## Graduate Studies at the Institute for Shock Physics





Graduate students from a range of disciplines (Physics, Chemistry, Materials Science, Mechanical Engineering, and Geo/Planetary Science) have a unique opportunity to study the response of materials at extreme conditions with the internationally renowned scientists at Washington State University.

Working within their respective academic departments, graduate students conduct their PhD research in the Institute for Shock Physics (ISP), which provides tremendous learning and research opportunities through:

- Participation in innovative and multidisciplinary research
- Professional growth through independent thinking and hands-on work
- State-of-the-art experimental and computational facilities, including the Dynamic Compression Sector located at the Advanced Photon Source (Argonne, IL)
- Partnerships with exceptional faculty at other academic institutions (Caltech and Princeton)
- Access to the Department of Energy National Laboratories: <u>Lawrence Livermore</u>, <u>Los Alamos</u>, and <u>Sandia</u>

One of ISP's principal accomplishments is well-educated and rigorously trained scientists who have moved on to successful professional careers and become leaders in the field.

Scholarships and financial support available for outstanding students.

## Understanding Materials at Extreme Conditions

Shock wave experiments, using innovative measurement capabilities, allow researchers to examine condensed matter states at extreme compressions and temperatures. These experiments have been central to advances in fundamental science and modern technology. Examples include:

- High pressure and high temperature phenomena in meteorite impacts and in planetary interiors
- Space and National Security applications: including improved armor and understanding of detonations for safe and improved use of energetic materials
- Semiconductor research related to understanding the role of strains in layered devices used in electronics and optoelectronics
- Materials synthesis
- Remediation of contaminated soils



**Institute for Shock Physics** 

**Dynamic Compression Sector**