Submittee: Thomas Hillen
Date Submitted: 2017-06-01 07:21
Title: Graduate Summit in Mathematical Biology and Applied PDE
Event Type: Summer-School

Location:
Palisades Centre, Jasper, Canada

Dates:
May 25-28, 2017

Topic:
We invited our graduate students to the Palisades Centre in beautiful Jasper National Park. We offered a series of scientific and professional development activities, where we discussed mathematical modelling of biological problems, analysis of partial differential equations, career development in applied and industrial mathematics, and the art of communication. Participants had the opportunity to give either a short talk or a poster.

Methodology:
* Tutorials on modeling of collective behavior with PDEs (R. Eftimie , U Dundee)
 * Lecture on Industrial Mathematics (J. Stockie, Simon Fraser U)
 * Workshop on public speaking
 * Discussion of career paths in applied mathematics
 * Talks and posters of participants with poster awards
 * Art and music night

Objectives Achieved:
The workshop was a great success. The three tutrial lectures of Dr. Eftimie showcased nicely the sophisticated and interesting analysis methods that can be used to understand biological models. Many of the participating students and faculty members were inspired to further discuss the topics raised by Dr. Eftimie. The professional development activities on writing, speaking and career planning found great interest among graduate students and lively discussions ensued. Students have been made aware of opportunities an challenges. Furthermore, students presented their own work in short talks and poster sessions.

Scientific Highlights:
Three lectures on swarming by R. Eftimie. A particular highlight was her presentation of newly found multiple-period zig-zag patterns. These have never been analysed and Eftimie invited collaboration on this interesting topic.

Organizers:

Hillen, Thomas, Mathematical and Statistical Sciences, University of Alberta
Bianchi, Arianna, Mathematical and Statistical Sciences, University of Alberta

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Speakers:

Bianchi, Arianna, Mathematical and Statistical Sciences, University of Alberta, Postdoctoral Fellow - Co- organizer,Hike

Coombs, Daniel, Department of Mathematics, University of British Columbia, Professor and Graduate Advisor, Mathematics - Feedback from former students

de Vries, Gerda - Mathematical and Statistical Sciences, University of Alberta, Professor & Associate Chair (Undergraduate)Science - Speaking Workshop

Eftimie, Raluca - Department of Mathematics, University of Dundee, Senior Lecturer - Formation and Swarming I, II & III

Hillen, Thomas - Mathematical and Statistical Sciences, University of Alberta, Professor - Lead Organizer, Art and Music

Lewis, Mark - Mathematical and Statistical Sciences, University of Alberta, Canada Research Chair in Mathematical Biology - Co-organizer, Hike

Shen, Zhongwei - Mathematical and Statistical Sciences, University of Alberta, Postdoctoral Fellow - Short Talks I

Stockie, John - Department of Mathematics, Simon Fraser University, Professor - Industrial Mathematics

Tyson, Rebecca - Mathematical Biology, University of British Columbia - Okanagan, Associate Professor - Welcome

van den Driessche, Pauline - Department of Mathematics and Statistics, University of Victoria, Professor Emeritus, Adjunct Professor, Dept. Computer Science - Poster session

Ward, Michael - Department of Mathematics, University of British Columbia, Professor - Short Talks II

Bouman, Judith, University of British Columbia - Modeling the appearance and spread of drug-resistant influenza at the within-host scale

Buttenschoen, Andreas, University of Alberta - A space-jump derivation for non-local models of cell-cell adhesion

Charette, Laurent, University of British Columbia - Grad Student - Pattern Formation on a slowly evolving spherical cap

Chugunova, Marina, University of Calgary - Grad Student - Computing true ocular pressure via applanation tonometry

Contreras, Carlos, University of Alberta - Grad Student - Effect of radiation on the cell cycle through mathematical modelling

Deutscher, Karl MacEwan University - Grad Student - Analyzing three different predator prey models

Durney, Clinton, University of British Columbia - Grad Student - A Mechano-Chemical Model of Drosophila Dorsal Closure

Fagbade, Adeyemi University of Saskatchewan - Grad Student

Falcao, Rebeca, University of British Columbia - Grad Student - Unknown title

Fischer, Sam, University of Alberta - Grad Student - Optimal Placement of Watercraft Inspection Stations

Funk, Felix, University of British Columbia - Grad Student - How does Chemotaxis affect Cooperation in Public Good Interactions?

Gai, Chunyi, Dalhousie University - Grad Student - Slowly varying parameters and the probability densities for delayed bifurcations in partial differential equations

Hall, Meghan, University of Alberta - Grad Student - Mathematical Model of Growth and Neuronal Differentiation of Human Induced Pluripotent Stem Cells Seeded on Melt Electrospun Biomaterial

Scaffold

Herrera Alejandra, University of British Columbia - Grad Student - Counting individual fluorophores in STORM data

Hosseini, Hossein, University of Lethbridge - Grad Student

Ilmer, Ilia, University of Calgary - Grad Student - Reaction diffusion model of carrying capacity driven diffusion with harvesting and regularly diffusing population

Iyaniwura, Sarafa, University of British Columbia - Grad Student - Mathematical modelling of partially permeable boundaries in biological systems

Jamieson-Lane, Alastair, University of British Columbia - Grad Student - Chemicction dynamical reas in 2D, and the troubles they cause

Jaramillo, Juan, University of Victoria - Grad Student - Host Population Structure is important for the recurrence of Influenza A

Kovacic, Mitchell, Simon Fraser University - Grad Student - Swarm equilibria in domains with boundaries

MacQueen, Sarah, University of British Columbia - Grad Student - Stochastic modelling of bumble bee movement,

Marley, Jessa, University of Alberta - Grad Student - Optimizing pipeline construction in caribou habitat

Martignoni, Maria, University of British Columbia - Grad Student - Persistence, establishment and spread of mycorrhizal inoculum

Mata, MayAnne, University of British Columbia - Grad Student - An approximate model for stochastic avian flu epidemic recurrence

Olobatuyi, Oluwole, University of Alberta - Grad Student

Paquin-Lefebvre, Frederic, University of British Columbia - Grad Student - Interactions of Bulk Diffusion with Localized Reactions

Quee, Graham, University of Victoria - Grad Student - Optimizing pipeline construction in caribou habitat

Reimer, Jody, University of Alberta - Grad Student - Series of unfortunate events; how autocorrelation affects population growth and structure

Rhodes, Adam, University of Alberta - Grad Student - Mathematical Modeling of Cancer Stem Cell Dynamics: Insights Into Radio-Resistance

Saad-Roy, Chadi, University of Victoria - Undergrad Student - Model of Bovine Babesiosis Including Juvenile Cattle

Scurll, Josh, University of British Columbia - Grad Student - Unmasking heterogeneity within tumours using single-cell proteomics and computational clustering

Wang, Kunpeng, Dalhousie University - Grad Student - Group theoretical methods and their applications

Wong, Ka Wah (Tony), University of British Columbia - Grad Student - Surface PDEs using the Closest Point Method

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Links: