

## GRANTEE POSTER SESSION SCHEDULE

For the 2012 CMMI conference, NSF expects each grantee to display one poster related to each grant award. Posters should describe the objectives of the grant and summarize results to date. Each poster has been assigned to a session where the PI is expected to be at the poster to explain the grantee's work and answer questions. Each poster has also been assigned a location. All poster sessions will take place in Exhibit Hall AB.

Poster Session	Day and Time
Poster Session 1	Monday, July 9, 8:30 a.m.–12:00 p.m.
Poster Session 2	Monday, July 9, 3:00 p.m.–5:45 p.m.
Poster Session 3	Tuesday, July 10, 7:30 a.m.–9:30 a.m.
Poster Session 4	Tuesday, July 10, 3:15 p.m.–5:45 p.m.
Poster Session 5	Wednesday, July 11, 1:00 p.m.–4:00 p.m.

### Program Area Clusters

Section A: Students	
Section B: Advanced Manufacturing	
Materials Processing and Manufacturing	Nanoscale Science & Engineering Center
Manufacturing and Construction Machines & Equipment	Manufacturing Enterprise Systems
NanoManufacturing	Interdisciplinary Research
Nanoscale Interdisciplinary Research Team	
Section C: Mechanics and Engineering Materials	
Mechanics of Materials	Structural Materials and Mechanics
Materials and Surface Engineering	Biomechanics and Mechanobiology
Geomechanics and Geomaterials	
Section D: Resilient and Sustainable Infrastructures	
Civil Infrastructure Systems	Infrastructure Management and Extreme Events
GeoTechnical Engineering	George E. Brown, Jr. Network for Earthquake Engineering Simulation Research
Hazard Mitigation and Structural Engineering	George E. Brown, Jr. Network for Earthquake Engineering Simulation Operations
Section E: Systems Engineering and Design	
Engineering and Systems Design	Service Enterprise Systems
Control Systems	Operations Research
Sensors and Sensing Systems	Dynamical Systems

## GRANTEE POSTER SESSION SCHEDULE

The poster presenters are listed below in alphabetical order by PI along with the corresponding poster location. Please refer to the accompanying map for the poster session layout.

### A

**Magdy Abdelrahman, North Dakota State University, Fargo** **C160**

**Program Area:** Structural Materials and Mechanics

CAREER: A Program of Research Focused on Understanding of Interaction of Recycled Materials with Asphalt, Outreach, Academic and Engineering Development

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Daniel Abrams, University of Illinois at Urbana-Champaign** **D154**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Hybrid Masonry Seismic Structural Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Warren Adams, Clemson University** **E194**

**Program Area:** Operations Research

Collaborative Research: Reformulation-Linearization Technique for Discrete and Continuous Nonconvex Optimization with Applications

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Mohammadreza Aghajani, Brown University** **E213**

**Program Area:** Operations Research

Analysis of Large-Scale Stochastic Systems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Sajjad Ahmad, University of Nevada, Las Vegas** **D111**

**Program Area:** Infrastructure Management and Extreme Events

CAREER: Vulnerability of Water Infrastructure to Climate Variability and Change: Implications for Sustainable Water Management

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Shabbir Ahmed, Georgia Institute of Technology** **E231**

**Program Area:** Operations Research

Exploiting Submodularity in Integer Programming

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Elif Akcali, University of Florida** **B224**

**Program Area:** Manufacturing Enterprise Systems

Analytical Approaches for Assessing the Revenue Aspects and Environmental Impacts of Demanufacturing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Marwan Al-Haik, Virginia Polytechnic Institute and State University** **C174**

**Program Area:** Structural Materials and Mechanics

CAREER: Next Generation Multifunctional Composites for Radiations and Impact Hazards Mitigation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Farid Alizadeh, Rutgers University, Newark** **E195**

**Program Area:** Operations Research

Optimization Over Positive or Sum-of-Square Functions with Applications to Constrained Approximation and Shape Constrained Learning

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Matthew Allen, University of Wisconsin, Madison** **E249**

**Program Area:** Dynamical Systems

Methods for Experimental Identification of Nonlinear Dynamic Systems of Unknown Form and Order With Application to Human Gait

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Mahmoud Almasri, University of Missouri, Columbia** **E125**

**Program Area:** Sensors and Sensing Systems

MEMS Capacitive Plates with Large Tunable Dynamic Range for Voltage Conversion and Power Harvesting

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Khalid Alshibli, University of Tennessee, Knoxville** **C136**

**Program Area:** Geomechanics and Geomaterials

Experimental Measurements of Stresses and Strains of Granular Materials Using 3D Non-Destructive Technologies

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Annalingam Anandarajah, Johns Hopkins University** **C116**

**Program Area:** Geomechanics and Geomaterials

Mechanisms Controlling Swelling of Clays

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Annalingam Anandarajah, Johns Hopkins University** **C117**

**Program Area:** Geomechanics and Geomaterials

A Fundamental Study on Suction and Hysteresis of Soil-Water Characteristic Relation of Cohesive Soil

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kurt Anderson, Rensselaer Polytechnic Institute** **E266**

**Program Area:** Dynamical Systems

Framework for the Adaptive Multiscale Modeling of Biopolymers

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Sean Andersson, Trustees of Boston University**

**E65**

**Program Area:** Control Systems

**CAREER:** Nonlinear Control for Single Molecule Tracking

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Sean Andersson, Trustees of Boston University**

**E66**

**Program Area:** Control Systems

**DynSyst\_Special\_Topics:** A formal approach to the control of stochastic dynamic systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Bassem Andrawes, University of Illinois at Urbana-Champaign**

**D66**

**Program Area:** Hazard Mitigation and Structural Engineering

**CAREER:** Innovative Confinement Technology for Strong Main Shock-AfterShock Damage Mitigation

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Nagaraj Arakere, University of Florida**

**C48**

**Program Area:** Materials and Surface Engineering

**GOALI:** Monotonic and Cyclic Response of Plastically Graded Surfaces Subject to Rolling Contact Fatigue

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Helim Aranda-Espinoza, University of Maryland, College Park**

**C199**

**Program Area:** Biomechanics and Mechanobiology

**CAREER:** Mechanotaxis of Axons and Neurons

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Alan Argento, University of Michigan, Dearborn**

**C175**

**Program Area:** Structural Materials and Mechanics

**GOALI:** Dynamic Response of Rigid, Foamed Biocomposites

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Craig Arnold, Princeton University**

**B51**

**Program Area:** Materials Processing and Manufacturing

**EAGER:** Multiphoton Polymerization with Optical Trap Assisted Nanopatterning

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Craig Arnold, Princeton University**

**B146**

**Program Area:** NanoManufacturing

**Self-positioning Microspheres for Direct-write Nanolithography using Bessel Beam Optical Traps**

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Raymundo Arroyave, Texas A&M University**

**C72**

**Program Area:** Materials and Surface Engineering

Advanced High Strength Multiphase Steels through a Combined Alloy-Microstructural Design

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Harry Asada, Massachusetts Institute of Technology**

**E267**

**Program Area:** Dynamical Systems

A Multi-Cellular PZT Actuator/Generator with Tunable Stiffness and Resonant Frequencies

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jeremy Ashlock, Iowa State University**

**D155**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR Payload: Characterization of Dynamic Soil-Pile Interaction by Random Vibration Methods

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Domniki Asimaki, Georgia Institute of Technology**

**D41**

**Program Area:** Geotechnical Engineering

Topographic Amplification of Seismic Motion: Observations and Simulations in 3D

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Alper Atamturk, University of California, Berkeley**

**E214**

**Program Area:** Operations Research

A Unifying Study of the Capacitated Fixed-Charge Network Flow Polyhedron

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Adda Athanasopoulos-Zekkos, University of Michigan, Ann Arbor**

**D50**

**Program Area:** Geotechnical Engineering

Feasibility Study of High-Performance Cut-off Walls for Levees in Seismic Regions: Dynamic Wall Analyses and Ductile Slurry Development

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Shorya Awtar, University of Michigan, Ann Arbor**

**B116**

**Program Area:** Manufacturing Machines and Equipment

Multi-axis Parallel-Kinematic Motion Systems with a Large Dynamic Range

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Ashraf Ayoub, University of Houston**

**C181**

**Program Area:** Structural Materials and Mechanics

Establishing the Shear Constitutive Laws of Fiber-Reinforced Polymer (FRP)-Strengthened Concrete Elements

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Shapour Azarm, University of Maryland, College Park**

**E1**

**Program Area:** Engineering and Systems Design

EAGER: Design for Bundling Decisions with Marketing and Public Policy Considerations

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### B

**Charles Bakis, Pennsylvania State University, University Park**

**C148**

**Program Area:** Structural Materials and Mechanics

High Temperature and Sustained Load Effects on Structural Bonded Repairs in Civil Infrastructure

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Balakumar Balachandran, University of Maryland, College Park**

**E268**

**Program Area:** Dynamical Systems

Stochastic Resonance in Coupled, Nonlinear Oscillators

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Hari Jagannatha Balasubramanian, University of Massachusetts, Amherst**

**E159**

**Program Area:** Service Enterprise Systems

Balancing Timely Access and Patient-Physician Continuity in Primary Care

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Anna Balazs, University of Pittsburgh**

**C49**

**Program Area:** Materials and Surface Engineering

Harnessing Light to Control the Autonomous Functionality of Soft Active Materials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Thomas Balk, University of Kentucky**

**C91**

**Program Area:** Materials and Surface Engineering

GOALI: Understanding the Microstructural Evolution and High-Temperature Behavior of Osmium-Ruthenium Coatings for Dispenser Cathodes

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Oluwaseyi Balogun, Northwestern University**

**E148**

**Program Area:** Sensors and Sensing Systems

Surface Plasmon Photoacoustic Imaging of Subsurface Objects

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Oluwaseyi Balogun, Northwestern University**

**E149**

**Program Area:** Sensors and Sensing Systems

A Novel Non-Contact Technique for Dynamic Loading of Thin Film Materials Using Finite Amplitude Mechanical Stress Waves

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Xuegang Ban, Rensselaer Polytechnic Institute**

**D1**

**Program Area:** Civil Infrastructure Systems

Collaborative Research: Mobile Sensors as Traffic Probes– Addressing Transportation Modeling and Privacy Protection in an Integrated Framework

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xuegang Ban, Rensselaer Polytechnic Institute**

**D2**

**Program Area:** Civil Infrastructure Systems

CAREER: Using Mobile Sensors for Traffic Knowledge Extraction and Dynamic Network Management

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Amit Bandyopadhyay, Washington State University**

**B82**

**Program Area:** Manufacturing Machines and Equipment

Porous Nitinol for Load Bearing Implants Using Rapid Prototyping

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Zeb Barber, Montana State University**

**B95**

**Program Area:** Manufacturing Machines and Equipment

GOALI: Accurate, High Resolution Ladar for 3D Metrology at Large Standoff Distances

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Kash Barker, University of Oklahoma, Norman Campus**

**D130**

**Program Area:** Infrastructure Management and Extreme Events

Collaborative Research: Modeling the Efficacy of Inventory for Extreme Event Preparedness Decision Making in Interdependent Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Justin Barone, Virginia Polytechnic Institute and State University**

**C50**

**Program Area:** Materials and Surface Engineering

Mechanics of Self-assembled Peptide Structures

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>John Bassani, University of Pennsylvania</b></p> <p><b>Program Area:</b> Mechanics of Materials</p> <p>Mechano-Chemical Coupling in the Adhesion of Thin Shell Structures: Transitions Between Weakly- and Well-Bonded States</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>C1</b>
<p><b>Romesh Batra, Virginia Polytechnic Institute and State University</b></p> <p><b>Program Area:</b> Mechanics of Materials</p> <p>Fracture of Adhesive Bonds under Mixed Mode Loading: Experiments in a Dual Actuator Load Frame and Numerical Simulations</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>C27</b>
<p><b>Haim Bau, University of Pennsylvania</b></p> <p><b>Program Area:</b> NanoManufacturing</p> <p>GOALI: Real Time, Nanoscale Imaging of Electrochemistry and Electroplating in Liquid Media</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B159</b>
<p><b>Christopher Baxter, University of Rhode Island</b></p> <p><b>Program Area:</b> Geomechanics and Geomaterials</p> <p>Unique Relationship Between Small Strain Shear Modulus and Effective Stresses at Failure for Dilative Soils</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>C126</b>
<p><b>Sarah Baxter, University of South Carolina at Columbia</b></p> <p><b>Program Area:</b> Materials Processing and Manufacturing</p> <p>Synergistic Modeling: Manufacture and Design of 'Nano' Microstructures</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B20</b>
<p><b>Saif Benjaafar, University of Minnesota, Twin Cities</b></p> <p><b>Program Area:</b> Manufacturing Enterprise Systems</p> <p>Collaborative Proposal: Optimizing the Supply Chain for Cost and Carbon Footprint</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>B225</b>
<p><b>Lawrence Bennett, George Washington University</b></p> <p><b>Program Area:</b> Materials and Surface Engineering</p> <p>Magnetic Tunable Nanostructures: Property Characterization and Modeling</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>C92</b>
<p><b>Joseph Bentsman, University of Illinois at Urbana-Champaign</b></p> <p><b>Program Area:</b> Control Systems</p> <p>GOALI: Hybrid Control of Continuous Casting for Whisker and Crack Prevention</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>E75</b>



## GRANTEE POSTER SESSION SCHEDULE

**Ahmed-Amine Benzerga, Texas A&M University**

**C12**

**Program Area:** Mechanics of Materials

CAREER: Bridging Experiments and Multiscale Modeling of Size- and Temperature-dependent Phenomena in Polycrystalline Plasticity

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jay Berger, Earthquake Engineering Research Institute**

**D176**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

RAPID Awardee Workshop to Identify Research Needs Emerging from the 2010 and 2011 New Zealand Earthquakes and the 2011 Japan Earthquake and Tsunami

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jeffrey Berman, University of Washington**

**D67**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: Structural Integrity of Steel Gravity Framing Systems

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jeffrey Berman, Portland State University**

**D156**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-II: Toward Rapid Return to Occupancy in Unbraced Steel Frames

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jeffrey Berman, University of Washington**

**D157**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: Smart and Resilient Steel Walls for Reducing Earthquake Impacts

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Dionisio Bernal, Northeastern University**

**D198**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR: Next Generation Dissipation Guidelines for New and Existing Structures using the NEES Database

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Michael Berry, Montana State University**

**C161**

**Program Area:** Structural Materials and Mechanics

Building Green: Development and Evaluation of an Environmentally Friendly Concrete

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Vikas Berry, Kansas State University**

**C93**

**Program Area:** Materials and Surface Engineering

Detailed Surface Engineering and Electrical Characterization of pi-Functionalized Graphene Sheets and Ribbons with Preserved Lattice and Electronic Characteristics

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Jack Beuth, Carnegie Mellon University**

**B117**

**Program Area:** Manufacturing Machines and Equipment

GOALI/Collaborative Research: Integrated Microstructure and Melt Pool Dimension Control for Electron Beam Additive Manufacturing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jack Beuth, Carnegie Mellon University**

**C218**

**Program Area:** Biomechanics and Mechanobiology

Nanomechanical Material Size Effects Using an In-Situ, On-Chip Test Platform

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Bharat Bhushan, Ohio State University**

**B52**

**Program Area:** Materials Processing and Manufacturing

Mechanically Reliable Surfaces for Superhydrophobicity

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jacobo Bielak, Carnegie Mellon University**

**D199**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: High-fidelity site characterization by experimentation, field observation, and inversion-based modeling

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Joseph Biernacki, Tennessee Technological University**

**C182**

**Program Area:** Structural Materials and Mechanics

RUI: Controlling the Properties and Performance of Concrete Using Computer Aided Molecular Design

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Giovanna Biscontin, Texas A&M University**

**D158**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Capacity and Performance of Foundations for Offshore Wind Towers

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Douglas Bish, Virginia Polytechnic Institute and State University**

**E160**

**Program Area:** Service Enterprise Systems

Evacuation Planning with Demand Management

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Ebru Bish, Virginia Polytechnic Institute and State University**

**E161**

**Program Area:** Service Enterprise Systems

Optimal Blood Screening Strategies for Infectious Agents: Mathematical Models and Decision Support Tools

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Subir Biswas, Michigan State University**

**D15**

**Program Area:** Civil Infrastructure Systems

Collaborative Research: Protocols for Wireless Networking and Multi-application Data Handling for Freeway Traffic Safety Applications

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Denis Blackmore, New Jersey Institute of Technology**

**E269**

**Program Area:** Dynamical Systems

Collaborative Research: A Unified Dynamical Systems-Simulation-Visualization Approach to Modeling and Analyzing Granular Flow Phenomena

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jose Blanchet, Columbia University**

**E232**

**Program Area:** Operations Research

CAREER: Efficient Monte Carlo Methods in Engineering and Science: From Coarse Analysis to Refined Estimators

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jose Blanchet, Columbia University**

**E233**

**Program Area:** Operations Research

Efficient Monte Carlo Methods for Gaussian Random Fields

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Antonio Bobet, Purdue University**

**C137**

**Program Area:** Geomechanics and Geomaterials

Mechanical and Geophysical Characterization of Damage in Anisotropic Rock

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Dominic Boccelli, University of Cincinnati**

**D27**

**Program Area:** Civil Infrastructure Systems

Real-Time Distribution System Network Modeling and Fault Diagnosis

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Dennis Bong, Ohio State University**

**C51**

**Program Area:** Materials and Surface Engineering

Selective Aqueous-phase Adhesion by Molecularly Engineered Materials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ronaldo Borja, Stanford University**

**D58**

**Program Area:** Geotechnical Engineering

Coupled Solid-Deformation/Fluid-Flow Simulation of Failure Initiation in Variably Saturated Slopes

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Ronaldo Borja, Stanford University**
**D177**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-CR: Properties of Cohesionless Soil Subsequent to Liquefaction and Resedimentation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Francesco Borrelli, University of California, Berkeley**
**E85**

**Program Area:** Control Systems

CAREER: Distributed Control and Constraints Satisfaction in Complex Networked Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**David Bourell, University of Texas at Austin**
**B105**

**Program Area:** Manufacturing Machines and Equipment

Electrochemical Infiltration of Selective Laser Sintered Preforms

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Anton Bowden, Brigham Young University**
**C238**

**Program Area:** Biomechanics and Mechanobiology

CAREER: Biomechanical Consequences of Spinal Ligament Microstructure

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Carleen Bowers, University of Rochester**
**B169**

**Program Area:** NanoManufacturing

Biocatalytic Nanolithography

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Stephen Boyles, University of Texas at Austin**
**D3**

**Program Area:** Civil Infrastructure Systems

Collaborative Research: Stochastic and Dynamic Hyperpath Equilibrium Models

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Scott Brandenburg, University of California-Los Angeles**
**D200**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-II: Evaluation of Seismic Levee Deformation Potential by Destructive Cyclic Field Testing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Stanko Brankovic, University of Houston**
**B178**

**Program Area:** NanoManufacturing

GOALI: Electrochemical Nanofabrication of High-Anisotropy Bit-Patterned Magnetic Arrays using Self-Limiting Ion Milling Fabricated Templates

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Jonathan Bray, University of California, Berkeley</b></p> <p><b>Program Area:</b> Geotechnical Engineering</p> <p>Collaborative Research: Geoengineering Extreme Events Reconnaissance (GEER) Association: Turning Disaster Into Knowledge</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D42</b>
<p><b>Jonathan Bray, University of California, Berkeley</b></p> <p><b>Program Area:</b> Geotechnical Engineering</p> <p>Earthquake Surface Fault Rupture Interaction with Building Foundations</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D43</b>
<p><b>Jonathan Bray, University of California, Berkeley</b></p> <p><b>Program Area:</b> George E. Brown, Jr. Network for Earthquake Engineering Simulation Research</p> <p>NEESR-SG: Seismic Performance Assessment in Dense Urban Environments</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>D178</b>
<p><b>John Brigham, University of Pittsburgh</b></p> <p><b>Program Area:</b> Hazard Mitigation and Structural Engineering</p> <p>Computational Methods for Optimized Reliability and Efficiency in Smart Structural Systems</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D87</b>
<p><b>Ioannis Brilakis, Georgia Institute of Technology</b></p> <p><b>Program Area:</b> Civil Infrastructure Systems</p> <p>Progressive Site Modeling with Videogrammetry</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>D16</b>
<p><b>Ioannis Brilakis, Georgia Institute of Technology</b></p> <p><b>Program Area:</b> Civil Infrastructure Systems</p> <p>CAREER: Visual Pattern Recognition Models for Remote Sensing of Civil Infrastructure</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>D17</b>
<p><b>Ioannis Brilakis, Georgia Institute of Technology</b></p> <p><b>Program Area:</b> Civil Infrastructure Systems</p> <p>Reciprocal Reconstruction and Recognition for Modeling of Constructed Facilities</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>D18</b>
<p><b>L. Brinson, Northwestern University</b></p> <p><b>Program Area:</b> Mechanics of Materials</p> <p>New Approach to Nanoindentation Experiments and Modeling: Toward Fundamental Understanding of Thin Polymer Films and Polymer Nanocomposites</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>C28</b>

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Samuel Brody, Texas A&amp;M University</b></p> <p><b>Program Area:</b> Infrastructure Management and Extreme Events</p> <p>Examining the 100-Year Floodplain as a Metric of Risk, Loss, and Household Adjustment</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D112</b>
<p><b>James Brumbelow, Texas A&amp;M University</b></p> <p><b>Program Area:</b> Infrastructure Management and Extreme Events</p> <p>Agent-Based Modeling for Planning Emergency Response to Contamination Emergencies in Water Utilities</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>D131</b>
<p><b>Satish T. S. Bukkapatnam, Oklahoma State University</b></p> <p><b>Program Area:</b> Manufacturing Machines and Equipment</p> <p>Characterization and Real Time Defect Mitigation in Chemical/Mechanical Polishing of Microelectronic Wafers Using Decision Theory and MultiSensor Fusion</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>B118</b>
<p><b>Rigoberto Burgueno, Michigan State University</b></p> <p><b>Program Area:</b> Structural Materials and Mechanics</p> <p>Hybrid Nanostructured Material Systems for Tailored Stress-Wave Mitigation of Impact and Blast Effects</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>C149</b>
<p><b>Eric Butcher, New Mexico State University</b></p> <p><b>Program Area:</b> Dynamical Systems</p> <p>Collaborative Research: Stability, Identification, and Stochastic Resonance in Stochastic Delayed Systems</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>E270</b>
<p><b>William Buttlar, University of Illinois at Urbana-Champaign</b></p> <p><b>Program Area:</b> Structural Materials and Mechanics</p> <p>GOALI: A Hybrid Failure Approach using Digital Image Correlation for Functionally Graded Thin-Bonded Overlays</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>C150</b>
<p><b>Oral Buyukozturk, Massachusetts Institute of Technology</b></p> <p><b>Program Area:</b> Structural Materials and Mechanics</p> <p>Debonding in Bi-layer Material Systems under Moisture Effects : A Multi-scale Fracture Approach</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>C183</b>
<p><b>Oral Buyukozturk, Massachusetts Institute of Technology</b></p> <p><b>Program Area:</b> Hazard Mitigation and Structural Engineering</p> <p>A Robust Methodology for the Standoff Condition Assessment of FRP-Retrofitted Concrete Systems</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>D68</b>

## GRANTEE POSTER SESSION SCHEDULE

### C

**Steve C.S. Cai, Louisiana State University & Agricultural and Mechanical College** **D88**

**Program Area:** Hazard Mitigation and Structural Engineering

Investigation and Damage Mitigation of Low-lying Coastal Bridges under Hurricane-induced Wind and Wave Actions

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Wei Cai, Stanford University** **C2**

**Program Area:** Mechanics of Materials

CAREER: Bridging Defect Models and Micro-Deformation Experiments

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Juan Caicedo, University of South Carolina at Columbia** **D69**

**Program Area:** Hazard Mitigation and Structural Engineering

CAREER: Cooperative Human-Computer Model Updating Cognitive Systems (MUCogS)

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**James Calvin, New Jersey Institute of Technology** **E196**

**Program Area:** Operations Research

Algorithms and Complexity for Global Optimization

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jaime Camelio, Virginia Polytechnic Institute and State University** **B206**

**Program Area:** Manufacturing Enterprise Systems

GOALI: Quality Mining—A Novel Framework for Quality Monitoring and Control for Data-rich Manufacturing Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Fred Cannon, Pennsylvania State University, University Park** **B21**

**Program Area:** Materials Processing and Manufacturing

GOALI: Novel Low-Polluting Collagen-Alkali Silicate

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Guozhong Cao, University of Washington** **B147**

**Program Area:** NanoManufacturing

Solution-Based Fabrication of Coherent Nanocomposite Film Electrodes for Li-Ion Batteries

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Jian Cao, Northwestern University</b></p> <p><b>Program Area:</b> Materials Processing and Manufacturing Incremental Forming at Multi-Scales</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B22</b>
<p><b>Jian Cao, Northwestern University</b></p> <p><b>Program Area:</b> Materials Processing and Manufacturing GOALI: Process Analysis and Variation Control in Micro-stamping</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B23</b>
<p><b>Luca Caracoglia, Northeastern University</b></p> <p><b>Program Area:</b> Hazard Mitigation and Structural Engineering CAREER: An Innovative Performance-Based Simulation Framework for High-Rise Buildings against Wind Hazards</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D89</b>
<p><b>JoAnn Carmin, Massachusetts Institute of Technology</b></p> <p><b>Program Area:</b> Infrastructure Management and Extreme Events Preparing Cities for Climate Change: An International Comparative Assessment of Urban Adaptation Planning</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>D132</b>
<p><b>Michael Cassidy, University of California, Berkeley</b></p> <p><b>Program Area:</b> Civil Infrastructure Systems Theories of Multimodal Urban Mobility</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>D28</b>
<p><b>David Castelbaum, Colorado State University</b></p> <p><b>Program Area:</b> Geotechnical Engineering Collaborative Research: Experimental and Computational Investigation of Consolidation-Induced Contaminant Transport for High Water Content Geo-Materials</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>D51</b>
<p><b>Oana Cazacu, University of Florida</b></p> <p><b>Program Area:</b> Materials Processing and Manufacturing GOALI: High-strain Rate Deformation and Failure of Magnesium Alloys</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B24</b>
<p><b>Amy Cerato, University of Oklahoma, Norman Campus</b></p> <p><b>Program Area:</b> Geomechanics and Geomaterials CAREER: The Role of Specific Surface Area and Cation Exchange Capacity in Understanding and Predicting Expansive Soil Behavior</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>C118</b>



