

<b>EDT</b> <small>(GMT-4)</small>		<b>GMT</b>	<b>17th International Conference on Cyber Warfare and Security</b> <b>ICCWS 2022</b> <b>17 - 18 March 2022</b> <b>State University of New York at Albany, USA</b> <b>This Timetable lists time in EDT (local time in NY) and in GMT</b>		
<b>Wednesday 16 March 2022</b>			Zoom Room Login Details		
<b>10:00</b>	<b>14:00</b>	<b>Pre Conference Workshop</b> How Cyber Warfare and Information Operations are changing Everything! Presented by Dr Leigh Armistead	<b>PASSCODES FOR ALL ROOMS IS: ICCWS22</b>		
<b>18:00</b>		<b>Pre Conference Registration and Drinks, Courtyard by Marriott Albany Thruway (finishes at 18:30)</b>	Plenary Zoom Room 1 – the conference will start in this room <a href="https://us02web.zoom.us/j/82500297676">https://us02web.zoom.us/j/82500297676</a>		
<b>Thursday 17 March 2022</b>			Zoom Room 2 <a href="https://us02web.zoom.us/j/88026364822">https://us02web.zoom.us/j/88026364822</a>		
<b>07:30</b>	<b>11:30</b>	<b>Conference Registration in the ETEC Lobby at State University of New York at Albany, USA</b> <b>Zoom Room opens for virtual participants</b>	Zoom Room 3 <a href="https://us02web.zoom.us/j/86871149932">https://us02web.zoom.us/j/86871149932</a>		
<b>08:00</b>	<b>12:00</b>	<b>Room 1: ETEC 149/151</b> <b>Welcome and Opening of the Conference: Dean Robert Griffin, State University of New York at Albany, USA</b>			
<b>08:15</b>	<b>12:15</b>	<b>Keynote Presentation: Heather Hage, Griffiss Institute (GI), USA</b> <b>Runways to Rome</b>			
<b>09:00</b>	<b>13:00</b>	<b>Conference splits into streams</b>			
		<b>Zoom Room 1 &amp; ETEC 149/151</b> <b>Stream A: Defense</b> <b>Chairs: Stephen Taylor</b>	<b>Zoom Room 2 &amp; ETEC 105</b> <b>Stream B: Trust</b> <b>Chair: Arianit Maraj</b>	<b>Zoom Room 3 &amp; ETEC 107</b> <b>Stream C: Cloud</b> <b>Chairs: Clara Maathuis</b>	
<b>09:10</b>	<b>13:10</b>	The Role of Big Tech in Future Cyber Defence Angela <b>Mison</b> , Gareth <b>Davies</b> and Pete <b>Eden</b> University of South Wales, Caerphilly, UK	Zero Trust Container Architecture (ZTCA): A Framework for Applying Zero Trust Principals to Docker Containers Darragh <b>Leahy</b> and Christina <b>Thorpe</b> Technological University Dublin (TU Dublin), Ireland	Aligning South African Data and Cloud Policy with POPI@ Emma <b>Raaff</b> , Nicole <b>Rothwell</b> and Aidan <b>Wynne</b> , Stellenbosch University, South Africa	
<b>09:30</b>	<b>13:30</b>	Circuit-Variant Moving Target Defence for Side-Channel Attacks Tristen <b>Mullins</b> , Brandon <b>Baggett</b> , Todd <b>Andel</b> and J. Todd <b>McDonald</b> , University of South Alabama, Mobile, USA	I Know You by Heart: Biometric Authentication based on Electrocardiogram (ECG) signals Christoph <b>Lipps</b> , Lea <b>Bergkemper</b> , Jan <b>Herbst</b> and Hans Dieter <b>Schotten</b> , German Research Center for Artificial Intelligence, Kaiserslautern, Germany	Blockchain Technology for Addressing Privacy and Security Issues in Cloud Computing Pardis Moslemzadeh <b>Tehrani</b> , Andasmara Rizky <b>Pranata</b> , University of Malaya, Kuala Lumpur, Malaysia and Gabriele <b>Kotsis</b> , Johannes Kepler Universität, Linz, Austria	
