



THE UNIVERSITY OF BRITISH COLUMBIA

Data Science and Health

Research Excellence Cluster

DATA SCIENCE & HEALTH 2021: Impact and Lessons Learned From the COVID-19 Pandemic

PROGRAM AGENDA

November 9, 2021

WELCOME TO DATA SCIENCE & HEALTH 2021

We are excited to welcome you to our annual CPD course, designed to bring together clinicians, researchers and students to understand the importance of data science in healthcare research and delivery.

SCIENTIFIC PLANNING COMMITTEE

Thalia Field, MD, MHSc, FRCPC

Associate Professor, Division of Neurology, Department of Medicine, UBC

Marianne Ho-Asjoe, MD, CCFP

Family Physician

Raymond Ng, PhD

Professor, Computer Science, UBC

Director, Data Science Institute, UBC

Anita Palepu, MD, MPH, FRCPC, MACP

Head, Department of Medicine, UBC

Professor, Division of General Internal Medicine, Department of Medicine, UBC

SCIENTIFIC PLANNING COMMITTEE

Alan Rabinowitz, MD

Associate Professor, Division of Cardiology, Department of Medicine, UBC

Scott Tebbutt, PhD

Professor, Division of Respiratory Medicine, Department of Medicine, UBC

Teresa Tsang, MD, FRCPC, FACC, FASE

Associate Head, Research, Department of Medicine, UBC

Professor, Division of Cardiology, Department of Medicine, UBC

UBC CPD ACCREDITATION

The University of British Columbia Division of Continuing Professional Development (UBC CPD) is fully accredited by the Committee on Accreditation of Continuing Medical Education (CACME) to provide study credits for continuing medical education for physicians. This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, and has been approved by UBC CPD for up to 9.0 MOC Section 1 Group Learning credits. This program meets the certification criteria of the College of Family Physicians of Canada and has been certified by UBC CPD for up to 9.0 Mainpro+ Group Learning credits. Each physician should claim only those credits accrued through participation in the activity.

Accredited by UBC CPD



CONTINUING PROFESSIONAL DEVELOPMENT
FACULTY OF MEDICINE

PROGRAM STRUCTURE

Step 1

Learn about data science from ground up, and test your knowledge with a community of learners through self-paced **Canvas** modules.

October 2021

Step 2

Join your peers in discovering and discussing cutting-edge data science applications in health care and research, live on **Zoom**.

November 9, 2021

Step 3

Create interdisciplinary partnerships that move your data science project forward by attending our **workshop series**.

Winter 2021/22

LIVE ZOOM SESSION

11:45 AM Zoom registration begins

12:00 PM Opening Remarks

Dr. Anita Palepu, Head, Department of Medicine, UBC

12:05 PM **Session 1: Data-Driven Decision Making**

Applied Artificial Intelligence in Health: From Compute to Care

*Dr. Muhammad Mamdani, Vice President, Data Science and Advanced Analytics,
Unity Health Toronto*

How to Predict the Risk of Overdose?

Andy Tai, MSc Student, UBC

Follow the Money - Characterization of Real-Life Care Pathways From Physician
Billing Records Using Process Mining

Dr. Stephen van Gaal, Neurologist, Vancouver Stroke Program

LIVE ZOOM SESSION

1:00 PM

Session 2: Learning About COVID-19

Opportunities and Challenges for COVID-Related Research

Dr. Kim McGrail, Scientific Director, PopData BC & Health Data Research Network Canada

Big Data (Pandemic Edition): Design and Implementation of the IMPACC Study of Hospitalized COVID-19 Patients

Dr. Al Ozonoff, Associate Professor, Pediatrics, Harvard Medical School

The BC COVID-19 Interdisciplinary Clinical Care Network: A Tale of 2 Processes - Integrating Clinical Care and Research

Dr. Adeera Levin, Head & Professor, Division of Nephrology, Department of Medicine, UBC

2:00PM

Break

LIVE ZOOM SESSION

2:15 PM

Session 3: Ethical and Social Implications of Data Science

SARS-CoV-2 Emerging Variants: Genomic Data and the Benefits and Opportunities of Data Linkage

Dr. Caroline Colijn, Professor, Department of Mathematics, SFU

Bias in AI: What is It, Types and Examples, and Tools to Fix It

Dr. Apurva Narayan, Assistant Professor, Department of Computer Science & School of Engineering, UBC Okanagan

2:55PM

Session 4: Building a Learning Health System: How has COVID-19 moved us forward?

