# CMPD6 abstracts

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## Azmy Ackleh - A Multiple-Strain Susceptible-Infected Model with Diffusion Formulated on the Space of Radon Measures

University of Louisiana at Lafayette
USA

Minisymposium presentation
(Ecological and Epidemiological Models with Dispersal)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Folashade Agusto - Exploring the effects of prescribed fire and rising temperature on tick-borne diseases

University of Kansas
USA

Minisymposium presentation
(Vector-Borne Disease Dynamics)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Folashade Agusto - From cultural practices to risky behaviors to public sentiment: Modeling human behavior and disease transmission

University of Kansas
USA

Plenary presentation

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## Ephraim Agyingi - Modeling immune system priming: the miracle that saved Sub-Sahara Africa from COVID-19

Rochester Institute of Technology, Rochester, New York
USA

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Vitalii Akimenko - Numerical Method for the Age-structured SIPCV Epidemic Model of Healthy cells, Dysplasia, Cervical Cancer Cells and HPV Dynamics

University of Manitoba
Canada

Contributed presentation

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## Asami Anzai - Estimating importation cases using mobility data

Kyoto University
Japan

Minisymposium presentation
(Real time epidemiology in various geographic scales)

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## Julien Arino - **Role of case introductions in the community spread of infectious diseases**

University of Manitoba
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Joseph Baafi - **Modelling the Impact of Seasonality on Mosquito Population Dynamics: Insights for Vector Control Strategies.**

Memorial University of Newfoundland
Canada

Contributed presentation

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## Rebecca Bekker - Black Holes in TIME: the Effect of GRID Radiation on the Tumor-Immune Micro-environment

H. Lee Moffitt Cancer Center and Research Institute
USA

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Ranjini Bhattacharya - Angiogenesis in Cancer: A Tragedy of Commons

Moffitt Cancer Center
USA

Contributed presentation

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## Amanda Bleichrodt - Multi-model forecasts in the context of the Mpox outbreak in multiple countries (July 28th, 2022 through January 26th, 2023)

Georgia State University
USA

Minisymposium presentation
(Real time epidemiology in various geographic scales)

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## Anuraag Bukkuri - Models of Resistance in State-Structured Cancer Populations

Moffitt Cancer Center and Lund University
USA

Contributed presentation

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## Jacques Bélair - Population models with state-dependant delays

Université de Montréal
Canada

Minisymposium presentation
(Delay-differential equations in applications)

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## Jacques Bélair - Modeling the use of Fangsang Shelter Hospitals in Wuhan

Université de Montréal
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Robert Stephen Cantrell - Resource Matching in Spatial Ecology and Evolutionary Advantage

University of Miami
USA

Minisymposium presentation
(Ecological and Epidemiological Models with Dispersal)

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## Fabian Cardozo-Ojeda - Mathematical modeling of gene and cell therapy for HIV cure

Fred Hutchinson Cancer Center
USA

Minisymposium presentation
(Multiscale models of infectious diseases)

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## Bernard Cazelles - Modeling infectious disease dynamics: the challenge of non-stationarity

Sorbonne Université
France

Contributed presentation

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## Stanca Ciupe - Multiscale models of SARS-CoV-2 infection

Virginia Tech
USA

Minisymposium presentation
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## Adriana-Stefania Ciupeanu - Dynamics of COVID-19 Variants of Concern

University of Manitoba
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Jessica Conway - Heterogeneity in HIV viral rebound

Penn State
USA

Minisymposium presentation
(Mathematical and computational approaches to modelling immunology)

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## Jessica Conway - Modeling PrEP-on-demand strategies to prevent HIV transmission

Penn State
USA

Minisymposium presentation
(Multiscale models of infectious diseases)

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## Morgan Craig - Delays in the cell cycle: implications in immune responses

Sainte-Justine University Hospital Research Centre / Université de Montréal
Canada

Minisymposium presentation
(Delay-differential equations in applications)

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## Morgan Craig - The TME determines the efficacy of immunotherapies to treat glioblastoma

Sainte-Justine University Hospital Research Centre / Université de Montréal
Canada