<b>09:50</b>	<b>13:50</b>	Ontologies for Mitigation Selection of Industrial Control System Vulnerabilities Thomas <b>Heverin</b> , Andrew <b>Zeyher</b> , Andy <b>Zeyher</b> , Matthew <b>Lashner</b> and Sanjana <b>Suresh</b> , Drexel University, USA Michael <b>Cordano</b> , Gryphon Technologies, Philadelphia, USA (In Person Presentation)	Zero Trust and Advanced Persistent Threats: Who Will Win the War? Bilge <b>Karabacak</b> and Todd <b>Whittaker</b> , Franklin University, Columbus, USA	Identifying Adversaries' Signatures Using Knowledge Representations of Cyber-attack Techniques on Cloud Infrastructure Gilliam <b>Van Der Merwe</b> , Christian <b>Muller</b> , Wilhelm <b>Van Der Merwe</b> and Dewald <b>Blaauw</b> , Stellenbosch University, South Africa	
<b>10:10</b>	<b>14:10</b>	Social Media Privacy EDEE Security Model Benjamin <b>Yankson</b> , Eric Cajigal <b>Delgado</b> , Sydney <b>Davidson</b> , Natalie <b>Gitin</b> and Amjad <b>Al-Jabri</b> , University at Albany, USA (In Person Presentation)	Cyberbullying indicator as a precursor to a cyber construct development Salman Khalifa <b>Al-Romaihi</b> , Community College of Qatar, Doha, Qatar and Richard Adeyemi <b>Ikuesan</b> , Zayed University, Abu Dhabi, UAE	WFH, no WTH! Neal <b>Kushwaha</b> , IMPENDO Inc. (Canada), Ottawa, Canada, Piret <b>Pernik</b> , CCDCOE, Estonia and Bruce <b>Watson</b> , Stellenbosch University, South Africa	
<b>10:30</b>	<b>14:30</b>	<b>Break - Coffee in ETEC Lobby</b>	<b>Break - Coffee in ETEC Lobby</b>	<b>Break - Coffee in ETEC Lobby</b>	

<b>EDT (GMT-4)</b>	<b>GMT</b>	<b>Zoom Room 1 &amp; ETEC 149/151</b> <b>Stream A: Mini Track on Legal, Security and Drone's</b> <b>Chairs: Pardis Moslemzadeh Tehrani</b>	<b>Zoom Room 2 &amp; ETEC 105</b> <b>Stream B: Education</b> <b>Chairs: Sabarathinam Chockalingam</b>	<b>Zoom Room 3 &amp; ETEC 107</b> <b>Stream C: PhD Colloquium</b> <b>Chairs: Omer Keskin &amp; Saltuk Karahan</b> <b>(10 minute presentations with questions and discussion)</b>
10:50	14:50	Critical Systems Protection (CSP): Uncovering The Secret Service's Tactical Cybercapability for Securing Protectees Austin <b>Hyman</b> , Brian <b>Nussbaum</b> , Mario <b>Bencivenga</b> , and Zachary <b>Rizzo</b> , SUNY Albany, USA (In Person Presentation)	Addressing the Skills Shortage Gareth <b>Davies</b> , Angela <b>Mison</b> and Peter <b>Eden</b> , University of South Wales, Caerphilly, UK	Need for a Cyber resiliency framework for Critical Space Infrastructure Syed <b>Shahzad</b> , Li <b>Qiao</b> and Keith F <b>Joiner</b> , University of New South Wales Canberra, Australia
11:10	15:10	Integrating Democratic Cybersecurity: Empowerment of Traditional Law Enforcement and Democratic Public Safety Michael <b>Losavio</b> , Jeffrey <b>Sun</b> , Sharon <b>Kerrick</b> , Adel <b>Elmaghraby</b> , Sheryl Purdy and Clay Johnson, University of Louisville, USA (In Person Presentation)	Education and training against threats of phishing emails Ladislav <b>Burita</b> , Ivo <b>Klaban</b> and Tomas <b>Racil</b> , University of Defence, Brno, Czech Republic	Ransomware detection using process memory Avinash Singh, Hein Venter, University of Pretoria, South Africa and Richard Adeyemi Ikuesan, Community College Qatar, Qatar
11:30	15:30	Militarization of Police, Violence Against Blacks Counterinsurgency and Information Warfare: Ethical and Anticipated Ethical Issues Richard <b>Wilson</b> , Towson University, Towson & Michael <b>Shifflett</b> , U. S. Department of Homeland Security, USA	BJA Student Computer and Digital Forensics Educational Opportunities Program: The Assessment of Online Graduate Students Kyung-Shick <b>Choi</b> , Chitkushev <b>Lou</b> , Boston University and Kyung-Seok <b>Choo</b> , Utica College, Claire Seungeun <b>Lee</b> , University of Massachusetts Lowell, USA	The Cumulative Cyber Deterrence Maija <b>Turunen</b> , Finnish National Defence University, Helsinki and Martti J. <b>Kari</b> , Jyväskylä University, Finland
