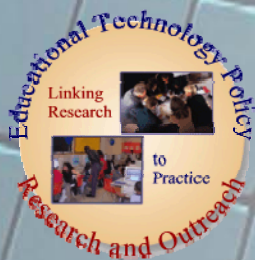# Information Assurance - Information Security -Digital Forensics Career Preparation and Opportunity Workshop For Guidance Counselors

**Thursday, September 27, 2007**
**8:00 am – 3:00 pm**

**Columbia Gateway Park**
**6740 Alexander Bell Drive**

The Goals of the School Counselors Workshop are to:

- Increase counselor awareness of the workforce needs of the United States in IS/IA and related fields (digital forensics, homeland security, network security, systems administrator, cybersecurity)
- Inform counselors about career pathways including 2 and 4 year degree and/or certification tracks.
- Describe security clearance levels, and the process for obtaining them
- Increase counselor awareness about the Regional CyberWatch Center and its benefits to students and the future technology workforce.
- Share the connection between the CyberWATCH program and post-secondary success at partnering colleges and universities.

School counselors are critical in the career choices of students. This 1 day workshop will introduce counselors to IS/IA, Cybersecurity and Digital Forensics career opportunities, and choices within these categories, as well as, the multiple pathways to enter the workforce in these areas. Industry employers will speak to participants about career opportunities, student internships, externships and other related opportunities.

School counselors will learn about current and future career trends in IS/IA, receive updates and current promotional materials for distribution to interested students and parents, and discover how to use the CyberWATCH Regional Center Web site to find answers to questions from parents, students, and other educators.

Special for All Workshop Attendees
Come to the October 4-5, 2007 C3 Conference FREE
http://www.edtechpolicy.com/C32007/Email/C3Registration2007.html

Dear Participants:

Educational Technology Policy, Research and Outreach (ETPRO) takes great pleasure in hosting its second in a series of *Information Assurance/Information Security/Digital Forensics Career Preparation and Opportunity Workshops*. The core mission of the IA/IS/Cybersecurity workshop series is to increase counselor awareness of the workforce needs of the United States in IS/IA and related fields (digital forensics, homeland security, network security, systems administrator, cybersecurity), inform counselors about career pathways including 2 and 4 year degree and/or certification tracks and describe security clearance levels, and the process for obtaining them. This workshop will begin with an opening snapshot of the growing demand of workers in information security, and then move on to situate the requirement within the larger US context of the need for technology and engineering to help employee pipeline in the future. A panel will then share insight from the perspectives of large and small companies, of business and education, and through the lens of diversity and opportunities for minorities and women. Information will be provided about Cisco Academy opportunities, and a member of the MD State Police Computer Crimes Unit will share the connection to and police digital forensics opportunities through Criminal Justice career pathways. We will conclude with help deciphering the various mazes of certification programs and talk about the security clearance process.

This workshop opportunity stems from the need to have educators and career counselors learn more about the growing need for IA/IS careers particularly in this geographic location. Indeed, the U.S. Bureau of Labor Statistics projects a 48 percent increase in jobs for computer software engineers and a 55 percent growth in jobs for network system and data communications analysts from 2004 to 2014. Projections for Maryland mimic the same trend. While computer operators and computer programmers are projected to decrease, computer software engineers, network systems and data communications analysts, and network and computer systems administrators are projected to go up between 40 and 50%, and computer and information systems managers are projected to grow by 23%. Much of this is fueled by the growing IT industry, which is in particular demand in MD, DC, and VA, because of the large federal infrastructure including intelligence and Department of Defense government agencies and related contractors, and will be increased by upcoming BRAC movements to Ft. Meade and the Aberdeen Proving Ground.

At the closure of the workshop, we hope that each participant has left with new knowledge and insights into the opportunities for their students and the vast resources that will help students and parents understand these exciting career opportunities. We also hope participants will continue to take part in and share with parents and students other exciting events scheduled throughout the year, including: The Annual C3 (Cyberethics, Cybersafety and Cybersecurity) Conference, the *Cool Careers in Cybersecurity* program targeting Middle School girls, the *Young Scholars Mindtools Summer Program* for high school students, and the new After-School *Mindtools* Enrichment Programs.

Sincerely,

Davina Pruitt-Mentle
Director
Educational Technology Policy, Research and Outreach
Outreach - STEM Initiatives Division

September 2007

> ETPRO is committed to encouraging today's youth to expand their knowledge of science, technology, engineering and math (STEM) and 21st Century Skills. ETPRO's outreach STEM programs are designed to introduce or re-engage youth to STEM using culturally savvy, community connected activities, in an informal fun fashion while bridging informal activities to classroom content.

