Research and Education in Reacting Computational Fluid Dynamics:
Thoughts from a National Lab Perspective

Ryan Bond, Ph.D.

Date: Friday, May 9, 2014
Time: 2:00 – 3:00
Place: 755 Baldwin Hall

ABSTRACT
In his talk, Dr. Ryan Bond will cover two technical topics. The first is code verification and its role in accurate numerical simulation of reacting, turbulent, compressible fluid mechanics. The second is reaction rate chemistry from a kinetic theory basis. Dr. Bond will also cover his other research activities, the computational simulation capabilities produced by the department that he manages, and his thoughts on challenges and opportunities in university research as applicable to national interests in aerospace. Finally, Dr. Bond will draw on his experience as a recruiter and hiring manager to discuss his perspectives on university graduate education.

BIOGRAPHICAL SKETCH
Dr. Ryan Bond grew up in Tullahoma, Tennessee and completed his undergraduate education at Mississippi State University, where he majored in Aerospace Engineering and Mathematics. After receiving his bachelor’s degrees he attended NC State University and received an MS and PhD in Aerospace Engineering. Dr. Bond's dissertation topic was computational modeling of flow through the combustor of a rocket-based, combined-cycle engine, funded by NASA Glenn Research Center. In 2003, Dr. Bond began working at Sandia National Labs as a Senior Member of the Technical Staff in the Aerosciences Department, where he continued work in computation of reacting flow. In 2010, Dr. Bond was promoted to Principal Member of the Technical Staff, and later that same year, he was promoted to manager of the Computational Thermal and Fluid Mechanics Department.