

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Systems Biology of Clostridium Acetobutylicum: Sugar Metabolism and TNT Reduction MARGARET HURLEY, CHRISTIAN SUND, MATTHEW SERVINSKY, US Army Research Laboratory — Rapid advancements in biotechnology are expected to impact multiple areas of interest to the Army, including decontamination, degradation of toxic chemicals and biofuels. This project is a joint experimental/computational effort to map out the metabolic pathways in Clostridium acetobutylicum, and use this information to develop a systems biology model of this system. This organism has been chosen specifically due to the fact that it has potential application to both biofuel production and nitroaromatic degradation. It is hoped that a systems biology model may provide key information to enhance both of these processes. Details will be presented of a first-generation model of central carbon metabolism in C. Acet., developed upon gene expression data accumulated from bacteria grown on different carbohydrate sources. Additional work will discuss the effect of TNT exposure and potential relevant enhancements of the model.

Margaret Hurley
US Army Research Laboratory

Date submitted: 13 Nov 2009

Electronic form version 1.4