

Session Program

12-17 Jul 2026



**European Conference on Mathematical and Theoretical
Biology (ECMTB 2026)**

Contributed Talks

University of Graz

Tuesday 14 July

17:00

Contributed Talks

Session | Location: University of Graz, 11.34 - SR

17:00–17:20 **A mathematical model of ultrasensitive sequencing protocol**

Speaker
Eszter Lakatos

17:20–17:40 **Mechanistic modelling of adipocyte lipid droplet dynamics**

Speaker
Thomas Reed

17:40–18:00 **Lost in space-resolved transcriptomics: mechanistic inference from spatial single-cell data**

Speaker
Augustinas Sukys

18:00–18:20 **Membrane Lipid Dynamics in Macrophage Chemotaxis**

Speaker
Joshua Forrest

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.06 - HS

17:00–17:20 **Partition-Induced Signals Reveal Hidden Molecular Structure in Breast Cancer**

Speaker
Mr SeyedSamie Alizadeh Darbandi

17:20–17:40 **An Information-Based Dynamical Network Model of Multicellularity Across Dimensions**

Speaker
Sabahat Defne Plattürk

17:40–18:00 **Generating Vascular Network Structures from Real Data**

Speaker
Rui Travasso

18:00–18:20 **Curriculum Learning for Patient-Specific Parameters in Glioblastoma Multiforme**

Speaker
Erica Rutter

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.27 - SR

17:00–17:20 **Sparsest steady-state relations from biochemical network structure**

Speaker
Haripriya Sridharan

17:20–17:40

Extension of an established dynamic thyroid model for capturing Graves' disease including antibody production

	<p>Speaker Thomas Benninger</p>
	<p>17:40-18:00 Autocorrelation-Based Inference of Transcription Dynamics via Infinite-Server Queueing Models</p> <p>Speaker Jeremy Worsfold</p>
	<p>18:00-18:20 Cellular resource allocation in budding yeast beyond steady state</p> <p>Speaker Weida Liao</p>
18:20	
17:00	<p>Contributed Talks Session Location: University of Graz, 15.46 - SR</p>
	<p>17:00-17:20 Quality of information impacts growers' adoption of crop protection methods</p> <p>Speaker Dr Frédéric Grogard</p>
	<p>17:20-17:40 Transmission Dynamics of Eastern Equine Encephalitis: Global Sensitivity Analysis and SHAP Parameter Importance in an Age-Structured Vector-Host Model</p> <p>Speaker Christopher Mitchell</p>
	<p>17:40-18:00 Associations of spatial dynamics of COVID-19 transmissions with social distancing measures on household visits in the Netherlands</p> <p>Speaker Ward Spee</p>
	<p>18:00-18:20 Interpretable measures for sensitivity and identifiability in models of infectious disease</p> <p>Speaker Tarek Alrefae</p>
18:20	
17:00	<p>Contributed Talks Session Location: University of Graz, 01.14 - HS</p>
	<p>17:00-17:20 Decomposing noise in RNA sequencing experiments of adaptive immune repertoires</p> <p>Speaker Matthew Cowley</p>
	<p>17:20-17:40 Bistability between acute and chronic states in a Model of Hepatitis B Virus Dynamics</p> <p>Speaker Hayriye Gulbudak</p>
	<p>17:40-18:00 New topologies in the unfolding of a high codimension singularity organizing neuronal dynamics</p> <p>Speaker Marisa Saggio</p>
	<p>18:00-18:20 AI-enabled discovery of mechanistic mediators in Alzheimer's disease progression</p> <p>Speaker Nuutti Barron</p>
18:20	

17:00

Contributed Talks

Session | Location: University of Graz, 11.32 - SR

17:00–17:20 **Markov Process based Mathematical Model of Vascular Stenosis Formation and Treatment**

Speaker
taiga kadowaki

17:20–17:40

Mechanisms of thrombin inhibition by protein S and the TFPI α -protein S complex

Speaker
Alexander G Ginsberg

17:40–18:00

Saddle-Node Bifurcation in Macrophage Proliferation Determines Atherosclerotic Plaque Stability

Speaker
Emine Atıcı Endes

18:00–18:20

Topological Morphological Descriptor Enables Artery–Vein Discrimination in Whole-Mouse Vasculature

Speaker
Sofia Farina

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 01.18 - SZ

17:00–17:20

3D-Analysis of tumor spheroids – a synergistic combination of mechanistic modeling and data-driven computational methods

Speaker
Anja Voss-Böhme

17:20–17:40

Multi-scale- Multi-processing Mathematical Modelling of Glioma Growth and Tumour Microenvironment Dynamics Using Coupled Reaction–Diffusion Systems

Speaker
Jawahira Zohra

17:40–18:00

Modelling interclonal cooperation in epithelial carcinogenesis using spatial models

Speaker
Muhammad Asim Farooq

18:00–18:20

Title: Mathematical modeling of radiotherapy response in murine glioma using MRI-defined tumor habitats

Speaker
Ayesha Das

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.34 - SR

17:00–17:20 **Predicting clogging in complex networks through a minimal continuum model**

Speaker
Cara Neal

17:20-17:40 **Multi-stage volume exclusion models for cell proliferation**

Speaker
John Carlo Dimaculangan

17:40-18:00 **Emergent mechanics from material replacement in biological systems**

Speaker
Matthew Butler

18:00-18:20

Deciphering Spatiotemporal Dynamics of Oocyte Selection during Ovarian Development: A 3D Multiscale Agent-Based Model

Speaker
Dr Pawan Kumar

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.33 - SR

17:00-17:20 **Decision-making in heterogeneous self-propelled systems**

Speaker
V́ctor Villegas-Morrall

17:20-17:40

Optimizing the resources allocation between biochemical defence and counter-counter defence in pathogenic and trophic interactions.

Speaker
Lukas Korn

17:40-18:00

Role of phenotypic plasticity in community assembly and coexistence: from a model organism to theory and back

Speaker
Dr Ata Kalirad

18:00-18:20 **The Race Between Entropy and Maximum Entropy**

Speaker
Jiří Nedomlel

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 01.15 - HS

17:00-17:20

Evaluating the impact of school measures on early SARS-CoV-2 transmission in Portugal: a retrospective study

Speaker
Ganna Rozhnova

17:20-17:40 **Optimal epidemic mitigation using focused and unfocused interventions**

Speaker
Martin Bootsma

17:40-18:00

Mapping bovine trypanosomosis under diagnostic uncertainty: spatial prevalence estimates in Nigeria and Ethiopia

	<p>Speaker Dr Alex Kaye</p>
	<p>18:00–18:20 Bayesian Inference for Outbreak Final Size Datasets with Underlying Household Structure</p> <p>Speaker Joseph Brooks</p>
18:20	
17:00	<p>Contributed Talks Session Location: University of Graz, 15.21 - SZ</p>
	<p>17:00–17:20</p> <p>Estimating directed connectivity from fMRI and structural priors via network diffusion model</p> <p>Speaker Dr Fahimeh Arab</p>
	<p>17:20–17:40 Construction and simulation of a path-valued model of dendrite growth</p> <p>Speaker Andrew Nugent</p>
	<p>17:40–18:00</p> <p>The exponential distance rule-based network model predicts topology and reveals functionally relevant properties of the Drosophila projectome</p> <p>Speaker Balázs Péntek</p>
	<p>18:00–18:20 Multi-scale Modelling of Astrocyte Metabolism in Pathological Morphologies</p> <p>Speaker Ingrid A. Lizcano-Prada</p>
18:20	
17:00	<p>Contributed Talks Session Location: University of Graz, 11.33 - SR</p>
	<p>17:00–17:20</p> <p>Conflict-Gated Gradient Scaling: Resolving gradient pathology in physics-informed epidemiological models</p> <p>Speaker Dr Woldegebriel Assefa Woldegerima</p>
	<p>17:20–17:40 Quantum-Enhanced Protein Folding on IBM Quantum Hardware with Reduced Locality</p> <p>Speaker Prof. Madhvi Shakya</p>
	<p>17:40–18:00</p> <p>The whole baby PK/PD model of anti-VEGF therapy that big pharma doesn't want you to see</p> <p>Speaker Jessica Crawshaw</p>
	<p>18:00–18:20</p> <p>Coupled Information-Infection Dynamics Produce Information-Driven Shifts in Epidemic Regimes via Competing Vaccine Narratives</p> <p>Speaker Dr Asma Azizi</p>
18:20	

Wednesday 15 July

08:30

Contributed Talks

Session | Location: University of Graz, 15.05 - HS

08:30–08:50 **Mathematical modeling of cell proliferation in a scaffold with elastic branching channels**

Speaker

Pejman Sanaei

08:50–09:10

A multi-phase field computational framework to model endothelial cell rearrangement and blood flow-induced polarization

Speaker

Marcos Gouveia

09:10–09:30

Modelling multiscale cell competitions and cooperations that determine longevity of homeostasis

Speaker

Ijas Ahamed N

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 01.18 - SZ

08:30–08:50 **Accelerating Parameter Estimation in Large Systems Biology Models**

