Ph.D. Student and/or Research Scientist with experimental and computational experience in fatigue and high temperature of metals fabricated by conventional and additive manufacturing methods (Starting Summer or Fall 2019)

Project Description:

The successful candidate will be engaged in experimental investigations and modeling of thermal history and fatigue and high temperature damage and failure mechanisms in aluminum, titanium, and nickel-based alloys fabricated by both conventional and additive manufacturing methods. The candidate should have knowledge of materials science (fatigue, thermo-mechanical fatigue, and creep, fracture mechanics and life predictions, materials processing and microstructures, dislocation mechanisms, stress analysis), experimental engineering experience (specimen preparation using CNC machining, mechanical testing, metallography and fractography – scanning and transmission electron microscopy are desired), and analytical and computational modeling skills (knowledge of MATLAB and ANSYS, and crystal plasticity modeling are desired). Responsibilities will include design of experiments for fatigue, thermo-mechanical fatigue, and creep investigations, implementation of novel testing and analysis schemes, and development of computational modeling tools. The researcher should be prepared to work in a fast-paced environment, which requires regular reports and presentations to research sponsors. Written and oral communication skills are essential requirements.