Canadian Mathematical Society
CMS/CSHPM Summer 2005 Meeting
University of Waterloo
Waterloo, Ontario
June 4-6, 2005

Scientific Report

The Summer 2005 Meeting of the Canadian Mathematical Society welcomed a record number of 540 participants – the first CMS meeting to have more than 500 participants. This was a joint meeting with CSHPM (the Canadian Society for History and Philosophy of Mathematics).

Following the usual format of the CMS Summer Meeting, the program included a wide variety of special sessions, plenary and prize lectures, and a public lecture. Most activities and all scientific talks were held on the University of Waterloo campus.

Plenary Lectures

The speakers and titles of the plenary talks were as follows:

Len Berggren, Simon Fraser University (CSHPM plenary talk): *'Currents and counter-currents in the history of mathematics in medieval Islam'*

Keith Devlin, Stanford University: *'How much mathematics can be for all?'*

Dan Freed, University of Texas at Austin: *'Correspondences, K-theory, and loop groups'*

Robert McCann, University of Toronto: *'Fluid flow in the semigeostrophic oceans and atmosphere'*

Andrei Okounkov, Princeton University: *'Enumerative geometry of curves in threefolds'*

Gilles Pisier, Université Paris 6 and Texas A&M University: *'Similarity problems and amenability'*

Ken Ribet, University of California at Berkeley: *'The modularity of some mod p Galois representations'*

The public lecture was given by Moshe Milevsky from the Schulich School of Business of the York University, and was titled: 'The mathematics of silly investment strategies, or how to win the Globe and Mail's stock picking contest'.

The public lecture took place on Sunday, June 5, in the evening. Both this lecture and the lecture in mathematics education given by Keith Devlin (which took place on the evening of Friday, June 3, as an early kick-off for the meeting) had large audiences, extending beyond the meeting participants, and including a good number of interested people from the local community.

Prize Lectures

The meeting included lectures given by the winners of the Krieger-Nelson and of the Jeffery-Williams research prizes of the CMS, and also a lecture given by the winner of the CMS prize for Excellence in Teaching. These were as follows:

The Krieger-Nelson address was given by Barbara Lee Keyfitz (Fields Institute and the University of Houston). Title: 'Conservation laws: past and future'.

The Jeffery-Williams address was given jointly by Edward Bierstone and Pierre Milman (both from the University of Toronto). Title: `Two short talks on singularities in geometry and analysis: 1 Resolution of singularities; 2 Geometry and differentiable functions'.

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The CMS Excellence in Teaching address was given by Philip Loewen (University of British Columbia). Title: 'r = 1 -sin (q)'. (For a hint on how to read this title we also add here the first sentence of the abstract, which is: 'Love mathematics; love your students.')

Special Sessions

The meeting hosted a record number of 23 parallel special sessions, covering a wide range of mathematical research interests, and also aspects of mathematics education and of the history and philosophy of mathematics. The special sessions and their organizers were as follows:

Automatic Sequences and Related Topics
  Org: Jean-Paul Allouche (Orsay, France), Jeffrey Shallit (Waterloo)

Combinatorics and Geometry
  Org: Ian Goulden (Waterloo)

Complex Variables
  Org: Thomas Bloom (Toronto), Paul Gauthier (Montreal)

Discrete and Computational Geometry
  Org: Leroy J. Dickey (Waterloo), Asia Ivic Weiss (York)

Dynamical Systems
  Org: Sue Ann Campbell (Waterloo), Yuming Chen (Wilfrid Laurier), Huaiping Zhu (York)

Exploratory Classroom Problems in Calculus
  Org: Peter Taylor (Queen's)

Functional Equations and Their Applications
  Org: Janos Aczel, Che-Tat Ng (Waterloo)

General Topology and Its Applications
  Org: E.D. Tymchatyn (Saskatoon), A. Karassev, M. Tuncali, V. Valov (Nipissing)

Geometric Topology
  Org: Hans Boden (McMaster), Doug Park, Mainak Poddar (Waterloo)

History and Philosophy of Mathematics (SCHPM Session)
  Org: Duncan Melville (St. Lawrence)

History of Mathematics from Medieval Islam to Renaissance Europe (SCHPM Session)
  Org: Rob Bradley (Adelphi), Glen van Brummelen (Bennington College)

Invariant Theory and Differential Geometry
  Org: Ray MacLenaghan (Waterloo), Roman Smirnov (Dalhousie)

L-Functions and Algebraic Curves
  Org: Yu-Ru Liu, David McKinnon, Michael Rubinstein (Waterloo)

Mathematical Aspects of Quantum Information
  Org: Daniel Gottesman (Perimeter Inst.), Achim Kempf (Waterloo), David Kribs (Guelph), Mike Mosca (Waterloo)

Mathematics from Ancient to Modern Times
  Org: Richard O'Lander, Ronald Sklar (St. John's)

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Mathematics of Actuarial Finance
  Org: Tom Salisbury (York, Fields)

Mathematics of Computer Algebra and Analysis
  Org: Keith Geddes, Mark Giesbrecht, George Labahn, Arne Storjohann (Waterloo)

Nonlinear Partial Differential Equations
  Org: Robert McCann (Toronto), Walter Craig (McMaster), Catherine Sulem (Toronto)

Operator Algebras, Operator Spaces and Harmonic Analysis
  Org: Ken Davidson, Brian Forrest (Waterloo)

Random Graphs and Their Applications
  Org: Anthony Bonato (Wilfrid Laurier), Penny Haxell, Nicholas Wormald (Waterloo)

Representation Theory
  Org: Wentang Kuo (Waterloo)

String Theory and Integrable Systems
  Org: Lisa Jeffrey (Toronto), Boris Khesin (Toronto), Rob Myers (Perimeter Inst.)

Contributed Papers Session
  Org: Peter Hoffman (Waterloo)

The special sessions had more than 300 talks, most of them 25 minutes and some of them of 50. More details and abstracts of the talks can be found on the web site of the meeting, at http://www.cms.math.ca/Events/summer05/speakers.e#sessions.

Sponsors

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    le Centre de Recherches Mathématiques
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    MITACS
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    Institute for Quantum Computing (IQC)
    Springer
    University of Guelph
    Queen's University, Department of Mathematics and Statistics
    University of Waterloo, Department of Pure Mathematics

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Meeting Committee

Meeting Director:
Alexandru Nica (Waterloo)

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Jean-Paul Allouche (Orsay, France)
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Hans Boden (McMaster)
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Rob Bradley (Adelphi)
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Duncan Melville (St. Lawrence)
Michele Mosca (Waterloo; Perimeter Inst.)
Rob Myers (Perimeter Inst.)
Che-Tat Ng (Waterloo)
Richard O'Lander (St. John's)
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