Speaker

Andrea Polo Rodríguez

08:50–09:10

Addressing Calibration Challenges in Generalized Lotka–Volterra Models of Microbial Ecosystems

Speaker

Ana Paredes-Vázquez

09:10–09:30

Identifiability-aware Neural ODEs for parsimonious learning of dynamical systems

Speaker

Núria Campo-Manzanares

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.21 - SZ

08:30–08:50

Bonsai: Tree representations for distortion-free visualization and exploratory analysis of single-cell omics data

Speaker

Daan de Groot

08:50–09:10

Enhancing epidemiological parameter inference using quantitative diagnostic data

Speaker

Punya Alahakoon

09:10–09:30

Efficient Parameter Estimation in Agent-Based Models of Collective Cell Invasion via Gaussian Process Surrogates and Bayesian Optimization**Speaker**

Ashlee Ford Versypt

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 11.03 - HS

08:30–08:50

Linking structure to behaviour in regulatory biochemical reaction networks through geometric and combinatorial methods**Speaker**

Ahmad Mokhtar

08:50–09:10

Biophysical Modeling of Molecular Glues: Mechanistic Insights for Design**Speaker**

Seokjoo Chae

09:10–09:30

What's in a modelling formalism? On the use of graphical models in systems biology**Speaker**

Leo Diaz

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 11.34 - SR

08:30–08:50

Treatment Scheduling Modulates Vascular Normalization, Interstitial Fluid Pressure, and Drug Delivery in Solid Tumors**Speaker**

Defne Yilmaz

08:50–09:10

Connecting Vertex Based and Centroid Based Epithelial Monolayer Models**Speaker**

Patrick Grant

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.34 - SR

08:30–08:50

Coarse-grained PDEs for polar auxin transport in plants.**Speaker**

Alexis Farman

08:50–09:10

On the Emergence of Traveling Wave Patterns in Resource-Mediated Tissue Competition**Speaker**

Natalia Briñas-Pascual

09:10–09:30

Multi-timescale dynamics of microswimmers**Speaker**

Sara Drummond-Curtis

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 01.15 - HS

08:30–08:50

Qualitative Analysis of a Caputo Fractional-Order System Arising from Within-Host Virus Dynamics

Speaker

Prof. ShyanShiou chen

08:50–09:10

Mathematical Model of Multiple Sclerosis

Speaker

Prof. Mo'tassem Al-arydah

09:10–09:30

Deciphering Neutrophil Complexity

Speaker

Prof. Gabriel Calvo

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 12.01 - HS

08:30–08:50

Extensions of Cyclic Competition Models in Population Dynamics

Speaker

Idan Sorin

08:50–09:10

Understanding microbiome assembly and stability through a simplified model

Speaker

Andreas Eilersen

09:10–09:30

A Bayesian phylogenetic approach using fluctuating methylation to resolve inter- and intra-crypt stem cell dynamics

Speaker

Calum Gabbutt

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 03.01 - HS

08:30–08:50

Modeling the impact of host diversity on the evolution of vector feeding preferences and implications for disease control

Speaker

Shravani Shetgaonkar

08:50–09:10

A mathematical model studying the interplay between malaria dynamics and economic growth

Speaker

Ruijun Zhao

09:10–09:30

Modular arithmetic as an alternative to model seasonal time-varying transmission rates: Influenza as a case study

Speaker

Dr Woldegebriel Assefa Woldegerima

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 02.11 - HS

08:30–08:50

Extending Time to First Subsequent Therapy in the Adjuvant Treatment of High-Grade Serous Ovarian Cancer**Speaker**

Cristina Koprinski

08:50–09:10

Mathematical Models for Non-Monotone Dose Responses**Speaker**

Peter Rashkov

09:10–09:30

A Spatially and Phenotypically Structured Model of Radiotherapy under Oxygen Heterogeneity**Speaker**

Francesco Albanese

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.12 - HS

08:30–08:50

Blocking of Bistable Front Propagation: Application to Wolbachia Population Replacement**Speaker**

Saoussen Latrach

08:50–09:10

Metabolic games in an autotroph-heterotroph consortium: eco-evolutionary analysis of cooperative, private and cheater exoenzyme strategies**Speaker**

Tanvir Hassan

09:10–09:30

Is (Microbial) Ecology Fair?**Speaker**

Teemu Kuosmanen

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.06 - HS

08:30–08:50

Enhancing Patient Privacy and Model Interpretability with Tensor Trains**Speaker**

Juliette Sinnott

08:50–09:10

Memory T Cells as Predictors of Progression-Free Survival in High-Grade Serous Ovarian Cancer: A Mathematical Modelling Approach**Speaker**

Iman Al Buwaiqi

09:10–09:30

Qualitative study of a tumor-immune interaction model for hepatocellular carcinoma under radiotherapy**Speaker**

Cristina Vilar Medina

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 10.01 - HS

08:30–08:50 **Critical assessment of Waddington's Epigenetic Landscape and its modern interpretations****Speaker**

Dr Eric Fanchon

08:50–09:10

Divergent mechanics of inner ear morphogenesis are coupled to developmental tempo over vertebrate evolution**Speaker**

Shuhei Horiguchi

09:10–09:30

Simulating how turnover influences actomyosin contraction and bundle formation**Speaker**

Dr Alex Tam

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.33 - SR

08:30–08:50 **Prey-predator-parasite models with infection-dependent attack rates****Speaker**

Frank Hilker

08:50–09:10

The evolution of an evolvability-enhancing condition-dependent mutation rate**Speaker**

Jana M. Riederer

09:10–09:30

Total biomass and dispersal: effects of local dynamics and network topology**Speaker**

Juan Segura

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 10.11 - HS

08:30–08:50

Joint Transmission-Mutation Modelling Shapes the Long-Term Dynamics of Evolving Pathogens**Speaker**

Mr Marvin Schulte

08:50–09:10

Estimated impact of 2022–2023 influenza vaccines on annual hospital burden in the United States**Speaker**

Shraddha Ramdas Bandekar

09:10–09:30

Co-modelling epidemics and specific TTI behaviours**Speaker**

Thomas House

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.04 - HS

08:30–08:50

SIR model with the distribution of preventive behaviors in a community

Speaker
Zhiqiong Fu

08:50–09:10

User-interactive Dashboard for 110 countries: Cost-Optimal Analysis of Health and Economic Trade-offs During Early Pandemics

Speaker
Jongmin Lee

09:10–09:30 **Venue access policies and intervention timing under vaccine acceptance heterogeneity**

Speaker
Maikel Bosschaert

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.46 - SR

08:30–08:50

Modeling water-related dynamics in subaerial biofilms interacting with porous stone substrates

Speaker
Fabiana Russo

08:50–09:10 **Understanding quorum-sensing bacteria one model at a time**

Speaker
Silas Poloni

09:10–09:30 **Modeling barriers to freshwater turtle re-introduction in rebuilt marshlands**

Speaker
Matthew Betti

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 02.01 - HS

08:30–08:50

Analyzing the impact of proliferation and treatment parameters on low-grade glioma growth using mathematical models

Speaker
Maria Vela Pérez

08:50–09:10

Human papillomavirus driving cervical cancer: a mathematical model with persistent infection, cancer progression, and spontaneous remission.

Speaker
Rena Hayashi

09:10–09:30

Asthma-mediated control of optic glioma growth via T cell-microglia interactions: A mathematical model

Speaker
Donggu Lee

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 01.22 - HS

08:30–08:50

Mathematical insights into the dynamics of prostate cancer under phytocannabinoid therapy

Speaker
Dr Marianna Cerasuolo

08:50–09:10 **Evolution of extrachromosomal DNA in non-growing cell populations**

Speaker
Alan Scaramangas

09:10–09:30

Mathematical modeling of macrophage-precancerous epithelial cell interactions in the oral cavity

Speaker
Lia Sela

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 02.23 - HS

08:30–08:50 **Mechanistic Modeling of Cell–Cell Contact Networks in Collective Cancer Invasion**

Speaker
Edwin Weinholtz

08:50–09:10

A Spatiotemporal Computational Model of Ultrasound-Triggered Nanoparticle Drug Delivery in Solid Tumors

Speaker
Farshad Moradi Kashkooli

09:10–09:30 **Subclones, Drivers and Microenvironment in a new Genetic Model of Tumour Growth**

Speaker
Vivien Holmes

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.02 - HS

08:30–08:50 **Inferring rooted phylogenies from distances**

Speaker
Klaus Schliep

08:50–09:10

Ecological and stochastic determinants of the growth and persistence of the oral pathogen *Porphyromonas gingivalis*

Speaker
Arnab Barua

09:10–09:30 **Invasion, replacement and coexistence in ecological models**

Speaker
Cameron Browne

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 11.33 - SR

08:30–08:50 **The evolutionary rarity of bacterial endosymbiosis**

Speaker
Eric Libby

08:50–09:10 **Plant tolerance is explained by resource-based plant-nematode interactions**

Speaker
Joseph Penlap

09:10–09:30 **Applying Koopman operator theory to explore the dynamics of bioreactor models**

Speaker
Cameron Jakub

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 11.32 - SR

08:30–08:50

Path-Independent Transformation of Antagonistic Interactions under Minimal Evolutionary Conditions

