Drug Transporters in ADME: From the Bench to the Bedside
April 11-13, 2022
Virtual Workshop

Monday, April 11, 2022

10:00 AM – 12:30 PM Part 1: Opening Keynote and Hot Topics

10:00 AM – 10:05 AM Introduction and Welcome
Melanie Felmlee, Ph.D., University of the Pacific
Xiaoyan Chu, Ph.D., Merck

10:05 AM – 11:00 AM Keynote: New and Emerging Research on Transporters in the SLC22 Family
Kathy Giacomi, Ph.D., University of California San Francisco

11:00 AM – 11:30 AM HOT TOPIC: Novel Transporter: OATP4C1
Jörg König, Ph.D., Friedrich-Alexander-Universität

11:30 AM – 12:00 PM HOT TOPIC: Pharmacogenetics and Endogenous Biomarkers for OATP1B1
Mikko Niemi, MD, Ph.D., University of Helsinki

12:00 PM – 12:15 PM POSTER: A “Humanized” Mouse Expressing Abcb1a/P-glycoprotein at the Choroid Plexus: A Better Model to Predict Blood-to-CSF Penetration of PGP Substrates?

12:15 PM – 12:30 PM POSTER: A Novel Transcellular Assay for Monocarboxylate Transporter 10 (MCT10)

2:00 PM – 4:30 PM Part 2: Transport in Non-traditional tissues

2:00 PM – 2:05 PM Introduction and Welcome
Jacqueline Bezencon, Ph.D., University of North Carolina
Hong Shen, Ph.D., BMS

2:05 PM – 2:35 PM Lung Transporters
Carsten Ehrhardt, Ph.D., Trinity College Dublin

Updated 3/22/2022
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>2:35 PM – 3:05 PM</td>
<td>Circumventing the Blood-Testis Barrier: Transporter-Mediated Therapeutic Delivery</td>
<td>Nathan Cherrington, Ph.D., ATS, University of Arizona</td>
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<tr>
<td>3:05 PM – 3:35 PM</td>
<td>Regulation of Drug Transporters in Placenta</td>
<td>Micheline Piquet Miller, Ph.D., University of Toronto</td>
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<td>3:35 PM – 4:00 PM</td>
<td>A quantitative proteomics-based atlas of drug transporters in six human tissues</td>
<td>Jill Barber, Ph.D., University of Manchester</td>
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<td>4:00 PM – 4:15 PM</td>
<td><strong>POSTER:</strong> Human Fetal Membrane: An Alternate Drug Transport System during Pregnancy</td>
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<td>4:15 PM – 4:30 PM</td>
<td><strong>POSTER:</strong> Novel Localization of Folate Transporters/Receptor in the Central Nervous System (CNS)</td>
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**Tuesday, April 12, 2022**

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<th>Time</th>
<th>Session Title</th>
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<tr>
<td>10:00 AM – 12:30 PM</td>
<td><strong>Part 3: Transporter Regulation and Altered Expression</strong></td>
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<tr>
<td>10:00 AM – 10:05 AM</td>
<td>Introduction and Welcome</td>
<td>Marilyn Morris, Ph.D., SUNY Buffalo</td>
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<tr>
<td>10:05 AM – 10:35 AM</td>
<td>Functional Regulation of Organic Anion Transporters by Complex Interplay among Post-translational Modifications</td>
<td>Guofeng You, Ph.D., Rutgers University</td>
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<td>10:35 AM – 11:05 AM</td>
<td>Patient iPSC-derived hepatocytes to study bile acid transporter dynamics in cholestasis</td>
<td>Sven van Ijzendoorn, Ph.D., University Medical Center Groningen</td>
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<td>11:05 AM – 11:35 AM</td>
<td>Transporters in Pediatric Patients</td>
<td>Saskia de Wildt, M.D., Ph.D., Radboud University</td>
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<td>11:35 AM – 12:00 PM</td>
<td>Proteomics-informed in vitro in vivo extrapolation of brain distribution of transporter-substrates targeting the central nervous system</td>
<td>Flavia Storelli, University of Washington</td>
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<tr>
<td>12:00 PM – 12:15 PM</td>
<td><strong>POSTER:</strong> A Proof of Concept to Study Pediatric Intestinal Drug Transport Using the Ussing Chamber Methodology</td>
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<td>12:15 PM – 12:30 PM</td>
<td><strong>POSTER:</strong> Development and Characterization of a Abcc4/Multidrug Resistance Protein 4 Knockout Rat</td>
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2:00 PM – 4:30 PM  Part 4: Regulatory Considerations

