

MIROSLAV LOVRIC *** CURRICULUM VITAE

September 2017

FULL CV AVAILABLE UPON REQUEST

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EDUCATIONAL BACKGROUND

Degree	University	Department	Year
Ph.D.	The Ohio State University	Mathematics	1990
M.Sc.	The Ohio State University	Mathematics	1984
B.Sc.	Prirodoslovno-Matematički Fakultet Sveučilista u Zagrebu, Zagreb (= Mathematical Faculty of the University of Zagreb, Zagreb, Croatia)	Mathematics	1981

CURRENT STATUS AT MCMASTER

Date of Appointment (Mac):	July 1, 1995
Full-Time:	Yes
Present Rank:	Professor

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Canadian Mathematics Education Study Group (2002-)
Society for Teaching and Learning in Higher Education (1995-)
Canadian Mathematical Society (1994 -)
American Mathematical Society (1984 -)
Croatian Mathematical Society (1982 -)

AREAS OF INTEREST

Research:

Mathematics education
 Mathematics in medicine and biology
 Riemannian geometry

EMPLOYMENT HISTORY

Visiting Appointments

King's College, London, England, (Fall 2002, sabbatical)
 University of Otago, Dunedin, New Zealand (Winter 2003, sabbatical)
 Victoria University of Wellington, New Zealand (Winter 2007, sabbatical)
 Victoria University of Wellington, New Zealand (Winter 2011, sabbatical)

HONOURS ACCORDED

- June 2015: Fields Institute Fellow
- December 2010: Adrien Pouliot Award, Canadian Mathematical Society
- March 2008: Faculty of Science Teaching Award, McMaster University
- August 2007: Government of Ontario Leadership in Faculty Teaching Award (provincial award)
- April 2004: President's Award for Excellence in Course or Resource Design, McMaster Univ.
- June 2001: 3M Teaching Fellowship Award (national award)
- April 2000: OCUFA Teaching Award (provincial award)
- April 1999: President's Award for Excellence in Instruction, McMaster University
- March 1999: Faculty of Science Teaching Award, McMaster University
- March 1997: Arts and Science Teaching Award, McMaster University
- March 1994: Overall Teaching Award, McMaster University; Faculty of Science Teaching Award, McMaster University

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Activity	Dates	# of Reviews
Reviewer for Mathematical Reviews	1995-2003	about 15
Editor of "Proceedings of the Riemannian Geometry Micro-Program" held at the Fields Institute	1996	
Reviewer for Zentralblatt für Mathematik	1998-2003	about 3
Reviewer for Mathematics Education Research Journal	2007	1
Reviewer for International Journal of Mathematics Education		

in Science and Technology	2007-	about 20
Reviewer for Fields Mathematical Education Journal	2012-	1
Reviewer for Educational Studies in Mathematics	2013-	2
Reviewer, WCSE Conference proposals	2015	3
Editorial Board Member, Fields Math Ed Journal	2013-	
Fields Cognitive Science Network member	2012-	
Canadian Mathematics Society ATOM series – associate editor	2016-	

Committee Memberships – Integrated Science Program

Team of Instructors - Curriculum (2009-2013)

Committee Memberships - Department of Mathematics and Statistics

Undergraduate Curriculum Committee (1998-2017)

Outreach Committee (2012-)

IQAP team member (2016-)

Committee Memberships - Faculty

Life Sciences Working Group (2014-)

Co-op Faculty Adviser (2014-)

APPC (2003-2005, 2013-2104, 2016-2017)

Committee Memberships - University

Museum of Art Administrative Board (2000-2009)

Provost's Task Force on Teaching and Learning (2008-2011)

MUFA Faculty Association Council (2011-)

McMaster Standard Calculator committee (2016)

University Writing and Numeracy Committee (2017-)

Committee Memberships - External

Ontario Mathematics Education Forum (1999-; chair from 2007-2009; chair from 2015-2017)

Organizing Committee for the 2009 Canadian Mathematics Forum (2007-2009)

Canadian Mathematics Education Study Group Executive, member (2011-2017)

Centre for Mathematics Education (at Fields Institute) – co-director (2016-)

ADMINISTRATIVE RESPONSIBILITIES

COURSES TAUGHT (RECENT)

name of the course and enrolment (if available) are given in parentheses

2017/2018

Math 1LS3 (Calculus for Life Sciences I; 475) F	1 section, 3 units
Math 2UU3 (Numbers for life; 615) F	1 section, 3 units
Math 1C03 (Math reasoning; 150) F	1 section, 3 units
Math 2C03 (ODEs; 154) W	1 section, 3 units
Math 3Z03 (History of math; 36) W	1 section, 3 units
ArtSci 4C06 (Thesis) F,W	1 student

2016/2017

Math 1LS3 (Calculus for Life Sciences I; approx. 450) F	1 section, 3 units
Math 3G03 (Problem-solving; 34) F	1 section, 3 units
Math 4W03 (Directed reading) F	1 student
Math 2C03 (ODEs; 153) W	1 section, 3 units
Math 3Z03 (History of math; 34) W	1 section, 3 units
Math 2UU3 (Numbers for life; approx. 200) W (Overload)	1 section, 3 units
ArtSci 4C12 (Thesis) F,W	1 student