Speaker
Hanna Isaksson

08:50–09:10 **Allocation dynamics of stage-specific interventions in structured populations**

Speaker
Daniel Strömbom

09:10–09:30 **Metapopulation Dynamics with May–Leonard Competitive Lotka–Volterra systems**

Speaker
Anju Susan Anish

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 11.11 - SR

08:30–08:50

Evolution on Large Networks: Mutation-Selection Balance and Fixation via Graphon Limits

Speaker
Dr Nikhil Sharma

08:50–09:10 **Mapping niches to trait abundance clusters using a more flexible clustering model**

Speaker
Satavisha De

09:10–09:30 **The role of space in the macroecological patterns of microbial abundances**

Speaker
Adrián Gutiérrez Arroyo

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 15.27 - SR

08:30–08:50

How much should we trust non-identifiable models? Reliable model selection in face of parameter non-identifiability

Speaker
Elijah Foo

08:50–09:10 **Exploring Cell-Free Systems Through Robust Sensitivity Analysis**

Speaker
Emily Hunter

09:10–09:30

Physiologically Informed Modeling of Aminoglycoside Exposure During Pediatric Maturation

09:30	<p>Speaker Dr Felix J. Meigel</p>
08:30	<p>Contributed Talks Session Location: University of Graz, 02.21 - HS</p> <p>08:30–08:50 Forecasting Patient Specific Treatment Response by Leveraging a Mathematical Model and Patient-Reported Outcomes</p> <p>Speaker Diya Upadhyaya</p> <p>08:50–09:10 Optimal and Predictive Control of Acute Myeloid Leukemia with Drug Resistance</p> <p>Speaker Pauline Mazel</p> <p>09:10–09:30 A Hybrid Model of Tumor Evolution: The Impact of Oxygen on Glioblastoma Dynamics</p> <p>Speaker Alexandra Whiteside</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 11.02 - HS</p> <p>08:30–08:50 Maximal human lifespan in light of a mechanistic model of aging</p> <p>Speaker Ben Shenhar</p> <p>08:50–09:10 Targeting metabolic fluxes to prevent drug tolerance in Mycobacterium Tuberculosis under host-derived stress</p> <p>Speaker Tanishk Patodi</p> <p>09:10–09:30 Balancing Stability and Complexity in Boolean Models of Biological Systems</p> <p>Speaker Venkata Sai Narayana Bavisetty</p>
08:30	<p>Contributed Talks Session Location: University of Graz, 15.11 - HS</p> <p>08:30–08:50 Mechanistic modelling of cluster formation in metastatic melanoma</p> <p>Speaker Nathan Schofield</p> <p>08:50–09:10 Parameter Identifiability Under Limited Experimental Data in Age-Structured Models of the Cell Cycle</p> <p>Speaker Ruby Nixson</p> <p>09:10–09:30 Inference of Spatially Varying Tumor Hydraulic Conductivity and Its Impact on Drug Transport</p> <p>Speaker Mohsen Rezaeian</p>
09:30	

08:30

Contributed Talks

Session | Location: University of Graz, 05.12 - HS

08:30-08:50 **A Phase-field Model for Apoptotic Cell Death****Speaker**

Daniel Vaughan

08:50-09:10

Catch-bond dynamics of cell-cell adhesion in the Cellular Potts model predicts dynamics in cell clustering, sorting and invasion**Speaker**

Lisanne Rens

09:10-09:30 **Data Driven Modeling of Limb Bud Growth and Morphogenesis****Speaker**

Tim Liebisch

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 11.01 - HS

08:30-08:50

Mean Field Theory for Coupled Oscillators predicts the existence and stability of synchrony in a network of inhibitory interneurons connected to excitatory neurons**Speaker**

Ananth Vedururu Srinivas

08:50-09:10 **Resource Limitations Induce Phase Transitions in Optimal Estimation Strategies****Speaker**

Takehiro Tottori

09:10-09:30

Derivation and Analysis of a Low-Dimensional Hopf Oscillator Model for Macroscale Brain Dynamics**Speaker**

Alexander Edthofer

09:30

08:30

Contributed Talks

Session | Location: University of Graz, 01.14 - HS

09:30

11:10

Contributed Talks

Session | Location: University of Graz, 15.34 - SR

11:10-11:30 **Agent-based modeling of multiple myeloma in the aged bone microenvironment****Speaker**

Riley Hall

11:30-11:50

Model-informed optimisation of dosing strategies using mechanistic tumour growth modelling**Speaker**

Esha Joshi

11:50-12:10

Using a mathematical model to predict and optimize response to chemo- and radiation therapy in glioma cells

Speaker
Reshmi J. S. Patel

12:10–12:30

Optimal Control in a Model of Metastatic Cancer Treatment with Neoantigen Cancer Vaccine

Speaker
Dr Jessica Kingsley

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 03.01 - SR

11:10–11:30

A structured systems dissection of immune response dynamics in Drosophila

Speaker
Dr Manmath Panigrahy

11:30–11:50

Temporal Topological Features Characterise Endothelial Network Formation in Cell-Based and Continuum Models

Speaker
Robert McDonald

11:50–12:10

The Spatial Regime Conversion Method: An Adaptive Hybrid Framework for Multiscale Reaction–Diffusion Systems

Speaker
Mr Charlie Cameron

12:10–12:30

The Matrameru code of biomolecules – Enumerating unbranched fatty acids and amino acids

Speaker
Stefan Schuster

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 15.33 - SR

11:10–11:30

Deterministic discrete-particle modeling of ribosome stalling beyond mean-field approximations

Speaker
Katrin Schröder

11:30–11:50

Capturing complex organoid dynamics using image analysis, modeling and simulation

Speaker
Franziska Matthäus

11:50–12:10

A Hybrid Agent-Based Framework for Quantifying Mitochondrial Dynamics from Time-Lapse Imaging

Speaker
Mr Volkan Ozcoban

12:10–12:30

Nonlinear Stability Analysis and Pattern Formation in Reaction-Diffusion-ODE Systems

Speaker
Finn Münnich

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 11.34 - SR

11:10-11:30 **The Impact of the Cell Cycle on Cellular Decision Making**Speaker
Charli Austin

11:30-11:50

Conditions on Interaction Networks for Achieving Specific Reinforcement under Global Dopamine SignalsSpeaker
Yonatan Savir11:50-12:10 **Biphasic responses in cell signalling systems**Speaker
Dr J Krishnan

12:10-12:30

Mathematical modeling of signal transduction and gene expression in cancer: from information processing to patient specific modelsSpeaker
Prof. Jana Wolf

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 15.21 - SZ

11:10-11:30 **A three process approach for insomnia-like awakenings**Speaker
Joe Rowland Adams11:30-11:50 **Fluid Transport through the Boundary of the Human Brain**Speaker
Emil Eriksson11:50-12:10 **A Kuramoto Oscillator Model of Closed-Loop Auditory Stimulation of REM Sleep EEG**Speaker
Mr Daniel Knott12:10-12:30 **Towards digital twins for sleep-wake timing**Speaker
Anne Skeldon

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 11.33 - SR

11:10-11:30

Machine Learning and Optimization Approaches for Improving Artificial Insemination Service Delivery in Philippine Water Buffalo SystemsSpeaker
Renier Mendoza

11:30-11:50

Breaking free from 2D: Extending the cellular Potts model to curved deforming surfaces to understand vascular remodelling

Speaker
Jessica Crawshaw

11:50-12:10 **Fast, Scalable, and Interpretable Persistent Homology for Biology**

Speaker
Dr Joshua Bull

12:10-12:30 **Evaluation of Tissue Growth Models for Proliferating Cell Colonies**

Speaker
Prof. Zuzanna Szymańska

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 11.32 - SR

11:10-11:30 **Household-level patterns of vaccine uptake during the COVID-19 pandemic in the UK**

Speaker
Joe Hilton

11:30-11:50 **End of the road? Supporting disease eradication efforts for yaws**

Speaker
Louise Dyson

11:50-12:10

Seasonal Reaction-Diffusion Model of Vector-Borne Diseases: Existence of periodic dynamics

Speaker
Michela Sabbatino

12:10-12:30 **Individual behavior can challenge the management of virulence**

Speaker
Clément MONAURY

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 01.18 - SZ

11:10-11:30

Agent-Based Model for Superficial Spreading Melanoma Reveals the Role of Cancer Hallmarks in Shaping Intratumor Heterogeneity and Tumor Morphology

Speaker
Khola Jamshad

11:30-11:50

Modelling Immune Dynamics in Locally Advanced MSI-H/dMMR Colorectal Cancer with Neoadjuvant Pembrolizumab Treatment: From Differential Equations to an Agent-Based Framework

Speaker
Georgio Hawi

11:50-12:10

Non-local models for spatio-temporal macrophage-tumour co-invasion: role of competition for resources

Speaker
Johan Marguet

12:10-12:30

Mathematical modelling reveals that liver architecture impacts tumour size distribution in mouse models of colorectal liver metastases.