Minisymposium presentation
(Modelling the Cancer Microenvironment)

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## Jim Cushing - Discrete-time models of infectious diseases: a project in memory of Aziz-Abdul Yakubu

University of Arizona
USA

Plenary presentation

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## Tanuja Das - **An eclipse-phase lag drives oscillations in a viral infection model with a general growth function**

University of New Brunswick, New Brunswick
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Tanuja Das - **Effect of a novel generalized incidence rate function in SIR model: stability switches and bifurcations**

University of New Brunswick, New Brunswick
Canada

Contributed presentation

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## Xiaoyan Deng - Predicting heterogeneous CD8+ immune memory responses in COVID-19 using a virtual patient cohort

Université de Montréal
Canada

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Clotilde Djuikem - Impulsive modelling of rust dynamics and predator releases

Université Côte d'Azur, Inria, INRAE, CNRS, Université Paris Sorbonne, BIOCORE, France
France

Contributed presentation

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## Marisa Eisenberg - Models to inform wastewater-based epidemiology: identifiability, uncertainty, and opportunities

University of Michigan, Ann Arbor
USA

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Marisa Eisenberg - Identifiability and infectious disease interventions: exploring when uncertainty matters

University of Michigan, Ann Arbor
USA

Plenary presentation

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## Blessing Emerenini - Data Assimilation of Quorum Sensing Regulation of Bacteria-Phage Interaction in Biofilm

Rochester Institute of Technology
USA

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Guihong Fan - Delayed model for the transmission and control of COVID-19 with Fangcang Shelter Hospitals

Columbus State University
USA

Minisymposium presentation
(Delay-differential equations in applications)

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## Suzan Farhang-Sardroodi - Mathematical model of muscle wasting in cancer cachexia incorporated with immunology

Department of Mathematics, university of Manitoba
Canada

Minisymposium presentation
(Mathematical and computational approaches to modelling immunology)

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## Suzan Farhang-Sardroodi - Mathematical Modelling of the Impact of Human Immune Diversity on COVID-19 transmission

Department of Mathematics, university of Manitoba
Canada

Minisymposium presentation
(Multiscale models of infectious diseases)

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## Jonathan Forde - Modeling the challenges of optimal resource deployment for epidemic prevention

Hobart and William Smith Colleges
USA

Minisymposium presentation
(Multiscale models of infectious diseases)

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## Samaneh Gholami - Mathematical Modeling of Immune Response to Protein Subunit COVID-19 Vaccines

York University
Canada

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Abba Gumel - Mathematical Assessment of the Role of Pre-Exposure Prophylaxis on the HIV Pandemic

University of Maryland
USA

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Abba Gumel - Mathematics of Wolbachia-based biocontrol of mosquito-borne diseases

University of Maryland
USA

Minisymposium presentation
(Vector-Borne Disease Dynamics)

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## Donglin Han - Retrospective estimation of proportion of total infections of COVID-19 during the first wave in Alberta

University of Alberta
Canada

Minisymposium presentation
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## Katsuma Hayashi - Reconstructing the temporal dynamics of clustering from cluster surveillance of COVID-19

Kyoto University
Japan

Minisymposium presentation
(Real time epidemiology in various geographic scales)

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## Jane Heffernan - Seasonality and Influenza pH1N12009 Vaccination Impact

York University
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Jane Heffernan - Modelling Immunity to SARS-CoV-2

York University
Canada

Plenary presentation

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## Esteban A. Hernandez-Vargas - The Shapes of Immunological Data during Respiratory Infections

University of Idaho
USA

Plenary presentation

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## Sarafa Iyaniwura - Understanding the efficacy of capsid protein allosteric modulators using a multiscale model of hepatitis B virus

Los Alamos National Laboratory
USA

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Sana Jahedi - Addressing Waning Immunity Against Measles: Reevaluating the MMR Vaccination Program

McMaster University, Biology department
Canada

Minisymposium presentation
(Mathematical and computational approaches to modelling immunology)

