Program

Welcome
Susan Kish
Executive, entrepreneur, advisor

Drug Design with Chemistry-Savvy Machine Intelligence
Gisbert Schneider
Professor for Computer-Assisted Drug Design, ETH Zurich

Stem Cells: Next Generation Drug Discovery Tools and Drugs
Marcie Glicksman
Chief Scientific Officer, ORIG3N

Data-Driven Chemical Synthesis
Connor Coley
Postdoc, Broad Institute, MIT

From Ligands to Drugs: Current Capabilities and Next Opportunities
Aimee Usera
Senior Investigator, Novartis Institutes for BioMedical Research (NIBR)

Q&A

Networking Reception

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RETHINK Drug Discovery

Friday, October 18, 2019

6.30 pm
District Hall, 75 Northern Avenue, Boston, MA

Recent advances in chemical synthesis, biological testing, and artificial intelligence (AI) allow for greater automation in the drug discovery process. AI systems that generate novel design suppositions, as well as, cope with multiple design objectives provide a basis for further automation in some aspects of drug discovery. Automation could potentially accelerate timeframes for compound design and optimization. It could also enable better decision making in early-stage pharmaceutical discovery that translates into late-stage clinical validation. However, such approaches also raise considerable conceptual, technical, and organizational challenges.

This symposium aims to address the latest advances of this rapidly progressing field of science, by bringing together leading researchers to present the state-of-the-art in drug discovery. Together they will make daring predictions surrounding the possibilities and limitations of drug discovery using machine intelligence.

Susan Kish is a senior executive with extensive experience in building successful businesses, products, services and teams. She has worked across multiple global industries e.g. financial services, media and clean energy and is a relentless advocate of digital and data literacy. A seasoned entrepreneur, Susan has been successful in bringing new ideas and businesses to life inside large corporations and banks as well as in start-up environments. She is a trustee and independent director on several boards.

Gisbert Schneider is a full professor at ETH Zurich, holding the Chair for Computer-Assisted Drug Design, and the Associate Vice President for ETH Global. His research focuses on the integration of artificial intelligence into practical medicinal chemistry. His career has led him from the Pharmaceuticals Division at Roche, Basel, to academia, initially to the Goethe-University in Frankfurt where he held the Beilstein Endowed Chair for Chem- and Bioinformatics, and then to his current position at ETH in Zurich. He is an elected Fellow of the University of Tokyo, and the recipient of the 2018 Herman Skolnik Award for his contributions to *de novo* design of bioactive compounds. He has co-founded several start-up companies including inSili.com LLC, AlloCyte Pharmaceuticals AG, and Endogena Therapeutics Inc.

Marcie Glicksman, Ph.D. is the Chief Scientific Officer at ORIG3N. For the past 30 years, Dr. Glicksman has been dedicated to developing better therapeutics for the nervous system and other therapeutic areas. Her efforts have resulted in 8 drugs entering the clinic, 2 marketed drugs. She worked in the bio-pharmaceutical industry for 13 years and then was on the faculty for ten years at Harvard Medical School and Brigham and Women's Hospital and Co-Directed the Laboratory for Drug Discovery in Neurodegeneration (LDDN). In her career, she has led multiple advanced therapeutic programs including drug candidates that were tested in the clinic. She is on the science advisory board for the Alzheimer's Drug Discovery Foundation (ADDF) and regularly reviews grants for NIH, Department of Defense, Alzheimer's Association, and other foundations. Dr. Glicksman received a bachelor's degree from Brown University and a Ph.D. degree in Neuroscience from Washington University. Dr. Glicksman has over 80 publications and 16 issued patents.

Connor W. Coley is a postdoctoral associate at the Broad Institute of MIT and Harvard. His work in computer assistance and automation for organic synthesis has included the development of a data-driven synthesis planning program and in silico strategies for predicting the outcomes of organic reactions. For his work in this field, Connor has been named one of C&EN's "Talented Twelve" and one of Forbes Magazine's "30 Under 30" for Healthcare. His continuing research interests are in how data science and laboratory automation can be used to streamline discovery in the chemical sciences. He received his B.S. and Ph.D. in Chemical Engineering from Caltech and MIT, respectively. In 2020, he will return to MIT as an Assistant Professor in the Department of Chemical Engineering.

Aimee Usera obtained her PhD in chemistry from Johns Hopkins University working with Gary Posner and completed her postdoc at MIT under the guidance of Sarah O'Connor. Following her studies, Aimee began her work in the Global Discovery Chemistry group at Novartis where she has developed new bioconjugation methods, novel half-life extension technology, and developed a pioneering long-acting chemical biologic toward obesity. Within Novartis, Aimee has worked across several disease areas and technologies including oncology, cardiovascular metabolism, protein modification, and protein degradation.