

## ICCWS 2023 Editorial

These proceedings represent the work of contributors to the 18th International Conference on Cyber Warfare and Security (ICCWS 2023), hosted Towson University, Baltimore County, Maryland, USA on 9-10 March 2023. The Conference co-Chairs are Richard Wilson, Towson University, Baltimore County, Maryland, USA, and Major Brendan Curran, from National Security Agency's Space Cybersecurity Office in Fort Meade, Maryland.

ICCWS is a well-established event on the academic research calendar and now in its 18th year, the key aim remains the opportunity for participants to share ideas and meet the people who hold them. The scope of papers will ensure an interesting two days. The subjects covered illustrate the wide range of topics that fall into this important and ever-growing area of research.

The opening keynote presentation is given by Justin Fanelli, Technical Director, Dept of Navy PEO Digital, on the topic of *Can Zero Trust Restore Our Ailing Trust?* The second day of the conference will open with an address by Dr. George R. Lucas, Stockdale Center at the U.S. Naval Academy. His talk is titled *Military Ethics & Algorithmic Warfare: from the Battlefield to the Cyber Domain*

With an initial submission of 136 abstracts, after the double blind, peer review process there are 53 Academic research papers, 6 PhD research papers, 12 Masters Research papers and 1 work-in-progress paper published in these Conference Proceedings. These papers represent research from Brazil, Austria, China, Estonia, Finland, Germany, Israel, Italy, Kenya, Nigeria, Pakistan, Russia, Saudi Arabia, Slovakia, South Africa, Sweden, Switzerland, Taiwan, UAE, Uganda and the United Kingdom.

We hope you enjoy the conference.

Richard L. Wilson  
Towson University, Baltimore County  
Maryland, USA  
March 2023

## ICCWS 2023 Conference Committee

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## Biographies

### Conference and Programme Chairs



**Richard L. Wilson** is a Professor in Philosophy at Towson University in Towson, MD. Professor Wilson Teaches Applied Ethics in the Philosophy and Computer and Information Sciences departments at Towson while also serving as Senior Research Scholar in the Hoffberger Center for Professional Ethics at the University of Baltimore. Professor Wilson's interest's are directed towards applying phenomenology to issues with emerging and innovative technologies.



**Major Brendan Curran** currently serves as a strategist for the National Security Agency's Space Cybersecurity Office in Fort Meade, Maryland. Major Curran is an Army Space Operations Officer with over twenty years of experience as both an active duty U.S. Army Commissioned and Non-Commissioned Officer in the fields of engineering, intelligence, communications, and space operations. Over the course of his fourteen years in the space community Brendan has integrated space-based capabilities and emerging technologies in support of military activities throughout Europe, Southwest Asia, and Africa. Major Curran established the Space Operations & Integrated Joint Special Technical Operations programs at 10th Special Forces Group (Airborne), Mission Command Training Program, and the Army Space Officer position at U.S. Space Force Space Operations Command (then U.S. Air Force Space Command) where he co-chaired the initial planning team that led to the creation of the National Space Defense Center. His professional passions are operational design, unconventional warfare, and strategy. Brendan is Defense Advanced Research Projects Agency (DARPA) Service Chief Fellow, Horatio Alger Association Distinguished Military Scholar, recipient of the BG Sharp Distinguished Leadership Award, and alumni of the U.S. Army training with industry program at the Johns Hopkins University Applied Physics Laboratory. He attended Towson University, MD on an Army Green to Gold scholarship where he earned a BS in Philosophy. Major Curran later attended Norwich University where he earned a MA in Diplomacy with a concentration in international conflict resolution. Major Curran is married to Dr. Carrie Arnold. They have a seven-year-old daughter. When he's not gazing up at the stars, Brendan can be found immersed in gardening and herpetology.

### Keynote Speakers



**Mr. Justin Fanelli** is the Technical Director of Program Executive Office Digital & Enterprise Services (PEO Digital), chartered to provide strategic technical leadership for the rapid transformation of enterprise IT infrastructure within the Department of Navy. His portfolios include Cloud and Platforms, Cyber and Operations, Digital Workplace/Productivity, Infrastructure, End User Services, and several others. Mr. Fanelli also serves as Chief Architect of Defense Medical Intelligence Data and Advisor to The Advanced Research Projects Agency for Health (ARPA-H), the moonshot startup within US Department of Health and Human Services.



