A team of four Cyber Operations graduate students from the Air Force Institute of Technology’s Center for Cyberspace Research combined their cyber skills and interests in digital forensics to field a winning team in the annual DoD Cyber Crime Center (DC3) Challenge for 2009. The DC3 Challenge is a call to the digital forensics community to pioneer new investigative tools, techniques and methodologies. Points are awarded based on the complexity of what the examiner normally encounters and has to adjust for, extract, or scrutinize in an analysis, of those file types for the examination problems. This highly competitive and challenging event had 1153 teams requesting entries. Only 44 teams completed the challenge, 34 U.S. and 10 international teams from commercial, government, civilian, military, and academic institutions to highlight tools, techniques, and procedures that address the most troubling issues DC3 faces. AFIT’s winning team has won a trip to the 2010 DoD Cyber Crime Conference where they will be recognized at an awards presentation and receive a plaque.

This year’s challenge was a new ‘twist’ from previous years, presenting the participants a mock-up of what an actual examiner might face in a Digital Forensics Lab. This made the results much more complicated than in prior DC3 Challenge years. In the end, AFIT’s CCR team consisting of Major John Borowski, Mr. Curtis Barnard, Mr. Mitchell Hirschfeld, and Mr. Justin Myers took the U.S. Division trophy while placing second overall in the competition that included international teams. Dr. Gilbert Peterson and Maj Eric Trias, Ph.D. served as faculty mentors/advisors for the team. Our students represented the Air Force and CCR in a superb manner. Challenges such as these demonstrate the value of graduate education and research and highlight the talents the Air Force is developing in support of the Air Force cyber mission.

Three out of the four members of the team are civilian graduate fellowship recipients of the National Science Foundation and Department of Homeland Security CyberCorps scholarship. This fellowship is awarded annually to qualified and talented students seeking graduate degrees in Cyber Operations and closely related fields. This fellowship covers the student’s tuition, books, and offers a $25,000 stipend a year. For additional information please visit the Center for Cyberspace Research’s website at http://www.afit.edu/CCR/.
AFIT CyberCorps Intern Students Participate in Bulwark Defender 2009

Curtis P. Barnard and Justin M. Myers, two AFIT CyberCorps graduates, participated in the Annual Bulwark Defender 2009 as part of their internship program at the Pacific Northwest National Laboratory (PNNL) in Richland, Washington. They were assigned to the Computer Network Operations Research Branch of the National Security Directorate. As part of their internship, they designed and implemented secure code modules as part of their internship program at PNNL.

While the Air Force Headquarters is pushing for an early standup of the new Cybersecurity Operations Officer (17D) career field on 30 April 2010, Air Education and Training Command is busy building the three new courses to support this aggressive schedule. The first of these courses is Undergraduate Cyber Training, designed for new officers entering the 17D career field. The second and third courses are Cyber 200 and Cyber 300, designed to educate officers on the current Cyber threats to our nation, legal and policy issues with application of Cyber power, and building a Cyber warrior culture.

The Center for Cyberspace Research is developing the curriculum and hosting Cyber 200 and 300 for two years, while a permanent location is determined by the Air Force. CCR has been working closely with Air Force Space Command (the lead for Cyber Operations), subject matter experts from within the DOD, and CCR’s own award-winning faculty to develop a challenging curriculum for these exciting new courses.

Cyber 200 and 300 have been designated Professional Continuing Education (PCE) courses, designed to meet the specific skills and functional competencies required by leaders in the Cyber profession. PCE provides students with the opportunity to think critically, to plan strategically, and to apply those skills and knowledge to future programs and challenges.

Cyber 200 and 300 will be three and two weeks long, respectively, and at the TS/SCI level. Cyber 200 is for Captains with 6-8 years of service while Cyber 300 is for Majors with 12-14 years of service. The CCR will leverage Active Duty, Reserve and Guard members with extensive experience in the operational and educational communities as instructors.

The development of cyber professionals is critical to the Air Force’s success in cyberspace. Dynamic and operationally relevant educational experiences will help keep the Air Force at the leading edge for mission assurance. AFIT continues to provide such experiences through its graduate and professional continuing education programs.

AFIT CCR Enlisted Graduates: Helping Shape Officer and Enlisted Cyber Forces with the Center for Cyberspace Research (CCR) at the Air Force Institute of Technology

A successful operation in the cyberspace domain requires the integration of the total force: active duty, civilian, Guard, and Reserve components. Each element brings unique talents and experience to bear. SMSgt Michael Woelfle and SMSgt Michael Wabiszewski, recent graduates of AFIT’s Cyber Operations Masters program, were selected as junior enlisted liaisons between the Air Force Cyberspace Technical Center of Excellence and the cyberspace operational communities. Each is ideally qualified to work on one of the most significant projects for the CCR: developing the Cyber Professional Continuing Education curricula for the new cyber career field.

SMSgt Woelfle was re-designated as a 3D1X3 RF Transmissions Systems specialist. His AFIT graduate program research determined that Bluetooth communication devices could be definitively identified and classified by examining unique characteristics within burst transmissions. This work extended AFIT’s RF “fingerprints” research to identify devices used in areas such as Improvised Explosive Devices. SMSgt Wabiszewski has been re-designated as a 3D0X2 Cyber Systems Operator in conjunction with the Enlisted Communication-Information career field transformation to a cyber focused force.

These NCOs are not only contributing to their respective career fields, but more importantly, they are impacting the Air Force mission by providing a broad and unique perspective coupled with a strategic viewpoint.

We remain a nation at war and so, more than ever, all of our military services rely on their “backbone” — the professional Noncommissioned Officer to succeed on the battlefield and on the homefront. America’s newest battlespace is cyberspace.

CCR Faculty Focus: LtCol Jeff Humphries

CCR is at the forefront of cyberspace education and research. Our outstanding faculty and staff push the envelope to maintain currency in cyberspace trends as well as discover the emerging technologies of tomorrow. As an Advisor to the Air Force Space Command, he is working to integrate AFIT’s education with the Space operations community.

Humphries ensures that what is learned in the classroom flows into AF-Active Duty, Reserve and Guard members with extensive experience in the operational and educational communities as instructors.

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Major Sherry Murphy graduated from AFIT in June 2009 with a Masters degree in Cyber Warfare. Her new mission is at the Doctrine and Strategic Studies Branch at Air Force Space Command at Peterson Air Force Base in Colorado Springs, CO. Major Murphy is utilizing her skills and forward thinking mind set enhanced in the Intermediate Developmental Education program at AFIT.

The education, research, and experiences at AFIT made Major Murphy realize that the obvious solution isn’t always the most comprehensive. We must always look for more innovative solutions and anticipate the next set of challenges.

Cyber Operations Graduate: Major Sherry Murphy

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