2015/2016

Math 1LS3 (Calculus for Life Sciences I; approx. 350) F	1 section, 3 units
Math 3G03 (Problem-solving; 33) F	1 section, 3 units
Math 1C03 (Introduction to Math Thinking; approx. 150) W	1 section, 3 units
Math 2C03 (ODEs; approx. 220) W	1 section, 3 units
Math 3ET3 (Math Teaching Placement) F, W	3 students
Sci 3EP3 (Science Teaching Placement) W	1 student

2014/2015 [Winter 2015: sabbatical leave]

Math 1LS3 (Calculus for Life Sciences I; approx. 400) F	1 section, 3 units
Math 1X03 (Calculus for Math and Stats; 127) F	1 section, 3 units
Math 3G03 (Problem-solving; 28) F	1 section, 3 units
Math 3ET3 (Math Teaching Placement) F	3 students

2013/2014

Math 1LS3 (Calculus for Life Sciences I; approx. 320) F	1 section, 3 units
Math 1LT3 (Calculus for Life Sciences II; approx. 400) W	1 section, 3 units

Math 1X03 (Calculus for Math and Stats; 87) F	1 section, 3 units
Math 1C03 (Introduction to Math Thinking; approx. 80) W	1 section, 3 units
Math 3G03 (Problem-solving; 27) W	1 section, 3 units
Math 3ET3 (Math Teaching Placement) Spring/Summer	2 students
Math 4P06 (Thesis) FW	2 students
ArtSci 4C12 (Thesis) FW	1 student

LIFETIME PUBLICATION LIST

Books

- “Conquering Calculus,” Nelson Education, 2017 (192 pages).
- “Vector Calculus,” textbook, Addison Wesley, 1997 (“Students’ Solution Manual for ‘Vector Calculus’,” and “Instructors’ Solution Manual for ‘Vector Calculus’,” Addison Wesley, 1997.)
- “Vector Calculus,” textbook, John Wiley and Sons, 2007. (“Students’ Solution Manual for ‘Vector Calculus’,” and “Instructors’ Solution Manual for ‘Vector Calculus’,” John Wiley and Sons, 2007.)
- “Calculus: Fear No More,” Nelson Education, 2009.
- “Calculus: Fear No More,” Second Edition, Nelson Education, 2015 (192 pages).
- “Calculus for Life Sciences: Modeling the Dynamics of Life,” textbook (with F. Adler), Nelson 2011; second edition: Nelson 2014. (761 pages)
- “Instructor’s and Student Solutions Manuals for Calculus for the Life Sciences,” Nelson 2011; second edition: Nelson 2014. (831 and 433 pages)
- “Probability and Statistics for the Life Sciences,” Nelson 2011; second edition: Nelson 2014. (195 pp.)
- “Functions of Several Variables for the Life Sciences,” Nelson 2011; second edition: Nelson 2014. (144 pp.)
- “Linear Algebra for the Life Sciences,” Nelson 2011; second edition: Nelson 2014. (138 pp.)

Contributions to books

- M. Lovric, *Mathematics in the Arts and Science Programme*, book chapter in ‘Combining Two Cultures: McMaster University's Arts and Science Programme: A Case Study’ (ed. By B. Ferrier, H. Jenkins and M. Ross), University Press of America, 2004.
- K. Trim, D. Harnish, M. Lovric and D. Roy, *Adjusting to learning and teaching with inquiry: A qualitative study of McMaster first-year science students and their instructor*, in Christopher Knapper, (ed.) *Experiences with Inquiry Learning*, Hamilton: CLL, McMaster University, 2007, pp. 59-72.
- A. Kajander, M. Lovric, *Mathematics Textbooks And Their Potential Role In Supporting Misconceptions*, *The Best Writing on Mathematics 2010*. Mircea Pitici, Editor. Princeton University Press, 2010.

- A. Burazin, M. Lovric, *Transition from Secondary to Tertiary Mathematics. Culture Shock: Mathematical Symbols, Language, and Reasoning.* In: A. Kajander, J. Holm, E. Chernoff (Eds.) Teaching and learning secondary school mathematics: Canadian perspectives in an international context. Advances in Mathematics Education (AiME), Springer, *to appear*.

PEER REVIEWED:

Peer Reviewed Journal Articles and Proceedings of Meetings

Riemannian Geometry and related:

- M. Lovric, M. Min-Oo, E.A. Ruh “Deforming Transverse Riemannian Metrics of Foliations,” Asian Journal of Mathematics, Vol. 4, No. 2, 2000, pp. 303-314.
- M. Lovric, M. Min-Oo, E.A. Ruh “Multivariate Normal Distributions Parametrized as a Riemannian Symmetric Space,” Journal of Multivariate Analysis, 74(1), 2000, pp. 36-48.
- M. Lovric “Compact Orbits of Analytic Killing Vector Fields on Riemannian Manifolds,” Rocky Mountain Journal of Mathematics, Vol. 30, No. 1, 2000, 315-323.
- M. Lovric, M. Min-Oo, M. Wang (Eds.) “Riemannian Geometry,” Fields Institute Monographs, American Mathematical Society, 1996.
- M. Lovric “Curvature Pinching Based on Integral Norms of the Curvature,” Can.J.Math. Vol. 45(3) 1993, 599-611.
- M. Lovric “Left-invariant Control Systems on Lie Groups,” Fields Institute for Research in Mathematical Sciences, 1993.