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## Harsh Vardhan Jain - A quantitative evaluation of an anti-cancer vaccine for treating advanced prostate cancer

Department of Mathematics and Statistics, University of Minnesota Duluth
USA

Minisymposium presentation
(Mathematical modeling and analysis in cancer immunotherapy)

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## Marek Kimmel - Site frequency spectra and estimation of clonal dynamics of tumors

Departments of Statistics and Bioengineering, Rice University
USA

Minisymposium presentation
(Stochastic population models: Theory and applications in Cancer Research)

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## Jude Kong - Mpox dynamic model: incorporating adaptive behavioural changes, different control strategies in the MSM community & under-reporting

York University
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Jude Kong - Leveraging mathematical models to support early management of an emerging disease outbreak: the case of Covid-19 and Africa

York University
Canada

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Chapin Korosec - Longitudinal immunological outcomes from three doses of COVID-19 vaccines in people living with HIV: antibodies, memory-B cells, cytokines, and a novel within-host immunological model

York University
Canada

Minisymposium presentation
(Mathematical and computational approaches to modelling immunology)

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## Christopher Kribs - Impact of tetravalent dengue vaccination with screening, ADE, and altered infectivity on dengue and Zika transmission

University of Texas at Arlington
USA

Minisymposium presentation
(Vector-Borne Disease Dynamics)

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## Furkan Kurtoglu - Modeling Colorectal Cancer Spheroids using Agent-Based Modeling Including Metabolism

Indiana University
USA

Minisymposium presentation
(Modelling the Cancer Microenvironment)

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## Brandon Legried - Inferring phylogenetic birth-death models from extant lineages through time

Georgia Institute of Technology - School of Mathematics
USA

Minisymposium presentation
(Stochastic population models: Theory and applications in Cancer Research)

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## Kang-Ling Liao - The opposite functions and treatment outcomes of CD200-CD200R in cancer

Mathematics, University of Manitoba
Canada

Minisymposium presentation
(Mathematical modeling and analysis in cancer immunotherapy)

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## Ernesto Lima - Development and calibration of a stochastic, multiscale agent-based model for predicting tumor and vasculature growth

The University of Texas at Austin
USA

Minisymposium presentation
(Modelling the Cancer Microenvironment)

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## Xiaochen Long - A Branching Process Model of Clonal Hematopoiesis

Rice University
USA

Minisymposium presentation
(Stochastic population models: Theory and applications in Cancer Research)

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## Loïc Louison - A Population Harvesting Model with Time and size Competition Dependence Function

Université de Guyane
France

Contributed presentation

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## Nadia Loy - A non-local kinetic model for cell migration : a study of the interplay between contact guidance and steric hindrance

Politecnico di Torino
Italy

Minisymposium presentation
(Modelling the Cancer Microenvironment)

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## Chinwendu Emilian Madubueze - Modelling transmission dynamics of Lassa fever transmission with two environmental pathway transmissions

York university Toronto, Ontario
Canada

Contributed presentation

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## Anna Marciniak-Czochra - Evolution of stem cell populations: Mechanistic mathematical modelling vs single cell data

Heidelberg University
Germany

Plenary presentation

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## Fabio Milner - **A mosquito-bird-human model for West Nile virus disease transmission**

Arizona State University
USA

Minisymposium presentation
(Vector-Borne Disease Dynamics)

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## Jemal Mohammed-Awel - **Mathematics model for assessing the impacts of pyrethroid resistance and temperature on population abundance of malaria mosquitoes**

Morgan State University
USA

Minisymposium presentation
(Vector-Borne Disease Dynamics)

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## Nicola Mulberry - **A nested model for pneumococcal population dynamics**

Simon Fraser University
Canada

Minisymposium presentation
(Bridging the scale from within-host to epidemic models)

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## Toshiyuki Namba - **Unexpected coexistence and extinction in an intraguild predation system**

Osaka Metropolitan University
Japan

Contributed presentation

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## Jay Newby - Dynamic self organization and microscale fluid properties of nucleoplasm