**The Information Assurance/Information Security/Digital Forensics**
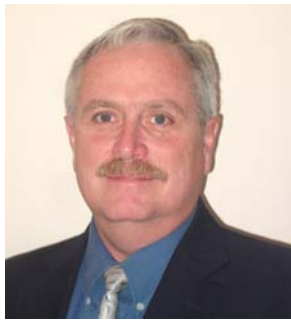**Career Preparation and Opportunity Workshop**
**Agenda**

**8:45 AM**           **Check In**

**8:50 – 9:00 AM**    **Welcome**

**9:00 – 9:30 AM**    **Background/Need:**
Statistics from the Most Recent Intelligence Careers,
Department of Labor Survey, and Global IS Workforce
Study - *Lynn McNulty:* (ISC)[2]
*"Information Security: A Growth Career"*

**9:30 – 10:30 AM**   **Opening Remarks**:
*Dr. Ralph K. Coppola*
Director of Worldwide Education, PTC
PTC-MIT STEM Pipeline Action Committee

**10:30 – 10:40 AM**  **BREAK**

**10:40 – NOON**      **Panel Discussion & Open Forum:**
- Two Year Pathway/Certificate Programs and Options
- Four Year Track Programs

**Panel Members:**
*Amera Bilal:* UMBC/CWIT
*John Baker:* JHU
*Linda Miller:* Northrop Grumman
*Francis Edwards:* Montani Solutions LLC.
*Sally Sullivan:* PGCC/Computer Information Systems

**12:00 – 1:15 PM**   **Working Lunch/Speaker:**
*Carroll McGillin:* Cisco Academy

**1:15 – 2:00 PM**    **Overview of Computer Crime and Digital Forensics:**
*Robert Smolek*
Maryland State Police Computer Crimes Unit

**2:00 – 2:10 PM**    **BREAK**

**2:10 – 2:45 PM**    **Clearance Processes and Requirements:**
*Bruce George:* AACC

**2:45 – 3:00 PM**    **CyberWATCH Regional Center Resources**

**3:00 – 3:30 PM**    **Briefing for Stipend Participants**

BIOGRAPHICAL SKETCHES
In ALPHABETICAL ORDER

Information Assurance/Information Security/Digital Forensics
Career Preparation and Opportunity Workshop

September 27, 2007

Educational Technology Policy, Research and Outreach
CyberWATCH

**John Baker, Sr.** has spent the first 18 years of his career in the information technology industry, designing and developing information systems, and managing technology operations for a diverse set of organizations. These have included the World Bank, Lockheed Martin, Coopers and Lybrand, and Commercial Credit Corporation. In the last 20 years Mr. Baker has directed both the Graduate and Undergraduate Technology programs, and non-credit training offerings for the Carey Business School at John Hopkins University. Currently serving as Director for the program, he is responsible for designing, implementing and managing the School's Undergraduate Business and Technology degree programs. He has 24 years teaching experience at the university level.

**Carey Business School of Johns Hopkins University**
The Carey Business School builds on the Johns Hopkins University tradition of excellence in practice and research with MBA programs in the Baltimore-Washington area, as well as master's degree and certificate programs, and undergraduate programs. http://carey.jhu.edu/itsprograms/

*Quick Facts*

- **Organization**: The Carey Business School of Johns Hopkins University is one of nine schools within the Johns Hopkins University.
- **Accreditation**: Johns Hopkins University is fully accredited by the Middle States Association of Colleges and Universities, the accrediting body for all colleges and universities in the mid-Atlantic region.
- **Master's and certificate programs offered**: The Carey Business School offers flexible format MBA programs, as well as master's degrees in finance, real estate, information and telecommunications systems, organization development and human resources, and marketing. Certificates offered include the Leadership Development Program for Minority Managers, Investments, as well as other innovative graduate certificate programs.
- **Joint Programs offered**: The Carey Business School of Johns Hopkins University offers several specialized degree and certificate programs in conjunction with the School of Medicine (the Business of Medicine), the School of Nursing (MBA/Master of Science in Nursing), and the School of Arts and Sciences (MBA/Master of Science in Biotechnology, MBA/Master of Arts in Communication, MBA/Master of Arts in Government).