12:30

Speaker
Dr Xiaoyuan Liu

11:10

Contributed Talks

Session | Location: University of Graz, 01.14 - HS

11:10–11:30

Counterfactual evaluation of elementary and secondary school policies in the COVID-19 pandemic

Speaker
Benedetta Canfora

11:30–11:50

The effects of vertical transmission on a spatially-structured host-parasite model

Speaker
Jack Woodruff

11:50–12:10

Linking Temporal Structure to Epidemic Dynamics in Contact Networks from Epigames

Speaker
Estelle McCool

12:10–12:30

Data-driven dynamical analysis of an age-structured model: A graph-theoretic approach

Speaker
Anuraj Singh

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 15.27 - SR

11:10–11:30

Closed-Form Steady-State Analysis of Multi-Stage Continuous Bioprocess Cascades

Speaker
Andrea Graf

11:30–11:50

The Frustrating Nature of Tissues

Speaker
Taylor Woodward

11:50–12:10

Building Spatial Resolution into Ebola virus VP40 Assembly Models: An ODE-to-ABM Transition

Speaker
Trevor Shoaf

12:10–12:30

Probing bacterial fitness in virtual chemostats

Speaker
Kaan Öcal

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 15.46 - SR

11:10–11:30

PerTexP: scenario-based exploration of pertussis dynamics under maternal and infant vaccination

Speaker
Emanuela Penitente

11:30–11:50

Assessing the Impact of Vaccination and Behavioral Change on Mpox Transmission in High-Risk Groups in the Democratic Republic of Congo Using an Age-Structured Mathematical Model

Speaker
Andrew Oname

11:50-12:10

Disentangling infectiousness and susceptibility by age group using transmission pair data: a study of SARS-CoV-2 household transmission

Speaker
Jantien Backer

12:10-12:30

Understanding the Biology Underpinning the Interaction between Arboviruses and Aedes aegypti Mosquitoes Using Statistical and Mathematical Modelling

Speaker
Ms Junjie Chen

12:30

11:10

Contributed Talks

Session | Location: University of Graz, 11.11 - SR

11:10-11:30

Competing mechanisms for anisotropic lesion formation in cardiac PFA modelling

Speaker
Prof. Luca Gerardo-Giorda

11:30-11:50

A Hybrid Cell-Based Model of Lipid-Immune Interactions in Atherosclerosis.

Speaker
Thomas Quinlan

11:50-12:10

How does cross-resistance for disease strains influence coexistence outcomes?

Speaker
Daniel Maes

12:10-12:30

A Sufficient Condition for Stable Coexistence Under a Generalist Predator

Speaker
Dr Lawrence Seminario-Romero

12:30

Thursday 16 July

10:40

Contributed Talks

Session | Location: University of Graz, 15.46 - SR

10:40–11:00

Mathematical model for analysing the interplay between income, nutrition, and tuberculosis dynamics

Speaker

Dr Palak Goel

11:00–11:20

A Robust Numerical Framework for Multi-strain Epidemic

Speaker

Fadilah Ilahi

11:20–11:40

Travelling waves in a mathematical model of fireblight during bloom season

Speaker

Hermann Eberl

11:40–12:00

Evaluating the Public Health Programs during the 2010 Haiti Cholera Outbreak: Disease Dynamics and Epidemic Response

Speaker

Dr Vijay Pal Bajjiya

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 11.32 - SR

10:40–11:00

Anticipating epidemic waves in non-stationary disease dynamics

Speaker

Joshua Looker

11:00–11:20

Forecasting SFTS risk in the Republic of Korea under population aging and climate change using machine learning

Speaker

Yongin Choi

11:20–11:40

Identifying household-level patterns of infectious disease transmission from longitudinal testing data using probabilistic inference

Speaker

Irene García

11:40–12:00

Assessing Birth Month Dependent Effectiveness of Monoclonal Antibodies against Infant RSV Hospitalization: A Modelling Study.

Speaker

Beryl Musundi

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 11.11 - SR

10:40–11:00

Clean seed use in seasonal agroecosystems: How growers behave shapes plant epidemic dynamics**Speaker**

Dr Ludovic Mailleret

11:00–11:20

Spatially explicit individual-based model for schistosome transmission: A bipartite network approach**Speaker**

Dr Melissa A. Iacovidou

11:20–11:40

Estimating fitness effects of mutations that evolve in a Long-Term Evolution Experiment of HIV-1**Speaker**

Jenny Dunstan

11:40–12:00

A temperature-dependant spacial model to optimise sterile male releases for *Drosophila suzukii***Speaker**

Jules Guilberteau

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 03.01 - SR

10:40–11:00

Mean first passage time as a framework for immune cell search and encounter**Speaker**

Mrs Fatemeh Saghafifar

11:00–11:20

A spatiotemporal model for prostate cancer**Speaker**

Alethea Barbaro

11:20–11:40

Simulating glioblastoma microenvironment: How hypoxia and vascular occlusion shape immune dynamics**Speaker**

Raquel Arroyo-Vázquez

11:40–12:00

Threshold-Driven Collapse and Recovery in a Simplified Wasp-Waist Ecosystem Model**Speaker**

Sam Subbey

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 15.21 - SZ

10:40–11:00

Rethinking HPV Vaccination in Japan Through Dynamic Transmission Modeling**Speaker**

Eunha Shim

11:00–11:20

Discovering the modes of action of antivirals from data and modelling: SARS-CoV-2 and Paxlovid as case study

Speaker
Dr Alicja B. Kubik

11:20–11:40

Leveraging machine learning algorithms to model health behavior in network-based epidemic models

Speaker
Dr Joshua Chevalier

11:40–12:00 **From Dilution to Amplification: Modeling Host-Driven Transitions in Lyme Disease**

Speaker
Dr Vardayani Ratti

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 11.34 - SR

10:40–11:00 **Hemogenic endothelium-derived multipotent progenitors shape prenatal hematopoiesis**

Speaker
Connor Shrader

11:00–11:20 **Mechanistic Bayesian Mixture Modeling of Infection Establishment and Proliferation**

Speaker
Bruce Rogers

11:20–11:40

Pathogen non-planktonic phases within the urinary tract impact early infection and resistance evolution

Speaker
Amanda de Azevedo-Lopes

11:40–12:00

A mathematical model of the immune system to understand response to regulatory T cell therapy in type 1 diabetes

Speaker
James Greene

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 15.33 - SR

10:40–11:00

Modeling the spatio-temporal effects of broad-beam and mini-beam irradiation on a cell population

Speaker
Mathilde Badoual

11:00–11:20

The Impact of Programmed Cell Death on Cell Population Dynamics: A Stochastic and Moment Dynamics Approach

Speaker
Peter Boldog

11:20–11:40

Quantifying biological heterogeneity in nano-engineered particle-cell interaction experiments

Speaker
Ryan Murphy

11:40–12:00 **Stochastic-Deterministic Mathematical Models of Neuroblastoma Spatial Structure**

12:00	<p>Speaker Perla Mallouk</p>
10:40	<p>Contributed Talks Session Location: University of Graz, 11.33 - SR</p>
	<p>10:40–11:00 Quantitative parameter free methods for toxicokinetics</p> <p>Speaker Ms Inzish Sajid</p>
	<p>11:00–11:20</p> <p>ROSA: A Geometric Spectral Lift for Detecting Pre-Reorganisation Signals in Noisy Spatial Graphs</p> <p>Speaker Dr Ben Cardoen</p>
	<p>11:20–11:40</p> <p>Learning dynamical systems with biochemically informed neural ordinary differential equations</p> <p>Speaker Prof. Lucas Böttcher</p>
	<p>11:40–12:00</p> <p>Persistent homology analysis of human populations reveals topological signatures of admixture</p> <p>Speaker Victoria May Mendoza</p>
12:00	
10:40	<p>Contributed Talks Session Location: University of Graz, 01.18 - SZ</p>
	<p>10:40–11:00</p> <p>Radiotherapy as an evolutionary force: modeling phenotypic heterogeneity and treatment response in tumors</p> <p>Speaker Ms Lara Schmalenstroer</p>
	<p>11:00–11:20 A computational study of physicochemical interactions in DCIS microinvasions</p> <p>Speaker Ana Forero Pinto</p>
	<p>11:20–11:40 Optimization of melanoma treatment with cocktails of CAR-T cells of different affinities</p> <p>Speaker Emilie Favier</p>
	<p>11:40–12:00</p> <p>Modeling the reversible transition of glioblastoma cells to resistant-senescent states via transport equations</p> <p>Speaker José Antonio Romero Rosales</p>
12:00	
10:40	<p>Contributed Talks Session Location: University of Graz, 01.14 - HS</p>
	<p>10:40–11:00</p> <p>Modelling mass asymptomatic testing strategies for early containment of infectious disease outbreaks in prisons</p>

Speaker
Prof. Lorenzo Pellis

11:00–11:20 **Cost-effectiveness of MenB vaccination to control the spread of gonorrhoea in the UK**

Speaker
Ian Hall

11:20–11:40 **Modelling West Nile spread in a habitat heterogeneous in space and time**

Speaker
Andrea Pugliese

11:40–12:00

Modelling community and healthcare worker transmission using a two-population SEIS Framework informed by ONS survey