## GRANTEE POSTER SESSION SCHEDULE

**Shantanu Chakrabartty, Michigan State University**

**E135**

**Program Area:** Sensors and Sensing Systems

CAREER: Integrated Research and Education in Self-powered Micro-sensing for Embedded and Implantable Structural Health Monitoring

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Jayajit Chakraborty, University of South Florida**

**D113**

**Program Area:** Infrastructure Management and Extreme Events

Collaborative Research: Advancing Environmental Equity Research: Vulnerability to Air Pollution and Flood Risks in Houston and Miami

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Abhijit Chandra, Iowa State University**

**B83**

**Program Area:** Manufacturing Machines and Equipment

Chemical Mechanical Paired Grinding

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ching Chang, University of Massachusetts, Amherst**

**C127**

**Program Area:** Geomechanics and Geomaterials

Deformation and Failure Behavior of Soils under Erosion

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Shih-Ho Chao, University of Texas at Arlington**

**D179**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Steel Truss Systems with Enhanced Seismic Safety and Performance

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Shih-Ho Chao, University of Texas at Arlington**

**D180**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Full-Scale RC and HPFRC Frame Subassemblages Subjected to Collapse-Consistent Loading Protocols for Enhanced Collapse Simulation and Internal Damage Characterization

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Xiuli Chao, University of Michigan, Ann Arbor**

**E180**

**Program Area:** Service Enterprise Systems

Collaborative Research on Studies of Multichannel Opaque Service Enterprise

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Ioannis Chasiotis, University of Illinois at Urbana-Champaign**

**C52**

**Program Area:** Materials and Surface Engineering

CAREER: Nanoscale Confinement in Polymers: Integrated Research and Education in Nanoscale Experimental Mechanics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Fanglin (Frank) Chen, University of South Carolina at Columbia**
**C94**
**Program Area:** Materials and Surface Engineering

Self-Rising Approach to Synthesize Hierarchically Porous Mixed Ionic and Electronic Conducting Cathodes for Solid Oxide Fuel Cells

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Genda Chen, Missouri University of Science and Technology**
**D70**
**Program Area:** Hazard Mitigation and Structural Engineering

Exploring Polymer Cross-Linked Aerogels for Their Strength and Energy Absorption in Seismic Retrofit of RC Structures

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jian Chen, University of Wisconsin, Milwaukee**
**C53**
**Program Area:** Materials and Surface Engineering

Advanced Carbon Nanotube-Liquid Crystalline Elastomer Nanocomposites and Their Actuation Properties

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Junhong Chen, University of Wisconsin, Milwaukee**
**B2**
**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Exploration of Graphene-Nanocrystal Metamaterials

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Li-Han Chen, University of California-San Diego**
**B148**
**Program Area:** NanoManufacturing

Collaborative Research: High-Throughput Nanomanufacturing of 10 NM Feature Patterns Using Ultra-Sharp Probe Arrays

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Peng Chen, University of Pittsburgh**
**B1**
**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Laser Manufacturing of Three-Dimensional Lightwave Circuits and Nano-Optical Devices

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Peng Chen, University of Pittsburgh**
**B179**
**Program Area:** NanoManufacturing

Nuclear Nano-Engineering

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Peng Chen, University of Pittsburgh**
**E110**
**Program Area:** Sensors and Sensing Systems

EAGER: Fiber Sensors Networks for Crude Oil Migration Monitoring In Ocean

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Shaochen Chen, University of California-San Diego**

**B170**

**Program Area:** NanoManufacturing

Surface Plasmon-Assisted Nanolithography

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Suren Chen, Colorado State University**

**D90**

**Program Area:** Hazard Mitigation and Structural Engineering

Reliability-Based Analysis and Design Loads For Slender Long-Span Bridges

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Wei Chen, Northwestern University**

**E2**

**Program Area:** Engineering and Systems Design

Stochastic Multiscale Computational Design Methodology

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xi Chen, Columbia University**

**C13**

**Program Area:** Mechanics of Materials

CAREER: The Science Underpinning Mechanical Self-Assembly

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Xin Chen, University of Illinois at Urbana-Champaign**

**E215**

**Program Area:** Operations Research

Tractable Approximation of Dynamic Decision Making Models Under Uncertainty

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Youping Chen, University of Florida**

**C219**

**Program Area:** Biomechanics and Mechanobiology

Reproducing the Extraordinary Mechanical Properties of Biominerals through Multiscale Simulation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Gary Cheng, Purdue University**

**B96**

**Program Area:** Manufacturing Machines and Equipment

Collaborative Research: Electromagnetic Peening Assisted Laser Micromachining (EPALM)—A Hybrid Micromachining Process with Enhanced Mechanical Properties

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Yang-Tse Cheng, University of Kentucky**

**C95**

**Program Area:** Materials and Surface Engineering

GOALI: Understanding and Controlling Coupled Mechanical and Chemical Degradation Phenomena within Insertion Electrodes

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

### Yet-Ming Chiang, Purdue University

**C96**
**Program Area:** Materials and Surface Engineering

Collaborative Research: Mechanical and Electrical Reliability Maximization of Rechargeable Lithium-Ion Batteries through Microstructure Design

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Yong Cho, University of Nebraska at Omaha

**D4**
**Program Area:** Civil Infrastructure Systems

CAREER: Hybrid 3D Unstructured Workspace Modeling: A Critical Component in Developing an Automated Construction Site

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### Jongeun Choi, Michigan State University

**E86**
**Program Area:** Control Systems

CAREER: Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Stephen Chou, Princeton University

**B180**
**Program Area:** NanoManufacturing

Cutting, Selecting, and Transfer-Printing Technology for Graphene-on-Demand over Entire Wafers and FET Applications

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Eugene Chow, Palo Alto Research Center Incorporated

**B149**
**Program Area:** NanoManufacturing

Mesoscale Printer

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

### Arindam Chowdhury, Florida International University

**D71**
**Program Area:** Hazard Mitigation and Structural Engineering

Development of Effective Approaches to the Large-Scale Aerodynamic Testing of Low-Rise Buildings

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

### Mashrur Chowdhury, Clemson University

**D19**
**Program Area:** Civil Infrastructure Systems

Vehicle-Infrastructure Integration Enabled Plug-In Hybrid Electric Vehicles for Energy Management

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### Cristian Ciobanu, Colorado School of Mines

**C239**
**Program Area:** Biomechanics and Mechanobiology

CAREER: Structural Helicity in Ultra-Thin Alloy Nanowires

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Cinzia Cirillo, University of Maryland, College Park**

**D29**

**Program Area:** Civil Infrastructure Systems

Dynamic Choice Models for Challenging Societies with an Application to Car Ownership Decisions

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jonathan Clark, Florida State University**

**E250**

**Program Area:** Dynamical Systems

Collaborative Research: Dynamics of Running on Variable Inclines

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Laura Clarke, North Carolina State University**

**B3**

**Program Area:** Materials Processing and Manufacturing

Utilizing the Photothermal Effect of Metal Nanoparticles for Processing of Polymers

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Peggy Clouston, University of Massachusetts, Amherst**

**C184**

**Program Area:** Structural Materials and Mechanics

Modeling the Design Limit States of Structural Composite Lumber

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Randy Cogill, University of Virginia**

**E234**

**Program Area:** Operations Research

Optimal Time-Reversible Policies for Markov Decision Processes

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Daniel Cole, University of Pittsburgh**

**B160**

**Program Area:** NanoManufacturing

Dynamic Maskless Holographic Lithography

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Emmanuel Collins, Florida State University**

**E285**

**Program Area:** Dynamical Systems

Modeling and Motion Planning for Autonomous Skid-Steered Vehicles

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Gerard Cornuejols, Carnegie Mellon University**

**E197**

**Program Area:** Operations Research

Integer and Combinatorial Optimization: Intersection Cuts from Multiple Rows

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Ross Corotis, University of Colorado at Boulder**

**D91**

**Program Area:** Hazard Mitigation and Structural Engineering  
Structural Reliability and Sustainable Resilience

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**John Coulter, Lehigh University**

**B53**

**Program Area:** Materials Processing and Manufacturing

GOALI: Intelligent Melt Rotation for Enhanced Injection Molding of Polymer and Nanocomposite Products

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**John Coulter, Lehigh University**

**B195**

**Program Area:** Interdisciplinary Research

IDR: Mesenchymal Stem Cells and Mechanotransduction: An Investigation of Nano-Structured Injection Molded Polymeric Biointerfaces

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Thomas Cova, University of Utah**

**D133**

**Program Area:** Infrastructure Management and Extreme Events  
Protective Action Triggers

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Daniel Cox, Oregon State University**

**D201**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR II: Mitigating the Risk of Coastal Infrastructure through understanding Tsunami-Structure Interaction and Modeling

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Nathan Crane, University of South Florida**

**B35**

**Program Area:** Materials Processing and Manufacturing  
High Yield Self Assembly of Functional Thermoelectric Devices

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Nathan Crane, University of South Florida**

**B119**

**Program Area:** Manufacturing Machines and Equipment  
Large Stroke Microscale Actuators Based on Electrowetting

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Gianluca Cusatis, Northwestern University**

**D72**

**Program Area:** Hazard Mitigation and Structural Engineering

Man-made Hazard Mitigation of Reservoir Dams: Monte Carlo Simulation with Multiscale Modeling of Concrete and Accurate Fluid-Structure Interaction

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

### D

**Narendra Dahotre, University of North Texas** **B36**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Composite Surfacing of Amorphous Materials by Laser Interference Nanopatterning

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Narendra Dahotre, University of North Texas** **B37**

**Program Area:** Materials Processing and Manufacturing

Laser-Assisted Rapid Surface Microstructuring of Alumina Ceramic

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jiangang Dai, Georgia Institute of Technology** **E216**

**Program Area:** Operations Research

Analysis and Control of Large-scale Service Systems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Liming Dai, Case Western Reserve University** **B134**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

NIRT: Fabrication of carbon nanotube based dry adhesive surfaces mimicking gecko-feet

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Liming Dai, Case Western Reserve University** **B171**

**Program Area:** NanoManufacturing

The Mechanistic Study on N-doped Carbon Nanomaterials as Highly Efficient Cathode for Fuel Cells

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Samantha Daly, University of Michigan, Ann Arbor** **C29**

**Program Area:** Mechanics of Materials

Experimental Investigation of Microstructural Effects on Deformation and Fracture Mechanisms in Nanostructured Metallic Materials

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Mohammed Daqaq, Clemson University** **B68**

**Program Area:** Manufacturing Machines and Equipment

Understanding the Macroscopic Dynamics of Ultrasonic Consolidation

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Mohammed Daqaq, Clemson University** **E111**

**Program Area:** Sensors and Sensing Systems

A Novel Concept for Micro-Power Generation Using Flow-induced Self-excited Oscillations

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Chiara Daraio, California Institute of Technology**
**C3**
**Program Area:** Mechanics of Materials

CAREER: Experimental Investigation of Highly Nonlinear Granular Crystals for the Development of New Mechanical Systems and Acoustic Metamaterials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Tuhin Das, University of Central Florida**
**E51**
**Program Area:** Control Systems

Controlling Transient Behavior of Solid Oxide Fuel Cells Using an Invariant Property

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Shideh Dashti, University of Colorado at Boulder**
**D159**
**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR: Seismic Response of Shallow Underground Structures in Dense Urban Environments

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Alexandre d'Aspremont, Princeton University**
**E235**
**Program Area:** Operations Research

Collaborative Research: Mathematical Programming for Streaming Data

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Joseph Davidson, Arizona State University**
**B69**
**Program Area:** Manufacturing Machines and Equipment

Math Based Precision Manufacturing and Metrology for Complex Mechanical Assemblies

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Rachel Davidson, University of Delaware**
**D114**
**Program Area:** Infrastructure Management and Extreme Events

RAPID: Post-Earthquake Fires in the March 2011 Japan Earthquake and Tsunami

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Angela Davies, University of North Carolina at Charlotte**
**B84**
**Program Area:** Manufacturing Machines and Equipment

In Situ Form Metrology in Manufacturing by Combining Engineered Optical Scattering and Photogrammetry

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Lauren Davis, North Carolina Agricultural & Technical State University**
**E162**
**Program Area:** Service Enterprise Systems

Collaborative Research: Engineering Efficient and Equitable Food Distribution Under Uncertainty

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.



## GRANTEE POSTER SESSION SCHEDULE

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**Stephen Davis, Northwestern University**

**B25**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Dynamics and Stability of Metallic Foams: Network Modelling

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Anirban De, Manhattan College**

**D59**

**Program Area:** Geotechnical Engineering

RUI: Understanding the Role of Flexible and Rigid Barriers in Mitigating Surface Blast Effects on Underground Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Maarten P. de Boer, Carnegie Mellon University**

**C14**

**Program Area:** Mechanics of Materials

Collaborative Research: Stick-slip Dynamics of Micromachined Interfaces

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Gregory Deierlein, Stanford University**

**C185**

**Program Area:** Structural Materials and Mechanics

Collaborative Research: Multi-Scale Simulation of Low-Triaxiality Fracture and Ultra Low Cycle Fatigue in Steel Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Gregory Deierlein, Stanford University**

**D92**

**Program Area:** Hazard Mitigation and Structural Engineering

Integrated System and Component Reliability in Seismic Collapse Safety of Structures

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Gregory Deierlein, Stanford University**

**D181**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR: Seismically Isolated Unibody Residential Buildings for Enhanced Life-Cycle Performance

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jason DeJong, University of California-Davis**

**C138**

**Program Area:** Geomechanics and Geomaterials

Bio-Mediated Improvement of Soil and Soil-Structure Interface Behavior

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jason DeJong, University of California-Davis**

**D182**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-II: Biological Improvement of Sands for Liquefaction Prevention and Damage Mitigation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

**Brian Denton, North Carolina State University** **E163**

**Program Area:** Service Enterprise Systems

**CAREER:** Optimization of Screening and Treatment Delivery Systems for Chronic Diseases

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Brian Denton, North Carolina State University** **E164**

**Program Area:** Service Enterprise Systems

Optimization of Medical Treatment Decisions for Type 2 Diabetes

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jaydev Desai, University of Maryland, College Park** **E52**

**Program Area:** Control Systems

Mechanical Phenotyping of Cells: Haptics-Enabled Atomic Force Microscopy

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Salil Desai, North Carolina Agricultural & Technical State University** **B85**

**Program Area:** Manufacturing Machines and Equipment

**CAREER:** Hybrid Approach to Direct-Write Based Micro and Nano Manufacturing

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Hans DeSmidt, University of Tennessee, Knoxville** **E286**

**Program Area:** Dynamical Systems

**CAREER:** Vibration-Based Active and Passive Damage Identification of Time-Varying Dynamical Systems with Applications to Rotating Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Reginald DesRoches, Georgia Institute of Technology** **D73**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: Machine Vision Enhanced Post Earthquake Inspection and Rapid Loss Estimation

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Reginald DesRoches, Georgia Institute of Technology** **D160**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR–Innovative Seismic Retrofits for Resilient Reinforced Concrete Buildings

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Vijaya Kumar Devabhaktuni, University of Toledo** **E20**

**Program Area:** Engineering and Systems Design

New Methodologies for System-Level Electromagnetic Compatibility (EMC) Analysis of Electronic Systems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Santosh Devasia, University of Washington**

**E53**

**Program Area:** Control Systems

Control of Distributed Nanosteppers

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Santosh Devasia, University of Washington**

**E287**

**Program Area:** Dynamical Systems

Vibration Mitigation in Inchworm Nanopositioners for SPMs

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Elizabeth Dickey, North Carolina State University**

**C54**

**Program Area:** Materials and Surface Engineering

GOAL: Laser Surface Processing of Ceramic Eutectics for Enhanced Cutting Tool Performance

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Yifu Ding, University of Colorado at Boulder**

**C73**

**Program Area:** Materials and Surface Engineering

Instabilities in Patterned Polymer Surfaces

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Seddik Djouadi, University of Tennessee, Knoxville**

**E54**

**Program Area:** Control Systems

Optimal Model Reduction for Aerodynamics Boundary Feedback Control

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Zvonimir Dogic, Brandeis University**

**C200**

**Program Area:** Biomechanics and Mechanobiology

Collaborative Research: Mechanics and Structural Polymorphism of Bacterial Flagellar Assemblies

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Denis Dorozhkin, University of Connecticut**

**E34**

**Program Area:** Engineering and Systems Design

CAREER: Geometric Singularities in Engineering Design and Manufacturing: A Generic Spacetime Approach

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Denis Dorozhkin, University of Connecticut**

**E35**

**Program Area:** Engineering and Systems Design

Geometric Skeletons for Topologically Evolving Domains

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Thomas Dow, North Carolina State University** **B150**

**Program Area:** NanoManufacturing

**GOAL:** Nanocoining

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Vinayak Dravid, Northwestern University** **C220**

**Program Area:** Biomechanics and Mechanobiology

Implementation of Fluidic-Scanning Near Field Ultrasound Holography with Integrated Electronic Detection for Nano-Bio-Mechanics

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Traian Dumitrica, University of Minnesota, Twin Cities** **C240**

**Program Area:** Biomechanics and Mechanobiology

**CAREER:** Nanomechanics from First principles: A Symmetry-Adapted Methodology

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Rebecca Dupaix, Ohio State University** **B54**

**Program Area:** Materials Processing and Manufacturing

**CAREER:** Integrated Approach to Modeling, Simulation, and Design for Manufacture of Micro-hot Embossing Using a Polymer Glass Transition Modeling Framework

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Shirley Dyke, Purdue University** **D202**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

Workshop/Collaborative Research: Vision 2020: An Open Space Technology Workshop on the Future of Earthquake Engineering; St. Louis, Missouri; January 2010

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Shirley Dyke, Purdue University** **D203**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

**NEESR-SG:** Performance-Based Design and Real-time Large-scale Testing to Enable Implementation of Advanced Damping Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Yuris Dzenis, University of Nebraska, Lincoln** **B135**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

**NIRT:** NanoManufacturing and Analysis of Active Hierarchical Nanofilamentary Nanostructures

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

### E

**Christopher Eamon, Wayne State University** **D93**

**Program Area:** Hazard Mitigation and Structural Engineering

Accurate and Efficient Reliability Analysis of Complex Structural Engineering Problems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Demetre Economou, University of Houston** **B181**

**Program Area:** NanoManufacturing

Large Area, Rapid Manufacturing of Virtually Any Nanopattern Using Nanopantography

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Ronald Eguchi, ImageCat, Inc.** **D134**

**Program Area:** Infrastructure Management and Extreme Events

RAPID: The Role of Urban Development Patterns in Mitigating the Effects of Tsunami Run-up

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Kornel Ehmman, Northwestern University** **B38**

**Program Area:** Materials Processing and Manufacturing

Laser-Induced Plasma Micro-Machining (LIP-MM)

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Herbert Einstein, Massachusetts Institute of Technology** **D57**

**Program Area:** Geotechnical Engineering

Cavern Design for the Deep Underground Science and Engineering Laboratory (DUSEL)

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Kamil Ekinci, Trustees of Boston University** **C97**

**Program Area:** Materials and Surface Engineering

Tailor-made Superhydrophobic Surfaces for MEMS and NEMS

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Usama El Shamy, Southern Methodist University** **C119**

**Program Area:** Geomechanics and Geomaterials

Multiscale Experimental and Computational Investigations of Erosion-Induced Failure of Levee Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ahmed Elgamal, University of California-San Diego** **D161**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-II: A Seismic Study of Wind Turbines for Renewable Energy

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Ryan Elliott, University of Minnesota, Twin Cities** **E126**

**Program Area:** Sensors and Sensing Systems

CAREER: Branch-Following and Bifurcation Methods to Identify Active Materials for Tomorrow's Sensors and Actuators

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Michael Engelhardt, University of Texas at Austin** **D94**

**Program Area:** Hazard Mitigation and Structural Engineering

Elevated Temperature Performance of Shear Connectors for Composite Beams

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Bogdan Epureanu, University of Michigan, Ann Arbor** **E288**

**Program Area:** Dynamical Systems

Micro-Fluid-Structural Sensing Based on Sensitivity Vector Fields and Morphing Modes Created by Nonlinear Feedback Excitation

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**F. Safa Erenay, University of Wisconsin, Madison** **E165**

**Program Area:** Service Enterprise Systems

CAREER: Optimizing Disease Screening & Diagnosis

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Ozlem Ergun, Georgia Institute of Technology** **E176**

**Program Area:** Service Enterprise Systems

Managing Debris Collection and Disposal Operations

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ozlem Ergun, Georgia Institute of Technology** **E177**

**Program Area:** Service Enterprise Systems

Fair and Efficient Implementation of Extended Producer Responsibility Legislation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**David Erickson, Cornell University** **B194**

**Program Area:** Interdisciplinary Research

IDR: Self-Reliant, Autonomous Microsystems for Biophysical Monitoring of Small Animals (Lab-on-a-Bird)

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ozan Erol, Washington State University** **E76**

**Program Area:** Control Systems

New Magnetorheological Actuator with Embedded Hall-Effect Sensor for Hysteresis Elimination

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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### F

**Larry Fahnestock, University of Illinois at Urbana-Champaign** **D108**

**Program Area:** Hazard Mitigation and Structural Engineering  
Innovative Self-Centering Braces for Advanced Seismic Performance

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Michael Falk, Johns Hopkins University** **C55**

**Program Area:** Materials and Surface Engineering  
Extended Time Scale Simulation Studies of Nanoscale Friction

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Michael Falvo, University of North Carolina at Chapel Hill** **C201**

**Program Area:** Biomechanics and Mechanobiology  
Tuning Morphology and Mechanics of Fibrin Assemblies

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jun Fan, Missouri University of Science and Technology** **E136**

**Program Area:** Sensors and Sensing Systems  
Novel Coaxial Cable Bragg Grating Sensors for Large Strain Measurement in SHM

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Tai-Hsi Fan, University of Connecticut** **C221**

**Program Area:** Biomechanics and Mechanobiology  
CAREER: The Role of Mobility in Antibody Aggregation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Nicholas Fang, Massachusetts Institute of Technology** **B136**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing  
SNM: Digital Optofluidic Self Assembly of Heterogeneous Metamaterials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Vivek Farias, Massachusetts Institute of Technology** **E198**

**Program Area:** Operations Research  
CAREER: Large Scale Stochastic Control: A Math Programming and Discrete Optimization Lens

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ronald Fearing, University of California, Berkeley** **C241**

**Program Area:** Biomechanics and Mechanobiology  
Collaborative Research: Electrically Controlled Nanofibrillar Surfaces for Cleaning and Adhesion

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Brian Feeny, Michigan State University</b> <b>E289</b>  <b>Program Area:</b> Dynamical Systems                      A Positive Effect of Negative Stiffness: Wave Behavior and Energy Management  <b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>
<p><b>Eugene Feinberg, SUNY at Stony Brook</b> <b>E217</b>  <b>Program Area:</b> Operations Research                      Constrained Optimization of Markov Decision Processes  <b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>
<p><b>Qianmei Feng, University of Houston</b> <b>B207</b>  <b>Program Area:</b> Manufacturing Enterprise Systems                      Collaborative Research: Integrated Modeling and Optimization of Manufacturing Variability and Product Reliability for Advanced and Evolving Technologies  <b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>
<p><b>Flavio Fenton, Cornell University</b> <b>E251</b>  <b>Program Area:</b> Dynamical Systems                      Nonlinear Dynamics and Bifurcations in Cardiac Tissue  <b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>
<p><b>Scott Ferguson, North Carolina State University</b> <b>E3</b>  <b>Program Area:</b> Engineering and Systems Design                      GOALI: A Multidisciplinary Approach to Simultaneous Market Segmentation and Product Family Definition  <b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>
<p><b>Michael Ferris, University of Wisconsin, Madison</b> <b>E236</b>  <b>Program Area:</b> Operations Research                      Extended Mathematical Programs: Hierarchical Models and Solution  <b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>
<p><b>Richard Finno, Northwestern University</b> <b>D52</b>  <b>Program Area:</b> Geotechnical Engineering                      Advancing the Capabilities of Adaptive Management Techniques in Geotechnics  <b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>
<p><b>Alison Flatau, University of Maryland, College Park</b> <b>E252</b>  <b>Program Area:</b> Dynamical Systems                      GOALI: Dynamic Coupling of Synthetic Jet Actuators and Flow Fields  <b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>



## GRANTEE POSTER SESSION SCHEDULE

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**Robert Fleischman, University of Arizona** **D204**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR: Inertial Force-Limiting Floor Anchorage Systems for Seismic Resistant Building Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Ernst-Ludwig Florin, University of Texas at Austin** **C222**

**Program Area:** Biomechanics and Mechanobiology  
Controlling the Mechanical Properties of Fiber Bundles through their Molecular Architecture

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Sean Fontenot, University of Oregon, Eugene** **B4**

**Program Area:** Materials Processing and Manufacturing  
Self-Assembled Liquid Crystal Thermoset 3-D Nano-Composites With Functionally Graded Properties

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Craig Foster, University of Illinois at Chicago** **C186**

**Program Area:** Structural Materials and Mechanics  
Numerical and Experimental Analysis of Earth-Based Structural Materials

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Diane Foster, University of New Hampshire** **D205**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR: Tsunami Induced Coherent Structures and their Impact on our Coastal Infrastructure

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Patrick Fox, University of California-San Diego** **D162**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-CR: Earthquake Performance of Full-Scale Reinforced Soil Walls

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Joelle Frechette, Johns Hopkins University** **C74**

