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
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)

Dr. Deborah Crawford
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 Policy, Plans, Strategy
Department of Homeland Security

Brian J. Moran
Secretary of Public Safety and Homeland Security
Commonwealth of Virginia

10:20 – 10:30  BREAK (Founders’ Hall Art Gallery)
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

Jermand Hagan  
FreddieMac
Tracks and Sessions:

**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*

   *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 Kisten 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*

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**11:45 – 1:00pm**  
**Lunch (Multipurpose Rooms)**  
**Pete Tseronis**  
Founder and CEO  
Dots and Bridges

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**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*

**Moderators:**  
Susan Spierre Clark, Ph.D.
University of Buffalo

Lauren R. McBurnett
Arizona State University

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:
1. Fadi Karaa, Ph.D. – New Jersey Institute of Technology
   *Optimizing Mass transit Transportation Resilience: Model, Implementation and Policy Implications*
   *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