



AMERICAN CHEMICAL SOCIETY KENTUCKY LAKE SECTION

SUBJECT: November 2011 Kentucky Lake Section Meeting

DATE: Thursday, November 17, 2011

PLACE: Fresh Market
2255 Eastwood St.
Paris, TN, 38242

SCHEDULE: 6:00 p.m. Dinner
7:00 p.m. Business Meeting/Awards
Officer Election Results
Speaker

PROGRAM: Awards Ceremony and Student Research Presentations

MENU: Choice of: Grilled chicken w/ veggie & potato or fries or rice, & salad
Grilled pork chop w/ veggie & potato or fries or rice, & salad
Pasta primavera w/ salad

PRICE: \$10.00 (Students \$5.00)

2012 Officer Election

The election of 2012 KLS-ACS officers will take place at the November meeting. Ballots containing candidates for Chair Elect & Councilor positions are contained with this announcement mailing. Only official ballots will be accepted. Ballots may be returned in person at the meeting or by mail to:

Brent Montgomery
10554 Latham Hwy 190
Palmersville, TN 38241

Awards Ceremony

The following awards will be given at the November meeting: Howard Hyuck High School Chemistry Teaching Award, Outstanding Student Award, Outstanding Professional Award, and our 50 Year Member Certificates

Student Research Presentations

Emily Worrell - Purification of Pollen Allergan Proteins

This work focuses on optimizing methods for isolation and purification of plant pollen proteins, which are known to induce allergic reactions in mammals. These proteins are typically glycosylated (have covalently bound sugar molecules), which are important in the immunological response. The glycans on isolated and purified pollen proteins will be thoroughly characterized via biochemical and mass spectrometric methods.

Lauren White and Bethany Aden – Wildlife Forensics

Research focuses on identifying biomarkers in DNA to determine the species of various animals, such as bear, turkey, and deer, to aide in wildlife investigations for the state of Tennessee.

Lee Elliott – Validating Dynamic IEF

Research focuses on developing and validating a new technique, Dynamic IEF. The focus of this research is to demonstrate that Dynamic IEF is capable of achieving the same peak capacity as Capillary IEF. To do this hemoglobin variants are being focused and visualized using fluorescence microscopy and eventually analyzed using LCMS and 2D-gels.

Paul Mott - Improving the Synthetic Method for Alpha-Sodium Glucoheptonate

Alpha-sodium glucoheptonate is a carboxylic acid salt that is industrially manufactured for use as a calcium chelant in mud drilling operations. The current synthetic method utilizes a method similar to the Kiliani-Fischer synthesis of aldoses. However, the synthetic method produces two diastereomers. Alpha is the desired diastereomer and has physical and chemical properties that make it much more valuable industrially than the beta isomer. This research focused on reducing beta production, and increasing alpha production by investigating the effect of changing the conditions of the method and trying to understand the mechanism by which the reaction proceeds. Initial findings have indicated that it is indeed possible to increase alpha production through the manipulation of solvent mixtures, the running time of the reaction and the temperature at which the reaction is run.