University of Alberta
Canada

Plenary presentation

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## Hiroshi Nishiura - Night-time population consistently explains the transmission dynamics of coronavirus disease 2019 in three megacities in Japan

Kyoto University
Japan

Minisymposium presentation
(Real time epidemiology in various geographic scales)

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## Ryo Oizumi - Analytical Representation of Eigensystem in Multiregional Leslie Matrix Model: Application to Sensitivity Analysis of Population Declining in Japan

National Institute of Population and Social Security Research
Japan

Contributed presentation

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## Lorenzo Pellis - Multi-scale time-since-infection models in evolutionary epidemiology

The University of Manchester
UK

Minisymposium presentation
(Bridging the scale from within-host to epidemic models)

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## Tin Phan - Modeling the emergence of viral resistance in SARS-CoV-2 patients treated with an anti-spike monoclonal antibody

Los Alamos National Laboratory
USA

Minisymposium presentation
(Mathematical and computational approaches to modelling immunology)

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## Tin Phan - Integrating wastewater surveillance data with epidemic models: challenges and opportunities

Los Alamos National Laboratory
USA

Minisymposium presentation
(Multiscale models of infectious diseases)

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## Tanya Philippsen - A retrospective modelling analysis of the effect of control measures on the transmission of SARS-CoV-2 in Canada

University of Victoria
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Andrea Pugliese - Combining data from surveillance on mosquitoes and corvids to understand the factors affecting the dynamics of West Nile Virus in Emilia-Romagna, Italy

Dept. of Mathematics, University of Trento
Italy

Minisymposium presentation
(Vector-Borne Disease Dynamics)

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## Erica Rutter - Modeling and Estimating Intratumoral Heterogeneity in Cancer

University of California, Merced
USA

Minisymposium presentation
(Modelling the Cancer Microenvironment)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Erica Rutter - Global Sensitivity Analysis of a Structured Model of COVID-19 Transmission on a College Campus

University of California, Merced
USA

Minisymposium presentation
(Multiscale models of infectious diseases)

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## Paul Salceanu - **Robust uniform persistence for structured models of delay differential equations**

University of Louisiana at Lafayette
USA

Minisymposium presentation
(Ecological and Epidemiological Models with Dispersal)

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## Leili Shahriyari - **Digital twins of cancer patients: a step toward personalized treatments**

Department of Mathematics & Statistics, University of Massachusetts Amherst
USA

Minisymposium presentation
(Mathematical modeling and analysis in cancer immunotherapy)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Zhisheng Shuai - Heterogeneity and Aggregation in Modeling Infectious Diseases

University of Central Florida
USA

Plenary presentation

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## Nourridine Siewe - TGF-beta inhibition can overcome cancer primary resistance to PD-1 blockade: a mathematical model

Rochester Institute of Technology
USA

Minisymposium presentation
(Mathematical modeling and analysis in cancer immunotherapy)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Nourridine Siewe - Increase Hemoglobin Level in Severe Malarial Anemia while Controlling Parasitemia: A Mathematical Model

Rochester Institute of Technology
USA

Minisymposium presentation
(Vector-Borne Disease Dynamics)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Nourridine Siewe - Breast cancer exosomal microRNAs facilitate pre-metastatic niche formation in the bone: A mathematical model

Rochester Institute of Technology
USA

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Stacey Smith? - Coupling the within-host process and between-host transmission of COVID-19 suggests vaccination and school closures are critical

The University of Ottawa
Canada

Minisymposium presentation
(Multiscale models of infectious diseases)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Tracy Stepien - Deciphering Glioma Microenvironment Entry Mechanisms of Myeloid-Derived Suppressor Cells

University of Florida
USA

Minisymposium presentation
(Modelling the Cancer Microenvironment)

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## Yasuhiro Takeuchi - Stability analysis of a single-species logistic model with time delay and constant inflow

Aoyama Gakuin University
Japan

Contributed presentation

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## Ryan Thiessen - Travelling waves of a new glioma invasion model

University of Alberta
Canada

Minisymposium presentation
(Modelling the Cancer Microenvironment)

