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

  Additional speaker to be added

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)
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

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

Charles Allen
City of New Orleans, LA
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
**Track D: Innovative Approaches**
Founders’ Hall Room 121
Discussant:

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:

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:

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:

1. Lori R. Hodges and Wayne Porter, Ph.D. – 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 (AEP)

Robert Manning
Electric Power Research Institute (EPRI)

*Additional speakers to be added*

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:  
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:  
1. Meghan Housewright – National Fire Protection Association  
   *International Standards Activities for Smart and Sustainable Cities*  
2. Marty D. Matlock, Ph.D. and Stephen D. Luoni – University of Arkansas  
   *A Design Language for Urban Resilience*  
3. 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:  
1. David L. Alderson, Ph.D. – Naval Postgraduate School  
   *Overcoming Barriers to Greater Scientific Understanding of Critical Infrastructure Resilience*  
2. Susan Spierre Clark, Ph.D. and Thomas P. Seager, Ph.D.  
   *A Capabilities Approach towards Prioritization of Critical Infrastructure Resilience*  


**Track E: Lifeline Sector Resilience**  
Founders Hall Room 210  
Discussant:  
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 A: Cyber Resilience**  
Founders Hall Room 118

   *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  
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 D: Innovative Approaches (Education)**  
Founders Hall Room 121  
1. Lauren R. McBurnett – Arizona State University  
   *Simulation Games Strengthen Experiential Learning in Infrastructure Systems Education*  
2. Thomas P. Seager, Ph.D. – Arizona State University  
   *Redesigning Education for Resilience*  

**Track E: Lifeline Sector Resilience**  
Founders Hall Room 210  
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*  

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2:15 – 2:30 BREAK (Founders' Hall Art Gallery)  

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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