**Program Area:** Materials and Surface Engineering  
CAREER: Engineering Surface Interactions to Modulate a Confined Fluid

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Terry Friesz, Pennsylvania State University, University Park** **D5**

**Program Area:** Civil Infrastructure Systems  
Stochastic Dynamic Game-Theoretic Models of Urban Freight Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Gary Fry, Texas A&M University**
**D206**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-CR: Multi-Scale, Mechanistic Fracture Prediction and Optimal Panel Zone Participation in Steel Moment Frame Buildings

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Peter Furth, Northeastern University**
**D20**

**Program Area:** Civil Infrastructure Systems  
Self-Organizing Traffic Signals

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Barry Fussell, University of New Hampshire**
**B106**

**Program Area:** Manufacturing Machines and Equipment  
Minimization of Force Model Uncertainty for CNC Milling Process Improvement

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Barry Fussell, University of New Hampshire**
**D60**

**Program Area:** Geotechnical Engineering  
'Smart Rocks' for Debris-Flow Landslide Research

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## G

**Evan Galipeau, University of Pennsylvania**
**C30**

**Program Area:** Mechanics of Materials  
Fiber-Reinforced Polymeric Material Systems: A Multi-Scale, Elasto-Viscoplastic Homogenization Approach

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Evan Galipeau, University of Pennsylvania**
**C31**

**Program Area:** Mechanics of Materials  
Pattern-Changing Instabilities and Giant Magnetostriction in Periodic Magnetoelastic Composites

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Daniel Gall, Rensselaer Polytechnic Institute**
**C56**

**Program Area:** Materials and Surface Engineering  
Adaptive High-Temperature Lubrication through Nanopore Channels

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**David Gamarnik, Massachusetts Institute of Technology**
**E199**

**Program Area:** Operations Research  
Statistical Physics Methods and Algorithmic Applications in Graphical Games and Combinatorial Optimization

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Mahdi Ganji, University of Arizona**

**E290**

**Program Area:** Dynamical Systems

Dynamics of Nanometer Gap Formation in Thermo-Tunneling Devices for Energy Conversion

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Di Gao, University of Pittsburgh**

**C75**

**Program Area:** Materials and Surface Engineering

Collaborative Research: Condensation and Icing at Superhydrophobic Surfaces

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Huajian Gao, Brown University**

**C242**

**Program Area:** Biomechanics and Mechanobiology

Effects of Elasticity and Geometry on Cellular Uptake of Nanoparticles

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jianbo Gao, Wright State University**

**E253**

**Program Area:** Dynamical Systems

Collaborative Research: Quantifying Predictability in Nonlinear Multiscale Systems with Applications to Tropical Cyclone Prediction

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Robert Gao, University of Connecticut**

**B55**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Multivariate Remote Process Sensing for Improved Observability in Injection Molding

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Maria Garlock, Princeton University**

**D95**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: Fire Damage Mitigation and Post-Fire Evaluation of Steel Girder Bridges

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**James Garrett, Carnegie Mellon University**

**D30**

**Program Area:** Civil Infrastructure Systems

Indirect Bridge Health Monitoring Using Moving Vehicles

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Laurie Garrow, Georgia Institute of Technology**

**E181**

**Program Area:** Service Enterprise Systems

Integrating Flexible Discrete Choice and Revenue Management Models

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

**Henri Gavin, Duke University**

**D163**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
 RAPID: Performance of the Base-Isolated Christchurch Women's Hospital during the Sequence of Strong Earthquakes and Aftershocks in New Zealand from September 2010 through 2011

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Tomas Gedeon, Montana State University**

**E271**

**Program Area:** Dynamical Systems  
 Fluid-Structure Interaction in Arthropod Mechanoreceptors with Application to Bio-Inspired Micro-Fluidic Sensors

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Brian Gerber, University of Colorado at Denver**

**D115**

**Program Area:** Infrastructure Management and Extreme Events  
 Managing Evacuee Ingress: Network Interactions and Community Hosting Performance

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Leonid Germanovich, Georgia Institute of Technology**

**D44**

**Program Area:** Geotechnical Engineering  
 Collaborative Research: Development of a Fracture Processes Facility at DUSEL Homestake

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Joseph Geunes, University of Florida**

**B226**

**Program Area:** Manufacturing Enterprise Systems  
 Collaborative Research: Mitigating the Cost of Anarchy in Complex Supply Chain Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Michael Gevelber, Trustees of Boston University**

**B182**

**Program Area:** NanoManufacturing  
 Real-Time Control for Engineering Electrospun Nanofiber Diameter Distributions for Advanced Applications

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Masoud Ghandehari, Polytechnic University of New York**

**B196**

**Program Area:** Interdisciplinary Research  
 IDR: Optical Imaging of High pH Dependent Degradation in Infrastructure Materials

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Pritha Ghosh, Texas A&M University**

**C15**

**Program Area:** Mechanics of Materials  
 Modeling and Computational Methodologies for the Simulation of the Response of Multifunctional Programmable Materials

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Somnath Ghosh, Johns Hopkins University**

**C32**

**Program Area:** Mechanics of Materials

Collaborative Proposal: Integrated Computational System for Probability Based Multi-Scale Model (PMM) of Ductile Fracture in Lightweight Alloys

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Victor Giurgiutiu, University of South Carolina at Columbia**

**E94**

**Program Area:** Sensors and Sensing Systems

Exact Modeling of Power and Energy Transduction for Optimum Design of Structurally-Integrated Thin-Film Active Sensors

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**William Goddard, California Institute of Technology**

**B133**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

SNM: Electronically Controlled Surface Assembly of DNA Nanostructures

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Alejandro Gonzalez Ruiz, University of New Mexico**

**E87**

**Program Area:** Control Systems

CAREER: Compressive Cooperative Sensing and Navigation in Mobile Networks

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Keith Gooch, Ohio State University**

**C202**

**Program Area:** Biomechanics and Mechanobiology

Biomechanical Regulation of Cellular Signaling and Organization

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jonathan Goodall, University of South Carolina at Columbia**

**D6**

**Program Area:** Civil Infrastructure Systems

Simulation of Integrated Urban Infrastructure Systems using Component-based Modeling

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Russell Gorga, North Carolina State University**

**B56**

**Program Area:** Materials Processing and Manufacturing

A Mechanistic Understanding of the Process-Property Relationships in an Alternative Electrospinning Process

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Nakhiah Goulbourne, University of Michigan, Ann Arbor**

**E112**

**Program Area:** Sensors and Sensing Systems

CAREER: Multiphysics Modeling and Experiments for Pulastile Membrane Sensors

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Andrew Gouldstone, Northeastern University**
**B197**
**Program Area:** Interdisciplinary Research

IDR/Collaborative Research: Activities in Thermal Spray Processing and Volcanology

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Sanjay Govindjee, University of California, Berkeley**
**E127**
**Program Area:** Sensors and Sensing Systems

High Performance Simulation Tools for Complex MEMS Resonator Design

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Nabil Grace, Lawrence Technological University**
**C151**
**Program Area:** Structural Materials and Mechanics

GOALI/RUI: Development of Innovative New Highway Bridge System

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Samuel Graham, Georgia Institute of Technology**
**B161**
**Program Area:** NanoManufacturing

High Throughput Process Screening and in-situ Characterization for Graphene Synthesis

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Lori Graham-Brady, Johns Hopkins University**
**C187**
**Program Area:** Structural Materials and Mechanics

Collaborative Research Strain-rate Dependent Properties of Cement-Based Materials: A Multi-Scale Experimental and Modeling Effort

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Zachary Grasley, Texas A&M University**
**C188**
**Program Area:** Structural Materials and Mechanics

CAREER: Linking Nanoscale and Macroscale Viscoelastic Responses of Cementitious Materials

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Itzhak Green, Georgia Institute of Technology**
**C189**
**Program Area:** Structural Materials and Mechanics

Degradation and Fault Detection of Rotordynamic Machinery Using Real-Time Experimental Modal Analysis

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Christopher Gregg, East Tennessee State University**
**D135**
**Program Area:** Infrastructure Management and Extreme Events

Effects of Environmental Cues and Informal and Official Warnings on Protective Action Decision Making: A Case Study for Earthquakes and Tsunamis in the Indian Ocean

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Mircea Grigoriu, Cornell University** **C16**

**Program Area:** Mechanics of Materials

Effective Properties of Multi-phase Materials by Stochastic Reduced Order Models (SROMs)

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Joanna Groza, University of California-Davis** **B172**

**Program Area:** NanoManufacturing

GOALI: Rapid Sintering to Manufacture Fully Dense and Bioactive Nanocrystalline Hydroxyapatite

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**David Grummon, Michigan State University** **C98**

**Program Area:** Materials and Surface Engineering

High-Authority Two-Way Surface Form Memory

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Zhiyong Gu, University of Massachusetts, Lowell** **B39**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Microscale Joining Using Nanoheater Structures

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Yongpei Guan, University of Florida** **E218**

**Program Area:** Operations Research

CAREER: A Study of Stochastic and Robust Integer Programming: Algorithms, Computations and Applications

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Madhav Guatam, University of Toledo** **C57**

**Program Area:** Materials and Surface Engineering

Fabrication of Zinc Nitride and Zinc-Oxy-Nitride Thin Films for Photovoltaic and Optoelectronic Applications

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kevin Gue, Auburn University** **B227**

**Program Area:** Manufacturing Enterprise Systems

Storage Systems with Virtual Aisles

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**James Guest, Johns Hopkins University** **E21**

**Program Area:** Engineering and Systems Design

Optimal Topology Design under Fabrication and Demand Uncertainties

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

**Seth Guikema, Johns Hopkins University**

**D21**

**Program Area:** Civil Infrastructure Systems

Drinking Water Distribution System Management Incorporating Health and Asset Risk

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Seth Guikema, Johns Hopkins University**

**D116**

**Program Area:** Infrastructure Management and Extreme Events

Multi-Scale Modeling of Interdependent Critical Infrastructure System Performance During Hurricanes

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Lingjie Guo, University of Michigan, Ann Arbor**

**B183**

**Program Area:** NanoManufacturing

Nanomanufacturing Process and Applications Based on Dynamic Nano-Inscribing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Rui (Ray) Guo, Duke University**

**C139**

**Program Area:** Geomechanics and Geomaterials

Chemo-Mechanical Nano-Scale Mechanisms of Aging of Soils

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Yuebin Guo, University of Alabama, Tuscaloosa**

**B70**

**Program Area:** Manufacturing Machines and Equipment

GOAL: Six-Sigma Based Robust Process Design Under Tool Deterioration for Giga Fatigue Life of Precision Machined Components in Hard Turning

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Yuebin Guo, University of Alabama, Tuscaloosa**

**B71**

**Program Area:** Manufacturing Machines and Equipment

Hybrid Dry Cutting–Finish Burnishing of Novel Biodegradable Magnesium-Calcium Implants for Superior Corrosion Performance

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Zhanhu Guo, Lamar University, Beaumont**

**B5**

**Program Area:** Materials Processing and Manufacturing

Synergistic Conductive Multifunctional Polymer Nanocomposites with Soft and Hard NanoFillers

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Diwakar Gupta, University of Minnesota, Twin Cities**

**E182**

**Program Area:** Service Enterprise Systems

Speed and Efficiency in Government Procurement of Transportation-Related Construction Services

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.



## GRANTEE POSTER SESSION SCHEDULE

**Satyandra Gupta, University of Maryland, College Park**

**E36**

**Program Area:** Engineering and Systems Design

Collaborative Research: Automatic Generation of Context-Dependent Simplified Models to Support Interactive Virtual Assembly

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Varun Gupta, University of Illinois at Urbana-Champaign**

**C33**

**Program Area:** Mechanics of Materials

GOALI: Validated Multiscale Simulations of Ceramic Matrix Composites for Power Generation

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Vijay Gupta, University of California-Los Angeles**

**C4**

**Program Area:** Mechanics of Materials

Loading Metal Nanostructures Under Extreme Conditions Using Stress Waves with Rarefaction Shock Profiles

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Maria Paz Gutierrez, University of California, Berkeley**

**D74**

**Program Area:** Hazard Mitigation and Structural Engineering

Biologically Inspired Self-Activated Building Envelope Regulation System (SABERS)

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Maria Paz Gutierrez, University of California, Berkeley**

**E150**

**Program Area:** Sensors and Sensing Systems

Biologically Inspired Self-Activated Building Envelope Regulation System (SABERS)

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## H

**Raphael Haftka, University of Florida**

**E4**

**Program Area:** Engineering and Systems Design

Estimating Probability of Improvement in Next Cycle of Surrogate Based Design Optimization

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Yacov Haimes, University of Virginia**

**D31**

**Program Area:** Civil Infrastructure Systems

Adaptive Systems-Based Prioritization of Bridge Infrastructure Maintenance: Integrated Modeling of Technical, Socio-Economic, and Normative Dimensions

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

### **Muhammad Hajj, Virginia Polytechnic Institute and State University**

**D96****Program Area:** Hazard Mitigation and Structural Engineering

A Functional Approach for the Analysis of Peak Wind Loads on Houses Exposed to Hurricanes and Validation of Wind Tunnel Simulations

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Samer Hamdar, George Washington University**

**D7****Program Area:** Civil Infrastructure Systems

Collaborative Research: New Methods for Measuring, Evaluating and Predicting the Safety Impact of Road Infrastructure Systems on Driver Behavior

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Paul Hansma, University of California-Santa Barbara**

**B198****Program Area:** Interdisciplinary Research

IDR: Bio-Inspired Actuators for Next Generation Infrastructure Systems

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

### **Julie Zhili Hao, Old Dominion University**

**E22****Program Area:** Engineering and Systems Design

Robust Design of High Performance MEMS Resonators

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### **Yaowu Hao, University of Texas at Arlington**

**C223****Program Area:** Biomechanics and Mechanobiology

Collaborative Research: Hierarchically Structured Polycrystalline Hollow Gold Nanoparticles—a Model System for Integrated Experimental and Multiscale Computational Nanomechanics

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### **Md Haque, Pennsylvania State University, University Park**

**C243****Program Area:** Biomechanics and Mechanobiology

Mechanics of Materials at the Extreme Length-Scales

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### **Sandip Harimkar, Oklahoma State University**

**B40****Program Area:** Materials Processing and Manufacturing

EAGER: Spark Plasma Sintering of Bulk Nanostructured Thermoelectric Materials

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### **Tequila Harris, Georgia Institute of Technology**

**B6****Program Area:** Materials Processing and Manufacturing

Understanding the Relationship Between Processing and Performance for Functional Materials

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Judith Harrison, United States Naval Academy**

**C58**

**Program Area:** Materials and Surface Engineering

Collaborative Research: Atomistic Simulations of the Nanotribology of Carbon-based Materials: Establishing Links between Structure, Chemistry, and Performance

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Anastasios John Hart, University of Michigan, Ann Arbor**

**B151**

**Program Area:** NanoManufacturing

Fabrication of Freeform Hierarchical Micro/Nanostructures by Control of Capillary Interactions with Aligned Carbon Nanotubes

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Youssef Hashash, University of Illinois at Urbana-Champaign**

**C128**

**Program Area:** Geomechanics and Geomaterials

Towards an Integrated Computational-Experimental Laboratory Testing Framework for Soil Behavior Characterization and Modeling

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Tasnim Hassan, North Carolina State University**

**D183**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: An Innovative Seismic Performance Enhancement Technique for Steel Building Beam-Column Connections

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Kianoosh Hatami, University of Oklahoma, Norman Campus**

**C140**

**Program Area:** Geomechanics and Geomaterials

Developing Sensor-Enabled Geosynthetics using Conducting Carbon Networks: A Proof-of-Concept Study

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Taviare Hawkins, University of Massachusetts, Amherst**

**C203**

**Program Area:** Biomechanics and Mechanobiology

Physical Regulation of Microtubule Biomechanics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kurt Hebert, Iowa State University**

**C47**

**Program Area:** Materials and Surface Engineering

Modeling the Formation of Self-Ordered Nanoporous Anodic Oxides

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Jonathan Helm, University of Michigan, Ann Arbor</b></p> <p><b>Program Area:</b> Service Enterprise Systems</p> <p>Hospital Systems Occupancy Prediction and Control to Increase Access, Smooth Provider Workload, and Reduce Cost</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>E166</b>
<p><b>Clifford Henderson, Georgia Institute of Technology</b></p> <p><b>Program Area:</b> Materials Processing and Manufacturing</p> <p>Understanding and Exploiting the Transport Behavior of Polymers in Confined Geometries</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>B57</b>
<p><b>Sunderesh Heragu, University of Louisville</b></p> <p><b>Program Area:</b> Manufacturing Enterprise Systems</p> <p>Collaborative Proposal: EARly-concept Grants for Exploratory Research (EAGER): Design Principles for Warehouses with Autonomous Vehicles (WAVE)</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>B228</b>
<p><b>Henry Hess, Columbia University</b></p> <p><b>Program Area:</b> Biomechanics and Mechanobiology</p> <p>Accelerated Degradation of Active Nanosystems by Biomolecular Motors</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>C204</b>
<p><b>Illya Hicks, William Marsh Rice University</b></p> <p><b>Program Area:</b> Operations Research</p> <p>Branch Decomposition Techniques for Submodular Optimization</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>E237</b>
<p><b>Andrew Hirsh, University of Michigan, Ann Arbor</b></p> <p><b>Program Area:</b> Dynamical Systems</p> <p>Predicting the Torsional Dynamics of DNA</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>E254</b>
<p><b>Dean Ho, Northwestern University</b></p> <p><b>Program Area:</b> NanoManufacturing</p> <p>CAREER: Scalable Fabrication of Nanodiamond Patch Platforms for Sustained Drug Release</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B162</b>
<p><b>Erik Hobbie, North Dakota State University, Fargo</b></p> <p><b>Program Area:</b> Biomechanics and Mechanobiology</p> <p>Nanoscale Structural Rearrangement and Strain Softening in Ultra-Pure Nanotube Membranes</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>C224</b>

## GRANTEE POSTER SESSION SCHEDULE

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**Dorit Hochbaum, University of California, Berkeley**

**E200**

**Program Area:** Operations Research

New Optimization Techniques in Data Mining

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Dorit Hochbaum, University of California, Berkeley**

**E201**

**Program Area:** Operations Research

Novel Efficient Clustering Techniques for Data Mining, Ranking, Pattern Recognition and Segmentation of Large Scale Data Sets

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jose Holguin-Veras, Rensselaer Polytechnic Institute**

**D136**

**Program Area:** Infrastructure Management and Extreme Events

RAPID: Field Investigation on Post-Disaster Humanitarian Logistic Practices under Cascading Disasters and a Persistent Threat: The Tohoku Earthquake Disasters

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Katja Holttä-Otto, University of Massachusetts, Dartmouth**

**E23**

**Program Area:** Engineering and Systems Design

Collaborative Research: Extreme Experience Design for Breaking Barriers to Innovation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**John Hooker, Carnegie Mellon University**

**E219**

**Program Area:** Operations Research

Multivalued Decision Diagrams in Optimization

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jennifer Horney, University of North Carolina at Chapel Hill**

**D117**

**Program Area:** Infrastructure Management and Extreme Events

The Effects of Pre-Disaster Recovery Plans on Post-Disaster Recovery Among Socially Vulnerable Populations

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**David Horsley, University of California-Davis**

**E137**

**Program Area:** Sensors and Sensing Systems

CAREER: Nonlinear Mechanically Amplified MEMS for Sensing and Communication

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Anette (Peko) Hosoi, Massachusetts Institute of Technology**

**E255**

**Program Area:** Dynamical Systems

Collaborative Research: Optimal Gaits and Design for Locomoting Systems

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Sandra Houston, Arizona State University**

**C141**

**Program Area:** Geomechanics and Geomaterials

Collaborative Research: Surface Flux for Cracked and Intact Clays for Poned and Sloped Conditions

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Roman Hryciw, University of Michigan, Ann Arbor**

**C129**

**Program Area:** Geomechanics and Geomaterials

Laboratory, Field and In-Situ Soil Characterization Through Image Processing

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**S. Jack Hu, University of Michigan, Ann Arbor**

**B229**

**Program Area:** Manufacturing Enterprise Systems

GOAL: Modeling Product Variety Induced Manufacturing Complexity for Assembly System Design

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Haiying Huang, University of Texas at Arlington**

**E95**

**Program Area:** Sensors and Sensing Systems

CAREER: Passive Wireless Sensor Networks for Bio-inspired Sensor Skins

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Hanchen Huang, University of Connecticut**

**C76**

**Program Area:** Materials and Surface Engineering

A New Characteristic Length Scale on Surfaces

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Pao-Tsung Huang, Purdue University**

**C130**

**Program Area:** Geomechanics and Geomaterials

CAREER: Linking Rheology to Performance—An Integrated Approach to the Evaluation and Design of Trenchless Technology Fluids

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Qiang Huang, University of Southern California**

**B208**

**Program Area:** Manufacturing Enterprise Systems

Collaborative Research: Nanostructure Growth Process Modeling and Optimal Experimental Strategies for Repeatable Fabrication of Nanostructures for Application in Photovoltaics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Qiang Huang, University of Southern California**

**B209**

**Program Area:** Manufacturing Enterprise Systems

In Situ Nanomanufacturing Process Control Through Multiscale Nanostructure Growth Modeling

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Rui Huang, University of Texas at Austin**

**C17**

**Program Area:** Mechanics of Materials

Nonlinear Mechanics of Graphene-Based Materials

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Samuel Huang, University of Cincinnati**

**E183**

**Program Area:** Service Enterprise Systems

GOALI: Robust and Efficient Knowledge Discovery With Application in Gene Expression Based Diagnosis

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Wenzhen Huang, University of Massachusetts, Dartmouth**

**E37**

**Program Area:** Engineering and Systems Design

GOALI: Collaborative Research: A Mode-based Simulation Enabling Model and Methodologies for Geometric Variation and Tolerance Control

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Yinlun Huang, Wayne State University**

**B41**

**Program Area:** Materials Processing and Manufacturing

Development of a Multiscale Modeling and Simulation Methodology for Predictive Paint Material Application in Automotive Coating

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Yong Huang, Clemson University**

**B86**

**Program Area:** Manufacturing Machines and Equipment

CAREER: Understanding Process-Induced Damage in Laser-Assisted Cell Direct Writing–Bridging Manufacturing Science and Biomedical Research

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Yong Huang, Clemson University**

**B87**

**Program Area:** Manufacturing Machines and Equipment

Fabrication of Double-Layer Cellular Spheroid using Acoustic Excitation-Assisted Compound Jetting

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Mont Hubbard, University of California-Davis**

**E67**

**Program Area:** Control Systems

Human Control of Bicycle Dynamics with Experimental Validation and Implications for Bike Handling and Design

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**James Hubbard, National Institute of Aerospace Associates**

**E256**

**Program Area:** Dynamical Systems

GOALI: Phased Array Synthetic Jets for Influencing Dynamics of Complex Flows

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Daniel Huber, Carnegie Mellon University**

**D22**

**Program Area:** Civil Infrastructure Systems

Automating the Creation of As-built Building Information Models

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**James Hubner, University of Alabama, Tuscaloosa**

**E113**

**Program Area:** Sensors and Sensing Systems

CAREER: Molecular Luminescent Sensing for Global Strain Measurement

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Samuel Hunter, Pennsylvania State University, University Park**

**E24**

**Program Area:** Engineering and Systems Design

Enhancing Creativity with a Concept Generator–Evaluation and Team Training

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Mahmoud Hussein, University of Colorado at Boulder**

**B199**

**Program Area:** Interdisciplinary Research

IDR: Phononic Surfaces for Flow Control

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Mahmoud Hussein, University of Colorado at Boulder**

**E291**

**Program Area:** Dynamical Systems

A Building Block Approach to Controlling Phonon Dynamics in Nanostructures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Tara Hutchinson, University of California-San Diego**

**D207**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Full-Scale Structural and Nonstructural Building System Performance During Earthquakes

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Olusegun Ilegbusi, University of Central Florida**

**B7**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Synthesis and Modeling of Novel Nanoparticle-Polymer Composite Films for Sensor Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jacqueline Isaacs, Northeastern University**

**B137**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

SNM: Designing and Integrating LCA Methods for Nanomanufacturing Scale-up

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

**Albena Ivanisevic, North Carolina State University**

**C99**

**Program Area:** Materials and Surface Engineering

Surface Engineering of Gallium Nitride with Biomolecules

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Tetsuya Iwasaki, University of California-Los Angeles**

**E68**

**Program Area:** Control Systems

Central Pattern Generator (CPG) Control of Locomotion for Adaptive Gait Generation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### J

**Sheldon Jacobson, University of Illinois at Urbana-Champaign**

**D137**

**Program Area:** Infrastructure Management and Extreme Events

New Approaches to Protecting Transportation Infrastructure

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Anand Jagota, Lehigh University**

**B200**

**Program Area:** Interdisciplinary Research

IDR: Coupling Theory and Experiment to Quantify Biomolecule-Nanomaterial Interactions

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Patrick Jaillet, Massachusetts Institute of Technology**

**E202**

**Program Area:** Operations Research

Online Optimization for Dynamic Resource Allocation Problems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Mona Jarrahi, University of Michigan, Ann Arbor**

**E128**

**Program Area:** Sensors and Sensing Systems

MEMS Reconfigurable Subwavelength Metallic Slits for Broadband Terahertz Modulation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Iwona Jasiuk, University of Illinois at Urbana-Champaign**

**C34**

**Program Area:** Mechanics of Materials

Image-Based Characterization and Multi-Scale Modeling of Bone

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Suhada Jayasuriya, University of Central Florida**

**E88**

**Program Area:** Control Systems

EAGER: Local Control Strategies for Predicting Emergent Behavior and Cooperative Control in Real Time under Minimal Communication

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Seokho Jeong, Virginia Polytechnic Institute and State University** **D164**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-CR: Topographic Effects in Strong Ground Motion—From Physical and Numerical Modeling to Design  
**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Peng Jiang, University of Florida** **B184**

**Program Area:** NanoManufacturing  
Scalable Self-Assembly of Colloidal Nanoparticles  
**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Xiaoning Jiang, North Carolina State University** **E138**

