



Parasitology Pre-meeting Course:  
**Chemical Biology: A New Tool for Parasite Biology and Drug Development**  
 November 13, 2016; 7:30 a.m. – 4 p.m.  
 Atlanta Marriott Marquis, Atlanta, GA USA

In recent years there has been a revolution in high-throughput screening and molecular techniques that have led to the discovery of compounds with activity against parasites. These compounds drive biologic knowledge and drug development for parasites. The compounds, if their targets can be discovered, become molecular probes into biological processes of parasites and can be applied throughout lifecycles to elucidate target function. In addition, many collaborations between academic and industry groups have arisen, generating promising compounds for drug development.

This pre-meeting course will provide examples of processes that lead to the discovery of small molecules with antiparasite activity. The course will examine how targets of these compounds are identified, using chemical-genomic approaches and ligand-based approaches. The course will investigate how the molecular structure of compound targets are elucidated and how iterative co-crystallography can be used to improve the potency and general properties of compounds. The speakers will provide examples of kinetoplastid and helminthic drug discovery programs and how industry-academic drug discovery interactions occur. The program will explore how pharmacokinetics and safety interact with drug discovery programs to enhance success. Finally, the course will explore recent examples of antiparasitic resistance and how those resistance mechanisms are characterized.

**Course Organizers:**

*Kevin Esch, DVM, MPH, PhD, Dipl. ACVP, Senior Principal Scientist, Metabolism and Safety, Veterinary Medicine Research and Development, Zoetis, Kalamazoo, Michigan, USA*

*Wesley Van Voorhis, MD, PhD, Chief, Division of Allergy & Infectious Diseases, Director of the Center for Emerging and Reemerging Infectious Diseases, Department of Medicine, Departments of Microbiology and Global Health, University of Washington, Seattle, Washington, USA*

**AGENDA**

7:30 a.m.      Light Continental Breakfast

**Part 1: Chemical Biology Approaches: From Compound to Target**

8 a.m.      **Phenotypic Screens to Chemical-Genetic Approaches to Targets (Malaria)**  
*Elizabeth Winzeler, PhD, Professor, University of California San Diego, La Jolla, California, USA*

- 8:45 a.m.      **Ligand Approaches to Link Chemicals to Targets**  
*Sonja Ghidelli-Disse, PhD, Investigator, Cellzome-a GlaxoSmithKline Company, Heidelberg, Germany*
- 9:30 a.m.      **Structure Based Drug Development: Recent Examples of Successes in Malaria**  
*David Matthews, PhD, Chair of the Scientific Advisory Committee, Structure-guided Drug Discovery Consortium (SDDC), University of Toronto, Toronto, Canada and retired Head of Structural Biology, Computational Chemistry, and Bioinformatics - Pfizer, La Jolla, California, USA*

10:15 a.m.      *Coffee Break*

## **Part 2: Antiparasitic Drug Development**

- 10:30 a.m.      **Kinetoplastid Drug Development**  
*Frederick Buckner, MD, Professor, Allergy and Infectious Diseases, University of Washington, Seattle, Washington, USA*
- 11:15 a.m.      **Helminth Drug Discovery, Using Model Organisms to Screen for Anthelmintics**  
*Timothy G. Geary, PhD, Director, Institute of Parasitology, Tier I Canada Research Chair, McGill University, Quebec, Canada*
- Noon              Lunch (On your own)

## **Part 3: From Discovery to Product**

- 1:30 p.m.      **Artemisinin Resistance and Beyond in Malaria**  
*David Fidock, PhD, Professor of Microbiology and Immunology and of Medicine (Division of Infectious Diseases), Director of the Graduate Training Program in Microbiology, Immunology and Infection, Columbia University Medical Center, New York, New York, USA*
- 2:15 p.m.      **Industry-Academic Partnerships: The Tres Cantos/GSK story**  
*Elena Fernández Álvaro, PhD, DDW Operations Senior Scientist, Diseases of the Developing World, R&D Alternative Discovery & Development, GSK, Tres Cantos, Madrid, Spain*
- 3 p.m.              *Break*
- 3:15 p.m.      **Cutting Edge Safety-Preclinical *in vitro* Models**  
*John P. Wikswo, PhD, Director, Vanderbilt Institute for Integrative Biosystems Research and Education, Vanderbilt University, Nashville, Tennessee, USA*
- 4 p.m.              Course Adjourns