2017 Frontiers in Resilience:

*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

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>8:00 - 8:45am</td>
<td>Event Registration and Check-in (Founders Hall)</td>
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<tr>
<td>8:45 – 9:00</td>
<td>Welcome Remarks and Introductions (Multipurpose Room 126)</td>
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<td><strong>Eric Vugrin, Ph.D.</strong>&lt;br&gt;Sandia National Laboratories</td>
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<td><strong>Mark Troutman, Ph.D.</strong>&lt;br&gt;Center for Infrastructure Protection and Homeland Security</td>
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<td>9:00 – 9:20</td>
<td>Symposium Opening Remarks (Multipurpose Room 126)</td>
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<td><strong>Deborah Crawford, Ph.D.</strong>&lt;br&gt;Vice President of Research&lt;br&gt;George Mason University</td>
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<td><strong>Heidi Ammerlahn</strong>&lt;br&gt;Director, Homeland Security Programs&lt;br&gt;Sandia National Laboratories</td>
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<tr>
<td>9:20 – 10:20</td>
<td>Opening Keynote Address (Multipurpose Room 126)</td>
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<td><strong>Susan Monarez, Ph.D.</strong>&lt;br&gt;Deputy Assistant Secretary for Strategy and Analysis&lt;br&gt;Department of Homeland Security</td>
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<td><strong>Brian J. Moran</strong>&lt;br&gt;Secretary of Public Safety and Homeland Security&lt;br&gt;Commonwealth of Virginia</td>
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<td>10:20 – 10:30</td>
<td>BREAK (Founders Hall Art Gallery)</td>
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10:30 – 11:45   Subject Matter Experts Panel (Multipurpose Room 126)
*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 Room 125)

David Martin, Ph.D.
Executive Director
Centre of Applied Innovation, Melbourne Polytechnic Institute

1:00 – 2:15   Subject Matter Expert Panel (Multipurpose Room 126)
*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, Jr., 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
Resilience: Hedge Your Bets

Walter Dula
Accenture Federal Services

Karim Abdullah
KIMA Consulting, LLC

E. Kenneth Barksdale, Jr.
Business Guard, Inc.

Stacy Gardner
Capitol One
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 Amanda Parker – 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
   Bridging Sectors and Scales: A Holistic Approach to 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 125/126)
Thursday, May 11

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

8:45 – 9:00  Welcome Back Remarks (Multipurpose Room 126)

9:00 – 10:15  Subject Matter Experts Panel (Multipurpose Room 126)

*Putting Resilience in Practice: Enhancing Resilience of the Power Grid*

**Moderator:**
Carol Adkins, Ph.D.
Sandia National Laboratories

Robert Bradish
American Electric Power

Katie Jereza
Edison Electric Institute

Robin E. Manning
Electric Power Research Institute

Dan Ton
U.S. Department of Energy

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*

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 Room 125)
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*

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*

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
   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 (Multipurpose Room 126)
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 (Multipurpose Room 126)

Eric Vugrin, Ph.D.  
Sandia National Laboratories

Mark Troutman, Ph.D.  
Center for Infrastructure Protection and Homeland Security