11:50	15:50	Mitigating Global Cyber Risk Through Bridging the National Incident Response Capacity Gap Elisabeth <b>Dubois</b> and Unal <b>Tatar</b> , University at Albany, SUNY, USA (in Peson - Work in Progress Presentation)	Futuer Needs of the Cybersecurity Workforce Connie <b>Justice</b> , Char <b>Sample</b> , Clay <b>Hampton</b> , Purdue School of Engineering and Technology, IUPUI, Indianapolis, Sin Ming <b>Loo</b> and Alex <b>Ball</b> , Boise State University, Boise, USA	Human Errors: A Cybersecurity Concern and the Weakest Link to Small Businesses Tabisa <b>Ncubekezi</b> , Cape Peninsula University of Technology, Cape Town, South Africa
12:15	16:15	<b>Zoom Room 1 &amp; ETEC 149/151</b> <b>Keynote Presentation: Tony Sager, Senior Vice President &amp; Chief Evangelist, Center for Internet Security</b> <b>Stranger in a Changed Land</b>		
12:55	16:30	<i>Break - Lunch in ETEC Lobby</i>		
		<b>Zoom Room 1 &amp; ETEC 149/151</b> <b>Stream A: Cyber-Attack</b> <b>Chair: Vijay Bhuse</b>	<b>Zoom Room 2 &amp; ETEC 105</b> <b>Stream B: Mini Track on Cyber Operations in the Global Information Environment</b> <b>Chair: Stilianos Vidalis</b>	<b>Zoom Room 3 &amp; ETEC 107</b> <b>Stream C: PhD Colloquium</b> <b>Chairs: Omer Keskin &amp; Saltuk Karahan</b> <b>(10 minute presentations with questions and discussion)</b>
13:20	17:20	Advancing cybersecurity capabilities for South African organisations through R&D Zubeida <b>Khan</b> and Nenekazi <b>Mkuzangwe</b> , Council for Scientific and Industrial Research, Pretoria, South Africa	Protecting Networks with Intelligent Diodes Jason <b>Dahlstrom</b> , Web Sensing LLC, USA and Stephen <b>Taylor</b> , Dartmouth College, Hanover, USA (In Person Presentation)	Evaluating the Reliability of Android Userland Memory Forensics Sneha <b>Sudhakaran</b> , Golden G <b>Richard</b> III, Louisiana State University, Baton Rouge, USA, Aisha <b>Ali-Gombe</b> , Towson University, USA and Andrew Case, Volexity, USA (PhD In Person Presentation)
13:40	17:40	Cyber-attack modelling - building a general model Martti <b>Lehto</b> , University of Jyväskylä, Finland (In Person Presentation)	On Explainable AI Solutions for Targeting in Cyber Military Operations Clara <b>Maathuis</b> , Open University, Heerlen, The Netherlands	The Impact of CISO Appointment Announcements on the Market Value of Firms Adrian <b>Ford</b> , Ameer <b>Al-Nemrat</b> , Seyed Ali <b>Ghorashi</b> and Julia <b>Davidson</b> , University of East London, UK (PhD)
14:00	18:00	The Failure of Trust in Trusted Systems Angela <b>Mison</b> , Gareth <b>Davies</b> and Pete <b>Eden</b> University of South Wales, Caerphilly, UK	Multi-Purpose Cyber Environment for Maritime Sector Gabor <b>Visky</b> , Arturs <b>Lavrenovs</b> , Erwin Orye, NATO Cooperative Cyber Defence Centre Of Excellence and Dan <b>Heering</b> , Olaf <b>Maennel</b> , Tallinn University of Technology, Estonia, Kimberly <b>Tam</b> , University of Plymouth, UK (In Person Presentation)	Technical Analysis of Thanos Ransomware Ikuromor <b>Ogiriki</b> , Vahid <b>Heydari</b> and Christoper <b>Beck</b> , Rowan University, Glassboro, USA (Masters)
