PURDUE UNIVERSITY | Environmental and Ecological Engineering
COLLEGE OF ENGINEERING

EEE Research Seminar

Tuesday, October 22, 2019 at 10:30 AM

POTTER HALL, Room 234 (Fu Room)

Dr. Robert Anex, Professor
Biological Systems Engineering
Wisconsin Energy
Institute & Energy Analysis and Policy
Program
University of Wisconsin, Madison

Finding the right pathway in the biobased chemical forest

Abstract

The significant technical and economic challenges that have restricted the commercialization of biofuels have motived biofuel companies and federal agencies to turn their attention to higher-value biobased chemicals. The current chemicals industry presents a very wide range of potential targets for biobased chemical replacements. Biology also creates opportunities for wholly new chemicals with unique functionality. As we strive to develop a biobased chemicals industry, how should government policy and private firms target products and pathways that are most likely to provide both economic and environmental benefits? This is one of several questions addressed over the past 10 years in the NSF Engineering Center for Biorenewable Chemicals (CBiRC). This seminar will describe what we learned about how to choose biobased chemical R&D targets during the earliest stages of development. It will introduce the concept of a 'bio-privileged' molecule and describe the journey of discovery in one particularly interesting biochemical testbed. Several of the tools and rules we developed can (hopefully) be applied more generally in technology assessment and in choosing targets for technology development.

Bio

Dr. Robert Anex is a professor of Biological Systems Engineering at the University of Wisconsin – Madison. He is also on the executive committees of the Wisconsin Energy Institute and the Energy Analysis and Policy program. He is an expert in energy and environmental analysis of biofuel and biorenewable chemical production systems. He was lead of techno-economic analysis and life cycle assessment efforts in the Center for Biorenewable Chemicals (CBiRC), and current serves on the U.S. Federal Biomass R&D Technical Advisory Committee. Dr. Anex received his Ph.D. in Environmental Engineering from U.C. Davis in 1995.