Multiscale/Multiphysics Session

- **Broad Discussion Points**

  - What do we mean by multiscale and multiphysics?

    - **Multiphysics**: Can occur via integration of various codes or integration of various equations/numerical techniques or both.

    - **Multiscale**: Spatial/temporal domains of varying resolution (e.g. AMR or adaptive time stepping)

  - Magma dynamics (magma/mantle convection) and subduction zone problems arose as potential focus areas.

  - Software engineering challenges exist in this area.

  - Using a common mesh across codes is a "typical" mechanism for code coupling.

  - Some feel a clearer argument needs to be made for the need to pursue multiscale/multiphysics.

  - Applications in other disciplines (e.g. integrated thermal/structural/optical modeling) provided some context for discussion along with examples in surface deformation (GeoFEST) and magnetospheric flow

  - "Homogenization" was raised as a technique for multiscale modeling during the report summary