

# WINTER 2005 SEMINAR SERIES

## F21C BIOPROCESSING & BIOSENSING CENTER

• DIVISION OF FOOD SYSTEMS & BIOENGINEERING •

### PRESENTER

**Tsung Min Kuo, PhD**, Research Chemist Microbial Genomics & Bioprocessing Research Unit, National Center for Agricultural Utilization Research, USDA-ARS, Peoria, IL 61604

### TITLE

**Microbial Systems for Utilization of Plant Lipids and Glycerol**

### ABSTRACT

Inventing new uses of agricultural commodities for improved U.S. economy is a mission undertaken by the National Center for Agricultural Utilization Research (NCAUR), USDA-ARS in Peoria, IL. Within the scope of developing biomaterials and processing technology from surplus vegetable oils especially soybean oil, scientists have been investigating effective microbial processes for producing value-added products from the oils and their component fatty acids. The original aim was to find microbial strains that could specifically produce ricinoleic acid, an important industrial hydroxy fatty acid, but subsequent studies led to the production of other new bioproducts, including various oxygenated fatty acids and fatty amides. Recently, in response to the new National Energy Policy calling for the production of biodiesel fuel from renewable resources, we have begun to investigate glycerol utilization in search of new microbial processes from sources including the world renowned ARS Microbial Culture Collection and the genomic sequence database available at NCAUR. This presentation will describe an overview of research progress on fatty acid bioconversion and discuss sources of microbial strains and challenges to develop scale-up processes for the production of new bioproducts for testing their potential industrial applications.

### DATE • TIME • LOCATION

**Tuesday, April 12, 4:00pm**  
**Ag Eng Bldg 105 • Refreshments**