2022 Workshop on Methods for 3D Microstructure Studies

August 17-19, 2022

Agenda

Day 1, Wednesday, August 17, 2022

08:45 – 09:00	**Greg Rohrer**, Carnegie Mellon University Introductions and overview of the workshop
09:00 – 10:00	**Amanda Krause**, Carnegie Mellon University, Observations of grain growth with 4D x-ray diffraction microscopy **Jerard Gordon**, University of Michigan, Evaluating grain scale deformation behaviors in complex concentrated alloys via synchrotron high energy diffraction microscopy
10:00 – 10:30	**Sean Donegan**, Air Force Research Laboratory Overview of Dream3D
10:30 – 10:45	Break
10:45 – 11:30	**Krzysztof Stopka**, Purdue, Modeling fatigue using digital microstructures: Applications of DREAM3D
11:30 – 12:15	**Tony Rollett**, Carnegie Mellon University, Microscale Structure - to - Properties Challenge with the MIDAS Data Set.
12:15 – 1:30	Lunch Break (boxed lunches provided)
1:00 – 1:30	**Betsy Clark**, Carnegie Mellon University Tour of Microscopy Lab (optional)
1:30 – 2:45	**Sean Donegan,** Air Force Research Laboratory Analysis of serial section data using DREAM3D
2:45 – 4:00	**Sean Donegan**, Air Force Research Laboratory Meshing & Smoothing microstructures using DREAM3D
4:00 – 4:15	Break / Workshop Picture
4:15 – 5:00	**Marc DeGraef**, Carnegie Mellon University EMsoft Overview
5:15 – 7:00	**All** Refreshments provided on the MSE Deck

Note for day 1. For those planning to participate in the tutorial for plugin development on Day 3, it is recommended that you set up the development environment on your computer in advance. A representative of BlueQuartz Software will be available throughout Day 1 to assist with this. If you prefer to begin this prior to the workshop, contact Mike Jackson at mike.jackson@bluequartz.net.

Day 2, Thursday, August 18, 2022

9:00 – 10:00	**Sean Donegan**, Air Force Research Laboratory
	Generating 3D microstructures with DREAM3D, part 1
10:00 – 10:15	Break
10:15 – 11:15	**Sean Donegan**, Air Force Research Laboratory
	Generating 3D microstructures with DREAM3D, part 2
11:15 – 12:00	**Greg Rohrer**
	Grain Boundary Crystallography and Grain Boundary Properties
12:00 – 1:30	Lunch Break (boxed lunches provided)
1:30 – 2:15	**Long-Qing Chen**, Penn State, An efficient software tool for computing effective properties of 3D microstructures
2:15 – 3:00	**Victoria M Miller**, University of Florida, Capturing crystallographic texture and its evolution during processing
3:00 – 3:15	Break
3:15 – 5:00	**Sean Donegan and others**, Air Force Research Laboratory
	Hands on help session: time to practice running Dream3D, problem solving, time to work on your own 3D data sets, with experts available for assistance.
6:00 – 8:00	All Optional no-host dinner at the Porch

Day 3, Friday, August 19, 2022

9:00 – 10:30	**Mike Jackson**, BlueQuartz Software
	Translating Software Tools into Plug-ins for DREAM3D
10:30 – 10:45	Break
10:45 – 12:15	**Mike Jackson and other**, BlueQuartz Software
	Hands on help session

12:15: Adjourn