Amera Bilal currently serves as the Director for University Initiatives at the Center for Women and Information Technology at the University of Maryland Baltimore County.  Amera oversees and continues to develop the CWIT Scholars program, a merit scholarship program based at the University of Maryland, Baltimore County.  She is responsible for executing a recruitment and retention strategy that seeks to support and graduate women who are pursuing majors such as Mechanical Engineering, Computer Engineering, Information Systems, Computer Science, and new in 2007, Chemical Engineering, all disciplines which show a female participation rate well below 50%.  Amera is a 2002 graduate of Bowie State University, where she studied History and Government.  She has returned to her alma mater to pursue a graduate degree in Human Resource Development, focusing on diversity training and management.  Amera and her husband, Andre Brown, reside in Baltimore City and have one daughter.

The Center for Women and Information Technology (CWIT), established at the University of Maryland Baltimore County (UMBC) in July 1998, is dedicated to providing global leadership in achieving women's full participation in all aspects of information technology (IT). Women's participation in IT will strengthen the workforce, raise the standard of living for many women, and help to assure that information technology addresses women's needs and expands the possibilities for their lives.

The mission has three objectives:
- to encourage more women and girls to prepare for careers and become leaders in information technology
- to communicate information related to the richness and breadth of women's lives, concerns, and possibilities using technology
- to foster research concerning gender and information technology http://www.umbc.edu/cwit/



Dr. Ralph Coppola, EdD is currently Director of Worldwide Education at Parametric Technology Corporation (PTC).  In this role he is responsible for identifying and implementing strategic educational opportunities, and building and shaping the next generation of customers by helping to develop the technology and engineering workforce of the future. When he was Executive Director of the Space Day Foundation he administered Space Day, a massive grassroots effort, implemented by partners in business, government and education, dedicated to the achievements, benefits and opportunities in the exploration and use of the space program. As Chief Educator, at The GLOBE Program, Dr. Coppola was on assignment to the Executive Office of the President of the United States and provided overall direction of all education activities associated with the development program including the long and short range planning and oversight of the program implementation, both domestically and internationally, and the coordination of all education related activities as they were carried out by individual Federal agencies, including NSF, NASA, NOAA and the EPA. He was a faculty member at the College of William and Mary, worked at the National Science Foundation and the University Corporation for Atmospheric Research during his tenure at GLOBE. As Executive Director, Institute for Environmental Policy and Education at Saginaw Valley State University, he designed educational projects that used telecommunications and information technology to transfer environmental knowledge. As Associate Executive Director of the Institute for Humanist Studies he designed educational projects focused on enhancing the quality of life through education and the use of technology. Dr. Coppola taught at the Graduate School of Education, at Rutgers University and served as a teacher at Malcolm X Shabazz High School in Newark New Jersey. He received his doctoral degree from Rutgers University in education.

**Parametric Technology Corporation** engages in the development and support of product lifecycle management and enterprise content management software solutions, and related services worldwide. Its desktop solutions include Pro/ENGINEER, a three-dimensional (3D) product design solution; Mathcad, an engineering calculation software solution that combines a computational engine with a word processor and graphing tools; and Arbortext Editor, an XML-based authoring tool to create content for multiple output types. The company's enterprise solutions comprise Windchill PDMLink, a product content management solution to control information by offering data accessibility, and automating and managing the product development process throughout the life of a product; Windchill ProjectLink, a collaborative project management solution that allows companies to work together on projects through Internet-based compartmentalized workspaces; and Pro/INTRALINK, a Windchill-based Pro/ENGINEER workgroup data management solution; Arbortext Publishing Engine, a server-based system that assembles XML and SGML content, and automatically publishes audience-specific content in both print and electronic forms; and Arbortext Content Manager that provides organizations with a single source of information. The enterprise solutions also include visualization solutions that allow enterprise-wide visualization, verification, annotation, and automated comparison of the electronic design intent; visualization and digital mock-up solutions that support the integration of two-dimensional (2D) and 3D product data; and 2D viewing solutions that enable authors to enrich their technical publications with interactive viewing of technical illustrations. Parametric Technology also offers maintenance services, and consulting and training services. It serves life sciences, publishing, government, and financial services markets. The company was founded in 1985 and is headquartered in Needham, Massachusetts. http://www.ptc.com/

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<u>Francis Edwards</u>, CISSP, GSNA, CCP, NSA IAM/IEM is founder and president of Montani Solutions LLC, an IT Security consulting firm based in Rockville, MD.  The company specializes in INFOSEC assessments, audits, design and training. Francis is a member of ISSA and VP – Education for the National Capital Chapter. He is also a member of ACM, AITP, InfraGard, ICCA and (ISC)[2].

