

Fundamental and Applied Biofuels Research at the Naval Postgraduate School

28 August 2013 – Glasgow Hall, Rm 109, 1200

With Guest Lecturers **Dr. Knox Millsaps & Dr. Chris Brophy**

Department of Mechanical & Aerospace Engineering, Naval Postgraduate School

Dr. Knox Millsaps

Professor, Chairman, & Director, *Marine Propulsion Laboratory*

Dr. Chris Brophy

Associate Professor & Director, *Rocket Propulsion & Combustion Laboratory*

This talk will provide a broad overview of the history and development of synthetic and bio-derived liquid fuels, their potential uses in naval ship and aircraft, as well as a survey of some of the research that has been conducted by NPS faculty and thesis students on biofuels and advanced energy systems over the past 3 years, such as:

- Programs to characterize the fundamental combustion properties of biofuels and biofuel blends
- Results from studies of the difference in laminar/turbulent flame speed, ignition delay, and reaction kinetics
- The use of biofuels in high speed Diesel engines, including differences in performance
- Advanced engine concepts, such as rotating detonation engines (RDE)

Dr. Millsaps Abridged Biography:

Dr. Millsaps is Professor and Chairman of the Mechanical and Aerospace Department at NPS. He teaches and conducts research in thermal fluid systems and energy and power systems, as well as turbomachinery aerodynamics, heat-transfer, and rotordynamics. He received a Ph.D. from MIT in Aerospace Engineering in 1992.

Dr. Brophy Abridged Biography:

Dr. Brophy is currently an Associate Professor in the Mechanical and Aerospace Department at Naval Postgraduate School. He is the Director of the Rocket Propulsion and Combustion Laboratory at NPS. Professor Brophy is an expert in high speed flows and rocket propulsion and has worked extensively with industry and other universities supporting the Office of Naval Research and DARPA programs in Combustion Sciences. Dr. Brophy received his Ph.D. from the University of Alabama, Huntsville.

