64th ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM

The Student Activities Committee of the New York Section of the American Chemical Society

Saturday, May 7th, 2016 at Lehman College

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. Scott D. Edmondson**
Merck and Co. Inc

Dr. Scott Edmondson got his start in Chemistry at Cornell University where he attained an A.B. in Chemistry in 1991. He obtained his Ph.D. in Chemistry in 1996 from The Ohio State University where he worked with renowned organic chemist Professor Leo Paquette on the application of anionic oxy-Cope rearrangements to the synthesis of terpene natural products. Next, he was an NIH postdoctoral fellow with Professor Samuel J. Danishefsky at Columbia University where he worked on alkaloid natural product total syntheses.

In 1998, Dr. Edmondson joined Merck and Co. where he has worked on a broad range of therapeutic areas including obesity, diabetes, urology, cardiovascular disease, and most recently infectious disease. He is a co-inventor of Januvia™, a DPP-4 inhibitor currently used to treat patients with type 2 diabetes and he led a team of scientists to discover a compound currently in Phase 3 clinical trials for the treatment of overactive bladder. Dr. Edmondson is a co-author of more than 40 publications, 4 book chapters, and 40 patents/patent applications. Currently, he is Director of Discovery Chemistry at Merck in Kenilworth, NJ.

Stories of Drug Discovery: Discovery of Januvia™ (Sitagliptin) For Diabetes And Vibegron For Overactive Bladder

Inhibition of dipeptidyl peptidase 4 (DPP-4) is now an established method for the treatment of type 2 diabetes. At Merck, the DPP-4 inhibitor program was initiated in 1999 and shortly thereafter the medicinal chemistry team began optimization of two distinct classes of inhibitors derived from either α-amino amides or β-amino amides. Importantly, early research from our laboratories illustrated that the selection of DPP-4 inhibitors for clinical development should take into account selectivity over related enzymes DPP8 and DPP9 which have been associated with toxicity in preclinical species. Optimization of the β-amino amide series led to the discovery of JANUVIA™ (sitagliptin), the first DPP-4 inhibitor approved for the treatment of type 2 diabetes.

β_3 Adrenergic receptor (AR) agonists were studied in the 1990's as a treatment for obesity, but development of early compounds was terminated due to a lack of sustained efficacy in humans for obesity. Subsequent preclinical studies suggested that β_3-AR agonists could be repurposed as a treatment for overactive bladder (OAB), and the recent approval of mirabegron confirmed that β_3-AR agonists are effective in humans for this indication. Although an early β_3-AR agonist from Merck (MK-0634) was successful in the clinic for the treatment of OAB, further development of the *compound* was halted due to toxicities in preclinical species. A back-up program identified vibegron (MK-4618) as a potential best-in-class β_3-AR agonist that addresses many of the liabilities associated with MK-0634 and is currently in Phase 3 clinical trials for the treatment of OAB.

This presentation will describe biology, medicinal chemistry, and clinical development of JANUVIA™ (sitagliptin) and vibegron.

SIGNFICANT DATES FOR 64th URS

Deadline for Abstract Submission - **March 18, 2016** Abstract acceptance notification – April 4, 2016
Deadline for Symposium Advanced Registration – April 8, 2016

2016 Co-chair	2016 Co-chair	2016 Co-chair
Dr. Ipsita A. Banerjee	**Dr. Meredith Foley**	**Dr. Paul Sideris**
Fordham University	St. John's University	Queensborough CC - CUNY
banerjee@fordham.edu	Foleym1@stjohns.edu	psideris@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 should be made out to: "NY ACS URS" and sent to: Prof. Paul Sideris, Queensborough Community College, Department of Chemistry, Science Building S-445, 222-05 56th Avenue, Bayside, NY 11364.