Applied Mathematics:

- M. Colangelo, A. Llop-Guevara, R. Fattouh, T. D. Walker, S. Goncharova, M. Lovric, and M. Jordana, “Modelling of House Dust Mite-Induced Chronic Airway Eosinophilia,” *submitted to Biology Direct*.
- M. Abou Chakra, M. Lovric, and J. Stone, “Predicting Morphological Disparities in Sea Urchin Skeleton Growth and Form,” BIORXIV/2017/133900, 2017.
- M. Colangelo, M. Lovric, J. Stone, “A Mathematical and Computational Model for Simulating Complex Dynamic Cancer Growth and Metastasis.” I. J. Comput. Appl. 19(3):145-153, 2012.
- M. Colangelo, M. Lovric, D. G. Harnish, J. Stone, “Modelling Diffusional Neighbourhoods of Cancer Cell Migration,” *In: Bidyut Gupta (Ed.): 22nd International Conference on Computers and Their Applications, CATA-2007, Honolulu, HI, pp. 134-138, 2007.*
- A. Llop-Guevara, M. Colangelo, D. Chu, C. L. Moore, N. A. Stieber, T. D. Walker, S. Goncharova, A. J. Coyle, P. O’Byrne, M. Lovric, M. Jordana, “*In vivo-to-in silico* Iterations to Investigate Aeroallergen-Host Interactions,” PLoS ONE, 3(6): e2426, 2008.

Mathematics Education and related [in co-authored publications the authors are listed in alphabetical order, which is actually not a common practice in mathematics education]:

- A. Kajander, M. Lovric, *Understanding and supporting teacher horizon knowledge around limits: A framework for evaluating textbooks for teachers*. International Journal of Mathematics Education in Science and Technology, 48(7), 1023-1042. DOI: 10.1080/0020739X.2017.1301583, 2017.
- A. Mamolo, M. Lovric, *Computational Thinking in and for Undergraduate Mathematics: Perspectives of a Mathematician*. Proceedings of the Annual RUME Conference, San Diego, February 2017, to appear.
- L. Dedieu, M. Lovric, *Student Perceptions of the Use of Writing in a Differential Equations Course*. PRIMUS, 1-20. DOI: 10.1080/10511970.2017.1337659, 2017.
- M. Lovric, *Tensions Between Mathematics and Science Disciplines: Creative Opportunities to Enrich Teaching Mathematics and Science*. Discussions on University Science Teaching: Proceedings of the Western Conference on Science Education. Vol. 1, Article 17, 2017.
- M. Lovric, *Programming and Mathematics in an Upper-Level University Problem-Solving Course*. PRIMUS, submitted.
- F. Caron, M. Lovric, *Approaches to Investigating Complex Dynamical Systems*, to appear in an online publication from ICME-13 conference in Hamburg, Germany, July 2016.
- M. Lovric, “Math with Programming – Shaken or Stirred?” Proceedings of the TIME 2014 – Technology in Mathematics Education conference, Krems, Austria, 1-5 July 2014.
- M. Lovric, “Three or Four Eggs in a Quiche?” A Vignette on Creating Math Problems, Canadian Math Education Forum, Ottawa, 1-4 May 2014; available at https://cms.math.ca/Events/CMEF2014/vignettes/accepted_vignettes
- M. Lovric, “Learning Mathematics In An Interdisciplinary Science Program.” Proceedings of the 12th International Congress on Mathematical Education, COEX, Seoul, Korea, 2012, pp. 1331-1340.
- M. Clark, M. Lovric, “Understanding Secondary-Tertiary Transition In Mathematics,” International Journal of Mathematical Education in Science and Technology, Volume 40, Issue 6, 2009, pp. 755-776.
- L. Fenwick-Sehl, M. Fioroni, M. Lovric, “Recruitment and retention of mathematics students in Canadian universities,” International Journal of Mathematical Education in Science and Technology, Volume 40, Issue 1, 2009, pp. 27-41.
- A. Kajander, M. Lovric, “Mathematics Textbooks And Their Potential Role In Supporting Misconceptions,” International Journal of Mathematics Education in Science and Technology, Volume 40, Issue 2, 2009, pp. 173 - 181.
- M. Clark, M. Lovric “Suggestion for a Theoretical Model for the Secondary-Tertiary Transition in Mathematics,” Mathematics Education Research Journal, Vol. 20, No. 2, 2008, pp 25-37.
- Kajander, M. Lovric, “Textbooks In Mathematics Learning: Potential For Misconceptions,” Delta-K, Vol 45, No 2, June 2008, pp. 18-20.
- A. Kajander, M. Lovric “Mathematics Background Survey – An Insight Into Students’

Preparation For University Mathematics Courses.” Proceedings of the First Africa Regional Congress of the International Commission on Mathematical Instruction (ICMI), 22 - 25 June 2005.

