



**TERRENCE BROG, PhD**

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## Plasma, Physics, Fusion, and Creating a Star on Earth

*The United States has a network of 17 national laboratories* by which the government ensures America's security and prosperity by addressing its energy, environmental and nuclear needs. These laboratories, operated by contractors for the U.S. Department of Energy (DOE), are spread across the country. But scientists in these labs must work together in a multidisciplinary approach to translate basic science to innovation to solve some of the nation's most pressing energy challenges. One such Laboratory is the Princeton Plasma Physics Laboratory (PPPL), one of the few laboratories in the DOE system that is single-focus. PPPL, one of 10 labs operated for the DOE Office of Science, is devoted to basic research in fusion energy and plasma science, with core competencies in magnetic confinement of fusion plasmas; plasma theory and computational physics; design and operation of experimental fusion devices; computer engineering; and application of plasma to industrial technologies. It also operates a major user facility available to scientists worldwide, the National Spherical Torus Experiment-Upgrade. A description of fusion, its benefits and challenges are presented.

**Friday, April 21, 2017 - 3:10 pm**

Franklin Miller, Jr. Lecture Hall  
(Hayes Hall 109)

*Reception to follow.*