



CYBERSECURITY IN UNIVERSITIES: A GLOBAL EXCHANGE PROGRAM

Virtual Component: 16 weekly sessions beginning March 10, 2021
In-person Component: September 2021 (anticipated)

Preliminary Schedule

Virtual Component

All sessions 15:00-18:00 CET (see conversion chart at end)

Session 1: March 10, 2021 Host: Fulbright, Marymount University, World Learning	
Cybersecurity in Universities: A Global Exchange Program – Introductions	<ul style="list-style-type: none"> • Fulbright: Origins and Goals of this Global Exchange • World Learning • Marymount University • Participants • Program Scope • Virtual and In-person Components
Scope of Cybersecurity	<ul style="list-style-type: none"> • Technology (Computer Science, Computer Engineering) • Social Sciences (Economics, Psychology, Sociology) • Business (Management, Finance, Privacy) • Ethics/Policy/Legal • Global Considerations
Preparing the Workforce	<ul style="list-style-type: none"> • Skills Gap • Workforce Needs, Now and in the Future • Training vs Education • Levels of Education • Pathways • National Initiatives

Session 2: March 17, 2021 Host: Marymount University	
Cybersecurity Attack Actors and their Activities	<ul style="list-style-type: none"> • Nation States • Cybercriminals • Hacktivists • Insiders • Cyber Warfare <p>Lecture and lab session: research to identify current cybersecurity actors in above categories</p>
Cyber Attack Vectors	<ul style="list-style-type: none"> • Network Intrusion • Exfiltration of Data/Privacy • Denial of Service/Bots • Malware, Ransomware/Phishing • Disinformation • Cryptojacking • Fraud/Blackmail • Identity Theft • Social Engineering <p>Lecture and lab session: Using the Kali Linux and other open source products</p>
Cybersecurity Education in the US	<p>Panel discussion</p> <ul style="list-style-type: none"> • K-12, community college, and university

Session 3: March 24, 2021 Host: Marymount University	
Impact of Cyber Attacks	<ul style="list-style-type: none"> • Personal Privacy • Business Impact (availability, reputation) • Economic Impact • Intellectual Property Loss • Damage to Critical Infrastructure (e.g. electrical grid). • Civil Discourse (e.g. election interference) • Disruption to Everyday Life.
Cyber Attack Surfaces	<ul style="list-style-type: none"> • Computer Networks/Authentication • Cyber Physical Systems/Critical Infrastructure • Internet of Things (IOT) • Mobile • Cyber Warfare • Government Systems • Healthcare • Cloud Computing • Social Media Sources

	<ul style="list-style-type: none"> • Avionics • Data Aggregation • Other <p>Presentation and development of individual presentations</p>
Social Impact	<ul style="list-style-type: none"> • Election security • Disinformation • Social media in politics

Session 4: March 31, 2021 Host: Marymount University	
Why are we so vulnerable	<ul style="list-style-type: none"> • Global Connectedness • Internet Protocol • Human Factors • Supply Chain • Social Media • Dark Web
Laws, Regulations and Policies	<ul style="list-style-type: none"> • International Treaties (Defense and Others) • International Law Enforcement • Regional and National Law Enforcement (e.g. GDPR) • Standards (e.g. NIST) • Policies <p>Presentation and discussion of US vs Europe and global considerations</p>
What can we do as Educators?	<ul style="list-style-type: none"> • Cybersecurity clinics • Service learning • Research

Session 5: April 7, 2021 Host: Marymount University	
Cyber Defense Tools	<ul style="list-style-type: none"> • Patching (Insecure Software) • Firewalls • Intrusion Protection (Detection) Systems • Cryptography • Monitoring and Surveillance <p>Presentation and lab hands-on session</p>
	<ul style="list-style-type: none"> • Cyberthreat Intelligence <p>Presentation and hands-on exercises with the Recoded Future database</p>
Collaborative approaches	<ul style="list-style-type: none"> • Commonwealth Cyber Initiates (CCI) • Greater Washington Partnerships • Government initiatives – Solarium Commission • Others

Session 6: April 14, 2021 Host: Marymount University	
Impact of New Technologies	<ul style="list-style-type: none"> • DevOps and Agile methods • AI Use by Hackers • Deepfakes • AI • Use for Cyber Defense (e.g. anticipating attacks) • Quantum Computing • Autonomous Vehicles Presentation and lab hands-on session
	<ul style="list-style-type: none"> • Machine Learning • Natural Language Processing (NLP)
	<ul style="list-style-type: none"> • Trustworthy AI • Presentation and Research

