

Department of

Chemical and Environmental Engineering

2015—2016 Seminar Series

Friday, May 6, 2016

9:30-10:30am

Winston Chung Hall 205/206

Heather Trajano

Chemical and Biological Engineering

University of British Columbia



SUPERIOR PAPER PERFORMANCE THROUGH WASTE RECOVERY

The focus of the Trajano Research Lab is to develop process technology for the production of chemicals from forest biomass that complements existing forest industry operations. These developments will require fundamental knowledge to enable process scale-up and prove economic viability. These technologies will renew the forestry industry, create jobs in nearby rural communities, and contribute to the low-carbon economy transformation.

British Columbia's pulp mills are the economic heart of the province; in many communities the forestry industry is either the primary or secondary employer. The companies also support local infrastructure such as schools, community centres, and hospitals. Pulp is to paper as apples are to apple crisp: an essential ingredient but additional ingredients and skill are needed to make the final product. Just as a Granny Smith apple is different from a Gala apple, different trees produce pulp with different properties. British Columbia's pulp is the strongest in the world and commands a premium price in the global marketplace. In partnership with Canfor Pulp Products, Dr. Trajano is exploring how to recover polysaccharides from wood waste to make a green paper strength additive. Dr. Trajano will introduce fundamentals of pulp and paper production. The effects of temperature, time and solids loading on polysaccharide recovery from wood waste will be described. The effects of adsorption of model polysaccharides and polysaccharides from wood waste on paper properties will be presented.

Bio: Dr. Heather Trajano is an assistant professor in Chemical and Biological Engineering at the University of British Columbia. She is a faculty associate of the UBC Pulp and Paper Centre and a member of the UBC Forest Bio-Products Institute. Dr. Trajano earned her B.Sc. in Chemical Engineering-Cooperative Program with Distinction at the University of Alberta. She completed her Ph.D. at the University of California Riverside in 2012. Her Ph.D. work was part of the Bio-Energy Science Center, a U.S. Department of Energy Bioenergy Research Center. During her Ph.D., Dr. Trajano was invited to intern with KATZEN International Inc., a consulting company specializing in the improvement, development and application of biofuels and ethanol worldwide. Dr. Trajano joined UBC immediately after completing her Ph.D.

Dr. Trajano's work has been published in *Biofuels*, *Bioproducts and Biorefining*, *Bioresource Technology* and *Biotechnology for Biofuels*. During her PhD, she received numerous best paper awards including the Martin Keller Award for Excellence for Student Poster, University of Ottawa Green Technology Prize at the 58th Canadian Chemical Engineering Conference, and Best Student Presentation in Applied Science and Technology at the 30th Symposium on Biotechnology for Fuels and Chemicals. She was the recipient of the William R. Pierson Graduate Fellowship and a Natural Sciences and Engineering Research Council Post-Graduate Scholarship. UCR also awarded her the Outstanding Teaching Assistant Award.