

Friday, Sept 28, 2007
1:40 PM – 2:30 PM
Room 126
Engineering & Architecture Building

All are invited to attend
Pizza will be served

Environmental Seminar Series

**Characterizing the Effects of Fermentative Byproducts on Ethanol
Producing Bacterial Species *T. ethanolicus* and *Clostridium thermocellum***

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Ethanol production is becoming increasingly important in the modern world as our traditional resources continue to deplete. The conversion of cellulosic materials (plant matter) to ethanol via bacterial metabolism is a promising technique, yet many details remain undiscovered. *Thermoanaerobacter ethanolicus* strains 39E and X514 are thermophilic anaerobes whose fermentative metabolism rapidly converts sugars into ethanol. *Clostridium thermocellum* has a similar lifestyle but ferments more complex sugars (dimer and polymers). The negative effects of ethanol buildup and high substrate concentration levels are well documented, yet the effects of the other two main fermentative byproducts, acetate and lactate, remain to be studied. The aim of this work is to characterize the effects of lactate and acetate on the growth and ethanol yield of 39E, by artificially administering high doses of them to growing cultures. This work should lead to a better understanding of potential benefits and pitfalls in industrial ethanol production via bacterial cultures.

**The CEE Department offers a Minor in Environmental Engineering, and a
MS in Environmental Engineering. For more information contact:
ceed@temple.edu, (215) 204-7814**