Session 7: April 21, 2021 Host: Marymount University	
Businesses and Cybersecurity	<ul style="list-style-type: none"> • Cybersecurity as a Business • Risk Management • Business Implications • Ransomware Effects
Public Sector Cybersecurity	<ul style="list-style-type: none"> • Defense • Intelligence • Federal Government • State and local Government • Private Center Cooperation • International
Entrepreneurship in Cybersecurity	<ul style="list-style-type: none"> • Product Development • Services • Innovation • Funding

<p style="text-align: center;">Session 8: April 28, 2021 Host: Marymount University</p>	
Best Practices	<ul style="list-style-type: none"> • Cyber Intelligence • Open Source Research • Borderless Security • Defense in Depth • Risk Management • Investment in the Right Products • Secure Technology to Support Business <p>Presentation and lab hands-on session</p>
	<ul style="list-style-type: none"> • Configuring Cybersecurity Labs for Students
	<ul style="list-style-type: none"> • Putting It All Together • Marymount University Closing Activities and Transition to World Learning • Expectations for September visit

<p style="text-align: center;">Session 9: May 5, 2021 Host: World Learning</p>	
The Range of Industry and Government Responses to Evolving Threats in the Last 10 years	<ul style="list-style-type: none"> • Trends over the last 10 years and where we are going • Threats to government and industry • Trends in cyber defense: how security teams have reacted and changed • Tech and product trends: from firewalls to multi-layer enterprise defense <p>Panelists to be invited from the Brookings Institution and others</p>
The Landscape of U.S. Academic Offerings in Cybersecurity	<p>Topics and illustrative speakers/panelists to be invited:</p> <ul style="list-style-type: none"> • Cyber Security Education (www.cybersecurityeducation.org/) • Maryland Cybersecurity Center (MC2), an academic center on the University of Maryland campus; research, education, outreach (https://cyber.umd.edu/about) • Certification as Certified Information Systems Security Professional (CISSP) • National Initiative for Cybersecurity Education (NICE) (www.nist.gov/itl/applied-cybersecurity/nice/about) • Computer-Aided Engineering credential • ABET’s cybersecurity accreditation

Session 10: May 12, 2021 Host: World Learning	
Security: from Security Operation Centers (SOC) Up	<ul style="list-style-type: none"> • Detecting malicious activity and mitigating it: the role of SOCs • Virtual visit to a leading security company's SOC • Illustrative SOC examples to be discussed: <ul style="list-style-type: none"> ○ Expel ○ FireEye ○ IBM • Remediating cyber attacks: the role of incident responders (such as Arete Incident Response, a leading incident responder that routinely investigates major cyber attacks, https://areteir.com)
Academic Center Example	<ul style="list-style-type: none"> • Illustrative: Carnegie Mellon University Privacy and Security Institute (https://cylab.cmu.edu/education/programs.html): Their efforts to build a curriculum that equips the next generation of leaders and operators in cyber defense

Session 11: May 19, 2021 Host: World Learning	
Specific Tactical Responses to Cyber Attacks by Industry and Government, on the Front Lines	Case studies and examples <ul style="list-style-type: none"> • Deep Dive: Computer Emergency Response Teams (CERTs) and their Critical Missions • US CERT at the US Department of Homeland Security (DHS) • DHS and the New Cybersecurity and Infrastructure Security Agency (www.cisa.gov)
Student Perspectives	Panel discussions with students and organizers such as: <ul style="list-style-type: none"> • To be invited: Cyber 9/12 Strategy Challenge (an annual cyber policy and strategy competition, (www.atlanticcouncil.org/programs/scowcroft-center-for-strategy-and-security/cyber-statecraft-initiative/cyber-912/)) • To be invited: National Cybersecurity Student Association

Session 12: May 26, 2021 Host: World Learning	
Information Sharing	<ul style="list-style-type: none"> • Information Sharing and Analysis Centers (ISACs) An industry ISAC director shares perspectives about the mission and challenges of sharing threat intelligence • Cyber Fusion Centers: a local/regional/state perspective • Facebook's policy on information sharing

