



# Banff International Research Station Calendar 2013

## JANUARY

- 1/13 - 1/18 **New Perspectives on the N-body Problem:** L. Chierchia (U. di Roma Tre), V. Kaloshin (Penn State), J. Mather (Princeton), S. Terracini (U. Milano-Bicocca)
- 1/20 - 1/25 **Selective Transport through Biological and Bio-mimetic Nano-channels: Mathematical Modeling Meets Experiments:** M. Elbaum (Weizmann Institute), G. Gnanakaran (Los Alamos), T. Jovanovic-Talisman (UH Mānoa), A. Zilman (Toronto)
- 1/27 - 2/1 **Algebraic Geometry and Geometric Modeling:** R. Goldman (Rice), J. Peters (Florida), F. Sottile (Texas A&M)

## FEBRUARY

- 2/3 - 2/8 **Topological Phenomena in Quantum Dynamics and Disordered Systems:** M. Franz (UBC), N. Lindner (Technion), G. Refael (Caltech)
- 2/10 - 2/15 **Holography and Applied String Theory:** J. Erdmenger (Max-Planck, Munich), S. Hartnoll (Stanford), G. Semenoff (UBC)
- 2/17 - 2/22 **Probabilistic Approaches to Data Assimilation for Earth Systems:** M. Buehner (Environment Canada), A. Chorin (UC, Berkeley), P. Gauthier (UQAM), K. Ide (Maryland), R. Miller (Oregon State)
- 2/24 - 3/1 **Asymptotics of Large-Scale Interacting Networks:** B. Hajek (UIUC), P. Marbach (Toronto), S. Sanghavi (UT, Austin)

## MARCH

- 3/3 - 3/8 **Applications of Iwasawa Algebras:** S. Ramdorai (UBC), P. Schneider (Münster), O. Venjakob (Heidelberg)
- 3/10/ - 3/15 **Interplay of Convex Geometry and Banach Space Theory:** G. Paouris (Texas A&M), C. Schütt (Christian-Albrechts), E. Werner (Case Western Reserve), D. Ye (Memorial U.)
- 3/17 - 3/22 **CosmoStat2013: Statistical Challenges from Large Data Sets in Cosmology and Particle Physics:** O. Lahav (UCL), R. Trotta (Imperial College), B. Wandelt (CNRS)
- 3/24 - 3/29 **Interactions of Gauge Theory with Contact and Symplectic Topology in Dimensions 3 and 4:** D. Auroux (UC, Berkeley), H. Boden (McMaster), O. Collin (UQAM), J. Etnyre (Georgia Tech)
- 3/31 - 4/5 **Partial Differential Equations in the Social and Life Sciences: Emergent Challenges in Modeling, Analysis, and Computations:** R. Choksi (McGill), M. Del Mar Gonzalez (U. Politècnica de Barcelona), M. Gualdani (UT, Austin), M. Schonbek (UC, Santa Cruz)

## APRIL

- 4/7 - 4/12 **Mapping Class Groups and Categorification:** J. Behrstock (CUNY), A. Licata (ANU, Canberra), R. Lipshitz (Columbia)
- 4/14 - 4/19 **Arithmetic Groups:** K. Bux (U. Bielefeld), D. Morris (Lethbridge), G. Prasad (Michigan), A. Rapinchuk (Virginia)
- 4/21 - 4/26 **Whitney Problems:** A. Brudnyi (Calgary), C. Fefferman (Princeton), P. Shvartsman (Technion), N. Zobin (College of William & Mary)
- 4/21 - 4/26 **Graph Algebras: Bridges between Graph  $C^*$ -Algebras and Leavitt Path Algebras:** G. Abrams (Colorado), J. Bell (SFU), S. Eilers (Copenhagen), G. Elliott (Toronto), M. Laca (UVic), M. Tomforde (Houston)
- 4/28 - 5/3 **Workshop on Mathematical Methods in Quantum Molecular Dynamics:** T. Carrington (Queen's), G. Hagedorn (Virginia Polytechnic)