Speaker
jingsi xu

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 15.27 - SR

10:40–11:00

Quantitative modeling of cytochrome P450 gene expression regulated by pregnane X nuclear receptor

Speaker
Veronika Bernhauerová

11:00–11:20

Cell Trajectory Inference based on Schrödinger Problem and a Mechanistic Model of Stochastic Gene Expression

Speaker
Clémence Fournié

11:20–11:40

Classification-Based Inference of Regulatory Networks (CIRN): Bayesian Logistic Regression for Reconstructing Directional and Signed Interactions from Time-Series Data

Speaker
Giovanni Entero

11:40–12:00

Vitamin C as a nitrosation inhibitor: a modelling study across dietary patterns and water quality

Speaker
Dr Gordon R. McNicol

12:00

10:40

Contributed Talks

Session | Location: University of Graz, 15.34 - SR

10:40–11:00

Mathematical Modeling of Glucose Transport in Hydrogel-Based Microneedle Biosensors for Continuous Glucose Monitoring

Speaker
Mohsen Rezaeian

11:00–11:20

Mathematical Modeling of Biofilm Eradication Using Optimal Control of Antibiotic Treatment

	<p>Speaker Rehan Akber</p>
	<p>11:20–11:40 Modelling tissue damage in destructive lung disease</p> <p>Speaker Dr Alice Peyraud</p>
	<p>11:40–12:00 Extended Pseudo-spectral Physics-inferred Neural Networks for phase field models</p> <p>Speaker Callum Marsh</p>
12:00	
14:00	
	<p>Contributed Talks Session Location: University of Graz, 11.03 - HS</p>
	<p>14:00–14:20 Spatial heterogeneity accelerates phase-to-trigger transitions of mitotic waves</p> <p>Speaker Daniel Ruiz-Reynés</p>
	<p>14:20–14:40 From Food Webs to Fluxes: A New Decomposition of Ecosystem Networks</p> <p>Speaker Caner Kazanci</p>
	<p>14:40–15:00 Mitochondrial Transport Constraints Drive Metabolic Plasticity in SDH-Deficient Cells</p> <p>Speaker Ramin Nashebi</p>
15:00	
14:00	
	<p>Contributed Talks Session Location: University of Graz, 11.02 - HS</p>
	<p>14:00–14:20</p> <p>Modelling epithelial homeostasis as an emergent property of the dynamical coupling between barrier function, immune response, and the microbiome</p> <p>Speaker Elisa Domínguez-Hüttinger</p>
	<p>14:20–14:40 Toward single-cell control: noise-robust perfect adaptation in biomolecular systems</p> <p>Speaker Dongju Lim</p>
	<p>14:40–15:00</p> <p>Modeling circadian–contraceptive interactions: Simulations reveal daytime dosing as optimal for pill efficacy</p> <p>Speaker Dr Brenda Lyn Gavina</p>
15:00	
14:00	
	<p>Contributed Talks Session Location: University of Graz, 15.46 - SR</p>
	<p>14:00–14:20 Limiting resistance evolution through drug combinations</p> <p>Speaker Christin Nyhoegen</p>
	<p>14:20–14:40 Modeling of biofouling dynamics in membrane filtration systems</p>

	<p>Speaker Vincenzo Luongo</p>
	<p>14:40-15:00</p> <p>Geometric analysis of an epidemiological model for Olive Quick Decline Syndrome (OQDS)</p> <p>Speaker Keren Tapper</p>
15:00	
14:00	<p>Contributed Talks Session Location: University of Graz, 15.12 - HS</p>
	<p>14:00-14:20 Non-ergodicity in ecology and evolution</p> <p>Speaker Teemu Kuosmanen</p>
	<p>14:20-14:40 Quantifying fitness, selection and survival in population trees with cell death</p> <p>Speaker Arthur Genthon</p>
	<p>14:40-15:00 Predicting the fate of mutation rate modifiers that shift the mutation bias</p> <p>Speaker Diego Tenoch Morales Lopez</p>
15:00	
14:00	<p>Contributed Talks Session Location: University of Graz, 02.21 - HS</p>
	<p>14:00-14:20</p> <p>Multiscale Hybrid Modeling of CAF Heterogeneity Reveals Spatially Driven Treatment Responses in the Tumor Microenvironment</p> <p>Speaker Junho Lee</p>
	<p>14:20-14:40</p> <p>Optimization of treatment strategies for breast cancer by targeting cancer-associated fibroblasts</p> <p>Speaker Tugba Akman</p>
	<p>14:40-15:00</p> <p>Modeling Administration Time-Of-Day Effects in Clinical Research: A Simulation Study with Application to Cancer Chronotherapy</p> <p>Speaker Sacha Revillon</p>
15:00	
14:00	<p>Contributed Talks Session Location: University of Graz, 15.11 - HS</p>
	<p>14:00-14:20</p> <p>Inferring CD8⁺ T Cell Differentiation Trajectories in Cancer through Data-Driven Distribution Modelling</p> <p>Speaker Nissrin Alachkar</p>
	<p>14:20-14:40</p> <p>Integrating Mechanistic Modeling and Machine Learning to Predict CAR-T Therapy Outcomes from CD4⁺/CD8⁺ Dynamics</p>

	<p>Speaker Saranya Varakunan</p>
	<p>14:40–15:00 Regulatory Network Topology Dictates Epithelial-Mesenchymal Fate Plasticity in Carcinomas</p>
15:00	<p>Speaker Mubasher Rashid Rather</p>
14:00	<p>Contributed Talks Session Location: University of Graz, 02.11 - HS</p>
	<p>14:00–14:20 Towards predictive relapse model in ALL</p>
	<p>Speaker Sergio Márquez-Díaz</p>
	<p>14:20–14:40 Mathematical modelling of 5-aminolevulinic acid in glioblastoma</p>
	<p>Speaker Charlotte Baxter</p>
	<p>14:40–15:00 The evolutionary fitness landscape of extrachromosomal DNA in cancer</p>
15:00	<p>Speaker Magnus Haughey</p>
14:00	<p>Contributed Talks Session Location: University of Graz, 10.01 - HS</p>
	<p>14:00–14:20 A reaction-diffusion model of epithelial polarity dynamics in the endometrium over the menstrual cycle</p>
	<p>Speaker Claire Miller</p>
	<p>14:20–14:40 Combined experimental and mathematical modeling methods reveal complex mechanisms behind the growth and shape control of tip-growing cells</p>
	<p>Speaker Rholee Xu</p>
	<p>14:40–15:00 A mathematical model of osteocyte network growth</p>
15:00	<p>Speaker Jack Fenwick</p>
14:00	<p>Contributed Talks Session Location: University of Graz, 01.18 - SZ</p>
	<p>14:00–14:20 Quantification of Information Flow by Dual Reporter System and Its Application to Bacterial Chemotaxis</p>
	<p>Speaker Kento Nakamura</p>
	<p>14:20–14:40 Semi-amortised simulation-based inference for stochastic nonlinear mixed-effects models</p>
	<p>Speaker Henrik Häggström</p>

15:00	<p>14:40–15:00</p> <p>Using Approximate Bayesian Computation for Model Selection in a Dual-Layer Cell Migration Model</p> <p>Speaker Tracy Stepien</p>
14:00	<p>Contributed Talks</p> <p>Session Location: University of Graz, 15.34 - SR</p>
	<p>14:00–14:20 On the stability of a non-local kinetic model for density-dependent cell migration</p> <p>Speaker Francesco Maria Mori</p>
	<p>14:20–14:40 Genetic Switching Dynamics in a Spatial Branching Model of Cancer Metastasis</p> <p>Speaker Lena Zuspahn</p>
15:00	<p>14:40–15:00 Lightning Laplace methods for floral-arthropod electrostatics</p> <p>Speaker Samuel Harris</p>
14:00	<p>Contributed Talks</p> <p>Session Location: University of Graz, 15.05 - HS</p>
	<p>14:00–14:20 Bridging Structured PDEs and ODE Models in Ovarian Follicle Dynamics</p> <p>Speaker Claudio Iuliano</p>
	<p>14:20–14:40 Simulation of Dll-4 and Notch Dynamics in a Blood Vessel with Cellular Rearrangement</p> <p>Speaker Tiago Gonçalves Pereira</p>
15:00	<p>14:40–15:00</p> <p>Opposites attract – the role of electrostatic polarisation in the sensory ecology of arthropods</p> <p>Speaker Ryan Palmer</p>
14:00	<p>Contributed Talks</p> <p>Session Location: University of Graz, 11.33 - SR</p>
	<p>14:00–14:20 First Explore, Then Settle: A Theoretical Analysis of Evolvability as a Driver of Adaptation</p> <p>Speaker Juan Jiménez-Sánchez</p>
	<p>14:20–14:40 How group communication changes under competition</p> <p>Speaker Gayashan Jayavilal</p>
15:00	<p>14:40–15:00</p> <p>Global well-posedness and stability analysis of a degenerate system for a prey-predator and natural enemy interaction</p> <p>Speaker Duc-Anh Nguyen</p>