How U.S. Universities Are Exposing Students to Info Sharing Communities and Practices	<ul style="list-style-type: none"> • Illustrative: Cybersecurity Policy and Governance at Boston College
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Session 13: June 2, 2021 Host: World Learning	
The InfoSec Community	<p>In addition to industry and government, many non-profits and independent researchers are key players in the global information security community. Researchers who have been instrumental to thwarting and uncovering major cyber attacks will discuss their work and experiences.</p> <p>To be invited:</p> <ul style="list-style-type: none"> • The Electronic Frontier Foundation (www.eff.org) • Citizen Lab (https://citizenlab.ca) • Researchers at social media companies like Facebook, Twitter, LinkedIn • Security perspectives from Facebook and/or Microsoft

Session 14: June 9, 2021 Host: World Learning	
The Marketplace: Cyber Defense Tools and Services in 2021	<p>Industry analysts explain different product types and Software as a Service (SaaS) offerings that exist and how different enterprises go about making spending decisions about cybersecurity products.</p> <ul style="list-style-type: none"> • Leading analysts, investors, and advisors to government and industry will discuss how they think of the world of different cybersecurity products; companies such as these to be invited: <ul style="list-style-type: none"> ○ Gartner (www.gartner.com) ○ Mitre (www.mitre.org) ○ Strategic Cyber Ventures (https://scvgroup.com) • The expanding threat space and what several start-ups like Safeguard Cyber (https://www.safeguardcyber.com) are doing to keep up with changes in cyber actors attack surfaces.

Session 15: June 16, 2021
Host: World Learning

Cyber and (Dis)Information Operations	<p>States, criminals, corporations, political groups and extremists all use the internet to advance their agendas, such as through a cyber attack and a leak of the compromised material, or by amplifying extreme ideas to broad audiences.</p> <ul style="list-style-type: none"> • How cyber operations are playing an increasing role in our political and social fabric, and what different organizations are doing about this • Social media companies’ roles in this domain • Social media companies are advertising companies. What are the impacts and influences of this social media business model? <p>Speaker from Facebook, Twitter and/or Google (YouTube) Researchers from leading think tank(s) on digital research and manipulation, to be invited, such as from:</p> <ul style="list-style-type: none"> ○ The Digital Forensic Research Lab at Atlantic Council (www.atlanticcouncil.org/programs/digital-forensic-research-lab/) ○ First Draft News (https://firstdraftnews.org)
Research Supported and Sponsored through University Structures	<p>Presentation and discussions with academics who conduct research on disinformation under university umbrellas: sources and mechanisms for funding, and organizational perspectives.</p> <p>Prominent speakers to be invited who associated with major initiatives at University of Washington, Georgia State University and Harvard University</p>

Session 16: June 23, 2021
Host: World Learning

Cyber Operations and International Affairs	<ul style="list-style-type: none"> • The bodies governing the internet including ICANN and the ITU • US national and state policy around internet governance • The General Data Protection Regulation (GDPR): the EU’s Regulation and Implications in the US (companies’ adaptations regarding transparency, consent and consumer protection) <p>Illustrative Speakers from:</p> <ul style="list-style-type: none"> ○ ICANN (www.icann.org) ○ Center for European Policy Analysis ○ Defense Group Inc.’s Center for Intelligence Research and Analysis (CIRA)
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Time zones conversion chart:

	U.S. West Coast Pacific Standard Time	U.S. East Coast Eastern Standard Time	CET Central European Time	EET Eastern European Time
	<i>San Francisco</i>	<i>Washington, D.C.</i>	<i>Czech Republic Poland Hungary Slovak Republic</i>	<i>Bulgaria, Romania, Lithuania, Latvia, Estonia</i>
March 10, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
<i>March 14, Daylight Saving Time Starts in the U.S.</i>				
March 17, 2021	7:00 – 10:00	10:00 – 13:00	15:00 – 18:00	16:00 – 19:00
March 24, 2021	7:00 – 10:00	10:00 – 13:00	15:00 – 18:00	16:00 – 19:00
<i>March 28, Daylight Saving Time Starts in Europe</i>				
March 31, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
April 7, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
April 14, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
April 21, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
April 28, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
May 5, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
May 12, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
May 19, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
May 26, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
June 2, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
June 9, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
June 16, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00
June 23, 2021	6:00 – 9:00	9:00 – 12:00	15:00 – 18:00	16:00 – 19:00