Spring 2024 Seminar Series

TIM CERNAK

"Chemical Synthesis Enabled by Information"

Wednesday
May 8, 2024
3:30 PM
Wu and Chen Auditorium
Levine Hall

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ABSTRACT

Advancing the synthesis of small molecules is critical to the advent of new medicines, materials, and agrochemicals. Our lab has been exploring strategies in chemical synthesis -- both in reaction method development and total synthesis -- that leverage modern data science techniques and robotics. This presentation will share some recent results using informatics to target novel amine-acid coupling reactions, and algorithms to streamline multistep synthesis. Chemical synthesis enabled by data science techniques and automation will be a consistent theme of the research, aiming towards a future state where medicines are invented at a rapid pace.

BIO

Tim Cernak was born in Montreal, Canada in 1980. He obtained a BSc in Chemistry from University of British Columbia Okanagan and there studied the aroma profile of Chardonnay wines. Following PhD training in total synthesis with Prof. Jim Gleason at McGill University, Tim was a FQRNT Postdoctoral Fellow with Tristan Lambert at Columbia University. From 2009-2018, Tim worked with the Medicinal Chemistry team at Merck Sharp & Dohme in Rahway and Boston. In 2018, Dr. Cernak joined the Department of Medicinal Chemistry at the University of Michigan in Ann Arbor as an Assistant Professor. The Cernak Lab is exploring an interface of chemical synthesis and data science. Tim has received fellowships from the Alfred P. Sloan, Bill & Melinda Gates Foundation and Schmidt Futures Foundations. He has served on Scientific Advisory Boards for Scorpion Therapeutics, The Open Reaction Database, and the Dundee Drug Discovery Unit. Tim is a co-Founder of Entos, Inc.