

## **Containing a Star on Earth: PPPL and the promise of fusion energy**

Nuclear fusion, the process that powers the sun and stars, is a promising solution to the global energy challenge. It is a carbon-free source of energy and its fuel is present in large enough quantities on Earth to meet the world's energy demands for thousands of years. This talk will provide an overview of research at the Princeton Plasma Physics Laboratory (PPPL), including the use of magnetic fields to confine a hot star on earth for the purpose of developing nuclear fusion energy reactors.

### **Walter Guttenfelder Bio (<http://w3.pppl.gov/~wgutten/>):**

Originally from Des Moines, Iowa, Dr. Walter Guttenfelder received his undergraduate degree in electrical engineering from Milwaukee School of Engineering, having followed his childhood love of electronics. After graduating he spent two years researching the effects of turbulence in flames at Purdue University. Upon discovering his interest in plasma physics and fusion energy research, Walter moved to the University of Wisconsin-Madison, where he completed his Ph.D. Before eventually moving to Princeton, he and his wife lived 2.5 years in the United Kingdom where Walter completed a post-doctoral research position at the University of Warwick. For the past six years he has been working at Princeton Plasma Physics Laboratory (PPPL) studying the role of plasma turbulence in fusion reactors (analogous to turbulence in the earth's atmosphere) through the use of experimental measurements and supercomputer simulations.