- A. Kajander, M. Lovric “Transition from Secondary to Tertiary Mathematics: McMaster University Experience,” International Journal of Mathematics Education in Science and Technology, Vol. 36, Nos 2-3, pp 149-160, 2005.
- M. Lovric “Learning How To Teach And Learn Mathematics – ‘Teaching Mathematics’ Course At McMaster University,” Proceedings of the First Africa Regional Congress of the International Commission on Mathematical Instruction (ICMI), 22 - 25 June 2005.
- M. Lovric “Narratives In Mathematics - Case of Arts And Science Mathematics Course At McMaster University,” Proceedings of the First International Symposium of Mathematics and its Connections to the Arts and Sciences, 19-21 May 2005, pp. 153-161, 2005.
- A. Kajander, M. Lovric “The double cohort: preliminary research on the transition from secondary to university level mathematics,” The Ontario Mathematics Gazette, 42 (4), pp 33-36, 2004.
- A. Kajander, M. Lovric “Transition from secondary to post-secondary mathematics: changing features of students’ mathematical knowledge and skills and their influence on students’ success,” Proceedings of the 26th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Toronto: University of Toronto, 2004.
- M. Lovric “Magic Geometry: Mosaics in the Alhambra,” in: Meeting Alhambra, ISAMA - Bridges Conference Proceedings, University of Granada, 2003.
- M. Lovric, K. Trim “Teaching Mathematics Course - Teaching Experience for Undergraduate Students,” Positive Pedagogy, Vol 1, No 2, May 2001.
- K. Trim, M. Lovric, D. Harnish, D. Roy “Enhancing Self-Directed Learning Opportunities for Science Students: Science Inquiry at McMaster University,” Conference Proceedings, HERDSA Conference, 2001.
- M. Lovric “Teaching Mathematics Course at McMaster University - Partnership for Teaching and Learning,” Conference Proceedings, HERDSA Conference, 2001.

NOT PEER REVIEWED:

Books/lecture notes/reports

- A. Burazin and M. Lovric, “Learning Portfolio in Mathematics at McMaster University,” report to MIIETL (62 pages), 2015.
- M. Lovric “Mathematics Review Manual with a Brief First-year Survival Guide,” McMaster University, 93 pages, 1999-2005
- M. Lovric “Differential Geometry,” Lecture Notes, McMaster University, 1999, 109 pages
- M. Lovric “Selected Topics in Vector Analysis” Custom Courseware, McMaster University, 1993, 1994, 1996.

Not peer-reviewed Journal Articles and Conference Proceedings

- V. Jungic and M. Lovric, *Call for National Dialogue: The Present and Future of Teaching First Year Mathematics at Canadian Universities*. CMS Notes, to appear.
- C. Buteau, G. Gadanidis, M. Lovric, E. Muller, *Computational Thinking and Mathematics Curriculum*. Proceedings of the 2016 Annual Meeting of CMESG, Queens University, 2017.
- M. Lovric and D. Poole, *Images of Undergraduate Mathematics*. In: P. Lijedahl, D. Allan, O. Chapman, F. Gourdeau, C. Lajoie, S. Oesterle, E. Simmt, P. Taylor (Eds.) Canadian Mathematics Education Study Group, 40 Years of CMESG. Burnaby, B.C.: CMESG, 2016.
- M. Lovric, *CMESG/GCEDM – Canadian Math Education Study Group/Groupe Canadien d’Etude en Didactique des Mathématiques*. CMS Notes Vol. 48, No. 2, March-April 2016.
- C. Buteau and M. Lovric, “Undergraduate Math Curriculum in 21st Century: Dictated by the Job Market?” CMS Notes Vol. 47, No. 2, March-April 2015.
- F. Caron, D. Lidstone, M. Lovric, “Complex Dynamical Systems,” Proceedings of the Canadian Mathematics Education Study Group Meeting, Edmonton, 30 May-3 June, 2014.
- M. Lovric, “Collaboration Between Research in Mathematics Education and Teaching Mathematics: Case Study of Teaching Infinity in Calculus.” Proceedings of the Canadian Mathematics Education Study Group Meeting, Quebec City, 2012.
- M. Lovric, “Thinking About Math,” CMS Notes, September 2011.
- M. Lovric, O. Turcotte and W. Whiteley “Recruitment, Attrition and Retention in Post-secondary Mathematics,” Proceedings of the Canadian Mathematics Education Study Group, 2010.
- L. Fenwick-Sehl, M. Fioroni, M. Lovric, “Recruitment and Retention of Mathematics Students - Report,” Proceedings of the CMESG 2008 Conference, Sherbrooke, Quebec, 2008.
- A. Kajander, M. Lovric, “Textbooks: Conceptions and Misconceptions,” CMS Notes, April 2007, pp. 8-9.
- M. Lovric, “Where Do We Live? Episodes in the Geometrization of Our Space,” Proceedings of the ISAMA 2002 Conference, Freiburg, Germany; 2004.
- M. Lovric, “Mathematics Background Survey – An Insight Into Our Students’ Preparation for University Mathematics Courses,” working paper, TSG 3, ICME-10 Conference, Copenhagen, Denmark, 2004.
- M. Lovric, D. Poole “Images of Undergraduate Mathematics,” working group on Images of Undergraduate Mathematics, Proceedings of the CMESG 2003 Conference, Acadia University; 2004.
- R. Birkan, M. Lovric “Myungsook Lee and The Appropriation of Geometry in the Paintings.” McMaster Museum of Art, 2004.
- M. Lovric “Interdisciplinary Projects in the Arts and Science Programme at McMaster University,” Conference Proceedings, ICTM2 Conference, Crete, Greece, 2002.