14:00

Contributed Talks

Session | Location: University of Graz, 02.01 - HS

14:00–14:20

Mathematical models for the treatment of leukemias with CAR-T cells alone and in combination with chemotherapy.**Speaker**

Mrs Aitana Moncho Espí

14:20–14:40

Mechanisms of Synergy and Resistance: Modeling Dynamic PD-L1 Regulation in Combination Immunotherapy**Speaker**

Bruce Pell

14:40–15:00

From clustering to dispersal: collective invasion driven by adhesion and motility**Speaker**

Josue Manik Nava

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 11.11 - SR

14:00–14:20

Mind the Gaps: How the Spiral of Silence Drives Partisan Misperception in the United States Political System**Speaker**

Daniel Levy

14:20–14:40

Thin-film modelling and parameter optimisation for biofilms**Speaker**

Dr Alex Tam

14:40–15:00

A mathematical model for a therapeutic approach for atherosclerosis**Speaker**

Dr Nader El Khatib

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 15.02 - HS

14:00–14:20

Gardner volumes and self-organization in a minimal model of complex ecosystems**Speaker**

Frederik Thomsen

14:20–14:40

A model of adipose cell population dynamics under variable energy balance**Speaker**

Aleksandra Tomaszek

14:40–15:00

Evolutionary Escape in Antibiotic Cycling Therapies**Speaker**

Esteban Hernandez Vargas

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 15.04 - HS

14:00-14:20 **Can we PrEP Our Way Out of the HIV Epidemic?**

Speaker
Dr Salman Safdar

14:20-14:40

Modeling the Geospatial Dynamics of Lyme Disease in Maryland Under Projected Climate Scenarios

Speaker
Saliyu Musa

14:40-15:00

Mesoscale community organization governs epidemic onset and spread in metapopulations

Speaker
Malbor Asllani

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 02.23 - HS

14:00-14:20

When Saboteur Bacteria Undermine Chemotherapy: A Mathematical Model of Cancer Treatment Dynamics

Speaker
Anna Geretovszky

14:20-14:40

Exploiting acid-dependent 'public bad' dynamics to develop normalizing adaptive therapies

Speaker
Kevin Scibilia

14:40-15:00

Mathematical and Computational Tools Aligned with Current Pharmaceutical Challenges

Speaker
Fahima Nekka

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 11.01 - HS

14:00-14:20 **Spectral Parameterization of EEG Dynamics during Emergence from General Anesthesia**

Speaker
Sandra Widmann

14:20-14:40

Novel methods for analyzing dynamics of functional brain networks: complex correlation patterns defining a robust functional architecture

Speaker
Prof. Maria Ercsey-Ravasz

14:40-15:00

The trade-off between fractal morphology and function of Drosophila neurons

Speaker
Ildikó-Beáta Márton

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 10.11 - HS

14:00-14:20

A new multi-scale model: An immuno-epidemiological approach using the total viral load in the population to model the spread of infectious disease outbreaks.**Speaker**

Mathilde Massard

14:40-15:00

An agent-based modelling approach to investigate the impact of gender on tuberculosis transmission in Uganda**Speaker**

James Doran

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 15.06 - HS

14:00-14:20

Investigating the Relationship Between Angiogenesis and Tumour Carrying Capacity with Physics Informed Neural Networks**Speaker**

Morghan van Walsum

14:20-14:40

A dynamical mechanism for intratumoral heterogeneity in breast cancer**Speaker**

Francisco Lopes

14:40-15:00

Spatial remodeling of the tumor-immune microenvironment by neoadjuvant chemoradiotherapy in NSCLC**Speaker**

Zuzanna Nowicka-Kaszkiwiak

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 05.12 - HS

14:00-14:20

A mathematical framework for coupled mechanics and mechanosensing in adherent cells**Speaker**

Dr Gordon R. McNicol

14:20-14:40

Optimal control of symmetry-breaking in cell fate specification**Speaker**

Pearson Miller

14:40-15:00

In vivo spatial dynamics of actomyosin oscillations**Speaker**

Jochen Kursawe

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 15.33 - SR

14:00–14:20

Identifying alternative explanations for population growth rate behaviour between ancestor and mutant strains of *Chlamydomonas reinhardtii* in stressful environmental conditions using multiple phenotype models

Speaker

Adam Hillman

14:20–14:40

Stability in asymmetric evolutionary games**Speaker**

Aradhana Narang

14:40–15:00

Intraspecific trait variation and niche choice in predator-prey dynamics**Speaker**

Anastasiia Enne

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 11.32 - SR

14:00–14:20

Dynamics of a modified piece-wise linear Toivonen-Fromhage model**Speaker**

Ryusuke Kon

14:20–14:40

Automated Discovery of Mechanistic Models for Microbial Communities**Speaker**

Artai Rodríguez Moimenta

14:40–15:00

Identical ancestor points and maximal specieslike clusters**Speaker**

Samuel Alexander

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 01.22 - HS

14:00–14:20

A mathematical framework for replication stress in cancer**Speaker**

Dr Francisco Berkemeier

14:20–14:40

Pharmacokinetic-Based Optimization of Dynamic PET Time Acquisition Protocols for Cancer Theranostics

Speaker

Diego Samuel Rodrigues

14:40–15:00

TopROI: Topological partition and analysis of colorectal cancer tissue architecture**Speaker**

Sergio Serrano de Haro Iváñez

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 15.21 - SZ

14:00-14:20

Application of Radial Basis Function Physics-Informed Neural Networks in Fractional Pharmacokinetics Modeling**Speaker**

Reza Mokhtari

14:20-14:40

Interaction-based networks describe chemical pathways within proteins**Speaker**

Fabian Schuhmann

14:40-15:00

Explaining the dynamical consequences of cis binding in a mathematical model of Notch signaling.**Speaker**

Specioza Namboozie

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 12.01 - HS

14:00-14:20

Selective sweep probabilities in spatially expanding populations**Speaker**

Alexander Stein

14:20-14:40

Optimal strategies for utilizing host plant distributions to slow the spread of plant pests**Speaker**

Adam Lampert

14:40-15:00

Eco-evolutionary dynamics of proliferation: from a community model to tumor growth**Speaker**

Dr Farnoush Farahpour

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 11.34 - SR

14:00-14:20

Dissecting GLUT4 Trafficking: Structural Motifs, Insulin Responsiveness and Retention**Speaker**

Adelle Coster

14:20-14:40

Curved proteins drive both passive and actin-driven biting, pushing and engulfment of soft objects**Speaker**

Shubhadeep Sadhukhan

14:40-15:00

Control of electrophysiology experiments in open and closed loop**Speaker**

Melvyn Tyloo

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 15.27 - SR

14:00-14:20

A Systematic Framework for Inferring Stochastic Dynamics from Data

Speaker
Katarina Bodova

14:20–14:40 **Invariant Image Reparameterisation for Identifiability Analysis of Individual-Based Models**

Speaker
Oliver Maclaren

14:40–15:00

PINNs for structured population dynamics inference: Application to oocyte dynamics in fish ovaries

Speaker
Louis Fostier

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 01.15 - HS

14:00–14:20

OP7, a promising influenza virus-derived interfering defective particle: multiscale modeling, role of the innate immune response and prediction of treatment windows

Speaker
Daniel Rüdiger

14:20–14:40

Mathematical Modeling of Tertiary Lymphoid Structure Development and Stage Progression in Chronic Kidney Disease

Speaker
Jinghao Chen

14:40–15:00

Regimes and mechanisms of inflammation described by reaction-diffusion systems

Speaker
Dr Wissam El Hajj

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 01.14 - HS

14:00–14:20

Understanding breakthrough infections following mpox vaccination: variation in the frequency of clinical characteristics

Speaker
Ms Anna Fairweather

14:20–14:40

Real time response modelling for high pathogenicity avian influenza

Speaker
Chris Baker

15:00

14:00

Contributed Talks

Session | Location: University of Graz, 03.01 - HS

14:00–14:20

Generation time for diseases with variable infectiousness before and after symptom onset: beyond geometric waiting times.

Speaker
Dr Jordi Ripoll

14:20-14:40

Eco-Epidemic Reaction-Diffusion Model with Fear and Carryover Effects: Stability and Pattern Formation

Speaker

Namrata Mani Tripathi

14:40-15:00

Optimising booster vaccination against SARS-CoV-2 variants: when should a variant-adapted vaccine be developed?