Multi-Omics and Medical Imaging (MOMI) Platform: Embracing Complexity

Dr. Alan Rabinowitz, Co-Founder & Chief Medical Officer, PHEMI

Machine Learning and AI for Causal Inference from Healthcare Data

Dr. Ehsan Karim, Scientist & Biostatistician, Centre for Health Evaluation and Outcome Sciences

LIVE ZOOM SESSION

Session 4 cont'd: Building a Learning Health System: How has COVID-19 moved us forward?

Success Aside: Where Did Our Health Research System Fall Short and What Have We Learned About How to Fix It?

Dr. David Patrick, Professor, School of Population and Public Health, UBC

Insight from Digital Patient Voices Using a Text Messaging Platform to Support the COVID-19 Pandemic in Rwanda and Canada

Dr. Richard Lester, Co-Founder & Director, WelTel International

4:15 PM Wrap Up

4:25 PM Closing Remarks

4:30 PM Session ends

The views, information, and opinions expressed during Data Science and Health 2021 are solely those of the speakers and do not necessarily represent those of the DASH Cluster.

CANVAS CURRICULUM

WELCOME + PERSPECTIVES

President Santa Ono

DATA SCIENCE: WHAT IS IT?

Basics of Data Science

Dr. Raymond Ng, Director, Data Science Institute, UBC

Dr. Ehsan Karim, Professor & Data Scientist, School of Population and Public Health, UBC

DATA SCIENCE: HOW DO YOU DO IT?

Basics of Statistics

Basics of Programming

Algorithms and Data Structures

Accessing Computing Resources

Dr. Tiffany Timbers, Professor, Master of Data Science, UBC

Dr. Mike Gelbart, Professor, Master of Data Science, UBC

CANVAS CURRICULUM

DATA SCIENCE: HOW DO YOU SPEAK THE LANGUAGE?

Presentation, Interpretation, and Communication of Data Science Findings

Dr. Firas Moosvi, Professor, Master of Data Science, UBC

DATA SCIENCE: HOW DO YOU USE IT IN HEALTH RESEARCH?

Applications in Cognition

Dr. Thalia Field, Division of Neurology, Department of Medicine, UBC

Artificial Intelligence in Echocardiography

Dr. Teresa Tsang, Division of Cardiology, Department of Medicine, UBC

MS, MRI, and Deep Learning

Dr. Roger Tam, Department of Radiology, UBC

Emergency Medicine and Digital Health

Dr. Kendall Ho, Department of Emergency Medicine, UBC

Applications in Personalized Oncogenomics

Dr. Marco Marra, Department of Medical Genetics, UBC

CANVAS CURRICULUM

DATA SCIENCE IN HEALTH RESEARCH AND INNOVATION

BC Digital Supercluster: Funding, Partnership, Innovation

Dr. Evgueni Loukipoudis, Chief Technology Officer, Digital Technology Supercluster

Digital Innovation Science

Dr. Tibor van Rooij, Lead, Digital Health Research Initiative, BC Children's Hospital Research Institute

WelTel: Case Study in Innovation

Dr. Richard Lester, Co-Founder & Director, WelTel International

MetaOptima: Case Study in Innovation

Dr. Maryam Sadeghi, Co-Founder & CEO, MetaOptima Technology Inc.

CANVAS CURRICULUM

DATA SCIENCE IN HEALTH CARE MANAGEMENT AND DELIVERY

PopData BC: Leveraging Administrative Data for Health Research

Dr. Kim McGrail, Scientific Director, PopData BC & Health Data Research Network Canada

Federated Learning: Privacy in the Era of Big Data and Artificial Intelligence

Dr. Aline Talhouk, Director, Data Science & Informatics, OVCARE

The Role of Data Analytics in Health Care: Perspectives and Future Directions

Dr. Diane Gutiw, Vice President, Consulting, CGI

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WORKSHOP SERIES

Engineering Perspective

November 24, 2021 | 4:00 - 5:00 PM

This workshop covers the basics of AI, its potentials and limitations to address clinical problems, and what is required to collaborate on an AI project.

Clinical Perspective

January 2022 (TBD)

Participants will share their clinical challenges and get insight on potential data science solutions from engineers specialized in health applications.

Monthly Workshops

January - June 2022 (TBD)

Monthly meetings with clinician and engineer mentors and peers to enable knowledge sharing and build collaborative links between disciplines.

THANK-YOU



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