2:00 PM – 2:05 PM  Introduction and Welcome
Xiaoyan Chu, Ph.D., Merck
Bridget Morse, Ph.D., Eli Lilly

2:05 PM – 2:35 PM  FDA regulatory perspective on transporter mediated drug interactions
Xinning Yang, Ph.D., US Food & Drug Administration (FDA)

2:35 PM – 3:05 PM  EMA regulatory perspective on transporter mediated drug interactions
Carolien Versantvoort, Ph.D., European Medicines Agency (EMA)

3:05 PM – 4:00 PM  Roundtable Discussion

4:00 PM – 4:15 PM  POSTER: Non-targeted Metabolomics and Machine Learning for the Identification of Plasma Metabolites Associated with Organic Anion Transporting Polypeptide 1B1 Function

4:15 PM – 4:30 PM  POSTER: SERAR Recombinant Protein Universal Transporter of Macromolecules by Transepithelial Paracellular Passage through the Intestinal Mucosal Barrier

Wednesday, April 13, 2022

10:00 AM – 12:00 PM  Part 5: Transporter IVIVE

10:00 AM – 10:05 AM  Introduction and Welcome
Xinning Yang, Ph.D., FDA
Matt Harwood, Ph.D., Certara

10:05 AM – 10:35 AM  Using the structural mass action kinetic model to derive simple closed form equations to estimate key kinetic parameters for P-gp and uptake transporters
Joe Bentz, Ph.D., Drexel University

10:35 AM – 11:05 AM  Biomarker-Informed Model-Based Risk Assessment of Organic Anion Transporting Polypeptide 1B Mediated Drug-Drug Interactions
Manthena Varma, Ph.D., Pfizer

11:05 AM – 11:35 AM  Application of Physiologically-Based Pharmacokinetic Modeling in Understanding P-glycoprotein-mediated Drug-Drug Interactions in Intestine
Shinji Yamazaki, Ph.D., Johnson & Johnson

Updated 3/22/2022
11:35 AM – 12:00 PM  IVIVE and PBPK of drug transport in the kidney in health and disease
Daniel Scotcher, Ph.D., University of Manchester

12:00 PM – 12:15 PM  **POSTER**: Comparing Machine Learning Models for Human OATP1B1 in MegaTrans®

12:15 PM – 12:30 PM  **POSTER**: A Meta-analysis of Hepatic Drug Transporters Protein Abundance in Human Liver Cirrhosis

2:00 PM – 4:00 PM  Part 6: Hot Topics / Closing Keynote

2:00 PM – 2:05 PM  Introduction and Welcome
Melanie Felmlee, Ph.D., University of the Pacific
Bridget Morse, Ph.D., Eli Lilly

2:05 PM – 2:35 PM  HOT TOPIC: Liquid Biopsies
Andrew Rowland, Flinders University

2:35 PM – 3:05 PM  HOT TOPIC: Novel techniques and approaches for understanding transporter regulation and activity
Ethan Lippmann, Ph.D., Vanderbilt University

3:05 PM – 4:00 PM  Closing Keynote - Complementary roles of transporters and gut microbiome in the disposition of steroids and drugs
Bhagwat Prasad, Ph.D., University of Washington