CHiMaD | Center for Hierarchical Materials Design

Agenda
Phase Field Methods Workshop
Friday, January 9, 2015

8:00 am **Registration & Breakfast**

8.30 am **Welcome**
Peter Voorhees (NU)

8:40 am **Creating Community Codes: Past Experiences & Future Suggestions**
James Belak (LLNL)

9:00 am **Discussion & Coffee**

Session 1: Current Codes & Capabilities

9.15 am **FiPy: A Finite Volume PDE Solver Using Python**
Jonathan Guyer & Daniel Wheeler (NIST)

9:35 am **Implementing Phase Field Models Using the MOOSE Framework**
Michael Tonks (INL)

9:55 am **PRISMS-PF: Massively Parallel Computational Framework for Phase Field Modeling**
Katsuyo Thornton & Siva Rudraraju (U-M)

10:15 am **Discussion & Coffee**

Session 2: Large Scale Computing

10:30 am **Scalable Libraries**
Barry Smith (ANL)

10:50 am **Scalable Solver Algorithms**
Dmitry Karpeev (ANL)

11:10 am **Hardware for Large Scale Computing**
James Belak (LNNL)

11:40 am **Discussion on Deliverables & Lunch**

Session 3: Potential Focus Areas

12:40 pm **Identifying Benchmark Problems**
Olle Heinonen (ANL)

1:00 pm **What Physics Should be Included?**
James Warren (NIST)

1:20 pm **Industrial Interest & Needs – Experiences from Hero-m**
Joakim Odqvist (Hero-m)

Session 4: Discussion

1.40 pm **What should a mesoscale community code be capable of solving (immediate community needs)?**
Lead by James Warren (NIST)

2.30 pm **Coffee Break**

2.40 pm **How do we structure a code so that it is extendable both in terms of capabilities (near-future needs) and high-performance scalability?**
Lead by James Belak (LLNL)

3.30 pm **What community standard problems should we formulate for testing and benchmarking?**
Lead by Olle Heinonen (ANL)

4.20 pm **How do we organize and maintain a community repository, and who should do that?**
Lead by Dmitry Karpeev (ANL)

5.10 pm **Final Remarks**
Peter Voorhees (NU)

5:30 pm **Adjourn**