**Program Area:** Sensors and Sensing Systems  
Flexoelectric Strain Gradient Sensors- a New Sensing Technology for In-situ Structure Health Monitoring  
**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Andrew Johnson, Texas A&M University** **E167**

**Program Area:** Service Enterprise Systems  
EAGER: Engineering Incentives for Health Care Systems  
**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Drew Johnson, University of Texas at San Antonio** **C120**

**Program Area:** Geomechanics and Geomaterials  
Plant Root Templated GeoTextiles  
**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Mihailo Jovanovic, University of Minnesota, Twin Cities** **E55**

**Program Area:** Control Systems  
CAREER: Enabling Methods for Modeling and Control of Transitional and Turbulent Wall-Bounded Shear Flows  
**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Mihailo Jovanovic, University of Minnesota, Twin Cities** **E56**

**Program Area:** Control Systems  
Collaborative Research: Algorithms for Design of Structured Distributed Controllers with Application to Large-Scale Vehicular Formations  
**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**John Judge, Catholic University of America** **E272**

**Program Area:** Dynamical Systems  
CAREER: Dynamics of Micro- and Nanomechanical Resonator Arrays  
**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Maria Juenger, University of Texas at Austin**

**C162**

**Program Area:** Structural Materials and Mechanics

Inorganic Polymers for Sustainable Civil Infrastructure

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Anak Agung Julius, Rensselaer Polytechnic Institute**

**E69**

**Program Area:** Control Systems

Collaborative Research: Motion Control of Bacteria-Powered Microrobots

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Yung Joon Jung, Northeastern University**

**B163**

**Program Area:** NanoManufacturing

Highly Organized Two and Three Dimensional Singlewalled Carbon Nanotubes- Polymer Hybrid Structures for Diverse Flexible Devices and Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## K

**Pierre Kabamba, University of Michigan, Ann Arbor**

**E77**

**Program Area:** Control Systems

GOAL: Control of Cyclic Systems—Theory, Applications, and Experiments

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Kyriaki Kalaitzidou, Georgia Institute of Technology**

**B97**

**Program Area:** Manufacturing Machines and Equipment

Freeform Fabrication of Multifunctional Nanocomposites via Selective Laser Sintering

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Vibha Kalra, Drexel University**

**B58**

**Program Area:** Materials Processing and Manufacturing

EAGER: Confined Self Assembly of Fully Conjugated Rod-Rod Diblock Copolymers in Nanofibers

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Vineet Kamat, University of Michigan, Ann Arbor**

**D32**

**Program Area:** Civil Infrastructure Systems

A Robust Method for Resolving Incorrect Visual Occlusion in Dynamic Augmented Reality Environments of Animated Engineering Operations

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Vineet Kamat, University of Michigan, Ann Arbor**

**D33**

**Program Area:** Civil Infrastructure Systems

Context-Aware Information Access for Rapid On-Site Decision Making in Construction, Maintenance, and Inspection of Civil Infrastructure Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Edwin Kan, Cornell University**

**E96**

**Program Area:** Sensors and Sensing Systems

Non-Self-Jamming Passive Telemetry with Sensor Integration

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Shiv Kapoor, University of Illinois at Urbana-Champaign**

**B88**

**Program Area:** Manufacturing Machines and Equipment

Design of CNT Composite Microstructural Characteristics for Enhanced Engineering Functionality and Manufacturability

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Levent Kara, Carnegie Mellon University**

**E25**

**Program Area:** Engineering and Systems Design

Creativity Meets Constraints–Sketch-Based CAD for Industrial Designers with Engineering Constraint Management

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Adam Kareem, University of Maryland, College Park**

**C100**

**Program Area:** Materials and Surface Engineering

Influence of thin-fluid-film effects on surface characterization with dynamic atomic force microscopy

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Adam Kareem, University of Maryland, College Park**

**C205**

**Program Area:** Biomechanics and Mechanobiology

CAREER: Sub-NanoNewton Force Spectroscopy in Liquids with Dual-Frequency-Modulation AFM

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Anette Karlsson, University of Delaware**

**C18**

**Program Area:** Mechanics of Materials

The Mechanics of Debonding of Foam Core Sandwich Structure Under Cyclic Loading

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jagannadham Kasichainula, North Carolina State University**

**B8**

**Program Area:** Materials Processing and Manufacturing

EAGER: Processing and Characterization of Novel Indium-graphene and Copper-graphene Composites for Heat Spreader Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Edward Kavazanjian, Arizona State University</b></p> <p><b>Program Area:</b> Geomechanics and Geomaterials Microbially-Induced Cementation of Sands by Denitrification</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>C131</b>
<p><b>Kazem Kazerounian, University of Connecticut</b></p> <p><b>Program Area:</b> Biomechanics and Mechanobiology CAREER: Hierarchies of Repair in Damaged Bone—A Role for Osteocytes</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>C225</b>
<p><b>Kazem Kazerounian, University of Connecticut</b></p> <p><b>Program Area:</b> Engineering and Systems Design A Mechanics Framework for the Analysis and Design of Protein Based Nano Machines</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>E38</b>
<p><b>Steven Keating, Massachusetts Institute of Technology</b></p> <p><b>Program Area:</b> Engineering and Systems Design EAGER: Bio-Beams—Functionally Graded Rapid Design &amp; Fabrication</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>E26</b>
<p><b>Leehyun Keel, Tennessee State University</b></p> <p><b>Program Area:</b> Control Systems A Collaborative Research on Multivariable Fixed Order Controller Synthesis and Design from Data</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>E78</b>
<p><b>Scott Kelly, University of North Carolina at Charlotte</b></p> <p><b>Program Area:</b> Dynamical Systems Constrained Lagrangian and Hamiltonian Mechanics in Fluid-Body Interactions: Analytical Modeling and Computational Methods</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>E257</b>
<p><b>Scott Kelly, University of North Carolina at Charlotte</b></p> <p><b>Program Area:</b> Dynamical Systems Collaborative Research: Manipulation of Suspended Microparticles via Localized Fluid Boundary Dynamics: Modeling, Simulation, and Experiments</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>E258</b>
<p><b>James Kendra, University of Delaware</b></p> <p><b>Program Area:</b> Infrastructure Management and Extreme Events RAPID: The Tohoku Catastrophe: Volunteers and Non-Profit Organizations in Post-Kobe Japan</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>D138</b>

## GRANTEE POSTER SESSION SCHEDULE

**James Kendra, University of Delaware**
**D165**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
Workshop on Deploying Post-Disaster Quick-Response Reconnaissance Teams: Methods, Strategies, and Needs

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Benjamin Keselowsky, University of Florida**
**C206**

**Program Area:** Biomechanics and Mechanobiology  
Mechanical Strain Modulation of Dendritic Cell-Directed Adaptive Immune Responses

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kapil Khandelwal, University of Notre Dame**
**D75**

**Program Area:** Hazard Mitigation and Structural Engineering  
CAREER: Multiscale Topology Optimization: Design of Structural-Material Systems Under Extreme Events

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jeffrey Kharoufeh, University of Pittsburgh**
**B210**

**Program Area:** Manufacturing Enterprise Systems  
Collaborative Research: Adaptive Maintenance Planning Based on Evolving Residual Life Distributions

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Milind Khire, Michigan State University**
**C142**

**Program Area:** Geomechanics and Geomaterials  
A Lattice Boltzmann Based Model for Predicting Unsaturated Flow through Soil Macropores and Capillary Pores

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Behrokh Khoshnevis, University of Southern California**
**B107**

**Program Area:** Manufacturing Machines and Equipment  
Digital Fabrication of High-Temperature Metals Using Selective Inhibition of Sintering

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Gap-Yong Kim, Iowa State University**
**B26**

**Program Area:** Materials Processing and Manufacturing  
Novel Manufacturing of Bio-inspired Metal Matrix Composites by Semisolid Forming-Joining

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**MinJun Kim, Drexel University**
**B173**

**Program Area:** NanoManufacturing  
CAREER: The Integration of Biomolecular Motors for Bacterial Actuation, Sensing, and Transport (BAST) at Micro/Nanoscale

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Nam Kim, University of Florida**

**E5**

**Program Area:** Engineering and Systems Design

Uncertainty Reduction by Testing, Inspection, Health Monitoring, and Maintenance (THIM) in Probabilistic Product Design

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Seong Kim, Pennsylvania State University, University Park**

**C101**

**Program Area:** Materials and Surface Engineering

Understanding and Preventing Frictional Polymer Formation in MEMS

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Brad Kinsey, University of New Hampshire**

**B42**

**Program Area:** Materials Processing and Manufacturing

GOAL: Characterization, Modeling, and Optimization of Magnetic Pulse Welding Processes

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Diego Klabjan, Northwestern University**

**B230**

**Program Area:** Manufacturing Enterprise Systems

Approximate Dynamic Programming in Complex Multi-Echelon Inventory and Production Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**William Klug, University of California-Los Angeles**

**C226**

**Program Area:** Biomechanics and Mechanobiology

CAREER: Membrane-Protein Interactions and the Mechanics of Cell Organelles

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Melissa Knothe Tate, Case Western Reserve University**

**C244**

**Program Area:** Biomechanics and Mechanobiology

Mechanical Modulation of Stem Cell Shape and Fate

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Suneel Kodambaka, University of California-Los Angeles**

**C59**

**Program Area:** Materials and Surface Engineering

Collaborative Research: Engineering the Morphology and Microstructure of Group III-V Compound Semiconducting Nanowires

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Zhenyu (James) Kong, Oklahoma State University**

**E39**

**Program Area:** Engineering and Systems Design

GOAL: Collaborative Research: A Mode-Based Simulation Enabling Model and Methodologies for Geometric Variation and Tolerance Control

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Nikhil Koratkar, Rensselaer Polytechnic Institute**

**C207**

**Program Area:** Biomechanics and Mechanobiology

Collaborative: Brittle Epoxies Rendered Ductile- Crazing in Thermosetting Epoxy Nanocomposites

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Nikhil Koratkar, Rensselaer Polytechnic Institute**

**C208**

**Program Area:** Biomechanics and Mechanobiology

Next Generation Li-Ion Rechargeable Batteries Featuring Nano-Engineered Anode Architectures

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ioannis Korkolis, University of New Hampshire**

**B27**

**Program Area:** Materials Processing and Manufacturing

GOALI: Fundamental Studies and Modeling of Pulsed Tube Hydroforming

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Konstantin Kornev, Clemson University**

**C77**

**Program Area:** Materials and Surface Engineering

Design and Surface Engineering of Nanofiber-based Probes

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Marisol Koslowski, Purdue University**

**C102**

**Program Area:** Materials and Surface Engineering

Microstructural Evolution of Molecular Crystals

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Sridhar Kota, University of Michigan, Ann Arbor**

**E6**

**Program Area:** Engineering and Systems Design

Collaborative Research: Design Framework for Biomimetic Elasto-Fluidic Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Steven Kramer, University of Washington**

**D184**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Evolutionary Intensity Measures for More Accurate and Informative Liquefaction Hazard Evaluation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Matthew John Krane, Purdue University**

**B28**

**Program Area:** Materials Processing and Manufacturing

GOALI: The Origin of Slag-Metal Interface Defects in Electroslag Remelting

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

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**Ananth Krishnamurthy, University of Wisconsin, Madison** **B204**

**Program Area:** Manufacturing Enterprise Systems

i-PICS: Integration of Advance Demand Information with Pull-Type Production Control Systems

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Swaminathan Krishnan, California Institute of Technology** **D97**

**Program Area:** Hazard Mitigation and Structural Engineering

Quantifying the Risk Posed to Tall Steel Frame Buildings in Southern California from Earthquakes on the San Andreas Fault

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**James Krzanowski, University of New Hampshire** **B120**

**Program Area:** Manufacturing Machines and Equipment

A New Strategy for the Design of Wear Resistant Nitride Coatings for Dry Machining

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Simge Kucukyavuz, Ohio State University** **B231**

**Program Area:** Manufacturing Enterprise Systems

Mixed-Integer Optimization for Multi-Item Multi-Echelon Production and Distribution Planning

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Simge Kucukyavuz, Ohio State University** **E220**

**Program Area:** Operations Research

CAREER: Mixed-Integer Optimization under Joint Chance Constraints

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Ashok Kumar, University of South Florida** **B108**

**Program Area:** Manufacturing Machines and Equipment

Study of Reliability and Modeling for Process Optimization and Yield Improvements in Chemical Mechanical Planarization

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Ashok Kumar, University of South Florida** **B109**

**Program Area:** Manufacturing Machines and Equipment

GOALI/Collaborative Research: Interface Engineered Diamond Coatings for Dry Machining

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Sanjay Kumar, University of California, Berkeley** **C227**

**Program Area:** Biomechanics and Mechanobiology

CAREER: Microscale Mechanobiology of Actomyosin Stress Fiber Bundles: An Integrated Program for Research and Education in Cellular Bioengineering

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Yue Kuo, Texas A&amp;M University</b></p> <p><b>Program Area:</b> Materials Processing and Manufacturing A Novel Fabrication Process for Polysilicon Thin Film Solar Cells</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>B9</b>
<p><b>Yue Kuo, Texas A&amp;M University</b></p> <p><b>Program Area:</b> Manufacturing Enterprise Systems Collaborative Research: Nonparametric Bayesian Modeling of Reliability of Nanoelectronics</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B211</b>
<p><b>Yahya Kurama, University of Notre Dame</b></p> <p><b>Program Area:</b> George E. Brown, Jr. Network for Earthquake Engineering Simulation Research NEESR-CR: Post-Tensioned Coupled Shear Wall Systems</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>D208</b>
<p><b>Pradeep Kurup, University of Massachusetts, Lowell</b></p> <p><b>Program Area:</b> Geotechnical Engineering A Hybrid Electronic Tongue for Geoenvironmental Site Characterization</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D45</b>
<p><b>Bruce Kutter, University of California-Davis</b></p> <p><b>Program Area:</b> George E. Brown, Jr. Network for Earthquake Engineering Simulation Research NEESR-CR: Design of Soil and Structure Compatible Yielding to Improve System Performance</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D166</b>
<p><b>Changhyun Kwon, SUNY at Buffalo</b></p> <p><b>Program Area:</b> Infrastructure Management and Extreme Events Collaborative Research: Regulating Hazardous Materials Transportation by Multi-Objective Dual Toll Pricing</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D118</b>
<p><b>Eil Kwon, University of Minnesota, Duluth</b></p> <p><b>Program Area:</b> Structural Materials and Mechanics RUI: Self-sensing Concrete Pavement</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>C163</b>
<p><b>Stelios Kyriakides, University of Texas at Austin</b></p> <p><b>Program Area:</b> Mechanics of Materials Mechanical Behavior and Crushing of Cellular Materials</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>C35</b>

## GRANTEE POSTER SESSION SCHEDULE

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**Jeffrey Kysar, Columbia University**

**C245**

**Program Area:** Biomechanics and Mechanobiology

Monoatomically Thin Films: Nonlinear Mechanical Response and Mechanical-Electrical Coupling

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### L

**Guanghai Lan, University of Florida**

**E238**

**Program Area:** Operations Research

Theory and Applications of Stochastic First-order Methods for Large-scale Stochastic Convex Optimization

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Chris Landry, Pennsylvania State University, University Park**

**D53**

**Program Area:** Geotechnical Engineering

CAREER: A Study of Predominant Flow Mechanisms and Parameters Controlling Contaminant Migration in Fractured Heterogeneous Rocks

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Cedric Langbort, University of Illinois at Urbana-Champaign**

**E89**

**Program Area:** Control Systems

EAGER: Extensible Linear Distributed Controllers for Large Multi-Input-Multi-Output Systems, with Applications to Control of Networked Printers

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**John Lannutti, Ohio State University**

**B59**

**Program Area:** Materials Processing and Manufacturing

Laser Machined Vascular Wall Engineering for Blood Vessel Manufacturing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Samuel Lasley, Virginia Polytechnic Institute and State University**

**D61**

**Program Area:** Geotechnical Engineering

CAREER: Determination of Performance-Based Earthquake Engineering Parameters using Paleoseismic Techniques

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Samuel Lasley, Virginia Polytechnic Institute and State University**

**D62**

**Program Area:** Geotechnical Engineering

Energy-based Approach for Evaluating and Mitigating Liquefaction Potential

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Jorge Laval, Georgia Institute of Technology</b></p> <p><b>Program Area:</b> Civil Infrastructure Systems</p> <p>CAREER: Impact of Freeway Geometric Design on Congestion Characteristics</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D8</b>
<p><b>Kam Leang, University of Nevada, Reno</b></p> <p><b>Program Area:</b> NanoManufacturing</p> <p>A Novel Multifunctional SPM Probe with Modular Quick-Change Tips for Fully Automated Probe-Based Nanomanufacturing</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>B185</b>
<p><b>Deborah Leckband, University of Illinois at Urbana-Champaign</b></p> <p><b>Program Area:</b> Biomechanics and Mechanobiology</p> <p>Force Transduction and Tension Sensing at Intercellular Junctions</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>C209</b>
<p><b>Eva Lee, Georgia Institute of Technology</b></p> <p><b>Program Area:</b> Operations Research</p> <p>Investigations in Mixed Integer Programming</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>E203</b>
<p><b>Taeyoung Lee, Florida Institute of Technology</b></p> <p><b>Program Area:</b> Dynamical Systems</p> <p>Collaborative Research: Computational Geometric Uncertainty Propagation for Hamiltonian Systems on a Lie Group</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>E259</b>
<p><b>Justin Legleiter, West Virginia University</b></p> <p><b>Program Area:</b> Biomechanics and Mechanobiology</p> <p>CAREER: The Role of Mechanical Properties in Amyloid Binding to Cellular Surfaces</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>C228</b>
<p><b>Shuting Lei, Kansas State University</b></p> <p><b>Program Area:</b> Manufacturing Machines and Equipment</p> <p>Defect Free and Robust Microstructuring Using Femtosecond Axicon-lens-focused Beam (FAB) with Application Focus in Thin Film Solar Cell Manufacturing</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>B98</b>
<p><b>Yu Lei, University of Connecticut</b></p> <p><b>Program Area:</b> Interdisciplinary Research</p> <p>IDR/Collaborative Research: Magnetic Beads Linked Immunoassay Meets Micro Coulter Counter: Novel Multiplexed Biosensor System for Food Safety</p> <p><b>Poster Session 5:</b> Wednesday, July 11, 1:00 p.m.–4:00 p.m.</p>	<b>B201</b>

## GRANTEE POSTER SESSION SCHEDULE

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**Tanmay Lele, University of Florida**

**C246**

**Program Area:** Biomechanics and Mechanobiology

Maintenance of Tension in Dynamic Stress Fibers

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Tanmay Lele, University of Florida**

**C247**

**Program Area:** Biomechanics and Mechanobiology

CAREER: The Function of Nuclear-Cytoskeletal Tethers in Cell Mechanosensing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Anne Lemnitzer, University of California-Irvine**

**D167**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

RAPID: U.S. Instrumentation and Data Processing of a Large-Scale Experiment on Soil-Structure Interaction of Underground Structures on the E-Defense Shake Table in Miki, Japan

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Donald Leo, Virginia Polytechnic Institute and State University**

**E114**

**Program Area:** Sensors and Sensing Systems

Auditory Mimics using Membrane-based Biomolecular Arrays

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kristina Lerman, University of Southern California**

**D139**

**Program Area:** Infrastructure Management and Extreme Events

INTEROP: Rapid Deployment of Humanitarian Assistance Social Networks for ad hoc Geospatial Data Sharing (GeoNets)

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Zayd Leseman, University of New Mexico**

**E292**

**Program Area:** Dynamical Systems

Collaborative Research: Improvement of MEMS Performance by Structural Vibrations–Theory and Practical Implementations

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Susan Lessner, University of South Carolina at Columbia**

**C210**

**Program Area:** Biomechanics and Mechanobiology

Novel Experimental and Theoretical Approaches to Understand Biomechanics of Atherosclerotic Plaque Rupture

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Ming Leu, Missouri University of Science and Technology** **B121**

**Program Area:** Manufacturing Machines and Equipment

**GOAL:** Freeze-form Extrusion Fabrication of Composite Structures Using Ultra High Temperature Ceramics and Refractory Metals

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Ming Leu, Missouri University of Science and Technology** **B122**

**Program Area:** Manufacturing Machines and Equipment

Bio-Inspired Design, Fabrication and Testing of Bipolar Plates for PEM Fuel Cells

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Retsef Levi, Massachusetts Institute of Technology** **E221**

**Program Area:** Operations Research

**CAREER:** New Algorithmic Approaches to Computationally Challenging Stochastic Supply Chain and Revenue Management Models

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Scott Levin, Johns Hopkins University** **E168**

**Program Area:** Service Enterprise Systems

Forecasting Demand for Pediatric Critical Care

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Mark Lewis, Cornell University** **E184**

**Program Area:** Service Enterprise Systems

Upgrades, Reneging and Retrials: Advanced Dynamic Control of Service Systems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Changzhi Li, Texas Tech University** **E151**

**Program Area:** Sensors and Sensing Systems

Software-Defined MIMO Radar Fusion for Structural Health Monitoring Sensor Network

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Christopher Li, Drexel University** **C176**

**Program Area:** Structural Materials and Mechanics

Depletion Mechanisms of Antioxidants in Polyethylene-Clay Nanocomposites

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Guoqiang Li, Louisiana State University & Agricultural and Mechanical College** **C19**

**Program Area:** Mechanics of Materials

A Self-Healing Smart Syntactic Foam

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Jacqueline Li, CUNY City College**

**B202**

**Program Area:** Interdisciplinary Research

IDR: Optimization of Nanodielectric Composites for Energy Storage Applications

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Ji Li, University of Connecticut**

**E27**

**Program Area:** Engineering and Systems Design

EAGER: Visualization of Protein Folding for Nano-Machine Design

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jiangyu Li, University of Washington**

**B10**

**Program Area:** Materials Processing and Manufacturing

Processing Nanocrystalline Thermoelectric Oxides for High Efficiency Energy Harvesting

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jing Li, Arizona State University**

**B212**

**Program Area:** Manufacturing Enterprise Systems

Regression-based Quality Improvement in Complex Systems with Consideration of Data Uncertainty

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jing Li, Lehigh University**

**E293**

**Program Area:** Dynamical Systems

New Model and Methodology for Signal Estimation and Decoding

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jingshan Li, University of Wisconsin, Madison**

**E169**

**Program Area:** Service Enterprise Systems

EAGER: Improvability Theory for Hospital Emergency Department: A System-Theoretic Method to Reduce Crowding

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jr-Shin Li, Washington University**

**E79**

**Program Area:** Control Systems

CAREER: Ensemble Control with Applications to Spectroscopy, Imaging, and Computation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Mo Li, Georgia Institute of Technology**

**C36**

**Program Area:** Mechanics of Materials

EAGER: Constitutive Relations in Amorphous Metals

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Teng Li, University of Maryland, College Park** **B152**

**Program Area:** NanoManufacturing

Collaborative Research: Deciphering the Reliability of Nano Ceramic Films on Polymer Substrates: A Mechanistic Study

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Teng Li, University of Maryland, College Park** **E129**

**Program Area:** Sensors and Sensing Systems

Graphene-based Ultrasensitive Nanostructures

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Wei Li, University of Texas at Austin** **B164**

**Program Area:** NanoManufacturing

GOALI/Collaborative Research: Fabrication of Multifunctional Nanofoams from Polymer Nanocomposites

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xiaodong Li, University of South Carolina at Columbia** **B47**

**Program Area:** Materials Processing and Manufacturing

High Throughput Manufacturing of Carbide Nanowire-Carbon Microfiber Hybrid Structures and Polymer Composites from Cotton Textiles

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Yue Li, Michigan Technological University** **D98**

**Program Area:** Hazard Mitigation and Structural Engineering

Integration of Mainshock-Aftershock Sequences Into Performance-Based Engineering Using Publicly Available NEEShub Data

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Zhichao Li, North Carolina Agricultural & Technical State University** **B110**

**Program Area:** Manufacturing Machines and Equipment

CAREER: Fundamental Research on Rotary Ultrasonic Machining of Dental Ceramic Materials

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Daan Liang, Texas Tech University** **D119**

**Program Area:** Infrastructure Management and Extreme Events

Development of a Quantitative Model for Measuring Regional Economic Resilience to Hurricanes

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Daan Liang, Texas Tech University** **D120**

**Program Area:** Infrastructure Management and Extreme Events

HI2: A New Measure of Hurricane Impact for Innovation in Enterprise Risk Management

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

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**Shuangshuang Liang, Texas A&M University** **E57**

**Program Area:** Control Systems

CAREER: Model-Based Control and Diagnostics for Transcritical CO<sub>2</sub> Vapor Compression Cycle Systems

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Haitao Liao, University of Tennessee, Knoxville** **B213**

**Program Area:** Manufacturing Enterprise Systems

Exploration of a Statistically Accurate and Energy Efficient Accelerated Testing Methodology

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Peter Liaw, University of Tennessee, Knoxville** **C60**

**Program Area:** Materials and Surface Engineering

Surface Modification of Bulk-Metallic Glasses by a Laser-Peening Process

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Andrew Lim, University of California, Berkeley** **E239**

**Program Area:** Operations Research

Coordinating Multiple Decision Makers in a Service Environment

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Liwei Lin, University of California, Berkeley** **B174**

**Program Area:** NanoManufacturing

Direct Synthesis, Assembly and Integration of Graphene via Micro CVD

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Yingzi (Lynn) Lin, Northeastern University** **E139**

**Program Area:** Sensors and Sensing Systems

CAREER: Bridging Cognitive Science and Sensor Technology: Non-intrusive and Multi-modality Sensing in Human-Machine Interactions

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Zhiqun Lin, Georgia Institute of Technology** **B186**

**Program Area:** NanoManufacturing

Collaborative Research: Large-Scale Nanomanufacturing of Well-Positioned and Highly Aligned DNA Wires from a Capillary Bridge

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Michael Lindell, Texas A&M University** **D140**

