

# TMS2016

145<sup>th</sup> Annual Meeting & Exhibition

FEBRUARY 14-18 DOWNTOWN NASHVILLE,  
TENNESSEE MUSIC CITY CENTER

Connecting the Global Minerals, Metals, and Materials Community.



## Mechanical Behavior at the Nanoscale III

This symposium focuses on materials that exhibit mechanical behavior and properties dominated by geometric and structural features at the nanometer scale. Research, development, and application of materials characterized by small volumes or reduced dimensionality—such as nanoparticles, nanowires, nanotubes, pillars, sheets, and thin films—are of interest, as are microscale and bulk specimens that are characterized by an underlying material structure of nanoscale feature length (i.e., nanocrystals, nanolaminates/multilayer thick films, and nanoporous foams). This symposium will cover observations of the mechanical behavior of nanoscale materials, through experiments and numerical simulations, as well as tools and techniques used to make those observations and develop a clearer understanding of the underlying physics and mechanics of material deformation.

### Topics for this symposium include:

- Unique mechanical behavior due to geometric (specimen) size effects
- Mechanical properties of elasticity, strength, plastic flow, fatigue, and fracture that are highly influenced by nanoscale geometric and structural features
- Nanoscale mechanical testing
- In-situ testing and characterization of nanoscale materials and structures
- Atomistic and nanoscale modeling and simulation of material behavior
- Development of micro- and macro-scale models of material behavior that incorporate nanomechanical deformation mechanisms
- Application of nanoscale materials in technology (e.g., MEMS/NEMS)

### Organizers include:

**Jonathan Zimmerman**, Sandia National Laboratories (USA)

**Daniel Gianola**, University of Pennsylvania (USA)

**Ting Zhu**, Georgia Institute of Technology (USA)

**Julia Greer**, California Institute of Technology (USA)

**Harold Park**, Boston University (USA)

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