PRESENTATIONS

Invited Lectures at Conferences

- ‘Future Directions for Digital Online Math Education in Ontario and Canada’ (panel) Workshop on Digital Open Mathematics Education, Fields Institute, Toronto, 22 June 2016
- ‘Approaches To Investigating Complex Dynamical Systems,’ ICME-13 Conference, Hamburg, Germany, 26 July 2016 (with F. Caron)
- ‘Science writ large: Experiences in teaching and coordinating large introductory classes, with an emphasis on mathematics.’ (panel) Western Conference on Science Education, Western University, London, Ontario, 10 July 2015.
- ‘Everyone is Talking About It: Math in the 21st Century,’ Plenary, Canadian Math Society Winter Meeting, 7 December 2014.
- ‘Breathing Life into University Mathematics: Teaching True Applications in Math Courses,’ Nelson Education Talk, 7 December 2014.
- ‘Math with Programming – Shaken or Stirred?’ TIME 2014 Conference, Krems, Austria, 2 July 2014.
- ‘Advanced Math Problem-Solving Course at McMaster,’ CMS Summer Meeting, Winnipeg, 7 June 2014.
- ‘Three or Four Eggs in a Quiche?’ Canadian Math Education Forum CMEF 2014, 2 May 2014.
- ‘What Does it Take to Succeed in Math,’ TEDx St Mary Secondary School, Scarborough, 8 May 2014.
- ‘Learning Mathematics within an Interdisciplinary Science Program,’ Western Conference on Science Education 2013, July 2013.
- ‘Collaboration Between Research in Mathematics Education and Teaching Mathematics: Case Study of Teaching Infinity in Calculus.’ Canadian Math Education Study Group Meeting, Laval, Quebec, May 2012.
- ‘Learning Mathematics in an Interdisciplinary Science Program,’ ICME 12 Conference, COEX, Seoul, Korea, July 2012.
- ‘Is Two Plus Two Still equal to Four?’ keynote address, ISOMA (=Independent Schools of Ontario Mathematics Association) Fall Conference, Appleby College, 1 November 2011.
- ‘Importance of Working Together,’ Canadian Mathematics Society Conference; Adrien Pouliot Award, Vancouver, December 2010.
- ‘Applications In First-Year Mathematics Courses: How To Write? How To Teach?’ Canadian Mathematics Society Conference, UNB, Fredericton, June 2010.
- ‘Publishing Good Textbooks,’ Canadian Math Education Forum, Vancouver, May 2009.
- ‘Mathematics in Context: Life Sciences Course at McMaster University’, CMS Winter meeting, Ottawa, December 2008.
- ‘Math for Life Science Course - Math in Context,’ Panel, Ontario Math Education Forum, Ottawa, October 2008.

- ‘Mathematics Textbooks, Misconceptions and Conceptual Understanding,’ Second Canada-France Congress, Universite de Quebec a Montreal, 2 June 2008.
- ‘Mathematics - Can't Live With It, Can't Live Without It,’ OCMA (Ontario Colleges Mathematics Association) Conference, 21 May 2008.
- ‘The Mind of Isaac Newton,’ Learning Technology Symposium (with Kathy Garay, Bill Harris and Muriel McKay), McMaster University, 5 December 2006.
- ‘Suggestion For A Theoretical Model For Secondary-Tertiary Transition In Mathematics,’ ICTM3 - Third International Conference on Teaching of Mathematics, Istanbul, Turkey, July 2006.
- ‘We Don’t Need No Education,’ Global Citizenship Conference, McMaster University, 4 March 2006.
- ‘Mathematics and Beauty in Islamic Architecture,’ Subtle Technologies Conference, Toronto, 28 May 2005.
- ‘Jumping over Fire: Some Hot Issues in the Transition from Secondary to Tertiary Education,’ NW OAME Conference, Thunder Bay, 27 February 2004.
- ‘Art of Communication,’ project NExTMAC, panel presentation, CMS Summer Meeting, Edmonton, June 2003.
- ‘Mathematics Education in Ontario – What’s Hot and What’s Not ,’ Inaugural Irish Undergraduate Mathematics Education Symposium, Trinity College, Dublin, Ireland, December 2002.
- ‘Using Undergraduate TAs - No One Way’ STLHE 2002 Conference, McMaster University, June 2002.

Contributed Lectures at Conferences (selection):

- ‘Computational thinking in and for undergraduate mathematics: Perspectives of a mathematician,’ RUME Conference, San Diego, 24 February 2017.
- ‘Conceptualizing hdealth Numeracy,’ Ontario Mathematics Education Forum, 28 January 2017.
- ‘Standardization as an important aspect of online instruction,’ Workshop on Digital Open Mathematics Education, Fields Institute, Toronto, 21 June 2016.
- ‘Are We There Yet?’ Workshop on Digital Open Mathematics Education, Fields Institute, Toronto, 21 June 2016
- ‘Tensions Between Mathematics and other Sciences – Ideal Opportunities to Enrich Teaching Science,’ Western Conference on Science Education, Western University, London, Ontario, 8 July 2015
- ‘Complex Dynamical Systems – Population Modelling,’ Canadian Math Education Study Group Meeting, Working Group presentation, Edmonton, 1 June 2014
- ‘Newton's Opticks and Universal Arithmetick,’ Ontario Mathematics Education Forum, March 2012

