**PRISMS Center**

**Annual Workshop Agenda**

**August 18-19, 2016**

**Palmer Commons Forum Hall**

**University of Michigan**

**Final Program**

**NOTE: Times include discussion times. All speakers should allow at least 10 minutes for Q+A at the end of their talks!**

**Thursday August 18**

**8:00am Registration**

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

John Allison

***Predicting Tensile Behavior, Part I***

**9:00pm** **Effect of plastic anisotropy on twin/grain boundary interactions in Mg alloys**

Guest Speaker: Irene Beyerlein, LANL

**9:40pm Using PRISMS-CPFEA to model microstructural influences on tensile Deformation in HCP Metals**

Sriram Ganesan, Shiva Rudruraju and Veera Sundararaghavan

***10:20-10:40 Break***

**10:40am** **Quantifying local deformation in Mg alloys**

Zhe Chen and Sam Daly

**11:20am** **TEM observations of twinning and dislocation mechanisms in Mg**

Guest Speaker: Kevin Hemker, Johns Hopkins University

***12:00-1:30 Lunch (Provided)***

***Predicting Tensile Behavior, Part II***

**1:30pm Solute strengthening of twinning dislocations in Mg alloys**

Guest Speaker: Maryam Ghazisaeidi, Ohio State University

**2:10pm** **Application of** **real space density functional theory to dislocation studies in Al and Mg**

Sambit Das, Phani Motamarri, Shiva Rudruraju and Vikram Gavini

# 2:50pm Towards dislocation-based models of general interfaces in crystals

Guest Speaker: Michael Demkowicz, Texas A&M University

***3:30-3:50 Break***

**3:50pm Mechano-chemical models of twinning deformation**

Greg Teichart,Koki Sagiyama, Shiva Rudruraju, Anton Van der Ven and Krishna Garikipati

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

**4:30pm** **Materials Commons**

Glenn Tarcea, Brian Puchala, Tracy Berman, Margaret Hedstrom, Emmanuelle Marquis, H. V. Jagadish and John Allison

***5:30-8pm Poster session and reception with hors d’oeuvres***

**Friday August 19**

**Palmer Commons, Forum Hall**

***Predicting Fatigue and Fracture Behavior***

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

Guest Speaker: David McDowell, Georgia Institute of Technology

**9:40am Quantifying fatigue characteristics in Mg alloys**

Jake Adams, John Allison, Wayne Jones

**10:20-10:40am Break**

**10:40am** **The PRISMS Computational Framework for simulating fatigue behavior in Mg alloys**

Christian Heinrich, Shardul Panwar and Veera Sundararaghavan

**11:20am** **The Sandia Fracture Challenge**

Guest Speaker: Brad Boyce, Sandia National Laboratory

**12:00-1:15 Lunch (Provided)**

***Predicting Microstructural Evolution***

**1:15pm** **Quantitative characterization of precipitate evolution in Mg-RE alloys**

Ellen Solomon, Vicente Araullo-Peters and Emmanuelle Marquis

**1:55pm** **Application of CASM to Mg-Nd, Mg-Y and Mg-Nd-Y system**

Anirudh Natarajan, Brian Puchala, Anton Van der Ven

**2:35pm** **Predicting precipitate evolution in Mg-Nd using PRISMS-PF**

Steve DeWitt, Shiva Rudruraju, Katsuyo Thornton and John Allison

***3:15-3:35pm Break***

**3:35pm Evaluation of a phase-field crystal model via grain-boundary energies and structures**

Jason Luce and Katsuyo Thornton

**4:15pm** **Incorporating strongly anisotropic interfacial energy and nucleation into PRISMS-PF**

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

**4:45pm** **Concluding Remarks**