**Dr. George R. Lucas** is a specialist in applied ethics (military, professions, technology) and history of modern philosophy/philosophy of science. He is Distinguished Chair in Ethics Emeritus at, Stockdale Center for Ethical Leadership, U.S. Naval Academy (Annapolis MD), Emeritus status conferred by Secretary of the Navy in April 2014 for life. Lucas is widely published, most recently with the book, *Law, Ethics, and Emerging Military Technologies: Confronting Disruptive Innovations* (Oxford: Routledge, 2022). He is also the General Editor of a Collected Critical Edition of the Works of Alfred North Whitehead (Edinburgh University Press). Lucas' current areas of research interest are Cyber Ware Ethics and AI and Cyber Warfare.

### Mini Track Chairs



**Dr. Jawad Hussain Awan** is Assistant Professor, Department of Computer Science, Shaheed Zulfikar Ali Bhutto Institute of Science & Technology, Ghara Campus, Sindh, Pakistan. He is a member of IFIP WG 9.10: ICT Uses in Peace and War, and an active researcher with the Global Foundation for Cyber Studies and Research Group. His research interests are ICT, Data Science, Cyber security, Security challenges in Smart and Physical Systems. He has published his research in several national and international research journals. He is the member of Editorial Review Board of a number of journals including of IEEE Access, Egyptian Journal of Informatics and the Journal of Information Warfare. He performed his duties as Committee member in ICCWS & ECCWS 2019, 2020, 2021 and 2022. He is also Microsoft Certified Professional in Web Programming, and has won research awards with the collaboration of HEC, Pakistan and the British Council. He also worked as Lab Manager, Lecturer, and Research Fellow.



**Dr. Zakariya Belkhamza** is currently a member of faculty at the computer information Systems department, Ahmed Bin Mohammed Military College, Doha, Qatar. His area of expertise is information systems, strategic information systems, system design and architecture. Dr. Zakariya Belkhamza holds a Ph.D. in Information systems. He has published several papers in International journals and has authored and edited several books in the area of information systems.



**Dr. Jason C. Brown** is a research scientist and assistant professor at the Army Cyber Institute at West Point. He teaches risk management and organizational security, and as a futurist, he studies emerging threats, technological and social trends, and responses to those threats. A currently serving officer with the U.S. Army, Dr. Brown has worked within the intelligence, information operations, and cyber career fields. He has authored technical reports on the future of extremism, information warfare, cyber enabled financial crimes, and Chinese soft power.



**Dr. Jessica Dawson** is the Information Warfare Division Chief at the Army Cyber Institute at West Point. She holds a Ph.D. from Duke Sociology and teaches social inequality and social theory. Her research focuses on the digital disruption of social processes. She serves as a special advisor to Army senior leaders on social media threats and information warfare.



**Christoph Lipps**, graduated in Electrical and Computer Engineering at the University of Kaiserslautern, where he meanwhile lectures as well. He is a Senior Researcher and Ph.D. candidate at the German Research Center for Artificial Intelligence (DFKI) in Kaiserslautern, Germany, heading the Cyber Resilience & Security Team of the Intelligent Networks Research Department. He is not only a member of the committee of the ICCWS and ECCWS, but also scientific committee member of various international conferences, and reviewer of several journals. His research focuses on Physical Layer Security (PhySec), Physically Unclonable Functions (PUFs), Artificial Intelligence (AI), entity authentication, Security in the Sixth Generation (6G) Wireless Systems and all aspects of network and cyber security.



**Dr. Char Sample** is a researcher with ICF. Dr. Sample also teaches at Boise State University. She has given guest lectures at Bournemouth University, Rensselaer Polytechnic University and Royal Holloway University. Dr. Sample has over 20 years' experience in the information security industry. Dr. Sample's research focuses on deception, and the role of cultural values in cybersecurity events Update. More recently she has begun researching the relationship between human cognition and machines. Presently Dr. Sample is continuing research on modeling cyber behaviors by culture, other areas of research are data resilience, cyber-physical systems and industrial control systems.



**Dr. Pardis Moslemzadeh Tehrani**, is a Visiting Associate Professor at the Faculty of Law, the University of Malaya. She was a Senior Lecturer at the same university from 2015 to 2022. Her research interests span the area of Information Technology Law, International Humanitarian Law and legal research methodology. Pardis has made scholarly contributions in peer-reviewed journals and presented papers in several national and international conferences and served on many conferences and workshop program committees.



**Dr Stilianos Vidalis**, Head of the Networks, Security and Systems subject group at the Department of Computer Science of the University of Hertfordshire. Leading the development of an innovative technology that automates threat assessments. Experienced in all aspects of Information Operations (IO) with excellent understanding of the Information Security (IS) lifecycle. Acted as an instructor for the British Armed Forces Intelligence Personnel on penetration testing and digital forensics for a number of years. Acted as a cyber-expert for the Welsh Government and for the Wales University Officers' Training Corps (WUOTC).