14:20	18:20	Utilising Switch Port Link State to Detecting Rogue Switches Travis <b>Quitiquit</b> and Vijay <b>Bhuse</b> , Grand Valley State University, Allendale, USA (In Person Presentation)	A New Dawn for Space Security Jordan <b>Plotnek</b> and Jill <b>Slay</b> , University of South Australia, Adelaide, Australia	Malware Binary Image Classification Using Convolutional Neural Networks John <b>Kiger</b> , Shen-Shyang <b>Ho</b> , Vahid <b>Heydari</b> and Rowan University, Glassboro, USA (Masters In Person Presentation)
14:40	18:40	<i>Zoom Room 1: Online Networking in Small Groups for Virtual Participants</i>		
15:00	19:00	<i>Close of Conference Day</i>		
19:00		Conference Dinner at Jacob and Anthony Italian, Stuyvesant Plaza, 1475 Western Ave, Albany, NY 12203		

EDT (GMT-4)	GMT	Friday 18 March 2022		
07:30	11:30	Zoom Room opens for virtual participants		
07:45	11:45	Conference Registration at State University of New York at Albany, USA		
08:00	12:00	Room 1: ETEC 149/151 Opening Messages		
08:05	12:05	Keynote Presentation: Col. Jeffrey Erickson, the director of the Army Cyber Institute. Developing the Critical Capabilities Needed to Respond to Cyber Attacks on Modern Cities		
08:50	12:50	Introduction to ICCWS 2023		
09:00	13:00	Poster Presentations Zoom Room 3 & ETEC 107 and in the ETEC Lobby (See final page of programme for details)		
09:30	13:30	Conference splits into streams		
		Zoom Room 1 & ETEC 149/151 Stream A: Cyber Warfare Chairs: Michael Hotchkiss	Zoom Room 2 & ETEC 105 Stream B: Mini Track on Cyber Security Threats in Smart Systems and Innovative Technologies Chairs: Terri Merz	Begins after poster session at 10:00(EST)/14:00(GMT) Zoom Room 3 & ETEC 107 Stream C: Masters Colloquium Chair: Omer Keskin & Saltuk Karahan (10 minute presentations with questions and discussion)
09:40	13:40	'Out Beyond Jointery': Developing a Model for Gaming Multi-Domain Warfare Keith Scott, De Montfort University, Leicester, UK	Context-Aware Cyber Threat Intelligence Exchange Platform Michael Motlhabi, Phumeza Pantsi, Bokang Mangoale, Rofhiwa Netshiya and Samson Chishiri CSIR, Pretoria, South Africa	Virtual Poster Session Continues here
10:00	14:00	Can Attrition Theory Provide Insight for Cyber Warfare? Stephen Defibaugh & Donna Schaeffer, Marymount University, Arlington Virginia, USA (In Person Presentation)	Don't Drink the Cyber: Extrapolating the Possibilities of Oldsmar's Water Treatment Cyberattack James Cervini, Aviel Rubin and Lanier Watkins, The Johns Hopkins University, USA	Securing InfiniBand with the Bluefield 2 Data Processing Unit Noah Diamond, Scott Graham, Air Force Institute of Technology, Gilbert Clark, Airforce Research Laboratory, Dayton, Ohio, USA
10:20	14:20	Cyber Warfare, An Existential Crisis Jacob Oakley, T2S Solutions, Huntsville, AL, USA	A Modern ICT Network Simulator for Co-Simulations in Smart Grid Applications Fabian Niehaus, Bastian Fraune, Richard Sethman and Giacomo Gritzan, FRI, Fakultät Elektrotechnik und Informatik, Bremen, Germany	Performance Implications for Multi-Core RISC-V Systems with Dedicated Security Hardware Samuel Chadwick, Scott Graham and James Dean, Air Force Institute of Technology, USA
