



Call for Applications for the 2016 Sandia National Laboratories Nonlinear Mechanics and Dynamics (NOMAD) Research Institute

The 2016 Sandia National Laboratories Nonlinear Mechanics and Dynamics (NOMAD) Research Institute, hosted at the University of New Mexico, is **open to graduate students and early career researchers from the US and international communities**. The goal of this institute is to bring together participants with diverse technical backgrounds from around the world to work in small teams on projects germane to **interfacial mechanics, jointed structures, and other nonlinear mechanics/dynamics problems**. It is our hope that this institute will help form lasting collaborations and make significant progress towards solving several of the major challenges in the area of nonlinear mechanics and dynamics. Based on the success of the previous institutes, we are seeking 30 highly motivated researchers to participate in the 2016 institute.

The institute is scheduled to last for six weeks, from **June 20 through July 29, 2016**, in Albuquerque, NM. There are a limited number of student internships available through Sandia National Laboratories for selected US graduate students, which will include support for the institute as a part of the summer assignments. For all researchers, funds are potentially available through Sandia to cover some expenses associated with attending the institute. There is no registration fee or other fees for participating in the institute itself.

The steering committee, Matthew Brake (SNL), Pascal Reuss (Daimler), Christoph Schwingshackl (Imperial), and Matt Allen (Wisconsin), has selected eleven projects for this year's institute:

1. **Experimental assessment of jointed interface configurations**
2. **Measurement of the effects of the far-field structure on joint properties**
3. **Round robin of numerical techniques for nonlinear structural dynamic response**
4. **Interface reduction methods for substructuring**
5. **Random sampling strategy for robust contact parameter tuning**
6. **Extracting material responses from Kolsky bar tests via numerical simulations**
7. **Emergent homogenization techniques and effective dynamical properties**
8. **Designing brittle fracture specimens to investigate environmentally assisted crack growth**
9. **Additive manufacturing topology optimization competition**
10. **Nonlinear system identification for MEMS devices**
11. **Wireless sensor strategies for structural health monitoring**

To formally submit an application for participating in the institute, please email Matthew Brake (mrbrake@sandia.gov) a copy of your CV, a statement of your research interests, your project preference, and a statement of whether your home institution can provide funding for you to attend the institute or if you need funding. Applications are due by March 1, 2016. For more information or for details about the internships at Sandia, which are available to US citizens and that support this institute, contact Matthew Brake, or visit http://www.sandia.gov/careers/special_programs/nonlinear_mechanics_and_dynamics_summer_research_institute.html.