**PRISMS Center**

**Annual Workshop Agenda**

**August 18-19, 2016**

**Palmer Commons Forum Hall**

**University of Michigan**

**Preliminary Program - Version 1**

**Thursday August 18**

**8:00am Registration**

**8:30am** **Welcome and PRISMS Center Overview**

John Allison

***Predicting Microstructural Evolution***

**8:50am** **Quantitative characterization of precipitate evolution in Mg-RE alloys**

Ellen Solomon, Vicente Araullo-Peters and Emmanuelle Marquis

**10:00am** **Application of CASM to Mg-Nd, Mg-Y and Mg-Nd-Y system**

Anirudh Natarajan, Brian Puchala, Anton Van der Ven

**10:40am Break**

**11:00am** **Predicting precipitate evolution in Mg-Nd using PRISMS-PF**

Steve DeWitt, Shiva Rudruraju, Katsuyo Thornton and John Allison

**11:40am** **Precipitate Evolution Use Case**

Brian Puchala

**12:00-1:00 Lunch**

***Predicting Tensile Behavior***

**1:00pm** **Simulating Twin Deformation in Mg Alloys**

Guest Speaker: Irene Beyerlein, LANL

**1:45pm** **Quantifying local deformation in Mg alloys**

Zhe Chen and Sam Daly

**2:20pm Using PRISMS-CPFEA to model microstructural influences on tensile Deformation in HCP Metals**

Sriram Ganesan, Shiva Rudruraju and Veera Sundararaghavan

**3:00-3:15 Break**

**3:15pm** **Modeling dislocation interactions with Interfaces,**

Guest Speaker: Michael Demkowicz, Texas A&M University

**4:00pm Dislocation interactions with precipitates**

Amit Misra, Zhihua Huang and John Allison

**4:40pm PRISMS Tensile Use Case**

Veera Sundararaghavan

**5-7pm Poster session and reception with hors d’oeuvres**

**Wednesday Sept 2 Beyster 1640**

***Predicting Fatigue Behavior***

**9:00am** **Modeling fatigue in metals**

David McDowell, Georgia Institute of Technology

**9:45am** **Quantifying fatigue characteristics in Mg alloys**

Jake Adams, John Allison, Wayne Jones

**10:25am** **Using PRISMS Tools to** **model Fatigue Crack Propagation in Mg Alloys**

Shardul Panwar and Veera Sundararaghavan

**11:05-11:20am Break**

**11:20am Modeling low cycle fatigue in Mg alloys**

Christian Heinrich, John Allison and Veera Sundararaghavan

**12:00pm PRISMS Fatigue Use Case Group**

Wayne Jones

**12:20-1:20 Lunch - Pierpont Commons**

***Integration, Collaboration and Information Sharing***

**1:30pm** **Materials Commons**

Glenn Tarcea, Brian Puchala and John Allison

***Advanced Computational Methods for Predicting Mechanisms of Tensile Deformation and Microstructural Evolution***

**2:15pm** **Application of** **real space density functional theory to dislocation studies in Al and Mg**

Sambit Das, Phani Motomori, Shiva Rudruraju and Vikram Gavini

**2:45pm** **Mechano-chemical models of twinning deformation**

Koki Sugiyama, Shiva Rudruraju, Anton Van der Ven and Krishna Garikipati

**3:15-3:30pm Break**

**3:30pm** **Evaluation of a phase-field crystal model via grain-boundary energies and structures**

Jason Luce and Katsuyo Thornton

**4:00pm Incorporating Strongly Anisotropic Interfacial Energy and Nucleation into PRISMS-PF**

Beck Andrews, Jason Luce, Shiva Rudruraju, Steve DeWitt and Katsuyo Thornton

**4:30pm** **Concluding Remarks**

John Allison