

Lecture schedule: Algebraic Topological Methods in Computer Science, II
University of Western Ontario, July 16–20, 2004

All talks will take place in Room 240 of Western Science Centre.

Coffee, tea and other refreshments will be available 10:30-11:00 and 2:30-3:00 daily.

Friday, July 16

- 9:30–10:30 **Robin Forman**, Rice University: *A Topological Approach to the game of “20 Questions”*
11:00–12:00 **Robert Ghrist**, Univ. of Illinois: *Reconfiguration and the geometry of cube complexes*
1:30–2:30 **Rick Jardine**, UWO: *Higher order automata, cubical sets, and some conjectures of Grothendieck*
3:00–4:00 **Reinhard Laubenbacher**, Virginia Bioinformatics Institute: *Finite dynamical systems: a mathematical foundation for simulation science*

Saturday, July 17

- 9:30–10:30 **Martin Raussen**, Aalborg Univ.: *Fundamental categories with a view to concurrency*
11:00–12:00 **Eric Goubault**, CEA Saclay: *Algorithms for computing fundamental categories, and applications to the static analysis of concurrent programs*
1:30–2:30 **Afra Zomorodian**, Stanford: *Persistence Barcodes for Shapes*
3:00–4:00 **Kathryn Hess**, EPF, Lausanne: *Quillen model categories applied to concurrency theory*

Sunday, July 18

- 9:30–10:30 **Gunnar Carlsson**, Stanford: *Topology of Point Cloud Data*
11:00–12:00 **Peter Bubenik**, EPF, Lausanne: *Towards a model category for local po-spaces*
1:30–2:30 **P. Robert Kotiuga**, Boston Univ.: *Complexity and Tractability issues in Topological aspects of 3-D Computational Electromagnetics*
3:00–3:30 **David Cohen-Steiner**, Duke: *Stability of Persistence Diagrams*
3:40–4:10 **Anne Collins**, Stanford: *A Barcode Shape Descriptor for Curve Point Cloud Data*
4:20–4:50 **Peter Csorba**, ETH, Zürich: *Homotopy types of box complexes*

Monday, July 19

- 9:30–10:30 **Frank H. Lutz**, TU Berlin/ZIB: *Graph Coloring Manifolds*
11:00–11:30 **Philippe Malbos**, Univ. of Wales and Univ. Montpellier II: *Homotopical properties for concurrent systems*
11:30–12:00 **Michael S. Postol**, US National Security Agency: *Computer Intrusion Detection Using Features from Graph Theory and Algebraic Topology*
1:30–2:30 **Michael Joswig**, TU Berlin: *Convex hulls, simplicial homology, and suitable software*
3:00–3:30 **Stratos Prassidis**, Canisius College: *A categorical approach for parallel Delaunay mesh generation*
3:40–4:10 **Eugene Zhang**, Georgia Tech.: *Vector Field Design on Surfaces*
4:20–4:50 **Peter Kim**, Univ. of Guelph: *Statistical Inverse Problems on Riemannian Manifolds*
5:00–5:30 **Sadok Kallel**, Univ. Lille: *Particle spaces and associated mapping spaces*

Tuesday, July 20

- 9:30–10:30 **Dmitry Kozlov**, KTH Stockholm: *Topological obstructions to graph colorings*
11:00–12:00 **Vin de Silva**, Stanford: *Harmonic methods in computational topology*
1:30–2:30 **Saugata Basu**, Georgia Tech.: *Efficient Algorithms for Computing the Betti Numbers of Semi-algebraic Sets*