- 'Panel and Discussion: Mathematics for the Life Sciences,' Canadian Mathematics Society winter meeting, Montreal, December 2012
- 'Motivating students in a large life sciences math classroom,' Ontario Mathematics Education Forum, September 2012
- 'Learning Mathematics in Interdisciplinary Context,' Research on Teaching and Learning Conference, McMaster University, 8 December 2011.
- 'Mathematics in Interdisciplinary Context and Big Ideas in Mathematics,' CMS Conference, Toronto, 10 December 2011.
- 'Suggestion For A Theoretical Model For Secondary-Tertiary Transition In Mathematics,' European First Year Experience 4th Annual conference, University of Groningen, The Netherlands, May 2009.
- 'Modeling Diffusional Neighbourhoods of Cancer Cell Migration,' 22nd International Conference on Computers and Their Applications, Honolulu, Hawaii (presented by my graduate student Marc Colangelo) 30 March 2007.
- 'Learning How to Teach and Learn Mathematics: 'Teaching Mathematics' Course at McMaster University,' 1st Africa Regional Congress of the International Commission on Mathematical Instruction, University of the Witwatersrand, Johannesburg, South Africa, 23 June 2005.
- 'Mathematics Background Survey – An Insight Into Students' Preparation for University Mathematics Courses,' 1st Africa Regional Congress of the International Commission on Mathematical Instruction, University of the Witwatersrand, Johannesburg, South Africa, 23 June 2005.
- 'Narratives In Mathematics - Case Of Arts and Science Mathematics Course at McMaster University, First International Symposium on Mathematics and Its Connections to the Arts and Sciences, The University of Education, Schwäbisch Gmünd, Germany, 20 May 2005.
- 'Learning how to Teach and Learn Mathematics: "Teaching Mathematics" Course at McMaster University, Canadian Mathematics Education Forum 2005, University of Toronto, 6 May 2005.
- 'Modern Mathematics Curriculum: Fiction or Reality?' ICME-10 Conference, Copenhagen, 4-11 July 2004.
- 'Transition from Secondary to Tertiary Mathematics, McMaster University Experience,' ICME-10 Conference, Copenhagen, 4-11 July 2004.
- 'Transition from Secondary to Post-Secondary Mathematics: Changing Features of Students' Mathematical Knowledge and Skills and Their Influence on Students' Success,' PME-NA Conference, Toronto, 23 October 2004.
- 'NZ Maths: Great Resource for High School Teachers,' CMESG 2003 Conference, Acadia University, June 2003.
- 'Magic Geometry: Mosaics in Alhambra,' ISAMA 2003 Conference, Granada, Spain, July 2003.
- 'Convergence of Media: Textbooks and Math on Internet - What's the Difference?' Learning Technology Symposium, McMaster University, 4-5 December 2003.
- 'Leadership in Mathematics Education,' Rotary Zone 22 and 27 Rotaract Conference

- “Youth, Leadership and Sustainable development’, McMaster University, 17 May 2002.
- ‘Time for Reflection: Science Inquiry - What was in it for me?’ STLHE 2002, McMaster University, 14 June 2002.
- ‘3M Review of Educational Dossiers System’ STLHE 2002, McMaster University, 14 June 2002.
- ‘Using Undergraduate TAs - No One Way’ STLHE 2002, McMaster University, 14 June
- ‘Interdisciplinary Mathematics Projects in the Arts and Science Programme at McMaster University,’ ICTM2 conference, Hersonissos, Crete, 1-6 July 2002.
- ‘Where Do We Live? Episodes in the Geometrization of Our Space ,’ ISAMA 2002 Conference, Freiburg, Germany, July 2002.
- ‘Interdisciplinary Projects in the Arts and Science Programme at McMaster University,’ STLHE Conference, St. John’s, June 2001.
- ‘Teaching Mathematics’ course at McMaster University – Partnership for Teaching and Learning,’ 24th International HERDSA Conference, University of Newcastle, Australia, July 2001.
- ‘Enhancing Self-directed Learning Opportunities for Science Students: Science Inquiry at McMaster University,’ 24th International HERDSA Conference, University of Newcastle, Australia, July 2001.
- ‘Old Math Textbooks – Why Did We Abandon Them,’ CMS Winter Conference, York University, Toronto, December 2001.
- ‘Electronic Media in a Large Calculus Class: Five Years Ago and Today,’ Learning Technology Symposium, McMaster University, December 2001.
- ‘Working Group: Preparing Teachers of Mathematics - ’Teaching Mathematics’ course at McMaster University,’ Ninth International Congress on Mathematical Education (ICME-9), Tokyo, Japan, 2000.
- ‘Teaching Mathematics’ Course - an Innovative Attempt at Improving Quality of Teaching’, AMS-Scandinavian International Mathematics Meeting, SDU-Odense Universitet, Denmark, 2000.
- ‘Teaching Mathematics’ Course at McMaster University - an Innovative Attempt at Improving Quality of Teaching,’ Canadian Mathematical Society Summer Conference, McMaster University, 2000.

Invited Colloquia, Seminars, Talks (selection):

- ‘Comments on "Vital Directions",’ Fields Mathematics Education Forum, 27 February 2016
- ‘Teaching Science and Mathematics in 21st Century,’ Freudenthal Institute seminar, Utrecht, Holland, 15 April 2016
- ‘Quantitative Literacy,’ Master of Communication Management Workshop, 15 October 2016
- ‘Teaching Mathematics in 21st Century,’ Fields Math Education Forum meeting, Fields Institute, Toronto, 25 April 2015.
- ‘Fields Institute Centre for Mathematics Education,’ Canadian Math Education Study Group conference, Ad Hoc, University of Moncton, New Brunswick, 9 June 2015.
- ‘Learning Mathematics within an Interdisciplinary Science Program,’ Auckland University

of Technology, New Zealand, 26 May 2015.

