Panel: Security best practices in high-speed networks

UTSA.

The University of Texas at San Antonio™

The Cyber Center For Security and Analytics

Moderator: Elias Bou-Harb, PhD., CISSP

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Chadi Assi

**IEEE Fellow and Full Professor
Concordia University
Montreal, Canada**

Brigadier General (ret) Guy Walsh

Executive Director of the National Security Collaboration Center (NSCC) at UTSA

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Chris Griffin

Chief Network Architect at Florida Lambda Rail

Ken Miller

Energy Science Network - ESnet

Brigadier General (ret) Guy Walsh

Brigadier General (ret) Guy Walsh is the founding Executive Director of the National Security Collaboration Center (NSCC), located at The University of Texas at San Antonio (UTSA). General Walsh has over 20 years of executive level management and operational leadership roles in both national defense and domestic operations (DSCA/DOMOPS) including aerospace operations, cyberspace operations, counterinsurgency and disaster relief and recovery. He has been an innovative and motivational leader of complex organizations including Commander, 175th Wing, Maryland Air National Guard and Commander, and 451st Air Expeditionary Wing, Kandahar, Afghanistan. He served as a National Defense Fellow with the Institute of National Security Studies (INSS) and also holds a Master's degree in International Relations from the University of Southern California.

Prof. Chadi Assi

Dr. Chadi Assi received the Ph.D. degree from the City University of New York. He was a Visiting researcher with Nokia Research Center, Boston, MA, USA, where he worked on quality of service in passive optical access networks. In 2003, he joined the Concordia Institute for Information Systems Engineering, Concordia University, as an Assistant Professor, where he is currently a Full Professor and an IEEE Fellow. His current research interests are in the areas of network design and optimization, network modeling and network reliability, and smart grids. He was a recipient of the prestigious Mina Rees Dissertation Award for his research on wavelength-division multiplexing optical networks. He is on the Editorial Board of the IEEE Communications Surveys and Tutorials, the IEEE Transactions on Communications, and IEEE Transactions of Vehicular Technology.

Ken Miller

Ken Miller recently joined the Science Engagement team at ESnet in February 2020. He will also be assisting the Engagement and Performance Operations Center (EPOC) team with Roadside Assistance, technical workshops/training and science deep dive workshops. Previously, Ken was the lead designer of Penn State's CC* Science DMZ grant. He developed a holistic view of research workflow through researcher engagement and using sFlow streaming telemetry of network packet samples and interface counters, as well as host-sFlow from physical systems, virtual, GPUs, containers, and applications. This data was used to develop a Research Data Security and Networking service that scaled and expanded the Science DMZ to multiple colleges and campuses across the commonwealth. Ken also developed a financial model which sustains the maintenance and continuous improvement of the Science DMZ beyond the original NSF investment.

Chris Griffin

Chris Griffin is the Chief Network Architect for Florida LambdaRail Rail LLC, the research and education regional optical network for the State of Florida. Chris is also the Network Architect for the University of Florida. He has been involved in high performance networking for over 20 years and has worked in both the public and private sectors. His primary professional interests include dense- wave optical networks, high performance research networks, network virtualization and automation. Chris has a Bachelor of Science degree in Computer Science from the University of South Florida.

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Question I

What do you perceive as a top cyber security concern targeting Science DMZs/high-speed networks/critical infrastructure. Are you seeing any new threats/dynamics during COVID-19? What are your employed security tools and techniques to mitigate such concerns?

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Question II

How are you, your private and public sector vendors/collaborators, and/or your research/operational teams using artificial intelligence (AI) (including deep and machine learning) to address the broad cyber security posture of networks/critical assets?

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Question III

What practices or tools do you currently implement to curate (retrieve, store, process, discard) sensitive (research) data? Do you deal with data transfers requiring encryption at very-high speed?

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Question IV

What is your experience with sharing empirical data to facilitate data-driven research related to high-speed networks? How do you handle this from a business and technical point of views?

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Question V

How do you project that the security field will move forward in high-speed networks? What are the pitfalls that must be addressed? What are some innovations that should take place? Are their existing working groups/forums that are relevant in such contexts?

Time (EST)	Topic	Presenter
01:00 - 01:45	Utilizing Cyber Armsraces for the Good Guys	Prof. Nur Zincir-Heywood (Dalhousie University)
1:45 - 2:45	Hands-on Session Bro I: Overview of Zeek, Logs, Zeek Scripting and Signatures, Performance Metrics	Elias Bou-Harb (UTSA)
2:45: - 3:00	Break	
3:00 - 3:45	Panel Security best practices in high-speed networks	Moderator: Elias Bou-Harb Associate Director for Cyber-Center for Security and Analytics, University of Texas San Antonio Panelists Chris Griffin Chief Network Architect at Florida Lambda Rail Guy Walsh Executive Director National Security Collaboration Center, University of Texas San Antonio) Ken Miller Energy Science Network (Esnet) Prof. Chadi Assi Full Professor and IEEE Fellow, Concordia University
03:45 - 04:00	Closing Remarks	Jorge Crichigno, Jason Zurawski

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CyberTraining CIP: Cyberinfrastructure Expertise on High-throughput Networks for Big Science Data Transfers