## **CHEMICAL, BIOLOGICAL & MATERIALS ENGINEERING**

100 E. Boyd, Sarkeys Energy Center, T-335 405-325-5811 The University of Oklahoma Norman, Oklahoma 2011 – 2012 Seminar Series

## DR. JEFFREY L. WHITE

PROFESSOR OF CHEMISTRY DEPARTMENT OF CHEMISTRY OKLAHOMA STATE UNIVERSITY STILLWATER, OKLAHOMA

Will present a seminar on

## "METHANOL-TO-HYDROCARBON CHEMISTRY: HOW THE CARBON POOL (R)EVOLUTION INFLUENCED ALKANE C-H BOND ACTIVATION EXPERIMENTS"

During this seminar we will review some of our earlier work related to long-standing controversies surrounding catalytic conversion of methanol into hydrocarbons over solid acids. Experimental approaches developed during that work allowed us to discover, for the first time, the structure of the "hydrocarbon pool" co-catalysts that are required for overall methanol conversion. Our current work involves fundamental questions about how alkanes begin their catalytic cycle in solid acid catalysts. Application of the in-situ approach we developed for the methanol catalysis to alkane C-H bond activation work revealed, for the first time, alkane reactivity in zeolites at temperatures below ambient. We will discuss current ideas on the mechanisms of alkane initiation and reactivity in solid acids, with specific emphasis on isobutane chemistry.

THURSDAY, APRIL 19, 2012 COOKIES AND COFFEE -- 2:45 P.M. SEMINAR -- 3:00 P.M. SARKEYS ENERGY CENTER, ROOM M-204

THIS IS A REQUIRED SEMINAR FOR CHE 5971

Accommodations on the basis of disability are available by contacting the office before the event.