In addition to 10 years experience in IT security, Francis has over 25 years of information technology leadership.  Prior to founding Montani Solutions, he was Manager of IT Security at Montgomery College, establishing its enterprise IT Security program.  He has also he held IT management and leadership positions at DIGEX, GEICO, Fannie Mae, Towson University, Glenville State College and West Virginia University.  Francis has consulted at City/County of Denver CO, NASA/Goddard, Farmers Home Administration, US Dept. of Labor, the State of West Virginia government and numerous private companies.  His activities and responsibilities have included IT security staff and project management; application development; quality assurance; end-user support; and management information / decision support systems.  He has led IT security assessments and evaluations; firewall administration; security audits; RFP development and evaluation; security awareness programs; enterprise anti-virus, spam filtering and patch management implementations; and security planning. Francis received a BS in Computer Science from West Virginia University, and has completed INFOSEC courses in system hardening, network auditing, incident handling and intrusion detection.

Francis holds the following certifications: Certified Information Systems Security Professional (CISSP), SANS/GIAC Systems and Network Auditor (GSNA), Certified Computing Professional (CCP), NSA Information Assurance Methodology (IAM) and Information Evaluation  Methodology (IEM), Gargoyle® Certified Malware Investigator, Cisco Certified Network Administrator (CCNA) – inactive, CheckPoint Certified Security Administrator (CCSA) – inactive

**Montani Solutions** is an IT Security consulting firm that assists organizations and businesses in ensuring that the information processed and contained in their computer systems and networks is secure. Their services minimize the fear and pain of information security breaches and incidents involving:

- Disclosure of confidential information and intellectual property
- Unauthorized access and modification of data        ▪ Loss of access/use of systems

Their personalized approach brings certified professionals and broad-based knowledge and experience to reviewing the people, processes and technology supporting your information systems, identifying vulnerabilities and recommending solutions to protect the information that you rely on for success. Based in Rockville, Maryland, Montani Solutions has clients of all sizes across the United States. http://www.montanisolutions.com/

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**Bruce George**, Ph.D., CISSP earned a B.S. degree in Biology from Cornell University, an M.S. degree in Biology from Midwestern University, and an M.S. and PhD degree from The Ohio State University in Electrical Engineering. He served in the Air Force for 23 years and at the National Security Agency for 13 years before joining Anne Arundel Community College where he teaches information security and other computer related courses as an Associate Professor for the Computer Information Systems department within the School of Business, Computing and Technical Studies.

**Anne Arundel Community College Computer Information Systems** department's main emphasis is to provide courses and programs of study that develop career skills and have immediate application to solving business problems. The department offers more than three dozen technical courses that form the core for seven certificate and three degree programs. Graduates of their programs can enter the workforce or continue their education at a four-year institution. http://www.aacc.edu/cis/default.cfm

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**Carroll McGillin** is the National Initiatives Manager with Cisco Systems' Networking Academy Program. She works with education institutions in the MD-DC-VA area and the US military and other federal agencies in the implementation of the Cisco Networking Academy Program.  In this role, Ms. McGillin has the opportunity to work closely at both the state and local levels to understand the changing requirements for effective CTE programs, including finding ways to engage businesses with the Cisco Academy students and instructors.  A major initiative within Cisco has been to seek ways to increase females' access to academic and career opportunities within the IT industries.  Ms McGillin leads a team within the US Academy team to focus on various awareness and intervention programs to address the gender gap in IT.

Ms. McGillin has been involved in various areas of instructional technology for the past 20 years.  She worked at Apple Computer in the education market both in the US and internationally.   She was also Corporate IT Training Manager at Booz-Allen & Hamilton.   Ms. McGillin received her MA in instructional design from Fordham University.

