on and analytical experience in the laboratory, they produced real-world data to help improve our quality processes."

Looking to save the Center time and reduce costs, MUSIP students collected and evaluated data

identifying ways to improve processes and technologies that help counter potential biological and chemical threats.

One of this year's MUSIP students from UMBC and former Joppatowne High School graduate, Samantha Bahre, partnered with Jenny Rendon, sophomore at Old Dominion University, to support the Center's Environmental Monitoring Laboratory (EML) team.

In an effort to determine an acceptable expiration date for quality process (QP) samples, they analyzed the performance recovery rates of chemical warfare materials in three sets of aspirated and non-aspirated air monitoring samples.

"With holding periods ranging from one to ten days, samples that were spiked with warfare agents did not reveal a noticeable decrease in analyte recovery," Bahre explained. "Therefore, we concluded that it would definitely be worthwhile to collect further data in support of extending the expiration date of air monitoring samples from 3 to at least 5 days."

Bahre and Rendon have consolidated their data, methods and results in a technical report to facilitate ongoing research in this field. Based on their findings, quality processes could potentially be improved in the EML by extending the expiration date of quality process samples. They would be able to (1) spike and sample QPs over holiday weekends, (2) spike and send QPs to remote monitoring sites without compromising integrity of QPs and (3) send samples with a lower urgency.

"The hands-on experience in the lab was extremely valuable and enabled me to learn so much more than only in the classroom," Bahre added. "I am very glad about the opportunity I was given to work with the EML team at ECBC."

As part of the MUSIP program, the group of aspiring scientists and engineers presented their project results to senior leaders at ECBC and showcased their accomplishments to the Center's workforce members during a poster session.

"I was truly impressed with the problem-solving skills that MUSIP students have demonstrated during their time at ECBC over the course of the past ten weeks," said the Center's Technical Director Joseph Wienand. "The depth and breadth of their projects clearly reflected their ability to think innovatively, a skill inherent in our workforce."

"I can speak on behalf of my colleagues when saying that we are very fortunate to have such talented and ambitious students support us in achieving our mission," he added.

This year's MUSIP students conducted the following research and development projects, in support of the Nation's defense:

- ***'Characterization of a Confidence Checker Device'*** -- Nishit Patel from UMBC, mentored by Jerold Bottiger, Ph.D., Robert Doherty and Jana Kesavan, Ph.D.

- ***'Continuous Loop UV Mutagenesis Chemostat Reactor for the Selection of C-F Degrading Bacteria'*** -- Jennifer Mohr from UMBC, mentored by Melissa Dixon, Steve Harvey, Ph.D. and Vipin Rastogi, Ph.D.
- ***'Identification of Shiga-like Toxin Production by Escherichia coli Using ELISAs'*** -- Jessica Ditillo from St. Mary's College of Maryland, mentored by Isaac Fruchey.
- ***'MIST Chamber Remodeling'*** -- Amon Dow III from Morgan State University, mentored by Do Nguyen and Kenneth Eng.
- ***'Protecting the Warfighter'*** -- Michael Bennett, Jr. from Morgan State University, mentored by Chika Nzelibe.
- ***'Q97A1 Filter Airflow Unit Tester'*** -- Brandon Au from the University of Maryland, mentored by Do Nguyen and Myat Win.
- ***'QP Performance Rates for the of Chemical Warfare Materials from Air Monitoring Samples'*** -- Samantha Bahre from UMBC mentored by John Schwarz and Jenny Rendon from Old Dominion University mentored by Wendy Smith.
- '***The Microwave Drying of Molecular Sieve for Joint Chemical Agent Detector: Phase 1 Regeneration'*** -- Richard A. Negri from Morgan State University, mentored by Michael Benham.
- ***'Vibration and Mechanical Shock Testing'*** -- Michele Stamm from the University of Maryland, mentored by Michael Palko.

Please click on the following link to read a student testimonial by Richard A. Negri, who participated in the MUSIP program for the second consecutive year: http://bit.ly/qtCaG8.

For more photos of this year's MUSIP highlights, please click here: http://bit.ly/qZbFJF

For more information about ECBC, visit http://www.ecbc.army.mil/.

ECBC is the Army's principal research and development center for chemical and biological defense technology, engineering and field operations. ECBC has achieved major technological advances for the warfighter and for our national defense, with a long and distinguished history of providing the Armed Forces with quality systems and outstanding customer service. ECBC is a U.S. Army Research, Development and Engineering Command laboratory located at the Edgewood Area of Aberdeen Proving Ground, Maryland. For more information about the Edgewood Chemical Biological Center, please visit our web site at http://www.ecbc.army.mil/ or call (410) 436-7718.

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