STUDY GROUP SESSION

Title: **MR in Drug Development**
Day: Tuesday, 25 April 2017
Time: 13:45 - 15:45
Room #: Rm 323ABC

Study Group Committee: Chair, Detlef Stiller, Ph.D., Ph.D.; Vice Chair, Alexandre J. Coimbra, Ph.D.; Secretary, Catherine D. G. Hines, Ph.D.; Trainee Representative, Georges Hankov, M.Sc.; Past Chair, Geoffrey J. M. Parker, Ph.D.
2017-2018 Incoming Committee : Secretary, Robert L. Janiczek, Ph.D.; Trainee Representative, Christina Y. Shu, Ph.D.

Overview: Medical and technical literatures abound with descriptions of novel imaging techniques with potential to facilitate drug research and development. Transitioning such techniques into effective drug development tools that regulatory agencies acknowledge as such, and that drug developers feel confident using in their drug development programs requires significant amounts of time and resources. Such endeavors may be more effectively undertaken as partnerships. The program for the MR in Drug Research Group Annual Meeting this year will highlight three such partnership programs: the IMI projects TRISTAN and QuIC-ConCePT, and the ^{129}Xe MRI Clinical Trials Consortium. Project TRISTAN (Translational Imaging in Drug Safety Assessment) is a public-private partnership supported by the European Innovative Medicines Initiative (IMI) and involving 21 organizations focused on assessment of liver toxicity, lung toxicity and the bio-distribution of biologics program. Project QuIC-ConCePT (Quantitative Imaging in Cancer: Connecting Cellular Processes with Therapy) is also supported by the European IMI, and dedicated to standardizing imaging techniques and was designed to qualify imaging biomarkers of tumor cell proliferation, apoptosis, and necrosis. Finally, the ^{129}Xe MRI Clinical Trials Consortium is an 8-member partnership established to provide a platform for both public- and private-sector trials by providing standardized ^{129}Xe MRI protocols across sites and an organization for efficient trial conduct, which will facilitate efforts at qualifying ^{129}Xe MRI as a drug development tool for lung diseases. The goal of these talks is to share different perspectives on challenges, how public-private partnerships work, how to approach these collaborations, and what it takes to demonstrate qualification of the drug development tool to regulatory agencies. Abstracts of each talk and respective speakers are presented below. Following this series of consortia-related talks, we will also present three student awards this year. Contenders have been pre-selected by the organizing committee for the relevance of their work to drug research. Each student will briefly present his/her work to the general audience, with an extended presentation over refreshments in the e-poster session, and the top three presentations selected by public acclaim will receive awards. Detailed program is depicted below.

Consortia Approach for Characterization & Qualification of MR-Based Imaging Biomarkers for Use in Drug Development

13:45	Introduction - Welcome & Business Meeting	Alexandre J. Coimbra, Ph.D. Genentech, Inc., USA
13:50	Translational Imaging in Drug Safety Assessment - TRISTAN: A Public Private Partnership to Validate MR Imaging Methods for their Efficient & Reliable use in Drug Safety Assessment	Gunnar Schütz, Ph.D. Bayer AG, Germany
14:10	IM[I] Project QuIC-ConCePT on Validation of Imaging Biomarkers in Oncology	John C. Waterton, Ph.D., F.R.S.C.(UK) University of Manchester, UK
14:30	^{129}Xe MRI Clinical Trials Consortium: A New Route for Efficacy Testing in the Lung	Jason C. Woods, Ph.D. Cincinnati Children's Hospital Medical Center, USA
14:50	Discussion Session	
15:00	Student Award Power-Pitches	
15:15	Poster Session, Refreshments & Award Polling	
15:35	Award Presentation & Conclusion	Catherine D.G. Hines, Ph.D. Merck Research Laboratories, USA

15:45   Adjournment

Student Award Power-Pitches

Dose-Dependent Effects of Citalopram on Serotonergic Function Assessed with SPECT & Pharmacological MRI

Anouk Schrantee, Ph.D.
Academic Medical Center, The Netherlands

Histogram Analysis of Intravoxel Incoherent Motion MRI in Predicting Chemoradiotherapy Response in Cervical Cancer

Jose Angelo U. Perucho, B.Eng.
The University of Hong Kong, China

1-year Follow-Up of $T_1\rho$ for Assessing Radiocarpal Cartilage Matrix Changes after Anti-TNF treatment for Rheumatoid Arthritis: Preliminary Results

Eric Ku, B.Sc.
Quinnipiac University, USA

Differentiating Recurrent Glioma from Treatment Effects Using Amide Proton Transfer-Weighted MRI

Shanshan Jiang, Ph.D. M.D.
Johns Hopkins University, USA

[19]F-Perfluorocarbon-Labeled Human Peripheral Blood Mononuclear Cells Can Be Detected In Vivo Using Clinical MRI Parameters in a Therapeutic Cell Setting

Corby A. Fink, M.Sc.
Western University, Canada

Using Machine Learning to Study Knee Osteoarthritis: The Path Towards OA Precision Medicine

Valentina Pedoia, Ph.D.
University of California at San Francisco, USA