

**Center of Excellence for Integrated Materials Modeling (CEIMM)
Annual Review Meeting**

May 8th - 9th, 2017

**Tec^Edge, 5000 Springfield Street, Suite 100
Dayton, Ohio 45431**

DAY 1: May 8th, 2017

8:00 - 8:15 AM	Welcome and CEIMM Overview	<i>S. Ghosh</i> (CEIMM Director)
8:15- 8:25 AM	Preliminary Comments	<i>C. Woodward, C. Przybyla</i> (RX Program Monitors)
8:25 - 8:30 AM	Preliminary Comments	<i>A. Sayir</i> (AFOSR PM)

METALS FOCUS

Chair: C. Woodward

8:30 - 9:45 AM	Material Characterization and Analysis	Pollock Group
8:30 - 9:20 AM	Perspectives on Linking 3D Data to Property Models	<i>T. Pollock</i>
	Acquisition and Analysis of 3D Data by Tri Beam Tomography	<i>W. Lenthe</i>
9:20 - 9:45 AM	<u>Discussion:</u> Challenges and Future Needs for 3D Data	<i>T. Pollock; M. Uchic; M. Groeber</i>
9:45 - 10:00 AM	Coffee Break	

Chair: M. Groeber

10:00 - 11:15 AM	Micro-Scale Experiments for Model Validation	Hemker Group
10:00 - 10:50 AM	Perspectives	<i>K. Hemker</i>
	Underpinning and Benchmarking Multi-scale Models at Appropriate Scales with Micro-tensile Experiments	<i>D. Eastman</i>
10:50 - 11:15 AM	Discussion: Micro-scale Experiments: An Overview	<i>K. Hemker; M. Uchic; P. Shade</i>

Chair: P. Shade

11:15 - 12:00 PM	Micromechanics and Multi-Scale Modeling of Superalloys	Ghosh Group
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11:15 - 12:00 PM	Perspectives 3D Generation of γ - γ' Microstructure	<i>S. Ghosh</i> <i>M. Pinz; G. Weber</i>
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12:00 - 1:00 PM	Lunch	
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Chair: P. Shade

1:00 - 2:15 PM	Micromechanics and Multi-Scale Modeling of Superalloys (Continued)	Ghosh Group
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1:00 - 1:50 PM	Multi-scale Modeling of Ni-based Superalloys	<i>G. Weber; A. Bagri</i>
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1:50 - 2:15 PM	Micromechanics and Multi-Scale Modeling	<i>S. Ghosh; C. Woodward;</i> <i>M. Uchic; M. Groeber</i>
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Chair: G. Jefferson

2:15 - 3:30 PM	Uncertainty Quantification Methods with Experimental Data and Computational Models	Graham-Brady Group
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2:15 - 3:05 PM	Perspective Quantification of Error and Uncertainty in Materials Characterization	<i>L. Graham-Brady</i> <i>N. Wade</i>
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3:05 - 3:30 PM	<u>Discussion</u> : Uncertainty Quantification for Material Characterization	<i>L. Graham-Brady;</i> <i>A. Criner; M. Uchic</i>
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METALS & POLYMERS FOCUS

Chair: M. Uchic

3:30 - 4:45 PM	Discrete Dislocation Dynamics to Discrete Polymer Chain-Network Dynamics Modeling	El-Awady Group
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3:30 - 4:20 PM	Perspective Free-volume Evolution to Plastic Deformation in Cross-linked Polymers from Coarse-grained Simulations	<i>J. El-Awady</i> <i>A. Aramoon</i>
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4:20-4:45PM	<u>Discussion</u> : Coarse Grained Modeling	<i>J. El-Awady; C. Woodward</i>
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6:00 PM	Dinner on your own	
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DAY 2: May 9th, 2017

COMPOSITES FOCUS

Chair: C. Przybyla

8:00 – 9:15 AM	Imaging, Quantitative Characterization and Experiments for Model Calibration	Sottos Group
8:00 – 8:50 AM	Perspectives Multiscale Characterization of Transverse Crack Formation in Composites	<i>N. Sottos</i> <i>C. Montgomery</i>
8:50 – 9:15 AM	<u>Discussion</u> : Microscale Experiment on Composites for Calibration and Validation	<i>N. Sottos; D. Nepal;</i> <i>G. Jefferson</i>

Chair: A. Criner

9:15 – 10:30 AM	Micromechanics & Multi-Scale Modeling	Geubelle Group
9:15 – 10:05 AM	Perspective IGFEM Modeling and Sensitivity Analysis of Transverse Failure in Carbon-epoxy Composites	<i>P. Geubelle</i> <i>D. Brandyberry</i>
	Sensitivity of Transverse Failure with Respect to Distribution of Material and Shape Parameters	<i>P. Geubelle</i>
10:05 – 10:30 AM	<u>Discussion</u> : Multi-scale Modeling of PMCs	<i>P. Geubelle; C. Przybyla;</i> <i>G. Jefferson; D. Nepal</i>

10:30 – 10:45 AM **Coffee Break**

Chair: C. Woodward

10:45 – 12:00 PM	Micromechanics and Multi-Scale Modeling	Ghosh Group
10:45 – 11:35 PM	Perspectives PM Composites: RVE and boundary Conditions	<i>S. Ghosh</i> <i>D. Kubair</i>
11:35 – 12:00 PM	<u>Discussion</u> : Failure on Polymer Matrix Composites	<i>S. Ghosh; C. Przybyla;</i> <i>G. Jefferson</i>
12:00 – 12:20 PM	JHU-Software Hub: An Experiment in Controlled Dissemination	S. Ghosh, A. Aramoon

12:20 – 1:30 PM **Lunch**

Chair: S. Ghosh

1:30 – 2:30 PM	Comments from the Advisory Board	GE Global Research LANL NASA Pratt & Whitney Sandia
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Chair: A. Sayir

2:30 - 3:30 PM	Discussion on Future Directions, Progress and Integrations	AFRL Program Monitors AFOSR Program Manager
3:30 PM	Concluding Remarks	<i>T. Bunning</i> Chief Scientist