## MAY

- 5/5 - 5/10 **The Art of Iterating Rational Functions over Finite Fields:** N. Boston (Wisconsin-Madison), A. Ostafe (Macquarie), I. Shparlinski (Macquarie), M. Zieve (Michigan)
- 5/12 - 5/17 **Impact of Climate Change on Biological Invasions and Population Distributions:** H. Berestycki (EHESS), A. Hastings (UC, Davis), M. Lewis (Alberta), P. Molnar (Princeton)
- 5/19 - 5/24 **Non-Gaussian Multivariate Statistical Models and their Applications:** N. Balakrishnan (McMaster), C. Field (Dalhousie), M. Genton (Texas A&M), H. Joe (UBC)
- 5/26 - 5/31 **Mathematical Tools for Evolutionary Systems Biology:** R. Gutenkunst (Arizona), L. Loewe (Wisconsin-Madison), P. Swain (Edinburgh)

## JUNE

- 6/2 - 6/7 **Refined Invariants in Geometry, Topology and String Theory:** J. Bryan (UBC), D. Diaconescu (Rutgers), T. Hausel (Oxford), B. Szendrői (Oxford)
- 6/9 - 6/14 **Nonlinear Conservation Laws and Related Models:** S. Benzoni-Gavage (U. Lyon), G. Chen (Oxford), W. Craig (McMaster), C. Dafermos (Brown), K. Trivisa (Maryland)
- 6/16 - 6/21 **Rules of Protein-DNA Recognition: Computational and Experimental Advances:** A. Morozov (Rutgers), G. Stormo (Washington U. St. Louis)
- 6/23 - 6/28 **Geometric Variational Problems:** J. Chen (UBC), A. Fraser (UBC), T. Lamm (Goethe U. Frankfurt)
- 6/30 - 7/5 **Water Waves: Computational Approaches for Complex Problems:** W. Craig (McMaster), N. Kutz (U. Washington), P. Milewski (Bath), A. Nachbin (IMPA)

## JULY

- 7/7 - 7/12 **Computational Complexity:** P. Beame (U. Washington), R. Impagliazzo (UC, San Diego), V. Kabanets (SFU), T. Pitassi (Toronto), A. Wigderson (Princeton)
- 7/14 - 7/19 **Mathematics and Mechanics in the Search for New Materials:** J. Ball (Oxford), K. Bhattacharya (Caltech), A. DeSimone (SISSA)
- 7/21 - 7/26 **Permutation Groups:** R. Guralnick (USC), C. Praeger (UWA), K. Tent (Münster), D. Testerman (EPFL)
- 7/28 - 8/2 **Spectral Theory of Laplace and Schroedinger Operators:** M. Ashbaugh (Missouri), R. Benguria (Pontificia U. Católica de Chile), R. Laugesen (UIUC), I. Polterovich (U. de Montréal), T. Weidl (U. Stuttgart)

## AUGUST

- 8/4 - 8/9 **Metric Geometry, Geometric Topology and Groups:** S. Ferry (Rutgers), A. Nabutovsky (Toronto), S. Weinberger (Chicago)
- 8/11 - 8/16 **Statistical Data Integration Challenges in Computational Biology: Regulatory Networks and Personalized Medicine:** J. Bryan (UBC), A. Labbe (McGill), S. Montgomery (Stanford), A. Olshen (UC, San Francisco), R. Shen (MSKCC), P. Spellman (OHSU)
- 8/18 - 8/23 **WIT: Women in Topology:** M. Basterra (UNH), K. Bauer (Calgary), K. Hess (EPFL), B. Johnson (Union College)
- 8/25 - 8/30 **Integrable Systems and Moduli Spaces:** D. Korotkin (Concordia), P. Zograf (Steklov)