**Program Area:** Infrastructure Management and Extreme Events

RAPID: Immediate Behavioral Response to Earthquakes in New Zealand and Japan

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Vadim Linetsky, Northwestern University**
**E204**
**Program Area:** Operations Research

Multivariate Dynamic Stochastic Models of Credit Risk

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Julie Linsey, Texas A&M University**
**E7**
**Program Area:** Engineering and Systems Design

Enhancing Engineering Innovation through Physical Representation: Identifying the Cognitive Enhancements Provided by Representation and Creating Novel Design Methods

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Cliff Lissenden, Pennsylvania State University, University Park**
**E97**
**Program Area:** Sensors and Sensing Systems

Continuous Piezoelectric Health Monitoring Systems Based on Ultrasonic Guided Waves

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Philip Liu, Cornell University**
**D185**
**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SD: Measuring Runup and Bed Shear Stress Using Long Stroke Wave-Makers

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Zhaowei Liu, University of California-San Diego**
**B138**
**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

SNM: Continuous and Scalable Nanomanufacturing for 3-Dimensional Functional Biomedical Devices

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Stefan Llewellyn Smith, University of California-San Diego**
**E260**
**Program Area:** Dynamical Systems

Collaborative Research: Beyond Point Vortices: Moving Singularities and Wave Fields in Fluid Mechanics

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Rasaratnam Logendran, Oregon State University**
**B232**
**Program Area:** Manufacturing Enterprise Systems

A Generalized Framework for Scheduling of Printed Circuit Boards

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Kenneth Loh, University of California-Davis**
**E115**
**Program Area:** Sensors and Sensing Systems

Bio-Inspired Sensing using Optoelectronic Nanocomposites (BISON)

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Hongbing Lu, University of Texas at Dallas**

**C103**

**Program Area:** Materials and Surface Engineering

Collaborative Research: Measurements of Yield Strength and Local Viscoelastic Properties Using Nanoparticle Embedment Methods

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Kathy Lu, Virginia Polytechnic Institute and State University**

**B43**

**Program Area:** Materials Processing and Manufacturing

Multi-Scale Study of Nanoparticle Sintering

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Hongbing Lu, University of Texas at Dallas**

**C78**

**Program Area:** Materials and Surface Engineering

Collaborative Research: Characterization and Modeling of Natural Fiber Polymer Matrix Composites for Correlating Natural Fiber/Matrix Morphology with Viscoelastic Properties

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Wu Lu, Ohio State University**

**E130**

**Program Area:** Sensors and Sensing Systems

III Nitride NEMS Devices for Chemical and Biological Sensing

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Gunnar Lucko, Catholic University of America**

**D23**

**Program Area:** Civil Infrastructure Systems

Financial Analysis and Optimization for Linear Scheduling Model of Construction Projects with Integrated Singularity Functions

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**James Luedtke, University of Wisconsin, Madison**

**E185**

**Program Area:** Service Enterprise Systems

Collaborative Research: Staffing and Routing in Service Systems with Uncertain Arrival Rates: An Integrated Stochastic Programming and Asymptotic Analysis Approach

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**James Luedtke, University of Wisconsin, Madison**

**E240**

**Program Area:** Operations Research

CAREER: Risk Management via Stochastic Programming: Models, Computation, and Applications

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Peter Luh, University of Connecticut**
**D141**
**Program Area:** Infrastructure Management and Extreme Events

Building Emergency Evacuation: Innovative Modeling and Optimization

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Cheng Luo, University of Texas at Arlington**
**B60**
**Program Area:** Materials Processing and Manufacturing

Generation Of Sidewall Patterns Using A Thermal Shape-Memory Polymer

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Craig Lusk, University of South Florida**
**E8**
**Program Area:** Engineering and Systems Design

Uncertainty Quantification for the Kinematic Approach to Compliant Mechanism Design

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Yuri Lvov, Louisiana Tech University**
**B165**
**Program Area:** NanoManufacturing

Tubule Nanocontainers for Corrosion Inhibitors

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Christopher Lynch, University of California-Los Angeles**
**E140**
**Program Area:** Sensors and Sensing Systems

Piezoelectric Sensor/Actuator Rosettes For Noise And Vibration Control

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Jerome Lynch, University of Michigan, Ann Arbor**
**D209**
**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: Damage Detection and Health Monitoring of Buried Pipelines after Earthquake-Induced Ground Movement

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jerome Lynch, University of Michigan, Ann Arbor**
**E141**
**Program Area:** Sensors and Sensing Systems

CAREER: Nanoengineered Sensing Skins for Structural Health Monitoring—An Integrated Research and Education Career Experience

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Patrick Lynett, Texas A&M University**
**D168**
**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: TSUNAMOS: A Validated, Multi-Scale Tsunami Model for Hybrid Numerical-Experimental Simulation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

### M

**Hideo Mabuchi, Stanford University** **E70**

**Program Area:** Control Systems

Tracking Individual Biomolecules via Fluorescence Modulation and Feedback

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Norbert Maerz, Missouri University of Science and Technology** **C121**

**Program Area:** Geomechanics and Geomaterials

Collaborative Research: Extracting 3-D Fracture Orientations for Rock Failure Analysis by Combining Optical Imaging and LIDAR Scanning Technologies

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Stephen Mahin, University of California, Berkeley** **D186**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

Coordinating Workshops for the NEES/E-Defense Collaborative Research Program in Earthquake Engineering (Phase 2)

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Gnanamanikam Mahinthakumar, North Carolina State University** **D34**

**Program Area:** Civil Infrastructure Systems

An Adaptive Leak Detection and Risk Analysis Framework for Urban Water Distribution Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Brian Maicke, University of Tennessee Space Institute** **E294**

**Program Area:** Dynamical Systems

GOALI: Predicting Acoustic Wave Dynamics in Solid and Hybrid Rocket Motors

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Lisa Maillart, University of Pittsburgh** **E170**

**Program Area:** Service Enterprise Systems

Optimizing Implanted Cardiac Device Follow-Up Care

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Lisa Maillart, University of Pittsburgh** **E171**

**Program Area:** Service Enterprise Systems

Markov Decision Process Models for Optimizing Vaccine Administration

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Richard Malak, Texas A&amp;M University</b></p> <p><b>Program Area:</b> Engineering and Systems Design</p> <p>GOALI/Collaborative Research: A Methodology for Utility-Based Decision Making in Large Design Organizations Using Empirically-Derived Risk Indicators</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>E40</b>
<p><b>Arif Malik, Saint Louis University</b></p> <p><b>Program Area:</b> Manufacturing Machines and Equipment</p> <p>GOALI: Reliability-Based Design and Operation of Metal Rolling Mills using Bayesian Theory and a New Rolling Model</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>B123</b>
<p><b>Rajib Mallick, Worcester Polytechnic Institute</b></p> <p><b>Program Area:</b> Structural Materials and Mechanics</p> <p>Collaborative Research: Use of Novel Heat Spreader Technology for Reduction of High Temperature Related Rutting in Asphalt Pavements</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>C152</b>
<p><b>Noah Malmstadt, University of Southern California</b></p> <p><b>Program Area:</b> NanoManufacturing</p> <p>Engineered Microfluidic Mixing for Green Nanocrystal Manufacturing</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>B175</b>
<p><b>Ajay Malshe, University of Arkansas</b></p> <p><b>Program Area:</b> Manufacturing Machines and Equipment</p> <p>Collaborative Research: Design and Fundamental Understanding of Advanced Minimum Quantity Lubrication (MQL) Machining using Nanolubricants</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>B89</b>
<p><b>Antoinette Maniatty, Rensselaer Polytechnic Institute</b></p> <p><b>Program Area:</b> Mechanics of Materials</p> <p>GOALI/Collaborative Research: Understanding Cracking and Defect Formation During AlN Crystal Growth</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>C5</b>
<p><b>Dinesh Manocha, University of North Carolina at Chapel Hill</b></p> <p><b>Program Area:</b> Engineering and Systems Design</p> <p>GOALI: Digital Layout and Assembly of Large CAD Structures</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>E41</b>
<p><b>Majid Manzari, George Washington University</b></p> <p><b>Program Area:</b> Geotechnical Engineering</p> <p>Multiscale Meshfree Analysis of Failure in Gestructures Founded on or Containing Liquefiable Soils</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D46</b>

## GRANTEE POSTER SESSION SCHEDULE

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**Scott Mao, University of Pittsburgh**

**C37**

**Program Area:** Mechanics of Materials

Integrated Experiment and Atomistic Computation on Moisture-Induced Interfacial Embrittlement

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Scott Mao, University of Pittsburgh**

**C229**

**Program Area:** Biomechanics and Mechanobiology

Nanoscale Characterization of Nanostructured Thin Film with Ultrahigh Strength and Ductility

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Francois Margot, Carnegie Mellon University**

**E186**

**Program Area:** Service Enterprise Systems

Real Option Management of Commodity and Energy Conversion Assets

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Laurence Marks, Northwestern University**

**C61**

**Program Area:** Materials and Surface Engineering

Tribology in Full View

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Maria Marshall, Purdue University**

**D142**

**Program Area:** Infrastructure Management and Extreme Events

Small Business Demise and Recovery After a Natural Disaster

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Pier Marzocca, Clarkson University**

**E295**

**Program Area:** Dynamical Systems

Efficient Reduced-Order Modeling Tools for Aeroelastic Predictions in Super Long-Span Bridges

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Stephen Mascaro, University of Utah**

**E80**

**Program Area:** Control Systems

Optimal Control of Actuator Arrays with Electric and Thermofluidic Inputs

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Forrest Masters, University of Florida**

**D76**

**Program Area:** Hazard Mitigation and Structural Engineering

CAREER: Behavior of Hurricane Wind and Wind-Driven Rain in the Coastal Suburban Roughness Sublayer

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Carlos Mastrangelo, University of Utah**

**E98**

**Program Area:** Sensors and Sensing Systems

Particle Imaging Manometry

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Karel Matous, University of Notre Dame**

**C38**

**Program Area:** Mechanics of Materials

EAGER: Multiscale Modeling of Heterogeneous Interfaces

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Fabio Matta, University of South Carolina at Columbia**

**D99**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: Resilient and Sustainable Engineered Fiber-Reinforced Earthen Masonry for High Wind Regions

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Konstantin Matveev, Washington State University**

**E261**

**Program Area:** Dynamical Systems

Dynamics of Novel Air-Assisted Marine Vehicles

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**George Mavroeidis, Catholic University of America**

**D77**

**Program Area:** Hazard Mitigation and Structural Engineering

CAREER: A Comprehensive Approach for Investigating the Effects of Near-Fault Dynamic Ground Deformations on Engineering Structures

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Constantinos Mavroidis, Northeastern University**

**E116**

**Program Area:** Sensors and Sensing Systems

Customizable Sensors for Humans Using an Integrated Polymer: C-SHIP

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Peter May, University of Washington**

**D9**

**Program Area:** Civil Infrastructure Systems

Collaborative Research: Critical Infrastructure Policy

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**J. Michael McCarthy, University of California-Irvine**

**E9**

**Program Area:** Engineering and Systems Design

Geometric Synthesis of Articulated Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

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**John McCartney, University of Colorado at Boulder**

**D54**

**Program Area:** Geotechnical Engineering

Soil Structure Interaction in Geothermal Foundations

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Leigh McCue-Weil, Virginia Polytechnic Institute and State University**

**E262**

**Program Area:** Dynamical Systems

CAREER: A Unified Research and Outreach Program in Nonlinear Vessel Dynamics

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Cole McDaniel, California Polytechnic State University**

**D169**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR: Ultra-Low Forced Vibration Testing

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Brian McFall, Georgia Institute of Technology**

**D187**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Tsunami Generation by Landslides: Integrating Laboratory Scale Experiments, Numerical Models and Natural Scale Applications

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Laura McLay, Virginia Commonwealth University**

**D121**

**Program Area:** Infrastructure Management and Extreme Events

CAREER: Extreme Weather Events and Emergency Medical Services: A Discrete Optimization Modeling Framework

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kurt McMullin, San Jose State University**

**D188**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: Experimental Determination of Performance of Drift-Sensitive Nonstructural Systems under Seismic Loading

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Laine Mears, Clemson University**

**B99**

**Program Area:** Manufacturing Machines and Equipment

CAREER: Model-Based Control of Machining Processes and Scalability for Manufacturing System Control

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Sanjay Mehrotra, Northwestern University**

**E178**

**Program Area:** Service Enterprise Systems

Multi-objective Robust Stochastic Planning and Scheduling of Healthcare Service Providers

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Sanjay Mehrotra, Northwestern University**
**E179**
**Program Area:** Service Enterprise Systems

Addressing Geographical Disparities in Transplant Organ Accessibility Across United States

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Sanjay Mehrotra, Northwestern University**
**E222**
**Program Area:** Operations Research

Distribution and Moment-Robust Optimization Models and Algorithms

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Sanjay Mehrotra, Northwestern University**
**E223**
**Program Area:** Operations Research

Models and Algorithms for Risk Adjusted Optimization with Robust Utilities

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Carol Menassa, University of Wisconsin, Madison**
**D24**
**Program Area:** Civil Infrastructure Systems

BRIGE: Integrated Social, Environmental, Economic, and Technical (SEET) Model for Sustainable Retrofit of Existing Buildings

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Cindy Menches, Illinois Institute of Technology**
**D35**
**Program Area:** Civil Infrastructure Systems

Flexible Decision-making in Response to Disruptive Events on Construction Sites

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**David Mendonca, Rensselaer Polytechnic Institute**
**D143**
**Program Area:** Infrastructure Management and Extreme Events

CAREER: Improvisation in Response to Extreme Events

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Chia-Hsiang Menq, Ohio State University**
**B124**
**Program Area:** Manufacturing Machines and Equipment

Modeling and Control of Magnetically Actuated Compliant Micromanipulators Enabling Multi-axis Scanning of 3D Micro/Nano Objects

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Chia-Hsiang Menq, Ohio State University**
**B125**
**Program Area:** Manufacturing Machines and Equipment

Six-Axis Visual Sensing and Visual Servo Control Rendering Direct Metrology for Manipulation of Multiple Micro Objects

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Vincent Mercado, Rensselaer Polytechnic Institute**

**D189**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-II: Advanced Site Monitoring and Effective Characterization of Site Nonlinear Dynamic Properties and Model Calibration

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**William Merryman, Vanderbilt University**

**C248**

**Program Area:** Biomechanics and Mechanobiology  
CAREER: Deconvoluting Fibroblast Mechanobiology

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Bernie Mettler, University of Minnesota, Twin Cities**

**E71**

**Program Area:** Control Systems  
Analyzing and Modeling Human Adaptive Spatial Control Skills Using General Principles of Optimal Control

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Edgar Meyhofer, University of Michigan, Ann Arbor**

**C211**

**Program Area:** Biomechanics and Mechanobiology  
Probing the Effects of Highly Bent and Twisted DNA on Transcription by RNA Polymerase

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jeremy Michalek, Carnegie Mellon University**

**E10**

**Program Area:** Engineering and Systems Design  
CAREER: Driving Design–Modeling the Influence of Market Forces and Public Policy on Vehicle Design Decisions

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Michael Miles, Brigham Young University**

**B111**

**Program Area:** Manufacturing Machines and Equipment  
High Speed Friction Stir Spot Welding: A New Approach to Spot Joining of Ultra High Strength Steel

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Michael Miles, Brigham Young University**

**C104**

**Program Area:** Materials and Surface Engineering  
GOAL: Defect Detection Microscopy: Microstructure Design for Formability of Wrought Magnesium Alloys

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Scott Miles, Western Washington University**

**D122**

**Program Area:** Infrastructure Management and Extreme Events  
Repeat Disaster Impacts to Infrastructure Networks and their Effects on Economic Agent Recovery

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Elise Miller-Hooks, University of Maryland, College Park</b></p> <p><b>Program Area:</b> Civil Infrastructure Systems</p> <p>Resilience in Rail-Based Intermodal Transportation Systems: Performance Measurement and Decision Support</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>D10</b>
<p><b>Alex Mills, University of North Carolina at Chapel Hill</b></p> <p><b>Program Area:</b> Service Enterprise Systems</p> <p>Collaborative Research: Priority Dispatching of Patients in the Aftermath of a Mass-Casualty Event</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>E172</b>
<p><b>Sergiy Minko, Clarkson University</b></p> <p><b>Program Area:</b> NanoManufacturing</p> <p>Collaborative Research: Forests of Magnetic Nanofibers for Liquid Transport and Manipulation</p> <p><b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>B153</b>
<p><b>Eduardo Miranda, Stanford University</b></p> <p><b>Program Area:</b> George E. Brown, Jr. Network for Earthquake Engineering Simulation Research</p> <p>NEESR-CR: Collapse Simulation of Multi-Story Buildings through Hybrid Testing</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>D210</b>
<p><b>Anil Misra, University of Kansas Center for Research, Inc.</b></p> <p><b>Program Area:</b> Structural Materials and Mechanics</p> <p>Relationship of Theoretical Nano-scale Structure/Properties of Calcium Silicate Hydrate (CSH) and Experimental Micro-scale Properties of Cement Paste</p> <p><b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>C190</b>
<p><b>Devesh Misra, University of Louisiana at Lafayette</b></p> <p><b>Program Area:</b> Biomechanics and Mechanobiology</p> <p>Nanoscale Near-Surface Deformation Response in Nanostructured Materials</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>C230</b>
<p><b>Samy Missoum, University of Arizona</b></p> <p><b>Program Area:</b> Engineering and Systems Design</p> <p>Advances in Explicit Design Space Decomposition for Computational Design</p> <p><b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>E11</b>
<p><b>Farrokh Mistree, University of Oklahoma, Norman Campus</b></p> <p><b>Program Area:</b> Engineering and Systems Design</p> <p>Collaborative Research: EAGER–Managing Uncertainty by Integrating Information Economics and Robust Design</p> <p><b>Poster Session 3:</b> Tuesday, July 10, 7:30 a.m.–9:30 a.m.</p>	<b>E28</b>

## GRANTEE POSTER SESSION SCHEDULE

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**Judith Mitrani-Reiser, Johns Hopkins University**

**D144**

**Program Area:** Infrastructure Management and Extreme Events

Modeling Building Downtime Due to Hurricane Impacts

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Panagiotis Mitropoulos, Arizona State University**

**D25**

**Program Area:** Civil Infrastructure Systems

CAREER: Safety as an Emergent Property of the Production System: Production Practices and Team Processes of High Reliability Crews

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Gregory Mocko, Clemson University**

**E42**

**Program Area:** Engineering and Systems Design

Integrative Situated Design: Linking Functions and Affordances Through Form

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jack Moehle, University of California, Berkeley**

**D190**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-GC: Mitigation of Collapse Risk in Vulnerable Concrete Buildings

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jeffrey Moehlis, University of California-Santa Barbara**

**E273**

**Program Area:** Dynamical Systems

Controlling Populations of Neurons

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Louay Mohammad, Louisiana State University & Agricultural and Mechanical College**

**C164**

**Program Area:** Structural Materials and Mechanics

A New Approach to Recycle Asphalt Shingles in Hot Mix Asphalt

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Benjamin Mohr, Tennessee Technological University**

**C153**

**Program Area:** Structural Materials and Mechanics

Nanoscale Characterization of Expansion Due to Delayed Ettringite Formation

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Pal Molian, Iowa State University**

**B72**

**Program Area:** Manufacturing Machines and Equipment

Shock Wave Induced Freeform Technique (SWIFT) for Manufacturing of Diamond Microtools

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Pal Molian, Iowa State University**
**B187**
**Program Area:** NanoManufacturing

A Hybrid Nanomanufacturing Approach for the Synthesis of Artificial Nacres

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Michael Mooney, Colorado School of Mines**
**C132**
**Program Area:** Geomechanics and Geomaterials

Exploring the Relationship between Vibratory Roller-Based

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Diego Moran, Georgia Institute of Technology**
**E241**
**Program Area:** Operations Research

Collaborative Research: Fundamentals of Convex Mixed Integer Nonlinear Programming

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Elise Morgan, Boston University**
**C212**
**Program Area:** Biomechanics and Mechanobiology

Collaborative Research: Micro- and Nano-Scale Characterization and Modeling of Bone Tissue

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**K. Morsi, San Diego State University**
**B44**
**Program Area:** Materials Processing and Manufacturing

Novel Current-Activated Tip-based Sintering (CATS)

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**David Morton, University of Texas at Austin**
**E205**
**Program Area:** Operations Research

Prioritization via Stochastic Optimization

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Khalid Mosalam, University of California, Berkeley**
**D211**
**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

EAGER: Next Generation Hybrid Simulation–Evaluation and Theory

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Donald Moynihan, University of Wisconsin, Madison**
**D123**
**Program Area:** Infrastructure Management and Extreme Events

The Network Governance of Crisis Response: Analyzing the Incident Command System

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Pallab Mozumder, Florida International University**

**D145**

**Program Area:** Infrastructure Management and Extreme Events

Communicating Forecast Information to Optimize Evacuation Behavior

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Christopher Muhlstein, Pennsylvania State University, University Park**

**C249**

**Program Area:** Biomechanics and Mechanobiology

Synthesis and Nanomechanical Properties of Crystalline Boron-based Nanofilaments

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Ranjan Mukherjee, Michigan State University**

**E81**

**Program Area:** Control Systems

Impulsive Control of Under-Actuated Dynamical Systems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Anastasia Muliana, Texas A&M University**

**C39**

**Program Area:** Mechanics of Materials

Nonlinear Field-Coupling Responses of Adaptive Functionally Graded Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Brigid Mullany, University of North Carolina at Charlotte**

**B90**

**Program Area:** Manufacturing Machines and Equipment

CAREER: An Innovative Look at Precision Polishing Dynamics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## N

**Satish Nagarajaiah, William Marsh Rice University**

**D191**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: Development of Next Generation Adaptive Seismic Protection Systems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Ahmed Naguib, Michigan State University**

**E58**

**Program Area:** Control Systems

Collaborative Research: IDR-Model-based Feedback Control of Transient Growth in a Laminar Boundary

Layer: Bridging the Gap between CFD and Experiments

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Clay Naito, Lehigh University**

**D100**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: Development of a Blast and Ballistic Resistant Precast Concrete Armored Wall System

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Narutoshi Nakata, Johns Hopkins University** **D78**

**Program Area:** Hazard Mitigation and Structural Engineering

**CAREER:** Advanced Acceleration Control Methods and Substructure Techniques for Shaking Table Tests

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Marvin Nakayama, New Jersey Institute of Technology** **E224**

**Program Area:** Operations Research

Modeling and Simulation of Complex Stochastic Systems and Cascading Failures, with Applications to the Electric Power Grid

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Roger Narayan, University of North Carolina at Chapel Hill** **B100**

**Program Area:** Manufacturing Machines and Equipment

**CAREER:** Laser Processing of Microstructured Medical Devices

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Angelia Nedich, University of Illinois at Urbana-Champaign** **E242**

**Program Area:** Operations Research

**CAREER:** Cooperative Multi-Agent Optimization

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Barry Nelson, Northwestern University** **E206**

**Program Area:** Operations Research

**GOAL:** Quantifying Input Uncertainty in Stochastic Simulation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ian Nettleship, University of Pittsburgh** **B61**

**Program Area:** Materials Processing and Manufacturing

Manufacturing the Microstructural Niche for Liver Tissue Bioreactors

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jun Ni, University of Michigan, Ann Arbor** **B73**

**Program Area:** Manufacturing Machines and Equipment

High-Performance Micromachining of Glass using Electrochemical Discharge Machining (ECDM) for Mems Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Xianglei Ni, University of Pittsburgh** **E274**

**Program Area:** Dynamical Systems

**Collaborative Research:** Novel NDE/SHM Approach Based on Highly Nonlinear Dynamics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

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**Yu Nie, Northwestern University**

**D36**

**Program Area:** Civil Infrastructure Systems

Toward More Reliable Mobility: Improved Decision Support Tools for Transportation Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Christopher Niezrecki, University of Massachusetts, Lowell**

**E296**

**Program Area:** Dynamical Systems

Dynamic Stress-Strain Prediction of Vibrating Structures in Operation

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jorge Nocedal, Northwestern University**

**E187**

**Program Area:** Service Enterprise Systems

Collaborative Research: Market-Based Calibration of Pricing Models for Financial and Energy Option Contracts

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Andrew Norris, Rutgers University, New Brunswick**

**C6**

**Program Area:** Mechanics of Materials

Cloaking Mechanical Waves

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### O

**Motohiro Ohno, University of Michigan, Ann Arbor**

**C165**

**Program Area:** Structural Materials and Mechanics

Development and Characterization of Durable Geopolymer Composites for Truly Sustainable Infrastructure Applications

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Okenwa Okoli, Florida State University**

**E131**

**Program Area:** Sensors and Sensing Systems

Development of a Triboluminescence and Photocatalysis Based System for Intrinsic Structural Health Monitoring

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Guney Olgun, Virginia Polytechnic Institute and State University**

**D63**

**Program Area:** Geotechnical Engineering

The Use of Energy Piles for Sustainable Energy

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Oliver O'Reilly, University of California, Berkeley** **E275**

**Program Area:** Dynamical Systems

The Dynamics of a Novel Wave Energy Converter

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**James Orlin, Massachusetts Institute of Technology** **E225**

**Program Area:** Operations Research

Nearly Optimal Solutions for Stochastic Optimization Problems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Nina Orlovskaya, University of Central Florida** **B11**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Mixed Ionic Electronic Conducting (MIEC) Cathodes for Intermediate Temperature Solid Oxide Fuel Cells

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Nina Orlovskaya, University of Central Florida** **C20**

**Program Area:** Mechanics of Materials

Time Dependent Creep Deformation of Non Polar Mixed Conducting Ferroelastic Perovskites

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Thomas O'Rourke, Cornell University** **D212**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Earthquake Response and Rehabilitation of Critical Lifelines

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Christine Ortiz, Massachusetts Institute of Technology** **C213**

**Program Area:** Biomechanics and Mechanobiology

Nanomechanics of Cartilage Extracellular Matrix Macromolecules from Aged, Diseased, and Engineered Tissues