**Cisco**: enables people to make powerful connections-whether in business, education, philanthropy, or creativity. Cisco hardware, software, and service offerings are used to create the Internet solutions that make networks possible-providing easy access to information anywhere, at any time. Cisco was founded in 1984 by a small group of computer scientists from Stanford University. Since the company's inception, Cisco engineers have been leaders in the development of Internet Protocol (IP)-based networking technologies. Today, with more than 61,535 employees worldwide, this tradition of innovation continues with industry-leading products and solutions in the company's core development areas of routing and switching, as well as in advanced technologies. http://www.cisco.com/

**Lynn McNulty**, CISSP, Director of Government Affairs, (ISC)², brings a wealth of information security management experience in government and private practice. During his 30-year career in the federal government, Lynn was Associate Director for Computer Security at the National Institute of Standards and Technology, the first Director of Information Systems Security at the State Department, and Security Program Manager at the Federal Aviation Administration. Lynn has been a consultant since 1995, providing government affairs, business development, and information security policy consulting services to private and public sector clients. He also served on the (ISC)² Board of Directors for several years, manages government affairs for (ISC)² and is Co-Chair of the (ISC)² Government Advisory Board for Cyber Security. He is also a member of the Information Security and Privacy Advisory Board established by the Federal Information Security Management Act.

Lynn is actively pursued by both national and local media outlets for comment as an expert source on U.S. federal government information security policy and related issues. He has been a guest on PBS's Jim Lehrer News Hour and has been featured in numerous federal IT publications such as Government Executive Magazine, Federal Computer Week, Government Computer News, Federal Times, and SIGNAL Magazine.

**(ISC)²®** is the globally recognized *Gold Standard* for certifying information security professionals throughout their careers. They have certified over 50,000 information security professionals in more than 120 countries. Founded in 1989 by industry leaders, (ISC)² issues the Certified Information Systems Security Professional (CISSP®) and related concentrations: Information Systems Security Architecture Professional (ISSAP®), Information Systems Security Management Professional (ISSMP®) and Information Systems Security Engineering Professional (ISSEP®); the Certification and Accreditation Professional (CAP^CM); and the Systems Security Certified Practitioner (SSCP®) credentials to those meeting the necessary competency requirements. Several of (ISC)²'s credentials meet the stringent requirements of ANSI/ISO/IEC Standard 17024, a global benchmark for assessing and certifying personnel. https://www.isc2.org/

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**Linda Miller** is a Business Development Manager at Northrop Grumman Information Technology: Intelligence Group (TASC). Prior to her work at Northrop Grumman she spent 34 years at the National Security Agency (NSA), retiring as a Defense Intelligence Senior Executive in the SIGINT Directorate.

Linda's wealth of Management and Leadership experience gained through her many years at NSA included the opportunity to hire, mentor, manage and lead cryptanalysts, signals analysts, mathematicians, computer scientists and engineers. Many of these individuals went on to careers in IA/IS and Computer Forensics. She holds a BA in Political Science from the University of South Carolina and is a graduate of the Federal Executive Institute.

TASC is a wholly owned subsidiary of Northrop Grumman IT and is one of the world's premier providers of information management and systems engineering solutions. TASC provides critical systems engineering, information management, and integrated systems management skills to our nation's intelligence, information operations & assurance, space, and communications programs and activities. From design and development to implementation and support, TASC offers a wide range of professional services and technology products to meet the needs of our clients in the US intelligence community, the military, federal and state government.
http://www.it.northropgrumman.com/serve/intelligence.html

**First Sergeant Robert Smolek** is an 18-year veteran of the Maryland State Police, currently assigned to the Criminal Investigation Division where he supervises the Computer Crimes Unit, a specialized investigative unit dedicated to the investigation of computer intrusion, fraud, identity theft, child exploitation, and the forensic analysis of digital media seized during criminal investigations. 1SGT Smolek also directs the Maryland Internet Crimes Against Children Task Force (MDICAC), a federally funded, multi-agency, multi-jurisdictional virtual task force designed to increase the capacity of Maryland law enforcement to respond to computer facilitated crimes against children.

As a Maryland Police Training Commission certified police instructor, 1SGT Smolek regularly lectures, trains, and provides technical assistance in the area of computer crime investigation to federal, state, and local law enforcement agencies and serves an adjunct professor at Anne Arundel Community College where he teaches a Cybercrime course. 1SGT Smolek holds an MS in Management from Johns Hopkins University.

**The Maryland Internet Crimes Against Children** makes use of the task force model, forming collaborative relationships with local Maryland and Federal law enforcement agencies to build a circle of protection around our children to safeguard them from Internet predators and build those investigative capacities within local law enforcement agencies which make possible the effective investigative response to online child exploitation. MDICAC is one of 45 ICAC Task Forces that have been developed nationwide.  http://icac.mdsp.org/

**Sally Sullivan** is a professor of Computer Information Systems at Prince George's Community College. After earning a Master of Arts degree in English and teaching English for a number of years, she became interested in personal computers in the 1980's. This interest led her to pursue education in Computer Information Systems and earn an Associate of Applied Science in Computer Management from PGCC. At that time, learning to program in Cobol was still cutting-edge.