## SEPTEMBER

- 9/1 - 9/6 **Modeling High-Frequency Trading Activity:** R. Gencay (SFU), R. Olsen (Olsen Ltd.)
- 9/8 - 9/13 **Random Measures and Measure-Valued Processes:** J. Bertoin (Zürich), S. Feng (McMaster), P. Joyce (Idaho), R. H. Mena Chávez (UNAM)
- 9/15 - 9/20 **Geometry and Inverse Problems:** G. Paternain (Cambridge), M. Salo (Helsinki), G. Uhlmann (UC, Irvine)
- 9/22 - 9/27 **Uncovering Transport Barriers in Geophysical Flows:** G. Haller (McGill), T. Peacock (MIT), J. Thiffeault (Wisconsin-Madison)
- 9/22 - 9/27 **Entanglement in Curved Spacetime:** A. Kempf (Waterloo), R. Mann (Waterloo), G. Milburn (Queensland)
- 9/29 - 10/4 **Geometric and Topological Graph Theory:** B. Mohar (SFU), J. Pach (NYU), P. Seymour (Princeton), R. Thomas (Georgia Tech), C. Thomassen (Technical U. Denmark)

## OCTOBER

- 10/6 - 10/11 **The Role of Oceans in Climate Uncertainty:** M. Fuentes (NC State), P. Gutter (Washington), M. Stein (Chicago)
- 10/13 - 10/18 **Whittaker Functions: Number Theory, Geometry and Physics:** B. Brubaker (MIT), D. Bump (Stanford), G. Chinta (CUNY), S. Friedberg (Boston College), P. Gunnells (U. Mass. Amherst)
- 10/20 - 10/25 **Managing Fire on Populated Forest Landscapes:** J. Braun (UWO), C. Dean (UWO), D. Martell (Toronto), D. Woolford (Wilfrid Laurier U.), M. Wotton (Canadian Forest Service)
- 10/27 - 11/1 **Disordered Quantum Many-Body Systems:** M. Aizenman (Princeton), B. Nachtergaele (UC, Davis), R. Sims (Arizona), G. Stolz (UAB)

## NOVEMBER

- 11/3 - 11/8 **Axiomatic Approaches to Forcing Techniques in Set Theory:** M. Foreman (UC, Irvine), J. Moore (Cornell), S. Todorcevic (Toronto, CNRS)
- 11/3 - 11/8 **Computable Model Theory:** B. Csima (Waterloo), S. Goncharov (Novosibirsk State), N. Greenberg (Victoria U. of Wellington), J. Knight (Notre Dame), T. Slaman (UC, Berkeley)
- 11/10 - 11/15 **Creative Writing in Mathematics and Science:** F. Diacu (UVic), M. Senechal (Smith College)
- 11/10 - 11/15 **Current Challenges for Mathematical Modelling of Cyclic Populations:** J. Sherratt (Heriot-Watt U.), R. Tyson (UBCO), H. Wang (Alberta)
- 11/17 - 11/22 **Entanglement in Biology: How Nature Controls the Topology of Proteins and DNA:** K. Millett (UC, Santa Barbara), E. Rawdon (U. St. Thomas), C. Soteros (Saskatchewan), A. Stasiak (Lausanne), J. Sulkowska (UC, San Diego)
- 11/24 - 11/29 **Understanding Relationships between Aboriginal Knowledge Systems, Wisdom Traditions, and Mathematics:** E. Doolittle (First Nations U. Canada), F. Glanfield (Alberta)
- 11/24 - 11/29 **Operator Algebras and Dynamical Systems from Number Theory:** A. Carey (ANU Canberra), M. Laca (UVic), M. Marcolli (Caltech)

## DECEMBER

- 12/1 - 12/6 **Bi-directional Transformations (BX) – Theory and Applications Across Disciplines:** J. Gibbons (Oxford), R. Paige (York), A. Schuerr (Darmstadt), J. Terwilliger (Microsoft), J. Weber (UVic)
- 12/8 - 12/13 **Integral Equations Methods: Fast Algorithms and Applications:** A. Barnett (Dartmouth), L. Greengard (NYU), S. Jiang (NJIT), M. Kropinski (SFU), P. Martinsson (CU-Boulder), V. Rokhlin (Yale)

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