Banff International Research Station
for Mathematical Innovation and Discovery

Complex Data Structures in the Health, Social and Environmental Sciences

Sunday, April 8, 2007 to Friday, April 13, 2007

Sunday   Arrival

16:00   Check-in begins (Front Desk – Professional Development Centre - open 24 hours)
            Lecture rooms available after 16:00 (if desired)
17:30-19:30 Buffet Dinner, Donald Cameron Hall
20:00   Informal gathering in 2nd floor lounge, Corbett Hall

Monday

7:00-8:45   Breakfast
8:45-9:00   Introduction and Welcome to BIRS by BIRS Station Manager, Max Bell 159

NPCDS Planning: Retrospective and Renewal
9:00-10:15 A brief history of the NPCDS
10:15-10:45 Coffee Break
10:45-12:00 The MRS application process
12:00-14:00 Lunch
14:00-15:00 Projects become Pillars? A reflection on NPCDS activities
15:00-15:30 Coffee Break
15:30-16:15 Breakout Groups
16:15-17:00 Reports
17:00-17:30 Wrap – up: identify outstanding/pressing issues for Wednesday

Tuesday

7:00-8:15   Breakfast

Spatial/Temporal Modelling for Marine Ecological Systems
8:30-9:15   Project Overview, Accomplishments and New Initiatives
                    Mike Dowd
9:15-9:30   Open Discussion
9:30-10:00 Statistical Data Assimilation for Marine Ecological Prediction - Mike Dowd
10:00-10:30 Coffee Break, 2nd floor lounge, Corbett Hall
10:30-10:55 Sockeye Salmon ecosystem studies in Rivers Inlet, BC - Rick Routledge
10:55-11:20 Tracking Marine Mammals using Bayesian State Space Models – Mike Dowd
11:20-11:30 Open Discussion
11:30-13:00 Lunch

Forests, Fires and Stochastic Modeling
13:00-13:45 Project Overview, Accomplishments and New Initiatives
                    John Braun, Charmaine Dean, David Martell

13:45-14:00 Open Discussion
14:00-14:25 Fire Spread Models - Cordy Tymstra (Government of Alberta)
14:25-14:50 Fire Management - Dave Martell (University of Toronto)
14:50-15:15 Boreal forest fires and climate – Ed Johnson (University of Calgary)
15:15-15:30 Open Discussion
15:30-16:00 Coffee Break, 2nd floor lounge, Corbett Hall
16:00-16:45 Estimating the Quantile Function: Applications to Prairie Rainfall Data - Giles Hooker
(Cornell University)
16:45-17:00 Open Discussion
17:30-19:30 Dinner

Wednesday

7:00-7:50   Breakfast
             Statistical Methods for Complex Survey Data
8:00-8:30 Project Overview, Accomplishments and New Initiatives: Changbao Wu
8:30-8:45   Overview of the StatCan Internship Program - Milorad Kovacevic
8:45-9:00   Overview of the Westat Internship Program - Randy Sitter
9:00-9:30   Talk #1 - Ivan Carrillo
9:30-10:00 Talk #2 - Wilson Lu
10:00-10:30 Coffee Break, 2nd floor lounge, Corbett Hall

             Design and Analysis of Computer Experiments for Complex Systems
10:30-11:15 Project Overview, Accomplishments and New Results – Derek Bingham
11:15-11:30 Open Discussion
11:30-11:55 Latent Socio-Spatial Process Model for Social Networks – Randy Sitter
11:55-12:20 Orthogonal and Nearly Orthogonal Designs for Computer Experiments – Boxin Tang
12:30-14:00 Lunch
14:00-18:00 NPCDS Planning (Report on Monday's Activity, CIHR Consensus Meeting, Conference
             Call with Serge Villemure, Conference Call with John Frank?)
17:30-19:30 Dinner

Thursday

7:00-8:00   Breakfast
             Statistical Genomics: Statistics of Complex, High-Throughput Genetic Data
8:00-8:45   Project Overview, Accomplishments and New Initiatives: Rafal Kustra
8:45-9:00   Open Discussion
9:00-9:25   Stratified FDR control for multistage genotyping projects: the ARCTIC validation design
             Celia Greenwood: Hospital for Sick Children, Toronto
09:25-9:50   Bayesian estimation of p-values and genome-wide SNP studies: Duncan Murdoch, U of
             Western Ontario
9:50-10:00   Discussion
10:00-10:20 Coffee break
10:20-10:50 High-throughput data analysis for life scientists, methodologists, and funding agencies:
             Bob Nadon McGill University and Genome Quebec Innovation Centre
10:50-11:00 Discussion
11:00-11:30 Learning about gene function through phenotypic studies of genome- wide gene deletion
             and inhibition: Jenny Bryan, UBC
11:30-11:40 Discussion
11:40-13:00 Lunch

             Data Mining with Complex Data Structures

13:00-13:45 Project Overview, Accomplishments and New Initiatives
 Hugh Chipman,
13:45-14:00 Open Discussion
14:00-14:25 "Dynamic Graph Modeling" - Shirley Mills
14:25-14:50 "Kernels and Ensembles: Perspectives on Statistical Learning" - Mu Zhu
14:50-15:00 Open Discussion
15:00-15:30 Coffee break, 2nd floor lounge, Corbett Hall
15:30-15:55 "A New Method for Linking metabolic and gene profiles to biological outcomes"
 - S. Stanley Young
15:55-16:20 "Kernel-induced classification tree and random forest" – Guangzhe Fan
16:20-16:30 Open Discussion
16:30-15:15 Statistical Innovation for Complex Data in Medical and Health Sciences – Peter Song
17:15-17:30 Open Discussion

18:00-19:30 Dinner

Friday

7:00-9:00   Breakfast
9:00-12:00   NPCDS Planning (Project leaders and members of NPCDS Scientific Committee and
 Board expected to attend)
             Distribution of labour
             Conference call with John Frank?
12:00-13:30 Lunch