- ‘How Real are Domsday Scenarios? Math of Long-term Modelling,’ Integrated Science Symposium – Synthesis, Keynote address, 2 April 2014
- ‘Who is a Scientist? Is it Fun to do Science?’ HISTReENet: the McMaster History of Ideas, Science, and Technology Research and Education Network (October 2013)
- History of Science in the Classroom. Panel. HISTReENet: the McMaster History of Ideas, Science, and Technology Research and Education Network (November 2013)
- ‘Math Preparation for University,’ York Region PA Day, Stephen Lewis Secondary School, Vaughan, May 2013
- ‘The Many Lives of Mathematics,’ Last Lecture series, McMaster University, March 2012.
- ‘Geometry of Our Universe,’ Mathematics Seminar, University of Waterloo, January 2012.
- ‘Learning Math from Animals,’ Integrated Science Synthesis Symposium, March 2012.
- ‘How to Succeed in University Math Classes?’ workshop, ISOMA (=Independent Schools of Ontario Mathematics Association) Fall Conference, Appleby College, 1 November 2011.
- ‘Recruitment and retention in Math,’ talk within Working Group on Recruitment, Attrition and Retention in Post-Secondary Mathematics, Canadian Mathematics Education Study Group Conference, Simon Frasier, May 2010
- ‘Students Getting a Voice,’ Ontario Math Education Forum, Fields Institute, 27 November 2010
- ‘AERA Report,’ Ontario Mathematics Education Forum, Fields Institute, Toronto, April 2009
- ‘Mathematics in Textbooks,’ Ontario Mathematics Education Forum, Fields Institute, Toronto, March 2009
- ‘Interdisciplinary Science,’ University of Alberta, Edmonton, March 2009
- ‘Interest and Motivation in Mathematics,’ Ontario Math Education Forum, Fields Institute, 31 May 2008.
- ‘Mathematics of Communication and Decision-Making in Medicine,’ Medical Physics Symposium, McMaster University, 13 December 2007.
- ‘Newton's Mind - Interdisciplinary Learning Object,’ Ontario Math Education Forum, Fields Institute, 26 November 2007.
- ‘Textbooks, Curriculum and Math Education,’ Ontario Math Education Forum, Fields Institute, 20 October 2007.
- ‘In Math Education, There are no Theorems, but ...’ University of Otago, Dunedin, New Zealand, 23 May 2007; also, University of Auckland, Auckland, New Zealand, 11 May 2007.
- ‘Mathematics Textbooks as Potential Source of Misconceptions,’ Auckland University of Technology, Auckland, New Zealand, 9 May 2007.
- ‘In Math Education, What You Say is Either Trivially Correct or Fundamentally Wrong,’ Victoria University, Wellington, New Zealand, 4 May 2007.
- ‘Evidence and Proof in Mathematics,’ mathematics education graduate seminar, Lakehead University, 15 February 2007.
- ‘Textbooks - Who Reads Them Anyway?’ Ontario Mathematics Education Forum, 20 January 2007.
- ‘Transition from Secondary to Tertiary Education - A Modern Rite of Passage,’ CLL workshop, McMaster University, 30 November 2006.

- ‘My Life as Researcher in Math Education,’ Invited Seminar, Concordia University, Montreal, 23 November 2006.
- ‘Transition From High School to University - Issues and Models,’ Ontario Mathematics Education Forum, Toronto, 21 October 2006.
- ‘Expectations, Challenges and Successes in Managing Large Classes,’ Invited Seminar, York University, Toronto, 19 October 2006.
- ‘Mathematics - Can't Live With It, Can't Live Without It,’ Invited Colloquium, University of Fribourg, Fribourg, Switzerland, 27 June 2006.
- ‘Assessment in Mathematics,’ Invited Presentation, Mohawk College, 17 May 2006.
- ‘Space and Dimension,’ Origins Seminar, 13 February 2006.
- ‘Math and Media,’ Ontario Mathematics Education Forum, Fields Institute, 28 Jan. 2006.
- ‘Concept of Dimension,’ McMaster University Science 2B3 (Big Questions) Guest Lecture, 29 September 2005.
- ‘Double Cohort, Fall 2004, Preliminary Report,’ Ontario Math Education Forum, Toronto, 26 February 2005.
- ‘Using Undergraduate TAs in Large and Online Classes,’ McMaster University CLL Seminar, 31 March 2005.
- ‘OAC vs Grade 12: Anything New and Exciting?’ Ontario Mathematics Education Forum, Fields Institute, 24 January 2004.
- ‘When Size Matters,’ University of Toronto at Scarborough Teaching and Learning Colloquium, 1 March 2004.
- ‘Mathematics in Communication in Medicine,’ Bachelor of Health Science Guest Seminars, 12, 19 and 26 March 2004.
- ‘Concept of a Dimension,’ Big Questions seminar, 24 September 2004.
- ‘Jumping Over Fire: Mathematics Issues in the High School to University Transition,’ University of Otago Mathematics Education Colloquium, March 2003
- ‘Undergraduates Teaching Undergraduates: Challenges and Opportunities,’ University of Wellington, March 2003
- ‘Jumping Over Fire: High School to University Transition,’ University of Wellington Teaching and Learning Seminar, March 2003
- ‘"Teaching Mathematics" Course at McMaster University - an Innovative Attempt at Improving Quality of Teaching,’ Auckland University of Technology Seminar, March 2003
- ‘Jumping Over Fire: High School to University Transition,’ Auckland University of Technology Seminar, March 2003
- ‘Using Undergraduate Tutors,’ seminar at King’s College London, 13 November 2002.
- ‘Mathematics Background Survey – Analysis, Messages and Action,’ Fields Mathematics Education Forum, November 2001
- ‘Teaching Mathematics’ Course at McMaster University,’ Math and Stats Teaching and Learning Seminar, Queens University, 2000

