



Northeastern University

College of Engineering

Please join us for a
Special Jointly-sponsored
Chemical Engineering & Chemistry and Chemical Biology Seminar

Wednesday, October 9, 2013
108 Snell Engineering
11:45 am – 1:00 pm

***“Chemical PLANTS and Production
Platforms: Propagation to Protein Expression”***



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ABSTRACT

The seminar will emphasize our work in applied plant biotechnology including transient gene expression in plants (supported by Monsanto), and propagation of plants which started with Weyerhaeuser using embryonic suspensor masses, and more recently the use of transcription factors to manipulate somatic embryogenesis in Arabidopsis and Cacao (the Chocolate Tree). The work with algae biofuels in collaboration with Joe Chappell, has resulted in extensive work on photobioreactor design, and the isolation of the hydrocarbon biosynthesis pathways from *Botryococcus braunii* which we are genetically engineering in to *Rhodobacter*. We can now produce C₃₀₊ triterpenes from CO₂, H₂, and O₂ (autotrophically) in genetically engineered *R. capsulatus*. *Rhodobacter* (a purple photosynthetic bacteria) has been an excellent platform for expressing functional membrane proteins, with a recent focus on Aquaporins.

BIOGRAPHY: Prof. Wayne Curtis is professor of chemical engineering at Pennsylvania State University (University Park, PA). He received his B.S. from the Penn State and his Ph.D. from Purdue University. His research interests are diverse and comprehensive and include the production of biofuels such as hydrocarbons and ethanol from algae and cellulose, developing a DNA delivery and transient expression system in plants for producing therapeutic proteins, producing functional membrane proteins in photosynthetic bacteria, and bioreactor and bioprocess development (see www.curtislab.org). He is also very involved in undergraduate education and has mentored over 200 undergraduates students in his research.

Refreshments will be served.