

NSF-VT RESIN Workshop, Lyceum, VA, December 7-8, 2009
Agenda

Monday December 7, 2009

7:45 – 8:00 AM: NSF representative and Lamine Mili: Welcome address

Session 1: Lamine Mili, Chairman

8:00 – 8:30 AM: “Resilient and Sustainable Interdependent Electric Power and Communications Systems,” *Lamine Mili, Virginia Tech.*

8:30 – 9:00 AM: “Assessing and Managing Cascading Failure Vulnerabilities of Complex, Interdependent, Interactive, Adaptive Human-based Infrastructure Systems,” *Robert G. Bea, University of California, Berkeley.*

9:00 – 9:30 AM: “The Interface of Infrastructures, Markets, and Natural Cycles - Innovative Modeling and Control Mechanisms for Managing Electricity, Water and Air Quality in Texas,” *David T. Allen, University of Texas, Austin.*

9:30 AM – 10:00 AM: “Interdependence, Resilience and Sustainability of Infrastructures for Biofuel Development,” *Ximing Cai, University of Illinois, Urbana/Champaign.*

10:00 – 10:30 AM: Break

Session 2: Michael von Spakovsky, Chairman

10:30 – 11:00 PM: “21st Century National Energy and Transportation Infrastructures: Balancing Sustainability, Costs, and Resiliency (NETSCORE-21),” *James D. McCalley, Iowa State University.*

11:00 – 1:30 AM: “A Multi-Scale Design and Control Framework for Dynamically Coupled Sustainable and Resilient Infrastructures, with Application to Vehicle-to-Grid Integration,” *Jeffrey L. Stein, University of Michigan.*

11:30 – 12:00 PM: “Optimization of Conjunctive Water Supply and Reuse Systems with Distributed Treatment for High-growth, Water-Scarce Regions,” *Kevin E. Lansey, University of Arizona.*

12:00 – 12:30 PM: “Sustainable Infrastructures for Energy and Water Supply (SINEWS),” *John C. Crittenden, Arizona State University.*

12:30 – 1:30 PM: Lunch

- 1:30 – 2:30 PM: **Plenary Session:** Follow-up of the presentation session: discussing the topics covered by the RESIN projects. *A. Urken (Chair), R. Bea, D. Allen, J. Stein, J. C. Crittenden, L. Mili, J. McCalley, K. Lansey, X. Cai*
- 2:30 – 3:00 PM: **Break**
- 3:00 – 4:30 PM: **4 Break-up Sessions:** 1) Engineering resilience and sustainability; 2) risk management; 3) creation of new standards for sustainability; 4) educating critical infrastructure planners and managers.
- 4:30 – 5:00 PM: **Session Chair reports**

Tuesday December 8, 2009

- 7:50 – 8:00 AM: NSF representative and Lamine Mili: Agenda of the day
- 8:00 – 8:15 AM: Sohi Rastegar: NSF-EFRI-RESIN Program
- 8:15 – 10:00 AM: **5 Break-up Sessions:** Identifying gaps in the RESIN program.
1) Social and urban resilience; 2) Economic and engineering resilience;
3) New standards for sustainability; 4) Risk management with integrated
resiliency and sustainability indicators; 5) Educating critical
infrastructure planners and managers.
- 10:00 – 10:30 AM: Break**
- 10:30 – 12:00 PM: Session Chair reports
- 12:00 – 1:00 PM: Lunch**
- Session 4: Sandeep Shukla, Chairman**
- 1:00 – 1:20 PM: “Neuroscience and Neural Networks for Engineering the Future
Intelligent Electric Power Grid,” *Ganesh K. Venayagamoorthy, Missouri
University of Science and Technology.*
- 1:20 – 1:40 PM: *Alex Q. Huang:* The FREEDM System Center.
- 1:40 – 2:00 PM: *David Woods:* Characteristics and Markers of Resilience
- 2:00 – 2:20 PM: *Nancy Leveson:* Engineering Resilience into Safety-Critical
infrastructures
- 2:20 – 2:40 PM: *Adrian Gheorghe:* Governance Issue in Resilience Engineering
- 2:40 – 3:00 PM: *Mihaela Ulieru:* Design for Resilience of Networked Critical
Infrastructures
- 3:00 – 3:20 PM: *Jefferson Tester:* Sustainable Energy Systems
- 3:00 – 3:30 PM: Break**
- 3:30 – 5:00 PM: **Plenary Session:** Future research agenda for the NSF-EFRI-RESIN
initiative and wrap up. *L. Mili (Chair), M. von Spakovsky, J. Tester.*