The CATALYSIS SOCIETY of Metropolitan New York
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Wednesday, May 16, 2012
Crowne Plaza Hotel, Somerset, New Jersey

Excellence in Catalysis Award Lecture

Greg Hughes
Merck & Co.
Enabling Technologies Lead
Process Chemistry Department

Leveraging Centers of Excellence in Catalysis and Analysis to Improve Pharmaceutical Manufacturing

In the past decade the Merck catalysis team has assembled world class capability for the use of high throughput experimentation in the screening and optimization of catalytic reactions. The group pioneered many aspects of the use of microplate technology and laboratory automation for modern catalysis research, introducing a number of the instruments and techniques that are now commonly used in the field today. More importantly, these capabilities have profoundly impacted the way that new pharmaceuticals are manufactured at Merck, with the development of a series of successful catalysis-based commercial manufacturing processes . The Merck catalysis team's expertise spans the traditional arena of catalysts for small molecule organic synthesis research, but also includes substantial expertise in the development and practical use of enzymatic catalysts. The team also draws on a depth of expertise in laboratory automation and high throughput analysis, both critically important to the successful practice of modern high throughput catalysis research.

Several examples will be presented to illustrate the important contributions of the group to the field of catalysis. One of the first clear-cut examples of the value of the high throughput catalysis approach at Merck was the development of highly efficient and affordable asymmetric hydrogenation routes for enantioselective synthesis of the drugs, sitagliptin, ezetimibe, laropiprant, taranabant, suvorexant and MK-1597. Most recently, the group has collaborated with Codexis on the directed evolution of improved enzymes to form highly optimized catalysts for commercial manufacturing processes, delivering greatly enhanced rate, specificity, and durability relative to the 'wild type' enzymes from which they were derived. This work recently culminated in the development of a substantially improved new enzymatic transaminase-based manufacturing process for sitagliptin which will also be presented.

Dinner is a buffet, and includes		Members	**$40**
a choice of beef, chicken or fish		Non-members	**$50**
Social Hour (Cash Bar)	6:00 PM	Students	**$25** (***Student Members = $10***)
Dinner	7:00 PM	Retired/Post-Doc/ Unemp.	**$40** (***Members = $30***)
Presentation	7:45 PM	Annual Dues	**$35 (Student = $15)**

Deadline for dinner reservations is **2:00 p.m. Monday, May 14, 2012**

Email Lucas Dorazio (lucasd.dorazio@basf.com) for reservations. With the exception of extreme circumstances, anyone not canceling reservations by the above deadline will be billed for dinner regardless of attendance.