Since then, she has worked as a corporate personal productivity software trainer, a database developer and, since 1994, a full time professor at PGCC. In that position, she teaches a variety of courses, including computer literacy, operating systems, software applications, database management, Security+ and C++. She also coordinates the department's computer literacy course, lately helping to emphasize security and ethical issues. She recently began serving as CyberWATCH project manager. She earned a Master's degree in Management Information Systems from Bowie State University in 2004 and in 2007 a graduate certificate from Capitol College in Security Management, her new field of focus. In June, 2007, she became a CISSP (Certified Information Systems Security Professional).

**The Prince Georges Community College Computer Information Systems Department** offers quality instruction through comprehensive degree and certificate options in the areas of programming, computer networking, Web technology, and systems engineering/analysis. It also provides opportunities for all students at the college to gain technology fluency through its general education offering, Computer Literacy. CIS faculty facilitate innovative learning experiences that equip students with the technical and problem-solving competencies required to obtain employment in the computer industry or continue education at a four-year institution . In addition, the faculty work diligently to create partnerships with local technology employers and are active participants in private and government technology initiatives to ensure currency in both instructional methods and curricula. The department also provides student support mechanisms and dynamic programs that foster retention. http://academic.pgcc.edu/cios/mission.htm
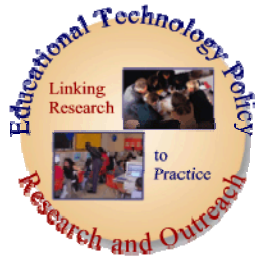
**Davina Pruitt-Mentle** serves as Director for Educational Technology Policy, Research and Outreach (ETPRO).Her primary responsibilities include providing professional development opportunities for educators through workshops and graduate courses, many of which are run on line, and overseeing grant initiatives and research projects that advance effective learning and teaching through technology integration. She has also been instrumental in developing ETPRO's K-12 STEM Outreach model which introduces or re-engages youth to STEM using culturally savvy, community connected activities, in an informal fun fashion while bridging informal activities to classroom content.

She has extensive experience in the research, development and delivery of educational media, including computer software, multimedia, distance learning and print materials. She served on the advisory committee for the national TSSA standards (Technology Standards for School Administrators) and Partnership for 21st Century Skills, and presently serves on the Maryland State Technology Plan Advisory Committee, the Maryland TL8 Advisory Council, Prince George's County Chamber of Commerce Education and Workforce Steering Committee and serves as the Education Chair for the Prince George's County Technology Council. In 2006 she was appointed to serve on the K-16 Maryland Committee on Library Information Literacy and Ethical Use. She has a three ISTE NCATE Program Review Board appointment.

Her research and development interests have focused on constructivist learning and teaching via technology, through her Young Scholars Mindtools Program, Digital Fluency curriculum and professional development through gaming theory. The Mindtools Program provides a means for students to explore technology applications essential to college success while also focusing on career possibilities that connect engineering, science, math and technology. Critical need areas are emphasized such as IT/IA/IS and digital forensics with a special focus on exposing students to the plethora of career opportunities in cybersecurity. A main research initiative looks at technology as an empowerment vehicle by investigating the meaning of technology in the lives of minority students with specific focus on recent Hispanic immigrants.

She has served as faculty lecturer within the College of Education at UMCP since 2001. She served as Director of Educational Technology Outreach within the College of Education at UMCP from 2001-2007. Before joining the College, she taught Chemistry (general through AP) at Oxon Hill High School in Prince George's County, Wheaton High School in Montgomery County, and Charles County Community College, Montgomery College and Central Virginia Community College. She also worked as a contractor in the Fuels Science Division at the Naval Research Laboratory. She has acted as consultant to a number of technology and education-related organizations, and has authored and presented at numerous national, regional and state conferences. Her PhD dissertation at UM in Educational Policy: Community and Educational Opportunity in the U.S.: The Relative Utility of a Community Based Informal Educational Technology Program.

The Information Assurance -Information Security -Digital Forensics Career Preparation and Opportunity Workshop for Guidance Counselors was organized by:

Educational Technology Policy, Research, and Outreach

with support from

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