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Tim Osswald, University of Wisconsin, Madison** **B48**

**Program Area:** Materials Processing and Manufacturing

Modeling Fiber-Matrix Separation and Fiber Jamming During Processing of Fiber Filled Composites

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Yanfeng Ouyang, University of Illinois at Urbana-Champaign** **D11**

**Program Area:** Civil Infrastructure Systems

CAREER: Information Mechanisms and Robust Stabilization of Nonlinear, Stochastic Transportation Networks

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Tugrul Ozel, Rutgers University, New Brunswick**

**B12**

**Program Area:** Materials Processing and Manufacturing

EAGER: Pulsed Laser Assisted Exfoliation of Single Crystalline SiC Thin Layers for Cost Effective Micro-Device Fabrication

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Tugrul Ozel, Rutgers University, New Brunswick**

**B101**

**Program Area:** Manufacturing Machines and Equipment

Predictive Modeling and Optimization of Machining Induced Surface Integrity with Applications in Titanium and Nickel-Based Alloyed End Products

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### P

**Jamie Padgett, William Marsh Rice University**

**D146**

**Program Area:** Infrastructure Management and Extreme Events

IT-Enabled Continuous Risk Assessment of Bridge Networks for Customized and Actionable Multi-Hazard Interventions

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jamie Padgett, William Marsh Rice University**

**D147**

**Program Area:** Infrastructure Management and Extreme Events

CAREER: A Risk-Based Model to Achieve Sustainable Solutions for Bridge Infrastructure Subjected to Multiple Threats

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Shamim Pakzad, Lehigh University**

**E152**

**Program Area:** Sensors and Sensing Systems

A Wirelessly Preemptive Sensing System for Quasi-Realtime Earthquake Monitoring of Bridges

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Derek Paley, University of Maryland, College Park**

**E263**

**Program Area:** Dynamical Systems

Collaborative Research: Targeting Observations of Tropical Cyclones using Cooperative Control of Unmanned Aircraft

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Luther Palmer, University of South Florida**

**E72**

**Program Area:** Control Systems

BRIGE: Running Over Rough Terrain—Enhancing Biological Hypotheses

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Sibel Pamukcu, Lehigh University**
**C143**
**Program Area:** Geomechanics and Geomaterials

Engineering Soils with Thermally Controlled Wettability on Command

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Sibel Pamukcu, Lehigh University**
**E142**
**Program Area:** Sensors and Sensing Systems

Wireless Signal Networks for Subsurface Modeling and Geo-Event Characterization

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Rong Pan, Arizona State University**
**B214**
**Program Area:** Manufacturing Enterprise Systems

Collaborative Research: Efficient Experimentation for Product and Process Reliability Improvement

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Santosh Pandey, Iowa State University**
**E99**
**Program Area:** Sensors and Sensing Systems

High-Resolution Electrical Sensing of Surface Charges and Currents of Living Cells

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Harold Park, Trustees of Boston University**
**C79**
**Program Area:** Materials and Surface Engineering

CAREER: Multiscale Design of the Coupled Optomechanical Properties of Silicon Nanowires

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Matthew Parkinson, Pennsylvania State University, University Park**
**E12**
**Program Area:** Engineering and Systems Design

GOALI: Accelerating Digital Design Through Web-Accessible Anthropometric Data and Digital Human Models

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Gustavo Parra-Montesinos, University of Michigan, Ann Arbor**
**D170**
**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Assessment of Punching Shear Vulnerability of Slab-Column Connections with Shear Stud Reinforcement

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Gregory N. Parsons, North Carolina State University**
**B154**
**Program Area:** NanoManufacturing

Continuous Atmospheric Pressure Atomic Layer Deposition Process for Controlled Nanoscale Thin Film Coatings

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Robert Peattie, Tufts University**

**C231**

**Program Area:** Biomechanics and Mechanobiology

A Combined Experimental-Computational Method to Evaluate Abdominal Aortic Aneurysm Wall Stress

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Zhijian Pei, Kansas State University**

**B91**

**Program Area:** Manufacturing Machines and Equipment

Ultrasonic Vibration-Assisted Pelleting of Cellulosic Biomass for Biofuel Manufacturing

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Assimina Pelegri, Rutgers University, New Brunswick**

**C250**

**Program Area:** Biomechanics and Mechanobiology

Multi-Scale Modeling of Central Nervous System White Matter

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Javier Pena, Carnegie Mellon University**

**E207**

**Program Area:** Operations Research

Computing Equilibria for Large Sequential Games

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Feniosky Pena-Mora, Columbia University**

**D12**

**Program Area:** Civil Infrastructure Systems

Interactive Ubiquitous Visualization of Construction Progress Monitoring with D4AR (4 Dimensional Augmented Reality) Models

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**John Perepezko, University of Wisconsin, Madison**

**C105**

**Program Area:** Materials and Surface Engineering

The Design and Analysis of Aluminide Surface Layers for Low Temperature Synthesis

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Juan Pestana-Nascimento, University of California, Berkeley**

**C122**

**Program Area:** Geomechanics and Geomaterials

Improved Description of the Seismic Response of Deep Soft Clay Deposits

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Catherine Peters, Princeton University**

**C133**

**Program Area:** Geomechanics and Geomaterials

Collaborative Research: DUSEL CO<sub>2</sub>—A Deep Underground Laboratory for Geologic CO<sub>2</sub> Sequestration Studies: Design of the Facility and Experiments

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Kara Peters, North Carolina State University** **C177**

**Program Area:** Structural Materials and Mechanics

Self-Healing Sandwich Composites

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**George Pharr, University of Tennessee, Knoxville** **C62**

**Program Area:** Materials and Surface Engineering

Indentation-Induced Damage Initiation and Evolution in Single- and Poly-Crystalline Ceramics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**George Pharr, University of Tennessee, Knoxville** **C214**

**Program Area:** Biomechanics and Mechanobiology

Collaborative Research: Aging and Disease Effects on Viscous Energy Dissipation of Bone as Characterized by Nanoindentation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ramana Pidaparti, Virginia Commonwealth University** **C232**

**Program Area:** Biomechanics and Mechanobiology

Multiscale Study of the Respiratory Airway Mechanics for Cellular Inflammation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Olivier Pierron, Georgia Institute of Technology** **C251**

**Program Area:** Biomechanics and Mechanobiology

Fabrication and Thermomechanical Characterization of NiTi Shape Memory Alloy Nanowires

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Marek-Jerzy Pindera, University of Virginia** **C215**

**Program Area:** Biomechanics and Mechanobiology

Microstructural Effects in Tailoring the Response of Engineered Bio-Materials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Michael Pinedo, New York University** **B215**

**Program Area:** Manufacturing Enterprise Systems

Collaborative Research: Container Scheduling–Complexity, Algorithms and Heuristics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Claire Poh, Clemson University** **C166**

**Program Area:** Structural Materials and Mechanics

Development of Performance-Based Design Guidelines for Integrating Phase Change Materials in Buildings

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Michael Pollino, Case Western Reserve University**

**D192**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR: Seismic Rehabilitation of Substandard Building Structures through Implementation of Stiff Rocking Cores (SRCRehab)

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Andreas Polycarpou, University of Illinois at Urbana-Champaign**

**C80**

**Program Area:** Materials and Surface Engineering  
Synthesis and Tribological Behavior of Metal Diboride-Nitride Coatings: Optimizing the Hard and Compliant Response

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Peter Polyvas, University of Arizona**

**E143**

**Program Area:** Sensors and Sensing Systems  
Wearable Micro-Sensors for Digital Palpation Tonometry and Soft Tissue Analysis

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Elmira Popova, University of Texas at Austin**

**E226**

**Program Area:** Operations Research  
Collaborative Research: Decision-Dependent Stochastic Processes Inference and Optimization

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Maurizio Porfiri, Polytechnic University of New York**

**E117**

**Program Area:** Sensors and Sensing Systems  
Little Eddies and Small Vibrations: Untapped Sources for Energy Harvesting in Aquatic Environments

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Maurizio Porfiri, Polytechnic University of New York**

**E264**

**Program Area:** Dynamical Systems  
CAREER: Guidance and Control of Fish Shoals using Bio-Mimetic Robots

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Maurizio Porfiri, Polytechnic University of New York**

**E265**

**Program Area:** Dynamical Systems  
Collaborative Research: Geometry of Group Behaviors with Application to Fish Schooling

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Siavash Pourkamali Anaraki, University of Denver**

**E132**

**Program Area:** Sensors and Sensing Systems  
Development of a Hybrid Nano-Electro-Mechanical Sensor Technology for Nanoscale Aerosol Mass and Momentumprobing

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

### Monica Prezzi, Purdue University

**D47**
**Program Area:** Geotechnical Engineering

Integrated Framework for 3D Analysis of Soil-Pile Interaction

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### Oleg Prokopyev, University of Pittsburgh

**E243**
**Program Area:** Operations Research

Novel Optimization-Based Biclustering Algorithms for Biomedical Data Analysis

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### David Y.H. Pui, University of Minnesota Institute of Technology

**B166**
**Program Area:** NanoManufacturing

Real Time Measurement of Agglomerated or Aggregated Airborne Nanoparticles Released From a Manufacturing Process and Their Transport Characteristics

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### Anand Puppala, University of Texas at Arlington

**C144**
**Program Area:** Geomechanics and Geomaterials

Collaborative Research: SWCC Based Models for Realistic Simulation of Swell Behavior of Expansive Soils

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Prashant Purohit, University of Pennsylvania

**C233**
**Program Area:** Biomechanics and Mechanobiology

CAREER: Entropic Elasticity of Fluctuating Filaments and Networks

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## Q

### Hang (Jerry) Qi, University of Colorado at Boulder

**C252**
**Program Area:** Biomechanics and Mechanobiology

Mechanics of Cell Alignment due to Contact Guidance by Nanoscale Surface Topography

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Wei Qi, University of California, Berkeley

**E188**
**Program Area:** Service Enterprise Systems

Collaborative Research: Effective Management of Smart Grids and Smart Meters for Creating a Sustainable Energy Future

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.



## GRANTEE POSTER SESSION SCHEDULE

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**Xiaoping Qian, Illinois Institute of Technology**

**B102**

**Program Area:** Manufacturing Machines and Equipment

Direct Measurement from Scan Data with Adaptive Moving Least-Squares Surfaces under Controlled Spatial Dependency

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Zhiguang Qian, University of Wisconsin, Madison**

**B216**

**Program Area:** Manufacturing Enterprise Systems

A Statistical Framework for the Design and Analysis of Multi-Fidelity Computer Experiments

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xiaoping Qian, Illinois Institute of Technology**

**E43**

**Program Area:** Engineering and Systems Design

GOAL: Computing Tip-Specimen Shape Interaction for Accurate, High Throughput Nano-Imaging of General Three-Dimensional Structures by Atomic Force Microscopy

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Tong Qiu, Pennsylvania State University, University Park**

**D55**

**Program Area:** Geotechnical Engineering

Analytical and Experimental Study of Pore Fluid Induced Damping and Effective Density in Saturated Soil During Shear Wave Excitations

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## R

**Sharif Rahman, University of Iowa**

**E13**

**Program Area:** Engineering and Systems Design

Reliability-Based Design Optimization of Large-Scale Complex Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Binod Rai, University of Memphis**

**C106**

**Program Area:** Materials and Surface Engineering

Grain Refined Nanocomposites: A Study on the Effect of Additives on Microstructure and Magnetic Properties of Permanent Magnets

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Anne Raich, Lafayette College**

**D64**

**Program Area:** Geotechnical Engineering

RUI: Pervious Concrete Piles: An Innovative Ground Improvement Alternative

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

### **Masoud Rais-Rohani, Mississippi State University**

**E14****Program Area:** Engineering and Systems Design

Computational Design Tool Development for Multilevel Optimization of Product-Material Systems Under Uncertainty

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Farshad Rajabipour, Pennsylvania State University, University Park**

**C167****Program Area:** Structural Materials and Mechanics

Engineering and Life Cycle Assessment of Activated Recycled Glass-Based Concretes

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Rajesh Rajamani, University of Minnesota, Twin Cities**

**E82****Program Area:** Control Systems

Active Noise Control Systems for Windows Using Transparent Carbon Nanotube Actuators

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### **Kamlakar Rajurkar, University of Nebraska, Lincoln**

**B74****Program Area:** Manufacturing Machines and Equipment

Theoretical and Experimental Study of Debris Removal and Tool Wear in Micro Electro Discharge Machining (Micro-EDM)

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

### **Theodore Ralphs, Lehigh University**

**E208****Program Area:** Operations Research

Decomposition-Based Optimization: A New Solver Paradigm

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Arvind Raman, Purdue University**

**E276****Program Area:** Dynamical Systems

GOALI: Nonlinear, Multi-modal, and Stochastic Dynamics of Low-stiffness Microcantilevers in Liquid Environment Atomic Force Microscopy

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Ainissa Ramirez, Yale University**

**B29****Program Area:** Materials Processing and Manufacturing

Rapid Fabrication of Three-Dimensional Structures Using Magnetically-Responsive Low-Melting-Point Alloys

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Julio Ramirez, Purdue University**

**D220****Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Operations

NEES Operations

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**C. Andrew Ramsburg, Tufts University**

**D48**

**Program Area:** Geotechnical Engineering

Exploration of the Mechanisms Controlling Emulsion-Based Alkalinity Release during Subsurface Remediation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Hayder Rasheed, Kansas State University**

**C168**

**Program Area:** Structural Materials and Mechanics

EAGER: Engineered Bio-Composites for Sustainable Concrete

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Richard Regueiro, University of Colorado at Boulder**

**C7**

**Program Area:** Mechanics of Materials

Collaborative Proposal: Bridging and Coupling Particle to Continuum Length-Scale Mechanics for Simulating Deformation and Flow of Dense Dry Particulate Materials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Benjamin Rehder, Arizona State University**

**C154**

**Program Area:** Structural Materials and Mechanics

CAREER: Linking Pore Structure, Performance, and Material Design of a Sustainable Macroporous Concrete for Multifunctional Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Dacheng Ren, Syracuse University**

**C81**

**Program Area:** Materials and Surface Engineering

CAREER: Patterned Biofilm Formation by Surface Design: Linking Structure to Physiology and Genetics

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Spiridon Reveliotis, Georgia Institute of Technology**

**B233**

**Program Area:** Manufacturing Enterprise Systems

Optimized Scheduling of Complex Resource Allocation Systems through Approximate Dynamic Programming

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jeffrey Rhoads, Purdue University**

**E277**

**Program Area:** Dynamical Systems

Exploiting Parametric Effects in Resonant Nanosystems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jeffrey Rhoads, Purdue University**

**E278**

**Program Area:** Dynamical Systems

CAREER: Exploiting Collective Behaviors in Coupled Micro- and Nanosystems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**John Rice, Utah State University** **C123**

**Program Area:** Geomechanics and Geomaterials

Collaborative Research: Critical Hydraulic Conditions for Piping in Sandy Soils, Laboratory Measurement and Numerical Simulation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kyle Riding, Kansas State University** **C169**

**Program Area:** Structural Materials and Mechanics

Collaborative Research: New Natural Supplementary Cementitious Materials for Concrete

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**H. Ronald Riggs, University of Hawaii** **D213**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Impact Forces from Tsunami-Driven Debris

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Liesel Ritchie, University of Colorado at Boulder** **D124**

**Program Area:** Infrastructure Management and Extreme Events

Effects of Technological Disasters on Dimensions of Social Capital: A Longitudinal Study of the 2008 TVA Kingston Fossil Plant Ash Release

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Giorgio Rizzoni, Ohio State University** **E297**

**Program Area:** Dynamical Systems

A System Dynamics Modeling Methodology to Predict Transient Phenomena in Compressible Fluid Flow Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**John Rogers, University of Illinois at Urbana-Champaign** **B143**

**Program Area:** NanoScale Engineering Center

NSEC: Center for Nano-Chemical-Electrical-Mechanical Manufacturing Systems\Nano-CEMMS

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Gonzalo Romero, Massachusetts Institute of Technology** **E189**

**Program Area:** Service Enterprise Systems

Alleviating Travel Delay Uncertainties in Traffic Assignment and Traffic Equilibrium

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Donald Roper, University of Arkansas** **E153**

**Program Area:** Sensors and Sensing Systems

Gold Nanoparticle Ensembles on Optical Plasmon Capillaries for Virus/DNA Sensing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**David Rosen, Georgia Institute of Technology** **E15**

**Program Area:** Engineering and Systems Design

A Multiscale Heterogeneous Foundation for Computer-Aided Design

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jamal Rostami, Pennsylvania State University, University Park** **C134**

**Program Area:** Geomechanics and Geomaterials

Study of Soil Abrasivity and Development of a Reliable Soil Abrasivity Index

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jamal Rostami, Pennsylvania State University, University Park** **C145**

**Program Area:** Geomechanics and Geomaterials

GOAL: Study of Advance Rate of Hard Rock Tunnel Boring Machines (TBMs) and the Impacts of Ground Conditions and Machine Specifications

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Paat Rusmevichientong, University of Southern California** **E227**

**Program Area:** Operations Research

CAREER: Real-Time Stochastic Optimization with Large Structured Strategy Sets and High-Volume Data Streams

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Andrzej Ruszczyński, Rutgers University, New Brunswick** **E244**

**Program Area:** Operations Research

Collaborative Research: Successive Risk-Neutral Approximations of Dynamic Risk-Averse Optimization Problems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Massimo Ruzzene, Georgia Institute of Technology** **E279**

**Program Area:** Dynamical Systems

Nonlinear Acoustic Meta-Materials for Wave Propagation Management and Control

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Keri Ryan, University of Nevada, Reno** **D101**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: An Innovative Gap Damper to Control Seismic Isolator Displacements in Extreme Earthquakes

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Keri Ryan, University of Nevada, Reno**

**D193**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-SG: TIPS–Tools to Facilitate Widespread Use of Isolation and Protective Systems, a NEES/E-Defense Collaboration

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### S

**Nikolaos Sahinidis, Carnegie Mellon University**

**E209**

**Program Area:** Operations Research  
Novel Relaxations for Global Optimization

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Mehdi Saïdi, University of Nevada, Reno**

**D214**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-SG; Seismic Performance of Bridge Systems with Conventional and Innovative Materials

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Srinivasa Salapaka, University of Illinois at Urbana-Champaign**

**E90**

**Program Area:** Control Systems  
A Tractable Computational Framework for Dynamic Coverage and Clustering

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Christopher Saldana, Pennsylvania State University, University Park**

**B112**

**Program Area:** Manufacturing Machines and Equipment  
Collaborative Research: Deformation Phenomena in Surface Texturing by Machining-Based Processes

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Rodrigo Salgado, Purdue University**

**C124**

**Program Area:** Geomechanics and Geomaterials  
A Novel Method of Analysis of Single Piles and Pile Groups Subjected to Lateral Loads

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Sanjay Sampath, SUNY at Stony Brook**

**B45**

**Program Area:** Materials Processing and Manufacturing  
GOALI: Novel Interface Driven Phenomena in Thermal Sprayed Systems: Mechanics, Materials Processing and Industrial Linkages

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Johnson Samuel, Rensselaer Polytechnic Institute** **B75**

**Program Area:** Manufacturing Machines and Equipment

Physics-Based Study of Graphene Colloidal Systems as Metal Working Fluids for Micro-Machining Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Florence Sanchez, Vanderbilt University** **C191**

**Program Area:** Structural Materials and Mechanics

CAREER: An Integrated Research and Education Program in Long-Term Durability of Nano-Structured Cement-Based Materials during Environmental Weathering

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Brett Sanders, University of California-Irvine** **D148**

**Program Area:** Infrastructure Management and Extreme Events

Data Integration and Model Development to Mitigate Urban Flooding Hazards Linked to Sea Level Rise

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Brett Sanders, University of California-Irvine** **D149**

**Program Area:** Infrastructure Management and Extreme Events

Prediction and Mitigation of Beach Overwash and Resultant Urban Flooding in Coastal California

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**David Sanders, University of Nevada, Reno** **D171**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: Seismic Simulation and Design of Bridge Columns under Combined Actions, and Implications on System Response

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Gaurav Sant, Arizona State University** **C155**

**Program Area:** Structural Materials and Mechanics

Phase Change Materials in Concrete: A New Strategy to Improve the Thermal Damage Resistance and Thermal Energy Efficiency of Concrete Structures

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Gaurav Sant, University of California-Los Angeles** **C170**

**Program Area:** Structural Materials and Mechanics

Collaborative Research: Fundamental Studies on Composition-Microstructure-Performance Relationships of Sustainable Cementitious Binders

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Ravi Saraf, University of Nebraska, Lincoln**

**B188**

**Program Area:** NanoManufacturing

Regulating Current Through a Nanoparticle Necklace by Microorganism: A Transformative Technology for Biofuel Cells and Biosensors

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Partha Sarkar, Iowa State University**

**D79**

**Program Area:** Hazard Mitigation and Structural Engineering

Study of Microburst Winds and Their Loading Effects on Built Structures

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Mehrdad Sasani, Northeastern University**

**D194**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR: Near Collapse Performance of Existing Reinforced Concrete Frame Buildings

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Richard Sause, Lehigh University**

**D215**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Performance-Based Design for Cost-Effective Seismic Hazard Mitigation in New Buildings Using Supplemental Passive Damper Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Andrew Schaefer, University of Pittsburgh**

**E173**

**Program Area:** Service Enterprise Systems

Optimizing Flu Shot Design Under Uncertainty

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Andrew Schaefer, University of Pittsburgh**

**E174**

**Program Area:** Service Enterprise Systems

Collaborative Research: The Optimal Timing of Kidney Exchanges: A Markov Game Approach

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Benjamin Schafer, Johns Hopkins University**

**D172**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Enabling Performance-Based Seismic Design of Multi-Story Cold-Formed Steel Structures

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Caroline Schauer, Drexel University**

**C63**

**Program Area:** Materials and Surface Engineering

GOALI: Mechanically Robust Structural Color System Based on Biomimetic Principles

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

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**Tony Schmitz, University of North Carolina at Charlotte**

**B92**

**Program Area:** Manufacturing Machines and Equipment

Collaborative Research: Applying Bayesian Predictive Modeling and Decision Theory to Milling Profit Optimization under Uncertainty

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Tony Schmitz, University of North Carolina at Charlotte**

**B93**

**Program Area:** Manufacturing Machines and Equipment

Collaborative Research: Unified Three-Dimensional Dynamic Modeling for Drilling and Milling Tool Assemblies (STaRC-3D)

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**John Schroeder, Texas Tech University**

**D109**

**Program Area:** Hazard Mitigation and Structural Engineering

Documenting the Engineering-Relevant Aspects of Extreme Thunderstorm Winds

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jan Schroers, Yale University**

**B30**

**Program Area:** Materials Processing and Manufacturing

GOAL: Miniature Net-Shape Fabrication Method Using Thermoplastic Forming with Bulk Metallic Glass

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jan Schroers, Yale University**

**B155**

**Program Area:** NanoManufacturing

Nanoimprinting with Amorphous Metals

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Mark Schulz, University of Cincinnati**

**B139**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

SNM GOAL: Carbon Nanotube Superfiber to Revolutionize Engineering Designs

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Axel Schulzgen, University of Central Florida**

**E144**

**Program Area:** Sensors and Sensing Systems

GOAL: Developing Piezospectroscopic Sensing Systems in Adhesives and Coatings

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Justin Schwartz, North Carolina State University**

**B13**

**Program Area:** Materials Processing and Manufacturing

Magnetic Field-Assisted Processing of Piezoelectric/Magnetostrictive Thin Film Composites to Enhance Properties

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Michael Scott, Oregon State University**
**D80**
**Program Area:** Hazard Mitigation and Structural Engineering

**CAREER:** Particle Finite Element Response Sensitivity Analysis of Fluid-Structure Interaction

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jeffrey Scruggs, University of Michigan, Ann Arbor**
**E59**
**Program Area:** Control Systems

**CAREER:** Control of Vibratory Energy Harvesting and Energy Constrained Systems

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Paul Selvadurai, University of California, Berkeley**
**D56**
**Program Area:** Geotechnical Engineering

**Fundamental Physical Mechanisms Leading to Initiation of Fault Rupture, With Application to Induced Seismicity at the Geysers Geothermal Field**
**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Venkat Selvamanickam, University of Houston**
**B14**
**Program Area:** Materials Processing and Manufacturing

**GOALI:** Epitaxial Growth of Superconducting Thin Film Tapes with Prefabricated Nanostructures

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Vladimir Semak, Pennsylvania State University, University Park**
**B103**
**Program Area:** Manufacturing Machines and Equipment

**Fundamental Study of Pulse Length Dependency for Laser Ablation and Melt Formation**
**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Suvrajeet Sen, Ohio State University**
**E228**
**Program Area:** Operations Research

**Stochastic Mixed-Integer Optimization: Polyhedral Theory, Large-Scale Algorithms and Computations**
**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Carlo Sequin, University of California, Berkeley**
**E44**
**Program Area:** Engineering and Systems Design

**Inverse 3D Modeling**
**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Halil Sezen, Ohio State University**
**D102**
**Program Area:** Hazard Mitigation and Structural Engineering

**Experimental and Computational Simulation of Progressive Collapse of Buildings**
**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Devavrat Shah, Massachusetts Institute of Technology**

**E245**

**Program Area:** Operations Research

What Do Customers Like: A New Approach That Lets The Data Decide

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jami Shah, Arizona State University**

**E29**

**Program Area:** Engineering and Systems Design

EAGER: Holistic Ideation for Creative Design

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jami Shah, Arizona State University**

**E30**

**Program Area:** Engineering and Systems Design

EAGER: MyDesignSpace: Discovering Design Patterns from Holistic Ideation Web Tool

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jami Shah, Arizona State University**

**E45**

**Program Area:** Engineering and Systems Design

Identification, Characterization & Measurement of Design Skills and Designer Profiles

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jami Shah, Arizona State University**

**E46**

**Program Area:** Engineering and Systems Design

Major: Understanding and Aiding Problem Formulation in Creative Conceptual Design

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Reza Shahbazian-Yassar, Michigan Technological University**

