

2017 Frontiers in Resilience Symposium:

***Developing Innovative Resilience Solutions at
the Interface of Science, Economics, and Policy***

**May 10 – 11, 2017
George Mason University
Arlington Campus
Founders Hall**

Symposium Agenda **Wednesday, May 10**

- 8:00 - 8:45am** **Event Registration and Check-in (Founders Hall)**
- 8:45 – 9:00** **Welcome Remarks and Introductions (Auditorium)**
- Eric Vugrin, Ph.D.**
Sandia National Laboratories
- Mark Troutman, Ph.D.**
Center for Infrastructure Protection and Homeland Security
- 9:00 – 9:20** **Symposium Opening Remarks (Auditorium)**
- Deborah Crawford, Ph.D.**
Vice President of Research
George Mason University
- Heidi Ammerlahn**
Director, Homeland Security Programs
Sandia National Laboratories
- 9:20 – 10:20** **Opening Keynote Address (Auditorium)**
- Susan Monarez, Ph.D.**
Deputy Assistant Secretary for Strategy and Analysis
Department of Homeland Security
- Brian J. Moran**
Secretary of Public Safety and Homeland Security
Commonwealth of Virginia
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- 10:20 – 10:30** **BREAK (Founders Hall Art Gallery)**
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10:30 – 11:45

Subject Matter Experts Panel (Auditorium)

Resilience Challenges in the Decades to Come: What Keeps You Up at Night?

Moderator:

Mark Troutman, Ph.D.

Center for Infrastructure Protection and Homeland Security

Susan Spierre Clark, Ph.D.

University of Buffalo

Stephen Flynn, Ph.D.

Northeastern University

Susan Ginsburg

U.S. Civil Security, LLC

Vanessa Vargas

Sandia National Laboratories

Alex Washburn

Stevens Institute of Technology

Evan Wolff

Crowell & Moring, LLP

11:45 – 1:00pm

Lunch (Multipurpose Rooms)

David Martin, Ph.D.

Executive Director

Centre of Applied Innovation, Melbourne Polytechnic Institute

1:00 – 2:15

Subject Matter Expert Panel (Auditorium)

Community Resilience: Buildings, Districts, and Cities

Moderator:

Mahmoud Taha, Ph.D.

University of New Mexico

Jared Genova

City of New Orleans, LA

Kevin Bush

U.S. Department of Housing and Urban Development

Robert Jeffers, Ph.D.

Sandia National Laboratories

Karina Korostelina, Ph.D.

George Mason University

Benjamin Thomas, Ph.D.

Oak Ridge National Laboratories

Alexander Zhivov, Ph.D.

U.S. Army Corps of Engineers

2:15 – 2:30

BREAK (Founders Hall Art Gallery)

2:30 – 3:45

Cross-Cutting Sessions

Track A: Cyber Resilience

Founders Hall Room 118

Panel on Cyber Resilience

Moderator:

Walter Dula

Accenture Federal Services

Stacy Gardner

Capitol One

Randy Sylvertooth

National Cybersecurity and Communication Integration Center

Jermard Hagan

FreddieMac

Track D: Innovative Approaches

Founders Hall Room 121

Discussant: Holly A. Dockery, Ph.D.

1. Rodric Bowman, D.Sc. – NYC Health + Hospitals
The Garden State Approach: A Model to Improve Preparedness and Strategically Enhance Resiliency at the Community Level
2. Kathryn Godfrey and Denton Herring – Government Accountability Office
Evaluating and Encouraging Integrated Disaster Resilience Action
3. Rae Zimmerman, Ph.D. – New York University
Infrastructure Frameworks for Urban Resilience

Track C: Critical Infrastructure

Founders Hall Room 318

Discussant: Mark Troutman, Ph.D.

1. Mahmoud Reda Taha, Ph.D. – University of New Mexico
Redundancy: A Gateway for Resilience-Based Design of Civil Infrastructure
2. Ignacio Martinez-Moyano, Ph.D. – Argonne National Laboratories
Bounded Resiliency
3. Sarah Gambill, Sandra Pinel, Wynne Kwan, Larry Henschel, and Kerry O'Connor – U.S. Department of Homeland Security
Bridging Sectors and Jurisdictions: A Holistic Approach to Developing Physical and Cyber Infrastructure Security and Resilience

3:45 – 5:00

Crossing Cutting Sessions

Track E: Lifeline Sector Resilience

Founders Hall Room 118

Discussant: Eric Vugrin, Ph.D.

1. Jennifer F. Sklarew, Ph.D., Colin Reagle, Ph.D., Viviana Maggioni, Ph.D., Paul Houser, Ph.D., Dann Sklarew, Ph.D., and Celso Ferreira, Ph.D. – George Mason University
Empowering Resilience in Energy and Water Systems: Addressing Barriers to Implementation of Urban Hydroelectric Microturbines
2. Elizabeth J. Kistin Keller, Ph.D. – Sandia National Laboratories
Water Governance and Resilience in the Orange – Senqu River Basin

Track B: Urban and Community Resilience

Founders Hall Room 121

Discussant: Rossitza Homan, Ph.D.