10:40	14:40	Cyberwarfare and its effects on Critical Infrastructure Humairaa Bhaiyat and Sipheshile Sithungu, University of Johannesburg, South Africa	Towards Detection of Selfish Mining Using Machine Learning Matt Peterson, Todd Andel and Ryan Benton, University of South Alabama, Mobile, USA	Improving Hardware Security on Talos 2 Architecture Through Boot Image Encryption Calvin Muramoto, Stephen Dunlap and Scott Graham Air Force Institute of Technology, Dayton, USA
11:00	15:00	Assessment of cyber security risks: Maritime automated piloting process Jouni Pöyhönen and Martti Lehto, University of Jyväskylä, Faculty of Information Technology, Finland (In Person Presentation)	Malware classification: A deep learning approach with Space-filling curves David Long and Stephen O'Shaughnessy, Technical University Dublin, Ireland (In Person Presentation)	Analysis of Sexual Abuse of Children Online and CAM Investigations in Finland Johanna Parviainen and Jyri Rajamäki, Laurea University of Applied Sciences, Espoo, Finland
11:20	15:20	The New Wave Cyber Attacks Angela Mison, Gareth Davies and Pete Eden University of South Wales, Caerphilly, UK	Transient Execution and Side Channel Analysis: a Vulnerability or a Science Experiment? Michael Shepherd, Scott Brookes and Robert Denz, Riverside Research, Lexington, MA, USA (In Person Presentation)	Digital Risk Management: Investigating Human-Factor Security with a Behaviorist Approach Ruan Pretorius and Dewald Blaauw, Stellenbosch University, South Africa
11:40	15:40	Data Mining for the Security of Cyber Physical Systems Using Deep-Learning methods Bhagawan Nath, University of Jyväskylä, Finland, Timo Hämäläinen, University of Jyväskylä and Soundararajan Ezekiel, Indiana University of Pennsylvania, USA	Oath Keepers, Domestic Terrorism and Insurgency: Ethical and Anticipated Ethical Issues Richard Wilson, Towson University, Towson & Michael Shifflett, U. S. Department of Homeland Security, USA	Analysis of Image Thresholding Algorithms for Automated Machine Learning Training Data Generation Tristan Creek and Barry Mullins, Air Force Institute of Technology, USA
12:00	16:00	Break - Lunch in ETEC Lobby		

<b>EDT (GMT-4)</b>	<b>GMT</b>	<b>Zoom Room 1 &amp; ETEC 149/151</b> <b>Stream A: Security</b> <b>Chairs: Martti Lehto</b>	<b>Zoom Room 2 &amp; ETEC 105</b> <b>Stream B: Cyber Protection and Regulations</b> <b>Chairs: Neal Kushwaha</b>	<b>Zoom Room 3 &amp; ETEC 107</b> <b>Stream C: Security Issues</b> <b>Chair: Bruce Watson</b>
13:00	17:00	Analysing the performance of Block-Splitting in LLVM Fingerprinting William <b>Mahoney</b> , George <b>Grispos</b> , Phil <b>Sigillito</b> , Jeff <b>Smolinski</b> , University of Nebraska at Omaha, USA and J. Todd <b>McDonald</b> , University of Soouth Alabama, USA	An Ontology for Effective Security Incident Management Sabarathinam <b>Chockalingam</b> , Institute for Energy Technology, Halden, Norway and Clara Maathuis, Open University of the Netherlands, The Netherlands	Taxonomy of Social Engineering Attacks; A survey of trends and future directions Arianit <b>Maraj</b> , Telecom of Kosovo, Republic of Kosovo and William <b>Butler</b> , Capitol Technology University, USA
13:20	17:20	Emerging Cyber risk Challenges in maritime transportation Jussi <b>Simola</b> and Jouni <b>Pöyhönen</b> , University of Jyväskylä, Finland	Bug Bountys: Between New Regulations and Geopolitical Dynamics Jantje <b>Silomon</b> , Mischa <b>Hansel</b> and Fabiola <b>Schwarz</b> , Institute for Peace Research and Security Policy, Hamburg, Germany	Improving Protection Against Cybersecurity Attacks of Emergency Dispatch Centers Jim <b>Sweeney</b> and Vu Tran, Capella University, Bristol, USA