Speaker

Abbie Evans

15:00

17:00

Contributed Talks

Session | Location: University of Graz, 01.14 - HS

17:00-17:20

Modeling PSA dynamics to predict resistance during intermittent androgen deprivation therapy

Speaker

Minhye Kim

17:20-17:40

Towards a thermodynamic consistent framework for reversible-irreversible hysteresis in epigenetic landscapes

Speaker

Jacobo Ayensa-Jiménez

17:40-18:00

A topological framework for the analysis of complex cellular interactions

Speaker

MARIA JOSE JIMENEZ

18:00-18:20

Deep reinforcement learning driven evolutionary therapy design for non-small cell lung cancer

Speaker

Laura Jansen-Storbacka

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.21 - SZ

17:00-17:20

Mapping the spread of artemisinin resistance in Africa

Speaker

Lucy Harrison

17:20-17:40

From Classrooms to Communities: Modeling the Impact of School-Based Interventions for Future Pandemic Response

Speaker

Ganna Rozhnova

17:40-18:00

The Effectiveness of Contact Tracing on Clustered Networks: An Event-Driven Network Simulation Study

Speakers

Dr Martin Bootsma, Dr Oluwapelumi Stephen Awolude

18:00–18:20

Mathematical Modeling of Tuberculosis Transmission in Comorbid Populations: A Six-Compartmental Stability Analysis

Speaker
Abigael Dangate

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 11.34 - SR

17:00–17:20

A phylodynamic model for within-host HCV infection integrating genomic sequences and time series biomarkers

Speaker
Wei-Ting Chen

17:20–17:40

Inferring the rules of TCR–pMHC binding using synthetic co-evolution

Speaker
Antonio Matas Gil

17:40–18:00

A Stochastic Germinal Center Model in Antigenic Space for Cross-Variant Antibody Responses to SARS-CoV-2 Vaccination

Speaker
Rodolfo G. Blanco-Rodriguez

18:00–18:20

What happens when an epidemiologist gets refractory giardiasis? Within-host modelling of duodenal infection dynamics and oral treatment

Speaker
David Haw

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 03.01 - SR

17:00–17:20

Can Cheating Go Viral? A Classroom-Based Social Contagion Model of AI Misuse

Speaker
Donna Dyer

17:20–17:40

Designing a feedback-oriented outreach activity: insights from a trial and error approach

Speaker
Christin Nyhoegen

17:40–18:00

Community-Engaged Learning in an Interdisciplinary Math-Biology Course

Speaker
Brynja Kohler

18:00–18:20

Granger-causality analysis reveals defective viral genomes with antiviral potential from longitudinal infection data

Speaker
Tanja Laske

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 11.32 - SR

17:00–17:20

Branching Process Models of Sub-Critical FMD Transmission: Inference, Control, and Surveillance Design in Karnataka, India**Speaker**

Glen Guyver-Fletcher

17:20–17:40

Impact of infant monoclonal antibody protection on RSV dynamics: a stage-structured modelling study**Speaker**

Anna Autoriello

17:40–18:00

The elasticity of SARS-CoV-2 transmission across the demographic landscape**Speaker**

Rey Audie Escosio

18:00–18:20

Time Until Disease Detection in a Stochastic Epidemic Model with Imperfect Vaccination**Speaker**

Diana Taipe Hidalgo

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.34 - SR

17:00–17:20

Modelling the active coordination of cell adhesion and contractility in cells and tissues**Speaker**

Carina Dunlop

17:20–17:40

Effects of Cell Orientation on Formation of Ordered Arrangement of Photoreceptor Cells in the Zebrafish Retina: A Lattice Model Study**Speaker**

Keiichi Yamamoto

17:40–18:00

How little is enough? Can low-complexity parameters discriminate wakefulness and anesthetized states?**Speaker**

Zoi-Lemonia Papanagiotou

18:00–18:20

A reference panel assisted geometric structure non-negative matrix factorization for the deconvolution of bulk tissue RNA-seq data**Speaker**

Dr Shaoyu Li

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 01.18 - SZ

17:00–17:20

Discrepancies between discrete and continuum models: insights from oncolytic virotherapy**Speaker**

David Morselli

17:20-17:40

Personalizing Cancer Therapy by Modeling the Evolutionary Dynamics of the Tumor Immune Microenvironment

Speaker
Qingpeng Zhang

17:40-18:00

Mathematical modelling of combination treatment of polycythaemia vera explains observed synergy of drugs

Speaker
Tobias Idor Boklund

18:00-18:20

Investigating the impact of infusion time-of-day on the antitumour efficacy of immune checkpoint inhibitors

Speaker
Marie Haghebaert

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 11.33 - SR

17:00-17:20

Transmission dynamics of Mpox: Implications for Global Control from the 2024 Outbreak

Speaker
Adnan Khan

17:20-17:40

Phylodynamic inference of the contributions of different contact types to infectious disease transmission

Speaker
Don Klinkenberg

17:40-18:00

Modeling the Heterogeneous Efficacy of Broad-Spectrum Medical Countermeasures: A Hybrid Approach from Outbreak Containment to Disease Burden Mitigation

Speaker
Youngsuk Ko

18:00-18:20

The evolution of latency in tuberculosis

Speaker
Alexander Beams

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.46 - SR

17:00-17:20

Perception of infection risk drives backward bifurcation during outbreaks

Speaker
Prof. Alexis Erich Alcocera

17:20-17:40

Mathematical modeling and optimal control analysis of impact of information-induced vaccination and saturated treatment on disease prevalence

Speaker
Dr Anuj Kumar

18:20

17:40–18:00

Improving Parameter Identifiability in Household-Transmission Models Using Genomic Data

Speaker
Golsa Sayyar

18:00–18:20

Evaluating infectious disease forecasts in a cost-loss situation

Speaker
Philip Gerlee

17:00

Contributed Talks

Session | Location: University of Graz, 15.27 - SR

17:00–17:20

Kron Reduction in Species-Reaction Graphs of Mass-Action Chemical Reaction Networks

Speaker
Manvel Gasparyan

17:20–17:40

A Kinetic Model of Yeast Fermentation Incorporating Nitrogen Metabolism

Speaker
Mr Diego Troitiño-Jordedo

17:40–18:00

Linking aggrephagy and mTOR signaling in amyotrophic lateral sclerosis: a minimal ODE model

Speaker
Alex De Nardi

18:00–18:20

Mechanistic modeling of extracellular vesicle-mediated immune evasion in *Candida albicans*

Speaker
Anastasia Solomatina

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 15.33 - SR

17:00–17:20

When does it pay to eat your friend?

Speaker
Josephine Solowiej-Wedderburn

17:20–17:40

Stochastic foraging and resource accumulation with queueing theory

Speaker
José Giral-Barajas

17:40–18:00

Far-from-equilibrium patterns in a cross-diffusion vegetation-autotoxicity model

Speaker
Frits Veerman

18:00–18:20

Population dynamics of gene drives with density-dependent fitness costs

Speaker
Sviatoslav R. Rybnikov

18:20

17:00

Contributed Talks

Session | Location: University of Graz, 11.11 - SR

17:00–17:20

How inertia affects autotoxicity-mediated vegetation pattern dynamics

Speaker
Prof. Giancarlo Consolo

17:20-17:40 **Dynamics of Consumer-Resource Systems**

Speaker
Rui Li

17:40-18:00 **Effects of Fitness Gradient**

Speaker
Jaku Svoboda

18:00-18:20

Forcing-Driven Nonlinear Dynamics of Satellite-Informed Agro-Forestry Socio-Ecological Systems

Speaker
Prof. Gerard Olivar-Tost

18:20

Friday 17 July

09:30

Contributed Talks

Session | Location: University of Graz, 01.15 - HS

09:30–09:50

A Novel Immunological Therapeutic Strategy Based on Morphology-Defined Endotypes of Skin Disease

Speaker

Ying Xie

09:50–10:10

Interferon-mediated antiviral protection limits Influenza spread: A spatial agent-based model

Speaker

Rodolfo Blanco-Rodriguez

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 15.27 - SR

09:30–09:50

Information degradation across data transformations affect causal inference

Speaker

Henrik Høiberg Jessen

09:50–10:10

Filtered Schemes for a Continuum Model of DNA Transcription

Speaker

Lisa Davis

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 15.06 - HS

09:30–09:50

Mathematical Modelling and Optimisation of Combined Oncolytic Virotherapy and Anti-PD-L1 Immunotherapy

Speaker

Hongfei Qiao

09:50–10:10

Multiple observations in blood cancer dynamics of AML, CML, and MPNs are comprehensively explained by the unifying Multiple Clone Cancitis model.