**C107**

**Program Area:** Materials and Surface Engineering

A New Perspective on Energy Harvesting Nanowires: The Role of Chemistry and Structure of Nanowires

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**M. Ravi Shankar, University of Pittsburgh**

**B31**

**Program Area:** Materials Processing and Manufacturing

Self-Assembling Ductile and Tough Bulk Nanostructured Alloys of High Thermal-Stability

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**M. Ravi Shankar, University of Pittsburgh**

**B32**

**Program Area:** Materials Processing and Manufacturing

Deformation Mechanics and Microstructure Evolution During Microforming of Metals

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**M. Ravi Shankar, University of Pittsburgh**

**B126**

**Program Area:** Manufacturing Machines and Equipment

Measuring Thermomechanical Material Response During Micromachining by In Situ Scanning Electron Microscopy

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Gang Shao, University of Central Florida**

**E154**

**Program Area:** Sensors and Sensing Systems

Micromachinable Polymer-Derived Ceramic Ultrahigh-Temperature Sensors

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Vadim Shapiro, University of Wisconsin, Madison**

**E31**

**Program Area:** Engineering and Systems Design

EAGER: Virtual Engineering for Conservation and Sustainability of Cultural Heritage

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Vadim Shapiro, University of Wisconsin, Madison**

**E47**

**Program Area:** Engineering and Systems Design

Collaborative Research: Engineering Analysis of Imprecise Models

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Vadim Shapiro, University of Wisconsin, Madison**

**E48**

**Program Area:** Engineering and Systems Design

Configuration Modeling, Design, and Analysis

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Pradeep Sharma, University of Houston**

**B140**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

NIRT: Active Electromechanical Nanostructures Without the Use of Piezoelectric Constituents

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Pradeep Sharma, University of Houston**

**C40**

**Program Area:** Mechanics of Materials

Size-Dependent Super-Piezoelectricity in Nanostructures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Pradeep Sharma, University of Houston**

**C41**

**Program Area:** Mechanics of Materials

EAGER/Collaborative Research: Coaxing Graphene to be Piezoelectric

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Pradeep Sharma, University of Houston**

**C82**

**Program Area:** Materials and Surface Engineering

The Origins of the Dead-Layer in High Energy Storage Density Nanocapacitors

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Leon Shaw, University of Connecticut**

**B33**

**Program Area:** Materials Processing and Manufacturing

Novel Processing of WC/Co Hardmetals with Simultaneous Improvements in Hardness and Toughness Derived From Nanocrystalline Powder

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Brian Sheldon, Brown University**

**C108**

**Program Area:** Materials and Surface Engineering

GOAL: Stress Evolution and Related Phenomena in Composite Electrodes for Li Ion Batteries

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**I-Yeu Shen, University of Washington**

**E118**

**Program Area:** Sensors and Sensing Systems

Performance Enhancement of PZT Thin-Film Microactuators via a Multi-Scale, Multi-Domain Design

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**I-Yeu Shen, University of Washington**

**E119**

**Program Area:** Sensors and Sensing Systems

Bio-Inspired Inner-Ear Microphones via a Piezoelectric Substrate and Nanorods

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**I-Yeu Shen, University of Washington**

**E298**

**Program Area:** Dynamical Systems

Vibration Analysis and Health Diagnosis of Spinning Cyclic Symmetric Rotors with Flexible Bearing and Housing Supports

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jinglai Shen, University of Maryland, Baltimore County**

**E73**

**Program Area:** Control Systems

Collaborative Research: A Constrained Optimal Control Approach to Nonparametric Estimation with Applications to Biological, Biomedical and Engineering Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Mengyan Shen, University of Massachusetts, Lowell**

**E133**

**Program Area:** Sensors and Sensing Systems

Sensing Mechanism and Persistence of Semiconductor Gas Sensors on Nanostructured Surfaces

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

### **Jianjun Shi, Georgia Institute of Technology**

**B217****Program Area:** Manufacturing Enterprise Systems

GOAL: Causation-Based Quality Control—A New Paradigm to Achieve Effective Monitoring, Diagnosis, and Control for Complex Manufacturing Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Jianjun Shi, Georgia Institute of Technology**

**B218****Program Area:** Manufacturing Enterprise Systems

Metamodel-Based Measurement, Control, and Optimization of Engineered Surfaces

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Sheldon Shi, Mississippi State University**

**C83****Program Area:** Materials and Surface Engineering

Impregnated Inorganic Nanoparticles at the Natural Fiber-Thermoplastic Polymer Interface

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### **Yunfeng Shi, Rensselaer Polytechnic Institute**

**C64****Program Area:** Materials and Surface Engineering

Quantitative Understanding of Atomic Wear Using Accelerated Molecular Simulation

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Albert Shih, University of Michigan, Ann Arbor**

**B127****Program Area:** Manufacturing Machines and Equipment

Collaborative Research: Tissue Cutting Mechanics—Investigation of the Effective and Minimally Invasive Biopsy

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### **Yung Shin, Purdue University**

**B113****Program Area:** Manufacturing Machines and Equipment

High Speed Picosecond Laser Scribing of Multilayer Thin Films in Solar Cell

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

### **Rajiv Shivpuri, Ohio State University**

**E16****Program Area:** Engineering and Systems Design

GOAL: Bayesian Hierarchical Network based Computational Framework for Risk Tolerant Process Design

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### **Andrei Shkel, University of California-Irvine**

**E100****Program Area:** Sensors and Sensing Systems

Folded Nuclear Magnetic Resonance Gyroscope

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Pranav Shrotriya, Iowa State University**

**B76**

**Program Area:** Manufacturing Machines and Equipment

Two-Dimensional Cutting of Polycrystalline Diamond and CBN Tools and Dies using a Novel Laser/Waterjet Hybrid Manufacturing Process

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Kenneth Shull, Northwestern University**

**C84**

**Program Area:** Materials and Surface Engineering

Crack Propagation in Self-Healing Polymer Gels with High Toughness

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Gennady Shvets, University of Texas at Austin**

**B189**

**Program Area:** NanoManufacturing

Development of Ultra-Dense Plasmonic Sensors Arrays Using Epitaxial Periodically-Perforated Silver Films

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Pedro Silva, George Washington University**

**D81**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: Damage Compliant Inelastic Design Parameters for Performance-Based-Seismic-Design of Slender RC Columns

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Dan Simon, Cleveland State University**

**E17**

**Program Area:** Engineering and Systems Design

GOAL: Biogeography-Based Optimization of Multiple Related Complex Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Joseph Sinfield, Purdue University**

**D65**

**Program Area:** Geotechnical Engineering

Geoenvironmental Influences on Raman Spectroscopic Monitoring of Chlorinated Solvents

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Joseph Sinfield, Purdue University**

**C146**

**Program Area:** Geomechanics and Geomaterials

Engineering the Pore Fluid of Sands with Highly Plastic Nano-Particles for Liquefaction revention

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Puneet Singla, SUNY at Buffalo**

**B203**

**Program Area:** Interdisciplinary Research

IDR/Collaborative Research: Characterizing Uncertainty in the Motion of Volcanic Plumes Advected by Wind Fields

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Puneet Singla, SUNY at Buffalo**
**E74**
**Program Area:** Control Systems

Image Guided Tracking of Tumor Motion for Conformal Radiation Therapy

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Nicholas Sitar, University of California, Berkeley**
**D195**
**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Seismic Earth Pressures on Retaining Structures

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Karen Smilowitz, Northwestern University**
**E175**
**Program Area:** Service Enterprise Systems

Design and Control Principles for Mobile Health Care Operations Management -- The Case of Asthma Control

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**J. Cole Smith, University of Florida**
**E210**
**Program Area:** Operations Research

Integrating Dynamic Programming within Mixed-Integer Programming Techniques

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Michael Smith, Trustees of Boston University**
**C234**
**Program Area:** Biomechanics and Mechanobiology

Collaborative Research: Molecular Mechanics Dictate the Mechanical Behavior of an Extracellular Matrix Fiber

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Stuart Smith, University of North Carolina at Charlotte**
**B114**
**Program Area:** Manufacturing Machines and Equipment

Material Removal Mechanisms in Vortex Machining

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Andrew Smyth, Columbia University**
**D103**
**Program Area:** Hazard Mitigation and Structural Engineering

Data Fusion of Heterogeneous Sensor Measurements for Enhanced Structural Modeling

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Nathan Sniadecki, University of Washington**
**C253**
**Program Area:** Biomechanics and Mechanobiology

CAREER: Mechanics of Vascular Smooth Muscle Cell Contraction–Subcellular Structure-Function Relationships

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

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**Amir Soleimanpour, University of Toledo**

**E120**

**Program Area:** Sensors and Sensing Systems

Fundamental Investigation of Pulsed Laser Irradiation on Metal Oxide Gas Sensor Performance

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Junho Song, University of Illinois at Urbana-Champaign**

**D125**

**Program Area:** Infrastructure Management and Extreme Events

Risk-informed Management and Post-disaster Operations of Lifeline Networks by Rapid, Condition-based System Reliability Analysis

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Gangbing Song, University of Houston**

**D173**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR Payload: Damage Detection of Reinforced Concrete Columns Subjected to Combined Actions

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Eric Sonnenthal, University of California, Berkeley**

**C147**

**Program Area:** Geomechanics and Geomaterials

Collaborative Research: Coupled Thermal-Hydrological-Mechanical-Chemical-Biological Experimental Facility at DUSEL Homestake

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Siavash Sorooshian, University of Nevada, Reno**

**D216**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-GC: Simulation of the Seismic Performance of Nonstructural Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Sabrina Spatari, Drexel University**

**C171**

**Program Area:** Structural Materials and Mechanics

Enhancing the Life Cycle of Plastic Pipes Through Nano-reinforcement

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Douglas Spearot, University of Arkansas**

**B156**

**Program Area:** NanoManufacturing

Fundamental Understanding of Nanoparticle-Based Lubricants Tuned to Respond to Harsh Boundary Lubrication Conditions

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Billie Spencer, University of Illinois at Urbana-Champaign**

**E145**

**Program Area:** Sensors and Sensing Systems

Bio-Informed Framework Enabling Multimetric Infrastructure Monitoring

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Jelena Srebric, Pennsylvania State University, University Park** **C192**

**Program Area:** Structural Materials and Mechanics

Modeling of Natural Plant Materials to Enable Performance Evaluation of Environmentally Friendly Buildings

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Sri Sritharan, University of Oklahoma, Norman Campus** **D174**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: Understanding and Improving the Seismic Behavior of Pile Foundations in Soft Clays

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Sri Sritharan, Iowa State University** **D217**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Unbonded Post-Tensioned Rocking Walls for Seismic Resilient Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Binil Starly, University of Oklahoma, Norman Campus** **B77**

**Program Area:** Manufacturing Machines and Equipment

CAREER: Bio-Manufacturing Heterogeneous Multi-scale 3D Matrices for Engineering Living Tissue Systems

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Martin Starzewski, University of Illinois at Urbana-Champaign** **C42**

**Program Area:** Mechanics of Materials

Mechanics of Fractal Materials

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Paul Steen, Cornell University** **B34**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Manipulating the Contacting and Solidification of Molten Metal in Continuous Casting

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Martin Steinert, Stanford University** **E32**

**Program Area:** Engineering and Systems Design

EAGER: AnalyzeD—Analyzing Engineering Design Activities

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Daniel Steingart, CUNY City College** **C65**

**Program Area:** Materials and Surface Engineering

GOALI: A Comparative Study of Electrochemical Codeposition with In-Situ Electron Microscopy

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Dusan Stipanovic, University of Illinois at Urbana-Champaign**

**E91**

**Program Area:** Control Systems

Collaborative Research: Safe Coordination of Multiple Autonomous Vehicles

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Robert Stone, Oregon State University**

**E33**

**Program Area:** Engineering and Systems Design

Collaborative Research: Quantifying Creativity in Automated Design through a Multiagent Coordination Framework

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Alejandro Strachan, Purdue University**

**C8**

**Program Area:** Mechanics of Materials

Cyber-Enabled Predictive Models for Polymer Nanocomposites: Multiresolution Simulations and Experiments

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Ji Won Suk, University of Texas at Austin**

**C21**

**Program Area:** Mechanics of Materials

Mechanical Characterization of Atomically Thin Membranes

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Tom Suleski, University of North Carolina at Charlotte**

**B104**

**Program Area:** Manufacturing Machines and Equipment

Can Multi-Scale Optics be Fabricated by Ultraprecision Systems—Hierarchical Fabrication Across Seven Orders of Magnitude?

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Wei Sun, Drexel University**

**B46**

**Program Area:** Materials Processing and Manufacturing

A Dual Functional Freeform Microplasma Surface Patterning and Biologics Printing

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Vishnu Baba Sundaresan, Virginia Commonwealth University**

**E101**

**Program Area:** Sensors and Sensing Systems

CAREER: Ionic Transistor Devices for Sensing and Controlled Actuation—An Integrated Research, Teaching and Community Outreach Program

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Krishnan Suresh, University of Wisconsin, Madison**

**E18**

**Program Area:** Engineering and Systems Design

CAREER: Next-Generation Shape Optimization of Geometrically Complex Artifacts

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Jeannette Sutton, University of Colorado at Colorado Springs** **D150**

**Program Area:** Infrastructure Management and Extreme Events

Collaborative Research: Informal Online Communication in Crises and Disaster Events: Content, Structure, and Dynamics

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jeannette Sutton, University of Colorado at Colorado Springs** **D151**

**Program Area:** Infrastructure Management and Extreme Events

Disaster Resilient Rural Communities: The Effect of Information Access on Rural Collective Efficacy

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**John Szivek, University of Arizona** **E121**

**Program Area:** Sensors and Sensing Systems

SENSORS: In Vivo Joint Regeneration Monitoring System to be Able to Establish Rehabilitation Approaches during Healing

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Izabela Szlufarska, University of Wisconsin, Madison** **C109**

**Program Area:** Materials and Surface Engineering

CAREER: Molecular Basis for Viscoelastic Response on Nano-Mechanical Biosensors

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

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**Ertugrul Taciroglu, University of California-Los Angeles** **C22**

**Program Area:** Mechanics of Materials

Collaborative Research: Validated Multiscale Simulation Framework for Large-strain Thermo-mechanical Response of Open-Cell Aluminum Foams

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Mahmoud Reda Taha, University of New Mexico** **C193**

**Program Area:** Structural Materials and Mechanics

Synthesis and Multi-Scale Mechanical Characterization of CSH

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Mitra Taheri, Drexel University** **C110**

**Program Area:** Materials and Surface Engineering

Multiscale Correlation of Magnetism and Microstructure at Iron/Oxide Interfaces

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Sam Tajbakhsh, Pennsylvania State University, University Park** **B219**

**Program Area:** Manufacturing Enterprise Systems

On-line Profile-to-Profile Process Adjustment for Robust Parameter Design Scenarios

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Li Tan, University of Nebraska, Lincoln** **C66**

**Program Area:** Materials and Surface Engineering

Self-Organized Nanolayers for Organic Thin-Film Transistors

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xiaobo Tan, Michigan State University** **E60**

**Program Area:** Control Systems

Nonlinear and Adaptive Control of Smart Material-Actuated Systems with Application to Nanopositioning

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Xiaoli Tan, Iowa State University** **C43**

**Program Area:** Mechanics of Materials

Mechanics of Multi-responsive Ceramics for Electrical Capacitors with High power/Energy density

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Choon Yik Tang, University of Oklahoma, Norman Campus** **E92**

**Program Area:** Control Systems

Control-Theoretic Approaches to Communication-Efficient, Distributed Convex Optimization over Wireless Networks

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jay Tang, Brown University** **C235**

**Program Area:** Biomechanics and Mechanobiology

Biomechanics of Actin Networks Regulated by Physical Mechanisms

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Jiong Tang, University of Connecticut** **E280**

**Program Area:** Dynamical Systems

Collaborative Research: Efficient Probabilistic Approach Using Order Reduction and Hybrid Models -- A New Paradigm for Structural Dynamic Analysis

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xiaoduan Tang, Iowa State University** **C111**

**Program Area:** Materials and Surface Engineering

Development of Scanning Photothermal Microscope for Nanoscale Sub-surface Structural Defect Characterization

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Rafiqul Tarefder, University of New Mexico** **C194**

**Program Area:** Structural Materials and Mechanics

**CAREER:** Characterization and Modeling of Asphalt Concrete for Moisture-Induced Damage

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Rafiqul Tarefder, University of New Mexico** **C195**

**Program Area:** Structural Materials and Mechanics

**GOALI:** Nanoscale Testing and Molecular Modeling of Aging in Asphalt

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**John Taylor, Virginia Polytechnic Institute and State University** **D37**

**Program Area:** Civil Infrastructure Systems

**CAREER:** Building Occupant Network Dynamics (BOND)–Multi-scale Experimentation and Simulation in the Built Environment to Achieve Sustained Energy Conservation

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jochen Teizer, Georgia Institute of Technology** **D13**

**Program Area:** Civil Infrastructure Systems

Automated Vision-Based Sensing for Site Operations Analysis

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jale Tezcan, Southern Illinois University at Carbondale** **D82**

**Program Area:** Hazard Mitigation and Structural Engineering

A Bayesian Approach for Modeling and Simulation of Non-Stationary Ground Motions

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Tolga Tezcan, University of Rochester** **E229**

**Program Area:** Operations Research

**CAREER:** Robust Design and Control of Parallel Server Systems: Analysis via Augmented Fluid Models and Heavy-Traffic Asymptotic Regimes

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Ying Tian, University of Nevada, Las Vegas** **D104**

**Program Area:** Hazard Mitigation and Structural Engineering

Collaborative Research: Dynamic Disproportionate Collapse in Flat-Plate Buildings

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**John Tichy, Rensselaer Polytechnic Institute** **C85**

**Program Area:** Materials and Surface Engineering

Limits to Lubrication Theory in Microsystems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Albert To, University of Pittsburgh**

**C9**

**Program Area:** Mechanics of Materials

A New Atomistic-to-Continuum Thermomechanical Model that Enables a Novel Averaging Method for Molecular Dynamics Simulations

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Masayoshi Tomizuka, University of California, Berkeley**

**B193**

**Program Area:** Interdisciplinary Research

IDR/Collaborative Research: Monitoring and Mobility Assistance with Wireless Body Sensor Network and Mechatronic Actuation

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Huseyin Topaloglu, Cornell University**

**E190**

**Program Area:** Service Enterprise Systems

Approximate Dynamic Programming for Perishable Asset Management with Applications in Dynamic Pricing, Capacity Allocation and Revenue Management

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Huseyin Topaloglu, Cornell University**

**E191**

**Program Area:** Service Enterprise Systems

A General Framework for Incorporating Choice Models into Operations Management Decisions

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Nicolas Triantafyllidis, University of Michigan, Ann Arbor**

**C23**

**Program Area:** Mechanics of Materials

Collaborative Research: Fundamental Experimental and Theoretical Investigation of Finite Strain and High Strain-Rate Electromagnetic Loading Processes in Metals

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Dallas Trinkle, University of Illinois at Urbana-Champaign**

**C24**

**Program Area:** Mechanics of Materials

GOALI: Modeling Solute Effects in Magnesium Alloys: First-principles to Predictive Finite-Element

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Dallas Trinkle, University of Illinois at Urbana-Champaign**

**C112**

**Program Area:** Materials and Surface Engineering

CAREER: First-Principles Modeling of Titanium-Oxygen-Solute Interaction: Materials Design for Improved Energy Efficiency

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Craig Trumbo, Colorado State University** **D126**

**Program Area:** Infrastructure Management and Extreme Events

Dynamics of Hurricane Risk Perception

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Michael Tsapatsis, University of Minnesota, Twin Cities** **B141**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

NIRT: Precise Building Blocks for Hierarchical Nanomanufacturing of Membranes with Molecular Resolution

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kwok-Leung Tsui, Georgia Institute of Technology** **B220**

**Program Area:** Manufacturing Enterprise Systems

Collaborative Research: Validation, Calibration, and Prediction of Computer Models with Functional Output

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Cameron Turner, Colorado School of Mines** **E19**

**Program Area:** Engineering and Systems Design

Design Space Analysis with Hyperdimensional Metamodels

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Kimberly Turner, University of California-Santa Barbara** **E102**

**Program Area:** Sensors and Sensing Systems

Collaborative Research: Novel Microscale Resonant Sensors for Chemical and Biological Detection

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## U

**Nasim Uddin, University of Alabama at Birmingham** **C178**

**Program Area:** Structural Materials and Mechanics

Composite Structural Insulated Panels (CSIPs) for Hazard Resistant Structures

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Nasim Uddin, University of Alabama at Birmingham** **D38**

**Program Area:** Civil Infrastructure Systems

Developing Bridge Weigh-in-Motion (B-WIM) Health Monitoring Systems for Bridge Infrastructure Safety

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Satish Ukkusuri, Purdue University** **D152**

**Program Area:** Infrastructure Management and Extreme Events

Collaborative Research: From Warnings to Evacuation in Hurricanes: a Holistic Investigation using an Interdisciplinary Approach

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

**Merve Unuvar, Rutgers University, New Brunswick**

**E246**

**Program Area:** Operations Research

Discrete Moment Problems and Applications

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Reha Uzsoy, North Carolina State University**

**B234**

**Program Area:** Manufacturing Enterprise Systems

International Collaboration: Capacity Anticipation and Modeling for Production Planning with Flexible Resources

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Reha Uzsoy, North Carolina State University**

**B235**

**Program Area:** Manufacturing Enterprise Systems

Next Generation Algorithms for Planning Production and Inventories with Uncertain Demand and Congestion

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## V

**Hooman Vahedi Tafreshi, Virginia Commonwealth University**

**B176**

**Program Area:** NanoManufacturing

Bimodal Nanofiber Mats with Controlled Microstructures for Size-Sensitive Nanoparticle Filtration/Separation and Superhydrophobic Drag Reduction

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Ardalan Vahidi, Clemson University**

**E61**

**Program Area:** Control Systems

Predictive Energy Management in Smart Vehicles: Exploiting Traffic and Terrain Preview for Fuel Savings

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Alexander Vakakis, University of Illinois at Urbana-Champaign**

**E281**

**Program Area:** Dynamical Systems

Collaborative Research: Global/Local System Identification of Strongly Nonlinear Dynamical Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**John van de Lindt, University of Alabama, Tuscaloosa**

**D175**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: NEESsoft-Seismic Risk Reduction for Soft-Story, Wood frame Buildings

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Benjamin Van Roy, Stanford University**
**E211**
**Program Area:** Operations Research

Directed Regression

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Shannon Van Zandt, Texas A&M University**
**D127**
**Program Area:** Infrastructure Management and Extreme Events

Developing A “Living Laboratory” for Examining Community Recovery and Resilience After Disaster

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Judy Vance, Iowa State University**
**E49**
**Program Area:** Engineering and Systems Design

GOAL: A Hybrid Method to Support Natural Interaction of Parts in a Virtual Environment

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Judy Vance, Iowa State University**
**E50**
**Program Area:** Engineering and Systems Design

EAGER: Haptics for Large Scale Virtual Environments to Assess Assembly Tasks

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**John Vande Vate, Georgia Institute of Technology**
**E230**
**Program Area:** Operations Research

Stochastic Control In Semiconductor Supply Chain

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Kalman Varga, Vanderbilt University**
**E299**
**Program Area:** Dynamical Systems

Quantum dynamics at the nanoscale

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Semyon Vaynman, Northwestern University**
**C44**
**Program Area:** Mechanics of Materials

Design and Development of Body-Centered Cubic Alloys with Increased Strength and Toughness for Infrastructural and Structural Applications

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Semyon Vaynman, Northwestern University**
**C156**
**Program Area:** Structural Materials and Mechanics

Design and Development of Fire-Resistant Ferritic Steels for Structural Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Franck Vernerey, University of Colorado at Boulder** **C254**

**Program Area:** Biomechanics and Mechanobiology

Multiscale Biomimetic Study of the Mechanics of Fish Scales

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Narendiran Vitchuli, North Carolina State University** **B62**

**Program Area:** Materials Processing and Manufacturing

A New Paradigm for Scalable Fabrication of Polymer Nanofibers by Bulk Shear and Phase Separation

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Joost Vlassak, Harvard University** **C25**

**Program Area:** Mechanics of Materials

Stress and Deformation caused by Insertion in Li Ion Batteries

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Paul Voyles, University of Wisconsin, Madison** **C45**

**Program Area:** Mechanics of Materials

Nanoscale Mechanics of Bulk Amorphous Metals

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## W

**Amy Wagoner Johnson, University of Illinois at Urbana-Champaign** **B63**

**Program Area:** Materials Processing and Manufacturing

Customized Load-Bearing Scaffolds Using Multiscale Porosity and Multi-Material Domains

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**S. Travis Waller, University of Texas at Austin** **D39**

**Program Area:** Civil Infrastructure Systems

Predicting Disrupted Network Behavior

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Mark Walter, Ohio State University** **C67**

**Program Area:** Materials and Surface Engineering

GOALI: Electrode Interface Stresses, Degradation, and Failure

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Hong Wan, Purdue University** **B221**

**Program Area:** Manufacturing Enterprise Systems

Collaborative Research: Optimal Sampling Plans in Supply Chains with Endogenous Product Quality

