

Biological and Environmental Engineering

First Annual

BEE Research Symposium

1st Presentation Session Riley Robb 125 10:00 – 11:30AM

- 10:00 ... *Ben Gray – Ahner Lab*
Cellulolytic enzyme expression in tobacco chloroplasts
- 10:15 ... *Matt Agler – Angenent Lab*
Undefined, mixed microbial cultures for production of butyric acid from corn fiber
- 10:30 ... *Rodrigo Labitot – Scott Lab*
Anaerobic degradability of complex materials
- 10:45 ... *Vineet Rakesh – Datta Lab*
Transport in deformable porous media: Applications to biomaterials processing
- 11:00 ... *John Connelly – Baeumner Lab*
Electrochemical microfluidic biosensors for the detection of enteric viruses from environmental waters
- 11:15 ... *Sarah Munro – Walker Lab*
The fermentation stoichiometry of *Thermotoga neapolitana* and effects of environmental parameters on biological hydrogen production

1st Poster Session Riley Robb 400 11:30AM – 1:00PM

Lunch Available, poster titles on next page

2nd Presentation Session Riley Robb 125 1:00 – 2:00PM

- 1:00 *Helen Dahlke – Soil and Water Lab*
Forecast of spatially distributed runoff dynamics in the Finger Lakes region using an interactive web tool and Python
- 1:15 *Maria Vicenta Valdivia – Soil and Water Lab*
The role of microbial processes in soil phosphorus dynamics
- 1:30 *Joanna Krzyspiak – March Lab*
Recreating in vivo epithelial behavior using stem cells in a microfluidic platform
- 1:45 *Thua Tran – Luo Lab*
Engineered DNA as nanomaterials

2nd Poster Session Riley Robb 400 2:00 – 3:00PM

Refreshments Available, poster titles on next page

Biological and Environmental Engineering

1st and 2nd POSTER SESSIONS (Presenter/Lab/Title)

Todd Anderson **Soil & Water Engineering**

Distributed denitrification from hydrologically sensitive areas in northeastern agricultural landscapes

Josephine Archibald **Soil & Water Engineering**

Polyphosphate accumulating organisms and biogeochemical hotspots

Veronica Morales **Soil & Water Engineering**

Impact of dissolved organic matter on colloid transport in unsaturated soils

Brian Buchanan **Soil & Water Engineering**

The role of roadside ditch networks in short-circuiting natural hydrologic pathways: implications for nonpoint source pollution transport

M. Ekrem Cakmak **Soil & Water Engineering**

Pore scale simulation of colloid transport

Junran Li **Soil & Water Engineering**

Denitrification and Nitrous Oxide (N₂O) emissions and hydrologic patterns across a temperate grassland-forest-alfalfa landscape

Rebecca Marjerison **Soil & Water Engineering**

Anaerobic digesters change the phosphorus leaching behavior of dairy manure

Tony Salvucci **Soil & Water Engineering**

The role of biofilms and curli in *Salmonella* transport through porous media

Asha Sharma **Soil & Water Engineering**

Using nanotechnology to identify and characterize hydrological flowpaths in agricultural landscapes

Eric White **Soil & Water Engineering**

Integrating a water balance into the soil and water assessment tool model

Zach Easton **Soil & Water Engineering**

Do water quality BMPs work? Combined monitoring and modeling hold the answer

Wei Zhang **Soil & Water Engineering**

Quantification of capillary force acting on colloids in a three-phase model system of partially saturated porous media

Amit Halder **Datta Lab**

A general framework for heat and mass transport in porous media with application to food processing

Ashish Dhall **Datta Lab**

Mathematical modeling of food processes

Vineet Rakesh **Datta Lab**

Transport process modeling in food and medicine

Katie Edwards **Baumner Lab**

Engineering liposomes for CD4+ T-cell detection

Peter Asiello **Baumner Lab**

Fabrication of a microfluidic device for mRNA amplification

John Connelly **Baumner Lab**

Human pathogenic *Cryptosporidium* species bioanalytical detection system with single oocyst limit of detection

Lauren Dugard **Baumner Lab**

Adhesive contact printing for PMMA and glass in biosensing microfluidic devices

Julie Leviter **Baumner Lab**

Creating DNA-gold nanoparticle conjugates for lateral flow assays

Sam Nugen **Baumner Lab**

Polymer biochips for nucleic acid electrochemical detection using liposomes

Alex Roth **Baumner Lab**

Modeling detection of *Cryptosporidium* using electrochemiluminescence

David Agyeman-Budu **Baumner Lab**

Surface characterization of Poly(methyl methacrylate) and Polystyrene for PEG grafting

Yang Wang **Baumner Lab**

Physical properties of PEG-liposomes and their application in cardiac diagnostics

Miriam Rosenbaum **Angegent Lab**

Studying defined microbial cultures in continuous flow microbial fuel cells

Arvind Venkataraman **Angegent Lab**

Pseudomonas Aeruginosa in a microbial fuel cell: A characterization of mutants

Jenny Pronto **ProDairy**

The Manure Management Program: Monitoring on-farm anaerobic digester performance in NYS following the ASERTTI protocol

Randy Clark **Aneshansley Lab**

Investigating whole root systems: Root quantification tools and techniques

Tiffany Gupton **Ahner Lab**

Characterization of phytochelatin synthase in *Thalassiosira Pseudonana*

Apollo Arquiza **Hunter Lab**

Modeling of the drying of astronaut cabin trash using a compartmentalized approach

Jong Bum Lee **Luo Lab**

A general approach to generating multifunctional nano-architectures from DNA-based ABC monomers

Young Hoon Roh **Luo Lab**

Self-assembly of DNA-lipid hybrid amphiphiles

Wenlong Cheng **Luo Lab**

Unconventional DNA-mediated route to plasmonic nanoparticle superlattices

Natt Kiatwuthinon **Luo Lab**

TBA

Liang Ding **Luo Lab**

Gold nanoparticles assembled into spherical networks by peptides

Nokyoung Park, Hisa Funabashi **Luo Lab**

A cell-free protein producing gel

Nokyoung Park **Luo Lab**

DNA hydrogel microdroplets formation and its applications as scaffolds for biomaterials"

Nokyoung Park, Mark Hartman **Luo Lab**

Multiplexed pathogen detection via a portable fixcycytometer