

# Washington, D.C. • October 18-21, 2021

# Transforming the Resilience of Critical Infrastructure Systems and Communities

*Resilience Week Objective:* A Symposium dedicated to advancing the interdisciplinary dialog on policy and technologies that accelerate critical infrastructure and community resilience to unexpected and malicious threats.

#### SUBMISSION SCHEDULE

Call for Special Sessions

- Submissions due: June 21
- Acceptance notification: June 28
- Call for Papers
- Submissions due: July 12
- Acceptance notification: September 6
- Final submissions due: September 30

#### COST

- \$495 for registration by October 1
- \$50 discount for IEEE members
- \$75 discount for IES members
- \$375 for current students

#### VENUE/ACCOMMODATIONS

In Partnership with TechConnect World TechConnect Gaylord National Hotel & Convention Center 201 Waterfront Street, National Harbor, MD 20745 General Hotel Info: (301) 965-4000 Room Reservations Phone: (877) 491-0468 mention "TechConnect" block to receive the special rate.

#### SYMPOSIUM CHAIRS

General Chair

 Craig Rieger, Idaho National Laboratory <u>Deputy General Chair</u>

 Justin Welch, Idaho National Laboratory <u>General Organizing Chair</u>

Jodi Grgich, Idaho National Laboratory
<u>Technical Program Chair</u>

• Tim McJunkin, Idaho National Laboratory Workforce Development Chair

Eleanor Taylor, Idaho National Laboratory

## CALL FOR SPECIAL SESSIONS

Within all topical areas, participants interested in exploring new interdisciplinary approaches or perspectives on resilience are encouraged to submit an abstract, including title, paragraph overview, topical area(s) and chair(s). Sessions or full tracks may be proposed, including invited and paper presentations, panels and facilitated discussions. Submission site:

https://cmt3.research.microsoft.com/User/Login?ReturnUrl=%2FRW21

#### CALL FOR PAPERS

Full papers: written following IEEE format and limited to seven double column pages in a font no smaller than 10 points. Note that an extra page fee of \$100 for each page (up to three additional pages) will apply to any camera-ready version exceeding the page limit.

Work in progress and industry practice: written following IEEE format and limited to four double column pages, in a font no smaller than 10 points. Work-in-progress papers describe research that has not yet produced the results required for a full paper, but that due to its novelty and potential impact deserves to be shared with the community at an early stage.

Accepted papers and work-in-progress papers will be submitted to IEEE for publication in Xplore.

#### WORKFORCE DEVELOPMENT SUBMISSIONS

Accepting innovative approaches, methodologies and special session proposals, papers, panels, and lightning talks specifically addressing talent pipelines and the practice and experience in developing resilience related domains as a profession and/or research area, as well as creating highly proficient multi-disciplinary teams and a workforce that realizes the full potential of people across all demographics. Examples of relevant topics include related training opportunities, curriculum development advances, assessment tools, competitions, integrated education pathways, community-based methods, inclusive environments, STEM outreach, professional development, case studies and best practices. New ideas and novel approaches are welcomed and encouraged. Please submit an abstract, including title, paragraph overview and topic(s) to be addressed. Submission site: https://cmt3.research.microsoft.com/User/Login?ReturnUrl=%2FRW21

# ELEMENTS OF RESILIENCE Accepting Special Session Proposals and Papers

## **Control Systems**

Program Chairs: Kevin Schultz, Johns Hopkins App. Physics Lab -- Quanyan Zhu, New York University Review Chair: Kris Villez, Oak Ridge National Laboratory

Topical areas include: anomaly detection, adaptive, fault-tolerant, and resilient control systems; distributed and robust sensing; monitoring/control security; data analytics and machine learning for control and optimization, diagnostic and prognostic tools, computational intelligence; cyber-physical power and energy systems; robotic systems; cyber-physical system security; cybersecurity for industrial control systems; autonomous cyber defense; internet of things; intelligent transportation systems; control of critical infrastructures; smart manufacturing and smart health.

## Cyber Systems

Program Chairs: Char Sample, Idaho National Laboratory -- David Manz, Pacific Northwest National Laboratory Review Chair: Nate Evans, Argonne National Laboratory

Topical areas include: cyber architecture; human machine interaction and cyber social understanding; human systems design, human and systems behavior; education and workforce development; sensor architectures; data fusion; computational intelligence; resilient cyber frameworks and architectures, adaptive/ agile/ moving defenses; resilient cyber-physical power and energy systems.

## **Cognitive Systems**

Program Chairs: Katya Le Blanc, Idaho National Laboratory -- Roger Lew, University of Idaho Review Chair: Nathan Lau, Virginia Tech

Topical areas include: selection, training and performance in complex sociotechnical systems; human performance models of event response; cognitive readiness in high-consequence environments, macroergonomics, systems design, and safety, human factors of security, privacy, and trust, situated cognition in cyber, physical, and hybrid environments, procedures, checklists, and skilled performance, human supervisory control and complex systems performance; distributed cognition, expertise coordination, and teamwork; human-machine interaction with automation, computers, and robots, and autonomous and semi-autonomous systems/technology.

#### **Communications Systems**

Program Chairs: Brad Nelson, Idaho National Laboratory -- Eyuphan Bulut, Virginia Commonwealth University Review Chair: Kemal Akkaya, Florida International University

Topical areas include: architectures, threats and failures, remediation and recovery, characterization, experiments and measurements, networks and infrastructure, military applications, civil applications, security, privacy and trust in communications, communications for cyber-physical systems (including but not limited to: power transmission and distribution, transportation, autonomous vehicles, aerial networks, industrial automation, building management systems, health care, agriculture, logistics, etc.), cloud, edge and fog computing.

# COMPLEX ENVIRONMENTS Accepting Special Session Proposals and Papers

#### **Communities and Infrastructures**

Program Chairs: Abraham Ellis, Sandia National Laboratories -- Emma Stewart, National Rural Electric Cooperative Association – Stephanie Pilkington, The University of North Carolina at Charlotte Review Chair: Ray Byrne, Sandia National Laboratories

Topical areas include: governance and resilience policy: temporary boust

Topical areas include: governance and resilience policy; temporary housing, impacts on affordable housing, and long term housing recovery; effects of human factors in recovery; intersection of social and physical vulnerability; business interruption and interruption of critical social services and institutions; models, metrics and systematic approaches to resilience planning; interdisciplinary approaches to resilience; capacity building and sustainability challenges; role of distributed community-based assets (utility and customer owned, including social services and the local economy) in recovery; resilience assessment methodologies and incorporation of sociotechnical approaches; application of advanced visualization methodologies (e.g., geospatial and virtual reality) that enhance critical infrastructure analysis reports and information sharing processes; and techniques to improve critical infrastructure resilience to all-hazards.