1. Lori R. Hodges – Larimer County, CO
Community Fragility: Putting Research into Action
2. Shari P. Willis, Ph.D., Christian A. Howieson, and Destiny D. Aman –
HWC
*Recommended Methods for Using Behavioral Science-based Risk
Communications to Increase CRS Participation*

5:00 – 7:00

Networking Reception (Multipurpose Rooms)

Thursday, May 11

8:00 – 8:45am **Event Registration and Check-in (Founders Hall)**

8:45 – 9:00 **Welcome Back Remarks (Auditorium)**

9:00 – 10:15 **Subject Matter Experts Panel (Auditorium)**
Putting Resilience in Practice: Enhancing Resilience of the Power Grid

Moderator:
Charles Hanley
Sandia National Laboratories

Robert Bradish
American Electric Power

Katie Jereza
Edison Electric Institute

Robert Manning
Electric Power Research Institute

Dan Ton
U.S. Department of Energy

Michael Winka
New Jersey Board of Public Utilities

10:15 – 10:30 **BREAK (Founders Hall Art Gallery)**

10:30 – 11:45 **Crossing Cutting Sessions**

Track B: Urban and Community Resilience
Founders Hall Room 111

*Challenges Affecting Climate Change Resiliency in the Greater
Washington, DC Area*

Moderator:

Dale Medearis, Ph.D.

Northern Virginia Regional Commission

Cory Miles

Northern Virginia Regional Commission

Amanda Campbell

Northern Virginia Regional Commission

Harrison Newton

100 Resilient Cities

Track A: Cyber Resilience

Founders Hall Room 118

Discussant: Bern Dealy, Ph.D.

1. Aaron Clark-Ginsberg, Ph.D. – Stanford University
What is Cyber-Resilience?
2. Sachin Shetty, Ph.D. – Old Dominion University
Linfeng Zhang, Jay P. Kesan, and David Nicol, Ph.D. – University of Illinois at Urbana-Champaign
Improving Assessment of Technological and Portfolio Risks

Track B: Urban and Community Resilience

Founders Hall Room 120

Discussant: Mark Troutman, Ph.D.

1. Meghan Housewright – National Fire Protection Association
International Standards Activities for Smart and Sustainable Cities
2. George W. McAleese and Lori W. Gordon
Recommendations for Use of Federal Resilience Tools and Resources in Smart Cities to Mitigate Infrastructure risks and Vulnerabilities

Track C: Critical Infrastructure

Founders Hall Room 121

Discussant: Holly A. Dockery, Ph.D.

1. Valerie M. Thomas, Ph.D. – Georgia Institute of Technology
Modeling New Infrastructure: Optimism Uncertainty, and Failure
2. David L. Alderson, Ph.D. – Naval Postgraduate School
Overcoming Barriers to Greater Scientific Understanding of Critical Infrastructure Resilience
3. Susan Spierre Clark, Ph.D. – University of Buffalo

*A Capabilities Approach towards Prioritization of Critical
Infrastructure Resilience*

Track E: Lifeline Sector Resilience

Founders Hall Room 210

Discussant: Elizabeth Kistin Keller, Ph.D.

1. Julia Philips, Ph.D. – Argonne National Laboratories
National Electricity Emergency Response Capabilities
2. Elizabeth Graffy, Ph.D. – Arizona State University
*Safeguarding the Resilience of Power and Transportation
Infrastructures during Transitions to Sustainability*
3. Alfred Hubler, Ph.D. – University of Illinois at Urbana-Champaign
Digital Wire Power Grids: Resilient and Efficient

11:45 – 1:00pm

Lunch (Multipurpose Rooms)

Pete Tseronis

Founder and CEO

Dots and Bridges

1:00 – 2:15

Crossing Cutting Sessions

Track C: Critical Infrastructure

Founders Hall Room 111

Future Trends and Hazards in Critical Infrastructure

Moderator:

Mark Troutman, Ph.D.

Center for Infrastructure Protection and Homeland Security

Track D: Innovative Approaches

Founders Hall Room 121

**Presenting the L.A. Water Game: *Experiential Learning in Infrastructure
Systems Education***

Moderator:

Susan Spierre Clark, Ph.D.

University of Buffalo

Track A: Cyber Resilience

Founders Hall Room 118

Discussant: Eric Vugrin, Ph.D.

1. Nancy W. Gallagher, Ph.D. and Charles T. Henry, Ph.D. - Center for International and Security Studies at Maryland
Cyber Disruption Index (CDI) and Use to Estimate Aggregated Effects of Multiple Disruptive Attacks
2. R.A. Williams – Sandia National Laboratories
Cybersecurity Applicability of Physical Resilience Design Features for Embedded Systems

Track D: Innovation Approaches

Founders Hall Room 120

Discussant: Vanessa Vargas

1. Dayton Marchese and Igor Linkov, Ph.D. - U.S. Army Engineer Research and Development Center
Network Approach to Resilience Quantification
2. Ralph T. Muehleisen, Ph.D. – Argonne National Laboratories
A New Framework for Identifying and Prioritizing Failure Points in Critical Urban Infrastructure
3. Paul Theron, Ph.D. – THALES Group
Towards a General Theory of Corporate Resilience

Track E: Lifeline Sector Resilience

Founders Hall Room 210

Discussant: Rossitza Homan, Ph.D.

1. Fadi Karaa, Ph.D. – New Jersey Institute of Technology
Optimizing Mass transit Transportation Resilience: Model, Implementation and Policy Implications
2. Andrea Stone – Dynamic Pro, Inc.
Risk Communication and its Vital Role in Building Resilience in Transportation Systems

2:15 – 2:30

BREAK (Founders Hall Art Gallery)

2:30 – 3:45

Subject Matter Expert Panel (Auditorium)

Shaping the Future: Solutions to the Most Pressing Resilience Issues

Moderator:

Pete Tseronis

Dots and Bridges

David Alderson, Ph.D.

Naval Postgraduate School

Alfred R. Berkeley

Princeton Capital Management

Tonya Coultas

Georgetown University

Matthew Fuchs

Pew Charitable Trusts

Mark J. Gerencser

UMUC Ventures

Adam Rose, Ph.D.

University of Southern California

3:45 – 4:15

Symposium Closing Remarks (Auditorium)

Eric Vugrin, Ph.D.

Sandia National Laboratories

Mark Troutman, Ph.D.

Center for Infrastructure Protection and Homeland Security