

2016 MURI Center for Material Failure Prediction through Peridynamics Program Review

Mr. James Fillerup | August 17-18, 2016 | Dayton, OH

Wright Brothers Institute:
TecEdge Innovation & Collaboration Center
5000 Springfield St #100
Dayton, OH 45431

Agenda Day 1 | Wednesday – August 17, 2016

Time	Title	Speaker
8:10-8:30	Registration	
8:30-8:45	Introductory Remarks	James Fillerup/ Ali Sayir AFOSR
8:45-9:00	Program Overview/Highlights/Collaborations	Erdogan Madenci University of Arizona
9:00-9:30	Basic Concepts of Peridynamics and Outlook	Stewart Silling Sandia National Laboratories
9:30-10:10	Progress at University of Arizona <ul style="list-style-type: none"> ➤ PD Modeling of Thermo-oxidative Degradation ➤ PD-FEM Coupling without an Overlap Zone ➤ PD Integrals for Strain Invariants: Elastic and Hyperelastic ➤ SED Functions ➤ PD for Digital Image Correlation: Stress and Strain Recovery 	Erdogan Madenci University of Arizona
10:10-10:25	Questions/Discussion	
10:25-10:30	BREAK	
10:30-11:10	Progress at University of Nebraska <ul style="list-style-type: none"> ➤ Corrosion Damage and Stress-Corrosion-Cracking Modeling ➤ A Constructive Kernel in PD and Connections to Asymptotically Compatible Discretizations for Elasticity ➤ Modeling of Dynamic and Static Fracture in Polycrystalline Materials 	Florin Bobaru University of Nebraska- Lincoln
11:10-11:25	Questions/Discussion	
11:25-11:30	BREAK	
11:30-12:10	Progress at Arizona State University <ul style="list-style-type: none"> ➤ Digital Image Correlation ➤ Corrosion and Nanoindentation ➤ X-ray Tomography Technique Development 	Nik Chawla Arizona State University

12:10-12:25	Questions/Discussion	
12:25-12:30	BREAK	
12:30-2:00	LUNCH BREAK (Box lunch)	
2:00-2:40	Progress at Columbia University <ul style="list-style-type: none"> ➤ Nonlocal Vector Calculus for Peridynamics ➤ Asymptotically Compatible Discretization ➤ Robust Nonlocal Gradient/Stress Recovery 	Qiang Du Columbia University
2:40-2:55	Discussion	
2:55-3:00	BREAK	
3:00-3:40	Progress at University of Texas- Austin <ul style="list-style-type: none"> ➤ Finite-deformation Constitutive Modeling ➤ Higher-order Discretization ➤ Advection-diffusion 	John Foster The University of Texas at Austin
3:40-3:55	Discussion	
3:55-4:00	BREAK	
4:30-5:00	Discussion/Adjourn	
	MEETING ADJOURNED FOR THE DAY	

Agenda Day 2 Thursday – August 18, 2016		
Time	Title	Speaker
8:10-8:30	Registration	
8:30-8:45	Composite Performance Prognosis for Advanced Aerospace Applications via Microstructure-sensitive Response Characterization and Modeling	Craig Przybyla AFRL
9:00-9:20	Progress/Plans at University of Arizona	Erdogan Madenci University of Arizona
9:20-9:30	Questions/Discussion	
9:30-9:35	BREAK	
9:35-9:55	Progress/Plans at University of Nebraska	Florin Bobaru University of Nebraska-Lincoln
9:55-10:05	Questions/Discussion	
10:05-10:10	BREAK	
10:10-10:30	Progress/Plans at Arizona State University	Nik Chawla Arizona State University
10:30-10:40	Questions/Discussion	
10:40-10:45	BREAK	
10:45-11:05	Progress/Plans at Columbia University	Qiang Du Columbia University
11:05-11:15	Discussion	
11:15-11:20	BREAK	
11:20-11:40	Progress/Plans at University of Texas- Austin	John Foster The University of Texas at Austin
11:40-11:50	Discussion	
11:50-11:55	BREAK	
11:55-12:55	Wrap up/Feedback	James Fillerup / Ali Sayir AFOSR
	MEETING ADJOURN	