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

<p><b>Anbo Wang, Virginia Polytechnic Institute and State University</b>  <b>Program Area:</b> Sensors and Sensing Systems                      Fully-Distributed Fiber-Optic Sensors for Pressure and Transverse Stress Measurement  <b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>E155</b>
<p><b>Anbo Wang, Virginia Polytechnic Institute and State University</b>  <b>Program Area:</b> Sensors and Sensing Systems                      Fiber-Optic Technology for Fully-Distributed Physical, Chemical, and Biological Sensing  <b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>E156</b>
<p><b>Chuji Wang, Mississippi State University</b>  <b>Program Area:</b> Sensors and Sensing Systems                      A Multi-functional Fiber Optic Sensor Platform Using a Time Domain Sensing Scheme  <b>Poster Session 5:</b> Wednesday, July 11, 1:00 p.m.–4:00 p.m.</p>	<b>E146</b>
<p><b>Fuyuan Wang, University of Illinois at Urbana-Champaign</b>  <b>Program Area:</b> Operations Research                      Four Mathematical Programming Paradigms with Operations Research Applications  <b>Poster Session 4:</b> Tuesday, July 10, 3:15 p.m.–5:45 p.m.</p>	<b>E247</b>
<p><b>Herbert Wang, University of Wisconsin, Madison</b>  <b>Program Area:</b> Geomechanics and Geomaterials                      Collaborative Research: Fiber-Optic Strain Monitoring of Rock Masses in Large Underground Facilities  <b>Poster Session 2:</b> Monday, July 9, 3:00 p.m.–5:45 p.m.</p>	<b>C125</b>
<p><b>Howard (Hao) Wang, SUNY at Binghamton</b>  <b>Program Area:</b> Materials Processing and Manufacturing                      Collaborative Research: Large-Scale Fabrication of Thin Polymer Nanocomposite Films  <b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>B15</b>
<p><b>Jialai Wang, University of Alabama, Tuscaloosa</b>  <b>Program Area:</b> Structural Materials and Mechanics                      Characterization of Environment-Assisted Subcritical Debond of Bonded Repairs/Strengthening of Aging Infrastructure  <b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>C157</b>
<p><b>Jialai Wang, University of Alabama, Tuscaloosa</b>  <b>Program Area:</b> Structural Materials and Mechanics                      Collaborative Research: Geopolymeric Nanocomposite, A Next Generation Material For Infrastructure Sustainability  <b>Poster Session 1:</b> Monday, July 9, 8:30 a.m.–12:00 p.m.</p>	<b>C158</b>

## GRANTEE POSTER SESSION SCHEDULE

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**Jifeng Wang, University of Illinois at Urbana-Champaign**

**C86**

**Program Area:** Materials and Surface Engineering

Design of Transforming Materials

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Junlan Wang, University of Washington**

**C87**

**Program Area:** Materials and Surface Engineering

CAREER: Experimental Investigation of Mechanical Properties of Nanoporous Thin Films

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Junmin Wang, Ohio State University**

**E62**

**Program Area:** Control Systems

Synergistically Integrated In-Cylinder Condition and Fueling Control for Advanced Multi-Mode Combustion Diesel Engines

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Jyhwen Wang, Texas A&M University**

**B49**

**Program Area:** Materials Processing and Manufacturing

Hydroforming of Sandwich Panels

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Kejin Wang, Iowa State University**

**C196**

**Program Area:** Structural Materials and Mechanics

Understanding Rheology of Cement-based Materials through Integrated Experiments and Computations at Multiple Scales

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Linbing Wang, Virginia Polytechnic Institute and State University**

**C197**

**Program Area:** Structural Materials and Mechanics

Digital Mix Design for Performance Optimization of Asphalt Concrete

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Qian Wang, Pennsylvania State University, University Park**

**E93**

**Program Area:** Control Systems

Modeling and Feedback Design for Autonomic Management of Enterprise-scale Virtualized Data Centers

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Shi-Qing Wang, University of Akron**

**C10**

**Program Area:** Mechanics of Materials

Melt Fracture in Soft Solid-Like Polymeric Materials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Xingwei Wang, University of Massachusetts, Lowell**

**E103**

**Program Area:** Sensors and Sensing Systems

CAREER: Novel Mechanism for Generation and Receiving of Ultrasound on a Single Fiber Using Nanoparticles

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Xudong Wang, University of Wisconsin, Madison**

**B190**

**Program Area:** NanoManufacturing

Self-Controlled Surface-Selective Atomic Layer Deposition for Integrated Vertical Nanowire Field Effect Transistors

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Gordon Warn, Pennsylvania State University, University Park**

**D83**

**Program Area:** Hazard Mitigation and Structural Engineering

Stability of Elastomeric and Lead-Rubber Seismic Isolation Bearings Under Extreme Earthquake Loading

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**April Warnock, University of Michigan, Ann Arbor**

**D128**

**Program Area:** Infrastructure Management and Extreme Events

Detection and Mitigation of Hazardous Releases in Infrastructure Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Joseph Wartman, Drexel University**

**D196**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-CR: Seismically Induced Rock-Slope Failure: Mechanisms and Prediction

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**James Watkins, University of Massachusetts, Amherst**

**B144**

**Program Area:** NanoScale Engineering Center

NSEC: Center for Hierarchical Manufacturing

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Dean Webster, North Dakota State University Fargo**

**C179**

**Program Area:** Structural Materials and Mechanics

Structural Composites with High Biobased Content

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Bingqing Wei, University of Delaware**

**B16**

**Program Area:** Materials Processing and Manufacturing

Collaborative Research: Manufacturing Deformable Energy Storage Devices from Carbon Nanotube Macro-Films

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Bingqing Wei, University of Delaware**

**B167**

**Program Area:** NanoManufacturing

Collaborative Research: Heterogeneous Integration of Patterned 3-D Nanotube Supercapacitors on CMOS

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Lisa Weiland, University of Pittsburgh**

**E122**

**Program Area:** Sensors and Sensing Systems

CAREER: High Performance, Mechanically Robust Ionometric Sensors

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Haifang Wen, Washington State University**

**C135**

**Program Area:** Geomechanics and Geomaterials

An Innovative Approach to Mitigate Shrinkage Cracking in Cementitiously Stabilized Soils

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Kris Wernstedt, Virginia Polytechnic Institute and State University**

**D153**

**Program Area:** Infrastructure Management and Extreme Events

DRRC/Collaborative Research: Emergency Management in Rural America: Decision-Makers Use of Climate Science in Flood Planning and Management

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Ward Whitt, Columbia University**

**E248**

**Program Area:** Operations Research

Multi-Server Queues with Time-Varying Arrival Rates

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Andrew Whittaker, SUNY at Buffalo**

**D218**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR-SG: Performance-Based Design of Squat Reinforced Concrete Shear Walls

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Eric Williams, Arizona State University**

**D14**

**Program Area:** Civil Infrastructure Systems

Urban Form and Energy Use Explored Through Dynamic Networked Infrastructure Model

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Steve Wojtkiewicz, University of Minnesota, Twin Cities**

**D105**

**Program Area:** Hazard Mitigation and Structural Engineering

Rapid Identification, Control, and Uncertainty Analysis of Structural Models

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Colin Wolden, Colorado School of Mines**

**B17**

**Program Area:** Materials Processing and Manufacturing  
High Throughput Manufacturing of Nanolaminates

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Shing-Chung Wong, University of Akron**

**B64**

**Program Area:** Materials Processing and Manufacturing  
CAREER: Electrospinning-Enabled Bio-Inspired Materials Research and Education

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Robert Wood, Harvard University**

**E63**

**Program Area:** Control Systems  
CAREER: Bio-inspired Automatic Control of a Flying Robotic Insect

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**David Wootton, Cooper Union**

**B128**

**Program Area:** Manufacturing Machines and Equipment  
GOALI/Collaborative Research: Design and Manufacturing of Bioactive Surgical Fixation Devices Using Injection Molding of Gradient Cellular Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Benxin Wu, Illinois Institute of Technology**

**B18**

**Program Area:** Materials Processing and Manufacturing  
EAGER/Collaborative Research: Laser Sintering of Nanolayered Carbon Nanotube Paper for Functionally Gradient Ceramic Nanocomposites

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Benxin Wu, Illinois Institute of Technology**

**B129**

**Program Area:** Manufacturing Machines and Equipment  
CAREER: Fundamental Research on a Novel Ultrasound-assisted Water-confined Laser Micromachining Technology

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jason Wu, William Marsh Rice University**

**D26**

**Program Area:** Civil Infrastructure Systems  
CAREER: Reliability Assessment and Risk Mitigation Principles for Smart Interdependent Infrastructure Systems

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Junqiao Wu, University of California, Berkeley**

**B191**

**Program Area:** NanoManufacturing  
Off-Equilibrium Doping of Semiconductor Nanowires

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

**Richard Wysk, North Carolina State University**

**B205**

**Program Area:** Manufacturing Enterprise Systems

**EAGER:** Engineering for Regenerative Medicine

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Gerard Wysocki, Princeton University**

**E104**

**Program Area:** Sensors and Sensing Systems

**CAREER:** Coherent Mid-Infrared Molecular Dispersion Spectroscopy for Ultra-Sensitive Chemical Detection

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

### X

**Marino Xanthos, New Jersey Institute of Technology**

**B65**

**Program Area:** Materials Processing and Manufacturing

**GOALI:** Fundamental Material and Processing Studies on Hot-Melt Extrusion-A Novel Pharmaceutical Manufacturing Process

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Zhenhai Xia, University of Akron**

**C68**

**Program Area:** Materials and Surface Engineering

Integrated Studies of Interfaces in Nanocomposites and Nanoimprinting

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xinran Xiao, Michigan State University**

**C26**

**Program Area:** Mechanics of Materials

**GOALI:** Stress in a Porous Polymeric Membrane Separator in a Lithium-Ion Battery

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Susan Xu, Pennsylvania State University, University Park**

**B236**

**Program Area:** Manufacturing Enterprise Systems

Risk Management of Supply Chain Networks with Dependent Disruptions

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Terry Xu, University of North Carolina at Charlotte**

**B157**

**Program Area:** NanoManufacturing

**CAREER:** Boron-based One-dimensional Nanostructures of Thermoelectric Energy Conversion

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Xianfan Xu, Purdue University**

**B142**

**Program Area:** Nanoscale Interdisciplinary Research Team and Scalable NanoManufacturing

**SNM:** Scalable Nanomanufacturing Machine Based on Parallel Optical Antenna Array

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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### Y

**Hitomi Yamaguchi Greenslet, University of Florida** **B115**

**Program Area:** Manufacturing Machines and Equipment

Magnetic Field Assisted Nanomachining of Ultraprecision Surfaces

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Hitomi Yamaguchi Greenslet, University of Florida** **C88**

**Program Area:** Materials and Surface Engineering

Surface Functionalization by Magnetic Field Assisted Finishing

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Henry Yang, University of California-Santa Barbara** **B78**

**Program Area:** Manufacturing Machines and Equipment

Collaborative Research: Controlling Surface Damage in Machining of Hierarchical Biological Composites

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Henry Yang, University of California-Santa Barbara** **C216**

**Program Area:** Biomechanics and Mechanobiology

Collaborative Research: Nanostructured Alloys With Unprecedented Properties

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jann Yang, University of California-Irvine** **E157**

**Program Area:** Sensors and Sensing Systems

Finite-Element Based Damage Identification and Tracking of Civil Structures

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jian Yang, New Jersey Institute of Technology** **E192**

**Program Area:** Service Enterprise Systems

Collaborative Research: The Nonatomic-Game Approach to Revenue Management Under Competition

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Shu Yang, University of Pennsylvania** **B177**

**Program Area:** NanoManufacturing

From a Single Micropatterned Elastic Membrane to a Library of Complex Patterns of Nanostructures: an Efficient Nanomanufacturing Route via Harnessing of Elastic Instability

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Bin Yao, Purdue University**

**E83**

**Program Area:** Control Systems

EAGER: A Holistic Approach to Adaptive Robust Control of Systems with Uncertain Nonsmooth Nonlinearities with Application to Cable-Conduit Actuated Surgical Robotic Devices

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**David Yao, Columbia University**

**E212**

**Program Area:** Operations Research

Dynamic Scheduling and Resource Control in Stochastic Processing Networks: Beyond Priority Rules

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Donggang Yao, Georgia Institute of Technology**

**B67**

**Program Area:** Materials Processing and Manufacturing

Precision Microprofile Extrusion with a Wall Slip Condition

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Y. Lawrence Yao, Columbia University**

**B66**

**Program Area:** Materials Processing and Manufacturing

Laser Modification of Surface Crystallinity of Biodegradable Polymers

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Y. Lawrence Yao, Columbia University**

**B94**

**Program Area:** Manufacturing Machines and Equipment

GOAL: Dissimilar Metal Joining for Micro-Scale Medical Devices

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Matthew Yates, University of Rochester**

**C113**

**Program Area:** Materials and Surface Engineering

Surface Crystallization to Optimize Nanostructure of Proton Conductors in Hydrogen Membrane Fuel Cells

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**M. K. Yegian, Northeastern University**

**D197**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research

NEESR: Induced Partial Saturation (LPS) Through Transport and Reactivity for Liquefaction Mitigation

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Allen Yi, Ohio State University**

**B79**

**Program Area:** Manufacturing Machines and Equipment

Micro-Optics Based 3D Microfabrication System

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Jingang Yi, Rutgers University, New Brunswick**

**E64**

**Program Area:** Control Systems

**GOAL:** Safety-Preserved Estimation and Control of Tire/Road Interaction

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Huiming Yin, Columbia University**

**C198**

**Program Area:** Structural Materials and Mechanics

**CAREER:** Energy in Sustainable Infrastructure–Multi-scale/physical Approach to a Novel Hybrid Solar Roofing Panel

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Yong-Kyu Yoon, University of Florida**

**B130**

**Program Area:** Manufacturing Machines and Equipment

Exploration of Multidirectional 3-D UV Lithography for Advanced Microfabrication

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Zhanping You, Michigan Technological University**

**C172**

**Program Area:** Structural Materials and Mechanics

A Microstructure-Based Modeling Approach to Characterize Asphalt Materials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Zhanping You, Michigan Technological University**

**C173**

**Program Area:** Structural Materials and Mechanics

**EAGER:** Using Nonmetals Separated from E-Waste and Waste Plastic Bags in Improving the Mechanical Properties of Asphalt Materials

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Mohammad Younis, SUNY at Binghamton**

**E282**

**Program Area:** Dynamical Systems

**Collaborative Research:** Exploration of the Nonlinear Dynamics of NEMS Carbon Nanotube Resonators

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Cheng Yu, University of North Texas**

**D84**

**Program Area:** Hazard Mitigation and Structural Engineering

**CAREER:** Comprehensive Research on Cold-Formed Steel Sheathed Shear Walls: Special Detailing, Design, and Innovation

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Choongho Yu, Texas A&M University**

**B192**

**Program Area:** NanoManufacturing

Building Selective Pathways for Electrons and Phonons in Nanocomposites

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Hang Yu, University of Delaware** **B50**

**Program Area:** Materials Processing and Manufacturing

Tailoring Thermal Conductivity for 3-D Polymer Composites

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Hongyu Yu, Arizona State University** **B19**

**Program Area:** Materials Processing and Manufacturing

IDR/Collaborative Research: Manufacturing Functional Laminated Composite Structures on Patterned Uneven Three-Dimensional Surfaces

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Miao Yu, University of Maryland, College Park** **E158**

**Program Area:** Sensors and Sensing Systems

Dexterous Fiber Optic Tweezers for Bio-Particle Manipulation and Force Sensing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Min-Feng Yu, University of Illinois at Urbana-Champaign** **C236**

**Program Area:** Biomechanics and Mechanobiology

Intrinsically-Nonlinear Broadband Nanoresonator for Ultrahighly Sensitive Sensing of Energy Transfers

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Xiong Yu, Case Western Reserve University** **D106**

**Program Area:** Hazard Mitigation and Structural Engineering

GOALI: An Innovative Real Time Bridge Scour Sensor for Bridge Risk Management

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Xiong Yu, Case Western Reserve University** **E105**

**Program Area:** Sensors and Sensing Systems

CAREER: Fusion of Multi-scale Sensing and Simulations for Bridge Scour Risk Management: An Integrated Research and Educational Plan

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Xiong Yu, Case Western Reserve University** **E106**

**Program Area:** Sensors and Sensing Systems

GOALI: An Innovative Real Time Bridge Scour Sensor for Bridge Risk Management

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Xiong Yu, Case Western Reserve University** **E107**

**Program Area:** Sensors and Sensing Systems

A High Resolution Distributed Moisture Sensing System for Direct Measurement of Earthquake Induced Void Redistribution

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Wenqiao Yuan, Kansas State University**

**B131**

**Program Area:** Manufacturing Machines and Equipment

**CAREER:** Multi-Scale Structured Solid Carriers Enabling Algae Biofuel Manufacturing in the Ocean

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Z

**Evan Zamir, Georgia Institute of Technology**

**C255**

**Program Area:** Biomechanics and Mechanobiology

Biomechanical Characterization of the Avian Epiblast during Primitive Streak Formation

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Giovanni Zangari, University of Virginia**

**B158**

**Program Area:** NanoManufacturing

Fundamental Studies of Electrowetting on Tailored Surfaces with Application to High Performance Capillary Force Actuators

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Antonios Zavaliangos, Drexel University**

**C46**

**Program Area:** Mechanics of Materials

**GOALI:** Processing and Optimization of Multilayered Pharmaceutical Tablets

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Pablo Zavattieri, Purdue University**

**C180**

**Program Area:** Structural Materials and Mechanics

High Performance Cement Composites with Nanocrystalline and Nanofibrillated Cellulose

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Hussein Zbib, Washington State University**

**C11**

**Program Area:** Mechanics of Materials

Mechanical Properties at the Sub-micrometer Length Scale: Multiscale Modeling and Experiments

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Assaf Zeevi, Columbia University**

**E193**

**Program Area:** Service Enterprise Systems

**CAREER:** Design and Analysis of Differentiated Services

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Alan Zehnder, Cornell University**

**E283**

**Program Area:** Dynamical Systems

Nonlinear Dynamics of Coupled MEMS Oscillators

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Dimitrios Zekkos, University of Michigan, Ann Arbor**

**D219**

**Program Area:** George E. Brown, Jr. Network for Earthquake Engineering Simulation Research  
NEESR-CR: Seismic Response of Landfills: In-Situ Evaluation of Dynamic Properties of Municipal Solid Waste, Comparison to Laboratory Testing, and Impact on Numerical Analyses

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Ruijie Zeng, University of Illinois at Urbana-Champaign**

**D129**

**Program Area:** Infrastructure Management and Extreme Events  
Planning for Drought Preparedness in the Watershed Context: A Risk-Based Decision Analysis

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Aspasia Zerva, Drexel University**

**D85**

**Program Area:** Hazard Mitigation and Structural Engineering  
Spatial Variability Effects on the Seismic Response of RC Highway Bridges

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Aspasia Zerva, Drexel University**

**D86**

**Program Area:** Hazard Mitigation and Structural Engineering  
Seismic Response of Concrete Gravity Dams Subjected to Spatially Variable Excitations

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Chun (Chuck) Zhang, Florida State University**

**B222**

**Program Area:** Manufacturing Enterprise Systems  
Collaborative Research: Multi-Accuracy Bayesian Models for Improving Property Prediction of Nanotube Buckypaper Composites

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Katherine Y. Zhang, Trustees of Boston University**

**C217**

**Program Area:** Biomechanics and Mechanobiology  
CAREER: Integrating Multi-Scale Mechanics and Biomaterials to Study the Translation of Mechanical Forces from Tissue to Cell

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Liangfang Zhang, University of California-San Diego**

**B168**

**Program Area:** NanoManufacturing  
Systematic Approaches to Scale-up of Biocompatible Drug Delivery Nanoparticles for High-Rate Production

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Lianyang Zhang, University of Arizona**

**C159**

**Program Area:** Structural Materials and Mechanics  
Geopolymerization of Mine Tailings for Sustainable Development

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

## GRANTEE POSTER SESSION SCHEDULE

**Mingjun Zhang, University of Tennessee, Knoxville** **C69**

**Program Area:** Materials and Surface Engineering

Nanoparticles to Increase Strength of Surface Adhesion: An Inspiration from Biological Systems

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Sulin Zhang, Pennsylvania State University, University Park** **C89**

**Program Area:** Materials and Surface Engineering

Perfecting Monolayer Graphene by Defect Removal Using Novel Thermo-Mechanical Methods

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Xiang Zhang, University of California, Berkeley** **B145**

**Program Area:** NanoScale Engineering Center

NSEC: Center for Scalable and Integrated Nanomanufacturing (SINAM)

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Xin Zhang, Trustees of Boston University** **C237**

**Program Area:** Biomechanics and Mechanobiology

Collaborative Research: Elastic and Viscoelastic Characterization and Modeling of Polymer based Structures for Biological Applications

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

**Xinghang Zhang, Texas A&M University** **E108**

**Program Area:** Sensors and Sensing Systems

Novel Magnetic Shape Memory Alloy Thin Films for Sensor and Actuator Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**YuMing Zhang, University of Kentucky** **B80**

**Program Area:** Manufacturing Machines and Equipment

Control of Metal Transfer at Given Arc Variables

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**YuMing Zhang, University of Kentucky** **B81**

**Program Area:** Manufacturing Machines and Equipment

Machine-Human Cooperative Control of Welding Process

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Yunfeng Zhang, University of Maryland, College Park** **D107**

**Program Area:** Hazard Mitigation and Structural Engineering

Sensor-Driven Structural Health Prognosis System for Continuous Reliability Assessment of Tubular Steel Structures

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.



## GRANTEE POSTER SESSION SCHEDULE

**Yunfeng Zhang, University of Maryland, College Park**

**E147**

**Program Area:** Sensors and Sensing Systems

Collaborative Research: Fish-Inspired Ultra-Sensitive Infrasonound Sensor for Critical Infrastructure Monitoring and Geo-hazards Early Warning

**Poster Session 5:** Wednesday, July 11, 1:00 p.m.–4:00 p.m.

**Yao Zhao, Rutgers University, Newark**

**B237**

**Program Area:** Manufacturing Enterprise Systems

CAREER: Project-Driven Supply Chains (PDSCs) -- Integrating Supply Chain Planning With Project Management

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Yiping Zhao, University of Georgia**

**C256**

**Program Area:** Biomechanics and Mechanobiology

Understanding and Preventing Nanocarpet Effect

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Jiang Zhe, University of Akron**

**E123**

**Program Area:** Sensors and Sensing Systems

A High Throughput Microfluidic Sensor for Real Time Health Monitoring of Rotating Machinery

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jiang Zhe, University of Akron**

**E124**

**Program Area:** Sensors and Sensing Systems

IDR: A Novel Multiplexed Multichannel Biosensor Chip for High-Throughput Detection of Macromolecular Biomarkers

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Karen Zheng, University of Texas at Dallas**

**B238**

**Program Area:** Manufacturing Enterprise Systems

GOALI: A Phased Approach for Investigating Trust and Trustworthiness in Forecast Information Sharing

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Weihong (Katie) Zhong, Washington State University**

**C114**

**Program Area:** Materials and Surface Engineering

Interfacial Wetting and Adhesion Enhancement in Advanced Organic-Fiber/Polymer Composites through a "Nano-nectar" Methodology

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Guangwen Zhou, SUNY at Binghamton**

**C70**

**Program Area:** Materials and Surface Engineering

Probing Nanoscale Oxidation Mechanism of Metals under Applied Stress

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

### H. Susan Zhou, Worcester Polytechnic Institute

**E134**
**Program Area:** Sensors and Sensing Systems

Engineering Rapid and Ultrasensitive Microsystem with Hybrid Nanomaterials

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### Jack Zhou, Drexel University

**B132**
**Program Area:** Manufacturing Machines and Equipment

EAGER/Collaborative Research: Solid Freeform Fabrication of a Conceptual Artificial Photosynthesis Device

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Shiyu Zhou, University of Wisconsin, Madison

**B223**
**Program Area:** Manufacturing Enterprise Systems

Statistical Analysis and Control of Ultrasonic-based Aluminum Nano-composite Fabrication Processes

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

### Guoming Zhu, Michigan State University

**E300**
**Program Area:** Dynamical Systems

GOALI/Collaborative Research: A Control Oriented Charge Mixing and Hybrid Combustion Model for SI-HCCI Dual Mode Engines

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Weidong Zhu, University of Maryland, Baltimore County

**E301**
**Program Area:** Dynamical Systems

GOALI: Dynamic Modeling and Analysis of Complex Systems with Application to Elevator Systems

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Yimin Zhu, Florida International University

**D40**
**Program Area:** Civil Infrastructure Systems

Stochastic Time, Cost and Environmental Impact Optimization of Construction Processes

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

### Yingxi (Elaine) Zhu, University of Notre Dame

**C90**
**Program Area:** Materials and Surface Engineering

Molecular Engineering of Biomimetic Hydrogel-Based Lubricious Films

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.

### Yong Zhu, North Carolina State University

**C115**
**Program Area:** Materials and Surface Engineering

Temperature Effect on Advanced Mechanical Properties of Semiconductor Nanowires

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

## GRANTEE POSTER SESSION SCHEDULE

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**Thomas Zimmie, Rensselaer Polytechnic Institute** **D49**

**Program Area:** Geotechnical Engineering

RAPID: Flood and Erosion Reconnaissance: Hurricanes Irene and Lee, Upstate New York and Western New England

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Michal Zochowski, University of Michigan, Ann Arbor** **E284**

**Program Area:** Dynamical Systems

Understanding Multimodal Interactions in Neuronal Networks

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Jun Zou, Texas A&M University** **E109**

**Program Area:** Sensors and Sensing Systems

MEMS-Switched Acoustic Delay-Lines Microsystems for Advanced Ultrasonic Imaging Applications

**Poster Session 1:** Monday, July 9, 8:30 a.m.–12:00 p.m.

**Lei Zuo, SUNY at Stony Brook** **D110**

**Program Area:** Hazard Mitigation and Structural Engineering

Vibration Control of Tall Buildings Using Electricity Generating Tuned Mass Dampers

**Poster Session 4:** Tuesday, July 10, 3:15 p.m.–5:45 p.m.

**Min Zou, University of Arkansas** **C71**

**Program Area:** Materials and Surface Engineering

CAREER: Nano-Engineered Surfaces: Fabrication and Mechanical and Tribological Properties

**Poster Session 2:** Monday, July 9, 3:00 p.m.–5:45 p.m.

**Qingze Zou, Rutgers University** **E84**

**Program Area:** Control Systems

CAREER: Control Tools for Nanoscale Rapid Broadband Viscoelasticity Measurement and Mapping of Soft Materials

**Poster Session 3:** Tuesday, July 10, 7:30 a.m.–9:30 a.m.