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## Necibe Tuncer - Determining Reliable Parameter Estimates for Within-host and Within-vector models of Zika Virus

Florida Atlantic University
USA

Minisymposium presentation
(Vector-Borne Disease Dynamics)

Mathematical modelling is an important tool for understanding and controlling the spread of infectious diseases. Heterogeneity, which refers to differences in factors such as demographics, behaviour, susceptibility, infectiousness, and disease severity within a population, plays a critical role in disease transmission and control. Incorporating heterogeneity into models can help researchers better understand disease spread across subpopulations and design more targeted control strategies. However, heterogeneous models can be high-dimensional and complex, leading to theoretical challenges in modelling analysis. Moreover, data collections in the field are often in the forms of aggregation, making modeling implementation challenging. In this talk, we will discuss recent developments and remaining challenges in modeling infectious diseases with a focus on heterogeneity and aggregation. The goal is to provide attendees with valuable insights into the significance of incorporating heterogeneity into models and effective ways to address associated challenges.

## Necibe Tuncer - Immuno-epidemiological co-a ection model of HIV infection and opioid addiction

Florida Atlantic University
USA

Minisymposium presentation
(Within-host and between-host mathematical models of biological dynamics)

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## Sonja Türpitz - Considering Subpopulations in Modelling Facultative Mutualism Reveals a New Approach to Model Interspecific Interactions

Friedrich Schiller University Jena, Germany
Germany

Contributed presentation

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## Marie Betsy Varughese - Incorporating Health Seeking Behaviour in a Deterministic Model for Influenza

University of Alberta
USA

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Jorge Velasco-Hernandez - Modeling a traffic light warning system for acute respiratory infections

Universidad nacional Autónoma de México
Mexico

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Jorge Velasco-Hernandez - The Ross-Mcdonald model revisited: linking transmission and within-host dynamics

Universidad nacional Autónoma de México
Mexico

Minisymposium presentation
(Vector-Borne Disease Dynamics)

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## Amy Veprauskas - The interplay between dispersal and Allee effects in discrete-time population models

University of Louisiana at Lafayette
USA

Minisymposium presentation
(Ecological and Epidemiological Models with Dispersal)

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## Amy Veprauskas - Pathogen dynamic in a tick-host system: A discrete-time modeling approach

University of Louisiana at Lafayette
USA

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Ren-Yi Wang - Analysis of A Countable-Type Branching Process Model for the Tug-of-War Cancer Cell Dynamics

Rice University
USA

Minisymposium presentation
(Stochastic population models: Theory and applications in Cancer Research)

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## Xuyuan Wang - Detecting and Resolving Nonidentifiability In Infectious Diseases Modeling

University of Alberta
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Kathleen Wilkie - Modelling the Evolution of the Immune Response to Cancer

Toronto Metropolitan University
Canada

Minisymposium presentation
(Mathematical and computational approaches to modelling immunology)

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## Kathleen Wilkie - Modelling Radiation Cancer Treatment with Ordinary and Fractional Differential Equations

Toronto Metropolitan University
Canada

Minisymposium presentation
(Modelling the Cancer Microenvironment)

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## Pei Yuan - Modelling for informing public health policy on prevention and control of COVID-19 epidemics in Toronto, Canada

York University
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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## Veronika Zarnitsyna - Competing Heterogeneities in Vaccine Effectiveness Estimation

Department of Microbiology and Immunology, Emory University School of Medicine
USA

Minisymposium presentation
(Bridging the scale from within-host to epidemic models)

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## Huaiping Zhu - **A two-stage model with distributed delay for mosquito population dynamics**

York University
Canada

Minisymposium presentation
(Delay-differential equations in applications)

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## Huaiping Zhu - **Predictive modelling and forecasting of the mosquito abundance and risk of West Nile virus in Ontario Canada**

York University
Canada

Minisymposium presentation
(Vector-Borne Disease Dynamics)

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**Pauline van den Driessche - Disease-Induced Hydra Effect**

University of Victoria, BC
Canada

Minisymposium presentation
(Recent Advances in Modelling Infectious Diseases)

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# List of participants

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