13:40	17:40	A Novel DevSecOps Model for Robust Security in an MQTT Internet of Things. Manasa <b>Ekoramaradhy</b> and Christina <b>Thorpe</b> , Technological University Dublin (TU Dublin), Ireland	Design and Evaluation of a Cyber Protection Team Planner Work Aid Kristen <b>Liggett</b> , Arielle <b>Stephenson</b> , Geoffrey <b>Dobson</b> and Meghan <b>Strang</b> , Air Force Research Laboratory, WPAFB, OH USA	Increasing Industry Profitability and Cyber Hygiene Utilizing Awareness Progression Methods John <b>Theborge</b> , Mark <b>Reith</b> and Wayne <b>Henry</b> , Air Force Institute of Technology, USA
14:00	18:00	The Development of Cybersecurity Awareness Measurement Model in the Water Sector Bryan S. <b>Mufor</b> , Annlizé <b>Marnewick</b> and Suné <b>von Solms</b> , University of Johannesburg, South Africa	KKK, Hegel and The Alt Right: An Ethical and Anticipated Ethical Analysis Richard <b>Wilson</b> , Towson University, Towson, USA	
14:20	18:20	<b>Room: ETEC 149/151</b> <b>Summary of the Conference:</b> <b>Awards to the winner of the Best PhD Paper and Best Poster</b>		
14:30	18:30	<i>Close of Conference</i>	<i>Close of Conference</i>	<i>Close of Conference</i>

## **Poster Presentations**

**Posters will be presented in the ETEC Lobby by in person participants and in Zoom Room 3 by Virtual Participants on Friday 18th March at 9:00 EDT/13:00 GMT.  
Posters are available to view on facebook and in dropbox at any time.**

<b>Posters to be displayed in ETEC Lobby throughout the conference, presentations take place during Friday morning coffee break</b>	<b>Friday: 9:00-10:00 EST/13:00-14:00 GMT Zoom Room 3 &amp; ETEC 107 Stream C: Poster Presentations Chair: Jantje Silomon 5 minute presentation plus 5 minutes for questions</b>
<b>In-Person Posters</b>	<b>Virtual Posters</b>
An Exploration on APTs in Biocybersecurity and Cyberbiosecurity Xavier-Lewis <b>Palmer</b> , Lucas <b>Potter</b> and Saltuk <b>Karahan</b> , Old Dominion University, USA (WIP Paper)	Incremental Malware Detection and Classification Using Hidden Markov Models Ran <b>Liu</b> and Charles <b>Nicholas</b> , University of Maryland, Baltimore County, United States
College Students' Digital Financial Literacy and Payment Fraud Prevention Behavior Yueqi <b>Li</b> & Ingrid <b>Fisher</b> University at Albany	Benefits of Crowdsourced Penetration Testing: Implementing an Industry Wide Crowdsourced Platform to Strengthen Penetration Testing and Artificial Intelligence Bianca <b>Pasikhani</b> , University of Maryland, University College Adelphi, MD, USA
	Cognition: a Goal, a Target, or a Weapon? Clara <b>Maathuis</b> , Open University, Heerlen, The Netherlands (Invited Poster)
	OSINT on the Dark Web: Child Abuse Material Investigations Iiro <b>Lahti</b> and Jyri <b>Rajamäki</b> , Laurea University of Applied Sciences, Espoo, Finland
	"You cannot Hide Behind Your Thoughts: EEG-based Biometric Identification". Christoph <b>Lipps</b> , German Research Center for Artificial Intelligence, Kaiserslautern, Germany
	The Big Lie, Disinformation, and Insurgency: Ethical and Anticipatory Ethical Issues Richard <b>Wilson</b> , Towson University, Towson, USA
	ISIS and U. S. Domestic Terrorism: A Comparison and Anticipating the Ethical Issues Richard <b>Wilson</b> , Towson University, Towson, USA