EXPLORING INTERNATIONAL COLLABORATION ON CYBER EDUCATION, RESEARCH & TRAINING

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UMBC
NSA/DHS CENTER OF EXCELLENCE

PROF. KEITH MAYES
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KAZUO NOGUCHI
KEIO UNIVERSITY JAPAN
INTERNATIONAL CENTER OF EXCELLENCE
Prof. Anupam Joshi

Oros Family Professor & Chair of Computer Science and Electrical Engineering Department at UMBC

Director of UMBC’s Center for Cybersecurity

& the CoTechnical Director of the National Cybersecurity FFRDC
UMBC -- In the Cyber-Epicenter
UMBC Cybersecurity EcoSystem

Degree Programs
• BA/BS/MS/MPS/PhD
• Undergrad CS Cybersecurity Track

Certificate Programs
• Undergrad Cybersecurity Analytics (IS)
• Grad: Cybersecurity Operations (CYBR)
• Grad: Cyber Strategy & Policy (CYBR)

Scholarships
• Federal CyberCorps (SFS)
• UMBC CyberScholars
• DOD IASP

Student Organizations
• CyberDawgs, hackUMBC
• ISSA, ACM, IEEE chapters
• Center for Women in Technology

Non-Credit Training
• UMBC Training Centers
• Summer Enrichment Experiences
• GenCYBER Camps

Campus Research Labs
• Center for Information Security & Assurance
• Ebiquity
• IBM Accelerated Cognitive Cybersecurity Laboratory
• Malware DREAM Lab
• Embedded Systems and Networks Laboratory
• Center for Hybrid Multicore Productivity Research (CHMPR)
• High Performance Computing Facility

Collaborations & Partnerships
• US Naval Academy
• Northrop Grumman
• NSA, ARL, AFOSR, DARPA, IARPA
• Other USM institutions and global academia (Keio, Kyushu, RHUL et al.)
• Private Industry
• NCCoE FFRDC

Industry & Business
• Cync Program
• Cybersecurity Incubator
• Career Services
• Office of Tech Transfer
• Local, Regional, National, & Global Outreach
Some facts and figures

- NSA/DHS **CAE in CyberDefense and Research**!
- 800 grad students across a variety of programs in CSEE and IS, a large fraction focused on security (200+)
- Nearly 3000 undergraduates between CSEE and IS who can take a track or certificate in Cybersecurity
  - CyberDawgs are NCCDC champs 2017!
- Research across the stack, from hardware security to IoT security to networks/systems security to software security to policies
  - Over 125 papers published, over $15M funding since 2009.
  - Collaborations with NSA, NIST, ONR, IBM, GE, NG, Cisco, ...
  - Work across disciplines CS + Policy, CS+Econ, ...
- SFS Cybercorps and Cyberscholars Program
  - Cyberscholars are 70% women, 27% URM
- 50+ Cyber Companies in BWTech@UMBC
  - CYNC program
- Technical lead representing USM in Commerce FFRDC (National Cybersecurity FFRDC)
Prof. Keith Mayes
Director of the Information Security Group
Head of the School of Mathematics and Information Security
The Information Security Group (ISG), Royal Holloway

- The ISG was founded in 1990 and is one of the oldest, and largest specialist information/cyber security groups in the UK
- Situated within three important innovation/enterprise areas
- Trusted by industry and government
The Information Security Group (ISG)

- Since its foundation in **1990** the ISG has been a world renowned centre of excellence in information/cyber security research, education and expert advice.
- It is a **GCHQ/EPSRC Centre of Excellence** for research (**ACE-CSR**).
- It has **GCHQ** certified MSc in information Security
  - …and now a certified BSc via Computer Science
- It hosts one of only two **UK GCHQ/EPSRC Cyber Security Centres for Doctoral Training** (**CDT**).
- It hosts the **Smart Card & IoT Security Centre** and **Systems Security Research Lab**.
- Winner of the InfoSec 2017 SC award for best Cyber Security Education Programme
The Scope of Research (& Education) Activity

- 20+ information/cyber security academic specialist staff & 12+ Research Assistants
- 90+ PhD, 450-500 MSc Students!
- 10+ Visiting Professors/Fellows
- 4000+ International Alumni
- Based on the shared trust and respect between the countries, institutions, departments and experts; we are discussing research collaboration with Keio (Japan), and UMBC (USA)
Mr. Kazuo Noguchi
Senior Researcher, InterNational Cyber Security Center of Excellence
Senior Manager, Hitachi America
InterNational Cyber Security Center of Excellence (INCS-CoE) in vision is based on Government-Private-Academia partnerships related with 3 countries, US, UK, and Japan at the beginning, starting from University as Phase 1, creating the environment for collaboration efforts where people get together.
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<td>International Training and Exercise</td>
<td>Critical Infrastructure Training and Exercise</td>
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<td>2</td>
<td>Training Tools</td>
<td>Create internationally useful tools for training and exercise</td>
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<td>3</td>
<td>Trust and Smart City (Society 5.0)</td>
<td>Create and implement safe and secure digitized city</td>
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<td>Student CTF/Hack-a-thon</td>
<td>Expanding the scope inviting Japanese students to Cambridge 2Cambridge event at MIT</td>
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<td>International Networking</td>
<td>Visiting and exchange opinions visiting US and UK universities by Japanese INCS-CoE Members</td>
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- 3 countries’ project candidates
  - Royal Holloway – UMBC – Keio
- 2 countries’ project candidates
  - Imperial – Keio (MOU signed already)
  - Georgia Tech – Keio (MOU will be signed on Oct 5)
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