INVITED SPEAKERS

Dr. Maurice Shen, **PhD,** Head of Academic Relations, BenchSci

Maurice obtained his PhD in neuropharmacology at the University of Toronto. Upon the completion of his degree, he joined the BenchSci co-founding team to develop the AI-assisted antibody selection platform. Maurice works closely with various stakeholders in academic research to ensure the adoption of the BenchSci platform, and to guide platform development based on

Dr. Casandra Mangroo, PhD, Head of Science, BenchSci

Casandra applies the research experience from her Ph.D. in Virology from the University of Toronto as the Science Team lead and product manager of the knowledge graph and data pipeline at BenchSci. Casandra is closely involved with developing the machine learning training sets and is responsible for the integrity and comprehensiveness of the scientific data on the BenchSci platform. She also works closely with the BenchSci co-founders, R&D and engineering teams to implement new data

AGENDA

Location: OICR, 5 floor, 5-20/21
Date: October 17, 2019 | 3:00 – 4:00 p.m.
Facilitator: Dr. Vanya Peltekova, Lead, BioLab Operations, OICR

3:00 – 3:30 p.m.   **The Antibody Reproducibility Crisis: Leveraging machine learning for AI-assisted antibody selection**
Dr. Maurice Shen, Head of Academic Relations, BenchSci

The "reproducibility crisis" has generated much attention in the research community over the past years. While the issue is multifaceted at its core, rogue antibodies have been identified as one of the major culprits. This talk we will review what is known about the "Antibody Crisis" in the literature and introduce BenchSci's approach to solving this problem.

The BenchSci will present their innovative open-access resource that uses a machine-learning algorithm to screen the literature and identify which and how antibodies have been cited. The resulting peer-reviewed data are searchable by protein targets or product identifier and are filterable by experimental contexts as cited in papers, including technique, tissues, cell lines.

3:30 – 4:00 p.m.   **AI-Assisted Reagent Selection: The application of machine learning to accelerate the experimental design**
Dr. Casandra Mangroo, Head of Science, BenchSci

Advances in the fields of AI and machine learning paved the way for the development of BenchSci's proprietary image and text-based machine learning algorithms along with bioinformatics ontologies, to extract relevant experimental data from original research resources. This information is contextualized within a knowledge graph that powers an AI-assisted antibody selection platform. This technology will soon expand into other scientific reagents and experiments and ultimately facilitate the entire experimental design process.

Artificial intelligence is truly revolutionizing the life science industry. While there are many AI companies focused on the target and lead compound identification, it is only the first step. There is a gap in the application of AI in the many years of bench work required to validate these candidates effectively. Our goal is to shorten the R&D and pre-clinical phases by giving research scientists the ability to leverage the power of AI technology to streamline the experimental design process and ultimately bring treatments to market faster.