Speaker

Johnny Ottesen

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 10.01 - HS

09:30–09:50

From Checkerboards to Synchrony: How Mobility Alters Coupled Oscillator Dynamics

Speaker

Tilman Glimm

09:50–10:10

Spectral Fragility in Biological Spatial Networks under Geometric Vertex Noise

10:10	<p>Speaker Dr Ben Cardoen</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 15.21 - SZ</p> <p>09:30–09:50 A hybrid response surface–ODE framework for multiscale predictions of microalgae growth dynamics</p> <p>Speaker Mrs Mélanie Pietri</p> <p>09:50–10:10 Structural identifiability of stochastic processes: from single-particle trajectories to total particle density data</p> <p>Speaker Arianna Ceccarelli</p>
10:10	<p>Contributed Talks Session Location: University of Graz, 11.34 - SR</p> <p>09:30–09:50 Network motifs, bistability and drug targets under noise</p> <p>Speaker Prof. Samrat Chatterjee</p> <p>09:50–10:10 Quantitative Modelling of Microbial Colony Growth Dynamics</p> <p>Speaker Attila Csikász-Nagy</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 15.34 - SR</p> <p>09:30–09:50 Self-Organization in Stochastic Multiscale Systems with Conflict Resolution Dynamics</p> <p>Speaker Richard Kollar</p> <p>09:50–10:10 Macroscopic Models for Hard Anisotropic Particles</p> <p>Speaker Carmela Moschella</p>
10:10	<p>Contributed Talks Session Location: University of Graz, 01.18 - SZ</p> <p>09:30–09:50 HORIZON: Hierarchical Optimization for Residual Inference with Zero-drift Ornstein-Uhlenbeck Noise</p> <p>Speaker Yuhong Liu</p> <p>09:50–10:10 Efficient Integration of Binary Qualitative Data into ODE Model Estimation</p> <p>Speaker Domagoj Doresic</p>
10:10	

09:30

Contributed Talks

Session | Location: University of Graz, 02.23 - HS

09:30–09:50

Robust regimens predicted using a virtual murine cohort of bladder cancer with experimental validation**Speaker**

Hannah Anderson

10:10

09:50–10:10

Modeling of glioblastoma recurrence based on local microenvironment characteristics**Speaker**

Dr Hermann Frieboes

09:30

Contributed Talks

Session | Location: University of Graz, 02.21 - HS

09:30–09:50

Mechanistic mathematical modeling of primary myelofibrosis pathophysiology and progression**Speaker**

Qijie Wang

10:10

09:50–10:10

Dynamical systems analysis of a model coupling hematopoiesis, hematological malignancy and inflammation.**Speaker**

Morten Andersen

09:30

Contributed Talks

Session | Location: University of Graz, 01.14 - HS

09:30–09:50

Pattern Selection in mechanochemical model of pattern formation**Speaker**

Dr Szymon Cygan

10:10

09:50–10:10

Hexagons of Health: Robust Liver Detoxification Emerges from Lobular Geometry**Speaker**

Daniel Sanchez-Taltavull

09:30

Contributed Talks

Session | Location: University of Graz, 02.11 - HS

09:30–09:50

A Nonlinear ODE Model of Butyrate-Tumour-Immune Cell Dynamics in Colorectal Cancer**Speaker**

Alexandra Lawryshyn

10:10

09:50–10:10

Tumours, risk, and waves: learning from multi-modal data to predict cancer outcomes**Speaker**

Chay Paterson

09:30

Contributed Talks

Session | Location: University of Graz, 05.12 - HS

09:30–09:50

Inferring Tissue Evolution Dynamics from DNA Methylation Profiles

Speaker
Catherine Engert

09:50–10:10

From intracellular oscillations to complex behaviour in the unicellular slime mould *Physarum polycephalum*

Speaker
Linnéa Gyllingberg

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 11.33 - SR

09:30–09:50

Soil Biodiversity and Ecological Niches Under Climate Change: Modelling Insights from the BIOserviceS Project

Speaker
Rajneesh Kumar

09:50–10:10

Mathematical modelling of actin polymerisation in biological condensates

Speaker
Fynn Wolf

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 11.01 - HS

09:30–09:50

Existence of periodic traveling waves in neural fields with direction preference

Speaker
Maren Bråthen Kristoffersen

09:50–10:10

Can we hear the shape of a neural network?"

Speaker
Giovanni Naldi

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 15.11 - HS

09:30–09:50

Machine Learning-Based Classification of Microsatellite Instability in Colorectal Carcinoma Using PCR Fragment Length Analysis

Speaker
Isabel Gernand

09:50–10:10

Extended Kalman Filter for Real-Time Estimation of Hidden Bone Marrow Dynamics from Peripheral Blood Measurements

Speaker
Mr YUSUF JAMILU UMAR

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 01.22 - HS

09:30–09:50

Modeling and Optimization of Microfluidic Spheroid-on-Chip Systems Using Computational Fluid Dynamics and Neural Network-Based Bayesian Optimization

Speaker
Mohsen Rezaeian

09:50–10:10

Mathematical Modeling of Prostate Growth for Digital Twin–Based Monitoring in Active Surveillance

Speaker
Valentin Schmid

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 15.05 - HS

09:30–09:50

Standing Wave Formation in In-Vitro Ultrasound Cell Culture Systems: Multiphysics Modeling and Experimental Investigation

Speaker
Dr Farshad Moradi Kashkooli

09:50–10:10

Phase-Field Model of Red Blood Cell Morphology in Sickle-Cell Anaemia

Speaker
João Maria Santos

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 03.01 - HS

09:30–09:50

Total progeny analysis for infectious clusters within epidemics, with applications to COVID-19 in Albania.

Speaker
Liam Critcher

09:50–10:10

Some measures for epidemic decision-making under limited resources in a stochastic SVIR model

Speaker
Dr María Gamboa Pérez

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 15.33 - SR

09:30–09:50

Phenotypical Characterization and Regional Morphometric Variation of the Invasive Indian Crow (*Corvus splendens*) in the Sultanate of Oman

Speaker
Dr Qais Abdullah SULIAMAN ALRawahi

09:50–10:10

Context-dependent coexistence and the spatial distribution of social parasites: fungus-growing ant communities as a case study

Speaker
Manish Sarkar

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 15.12 - HS

09:30–09:50

Modelling and inference of wildfire spread dynamics in UK moorland environment.

	<p>Speaker Axa-Maria Laaperi</p>
	<p>09:50–10:10 SIT-based control of <i>Aedes aegypti</i> mosquitoes featuring spatial heterogeneity</p>
10:10	<p>Speaker Olga Vasilieva</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 15.04 - HS</p>
	<p>09:30–09:50 Personalizing the Patient Model for Depth-of-Hypnosis Control</p>
	<p>Speaker Gorazd Karer</p>
	<p>09:50–10:10 Spectral EEG differences using Eleveld and Schnider propofol PK/PD models</p>
10:10	<p>Speaker Duygu Aydin</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 11.32 - SR</p>
	<p>09:30–09:50 A distance-space framework for inferring selection from time-resolved trait data</p>
	<p>Speaker Farnoush Farahpour</p>
	<p>09:50–10:10 Macaque social network structure beyond rank assortativity</p>
10:10	<p>Speaker Diogo Pires</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 15.02 - HS</p>
	<p>09:30–09:50 A Disease-Informed Neural Network Model for COVID-19 Dynamics in Diabetic and Non-Diabetic Populations</p>
	<p>Speaker Dr Monalisa Anand</p>
	<p>09:50–10:10 Image Segmentation for Biomedical Hyperspectral Images</p>
10:10	<p>Speaker Na Yu</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 11.11 - SR</p>
	<p>09:30–09:50 Mathematical Modelling of Stochastic Gene Expression Quantifies mRNA Heterogeneity in Cancer Cell Populations with Extrachromosomal DNA</p>
	<p>Speaker Poulami Somanya Ganguly</p>
	<p>09:50–10:10 Inferring Cell-Cell Interaction Dynamics from Cell Trajectory Data Using Deep Attention Networks, and the Mechanisms Underlying T Cell Behavioural Heterogeneity in the Response to Cancer</p>

10:10	<p>Speaker Mr James Boyle</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 10.11 - HS</p>
	<p>09:30–09:50 Simulation-based inference of epidemic and phylodynamic models via neural posterior estimation</p> <p>Speaker Francesco Pinotti</p>
10:10	<p>09:50–10:10 Stability Analysis of a Multistage Compartmental Model of Infection</p> <p>Speaker Jacobs Somnic</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 02.01 - HS</p>
	<p>09:30–09:50 Heavy-tailed dormancy and the role of cancer cell death in metastatic reactivation: a data-driven mathematical modelling study</p> <p>Speaker Nikolaos Sfakianakis</p>
10:10	<p>09:50–10:10 A mathematical model of cell-state dynamics in melanoma</p> <p>Speaker Ms Charlotte Taylor Barca</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 12.01 - HS</p>
	<p>09:30–09:50 Exploring reaction-diffusion equations: Modelling wildfires and resistance development</p> <p>Speaker Luca Madita Nieding</p>
10:10	<p>09:50–10:10 Population modelling under limited data: using expert knowledge in model calibration</p> <p>Speaker Dr Sarah Vollert</p>
09:30	<p>Contributed Talks Session Location: University of Graz, 11.03 - HS</p>
	<p>09:30–09:50 Mathematical Modelling and Numerical Simulations for Lipolysis on Lipid Droplets</p> <p>Speaker Dr Reymart Salcedo Lagunero</p>
10:10	<p>09:50–10:10 Structural Identifiability of Stoichiometric Matrix in Mass-Action Biochemical Reaction Networks</p> <p>Speaker Shivam Yadav</p>

09:30

Contributed Talks

Session | Location: University of Graz, 11.02 - HS

09:30-09:50 **Molecular noise modulates transitions in the cell-fate differentiation landscape****Speaker**

Yujing Liu

09:50-10:10

Coupled plasticity axes give rise to coordinated cellular behaviour and differentially aggressive attractor states in breast cancer**Speaker**

Ritesh Kumar Meena

10:10

09:30

Contributed Talks

Session | Location: University of Graz, 15.46 - SR

09:30-09:50 **Replicator Dynamics as a Framework for Invasion in Microbial Communities****Speaker**

Tomas Freire

09:50-10:10 **Habitat fragmentation promotes spatial scale separation under resource competition****Speaker**

Malbor Asllani

10:10