62nd ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM

The New York Chemistry Students' Association
Student Affiliate Committee – New York Section
American Chemical Society

Saturday, May 3rd, 2014 at St. John's University

8:00 am – 3:00 pm (breakfast, luncheon and award reception included)
Sign up as an attendee at http://www.newyorkacs.org/meetings/urs/urs.php

Keynote Speaker: Dr. Tina Iverson

Depts. of Pharmacology & Biochemistry, Vanderbilt University

Dr. Iverson earned her B.S. in Chemistry from St. John's University in 1995, where she did research with Dr. Diana Bartelt on the *Aspergillus nidulans* calmodulin-dependent multifunctional protein kinase. This early work on enzymes sparked her interest in how the three-dimensional positioning of the chemical functional groups of a protein influences activity. As a result, Dr. Iverson performed graduate studies in the laboratory of Doug Rees at the California Institute of Technology in Pasadena, CA. Here, she learned how to use X-ray crystallography as a tool to investigate enzymatic mechanisms, and focused on both soluble and integral membrane metalloproteins important for bioenergetic processes. Following doctoral studies, Dr. Iverson held two postdoctoral positions. In the first, she learned mechanisms of electrophysiology for the study of ion channels at Brandeis University. She then continued training in X-ray crystallography of bioenergetic membrane metalloenzymes at Imperial College, London. Since 2005, she has been in the Department of Pharmacology at Vanderbilt University where she is now an associate professor. Her research combines structural techniques with biophysical measurements to answer questions about molecular recognition in enzymes. These studies have helped to identify basic mechanisms of enzymatic function and are currently being used for bioengineering applications.

Keynote Address

Structure-facilitated bioengineering of antivirals and antibiotics to combat global health threats

Nature is the world's most venerable chemist, with bacteria, fungi, and plants all able to biosynthesize complex secondary metabolites that are difficult to replicate by organic synthesis (see, for example, **Fig. 1**). Many natural products have potent antimicrobial activity, which we hope to harvest for clinical use. Unfortunately, many of these natural products are also associated with undesirable pharmacological properties, such as organ toxicity. Chemical derivatization is a common method to alter the pharmacology of a compound and reduce side effects, however, most natural products are challenging to synthesize or derivatize in the laboratory due to limitations in chemical methods. Accordingly, improving methods of chemical synthesis could increase the arsenal of compounds that we use to treat life-threatening infections.

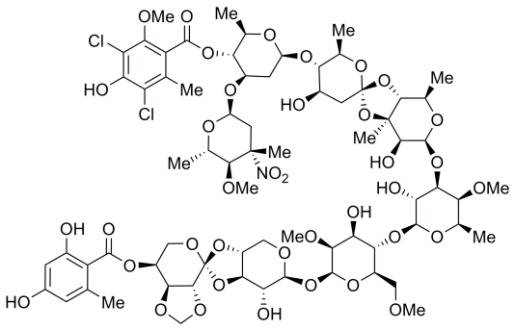

Fig. 1. Ziracin™. One example of a potential antibiotic where the natural complexity makes it prohibitively challenging to synthesize or chemically modify. Ziracin is a present target of interest in the laboratory.

SIGNFICANT DATES FOR 62nd URS

Deadline for Abstract Submission - **March 15, 2014** Abstract acceptance notification – March 26, 2014
Deadline for Symposium Advanced Registration – March 31, 2014

2014 Co-chair	2014 Co-chair	2014 Co-chair	2014 Co-chair
Dr. Joseph Serafin	**Dr. Yolanda Small**	**Dr. Paul Sideris**	**Dr. Sharon Lall-Ramnarine**
St. John's University	York College - CUNY	Queensborough CC - CUNY	Queensborough CC - CUNY
serafinj@stjohns.edu	ysmall@york.cuny.edu	psideris@qcc.cuny.edu	slallramnarine@qcc.cuny.edu

FREE Registration for student members of the National ACS, faculty mentors who register in advance and sponsors. For non-ACS members and guests, the registration is $35 in advance. All on-site registration is $45 for faculty, staff and guests. Checks for the registration fee should be made out to: "NY ACS URS" and sent to: Prof. Joseph Serafin, St. John's University, Department of Chemistry, 333 St. Albert Hall, Queens, NY 11439.