Other: lectures, public lectures, etc. at McMaster University (selection):

- ‘Math – How to Do Well and Be Happy,’ May at Mac, 13 May 2017.
- ‘Fun and Scary Facts about Infinity,’ Math@Mac, 6 March 2017.
- ‘Learning Math at McMaster is Fun,’ Fall preview, 29 October and 19 November 2016
- ‘Why Study Math and Stats,’ Science 1A3 talk, 6 October 2016
- ‘Math - How to Do Well and Be Happy.’ May at Mac presentation, 7 May 2016
- ‘Mathematics of Our Universe and Time Travel.’ McMaster Engineering and Science Olympics, 20 October 2016
- ‘Pi Day Lecture,’ McMaster University, 14 March 2016
- ‘Fun And Scary Facts About Infinity,’ Math@Mac lecture, 4 March 2015.
- ‘Math - How to Do Well and Be Happy,’ May@Mac presentation, McMaster University, 9 May 2015
- ‘Important Things to know about Math in University,’ Lecture, McMaster University, 24 March 2015
- ‘Geometry of Our Universe and Time Travel,’ Science and Engineering Olympics, McMaster University, 8 October 2015.
- ‘How Real are Domsday Scenarios? Math of Long-term Modelling,’ Science and Engineering Olympics, McMaster, 16 October 2014.
- ‘Math for Universe,’ Math@Mac lecture, 5 March 2014 .
- ‘Animals Doing Math,’ McMaster Science and Engineering Olympics, October 2013.
- ‘What's Happening in Mathematics Today? Math Where You Would not Expect to See it,’ Math@Mac presentation, March 2013.
- ‘Math - How to Do Well and Be Happy’ May@Mac presentation, May 2013
- ‘Teaching Interdisciplinary Mathematics,’ Dialogue with Teachers, February 2012
- ‘What Can I do with Math?’ Integrated science Careers Event, March 2012
- ‘Geometry of our Universe’ Big Questions (Science 2B3) guest lecture, 5 October 2011.
- ‘Math in Art and Architecture,’ SHAD lecture and workshop ‘Geodesic Domes,’ 12 July 2011
- ‘Math of Weather Forecasting,’ SHAD lecture, 5 July 2011
- ‘Aspects of Geometry of our Universe’ Big Questions (Science 2B3) guest lecture, September 2010.
- ‘Animals and Mathematics,’ Public lecture, McMaster University, 23 March 2010
- ‘Aspects of Geometry of our Universe’ Big Questions (Science 2B3) guest lecture, October 2009.
- ‘What's Happening in Mathematics Today? Math Where You Would not Expect It,’ Engineering Olympics, October 2009.
- ‘Mathematics Today: Modern Applications of Mathematics,’ Westdale High School, Hamilton, April 2009.
- ‘Math of Weather Forecasting,’ Arts and Science Lecture Series, March 2009.
- ‘How Do We Learn Math?’ Arts and Science Fridays Lecture Series, April 2008.

- ‘Aardvarks and Titanium Junkyards,’ Arts and Science Fridays Lecture Series, January 2008.
- ‘Geometry of our Space,’ Arts and Science Fridays Lecture Series, November 2007.
- ‘Concept of Dimension,’ Science 2B3 (Big Questions) guest lecture, McMaster University, October 2007.
- ‘21st Century Mathematics,’ Arts and Science Fridays Lecture Series, September, October 2007.
- ‘Mysteries of Infinity,’ McMaster University public lecture, October 2005.
- ‘Mathematics of Communication and Decision-Making in Medicine,’ McMaster University, March 2004.
- ‘Art of Teaching Problem-Solving,’ McMaster University, October 2004.
- ‘Mathematics of Communication and Decision-Making in Medicine,’ November 2004.
- ‘Have Eyes to Wonder, But Lack Tongues to Praise,’ public lecture, McMaster Museum of Art, November 2003.
- ‘Where Do We live,’ public lecture, McMaster University, November 2003.
- ‘Infinity,’ Public Lecture in Mathematics, McMaster University, November 2001.
- Canadian Undergraduate Math Conference Public Lecture "Esoteric Pies", June, 2000.
- Arts and Science Programme and Math and Stats Club public lecture "Faces of Symmetry", April, 2000.

Other: lectures, public lectures, etc. elsewhere (selection):

- ‘Symmetry and Mosaics in Alhambra Palace in Granada.’ Third Age Learning, Art Gallery of Burlington, 19 January 2017.
- ‘Interaction Between Math and Other Sciences,’ Quest University, Squamish, BC, 8 April 2015.
- ‘What If We Could Touch Infinity?’ Treehouse talk, Toronto, 14 October 2011.
- ‘Mathematics and Beauty of Mosaics in Alhambra Palace, Granada,’ AMCA Lecture, University of Toronto Faculty Club, April 2010.
- ‘Mathematics and Beauty of Mosaics in Islamic Architecture,’ Canadian Perspectives Lecture Series, University of Toronto, Mississauga, 27 April 2006.
- ‘Life is Too Short For Long Division,’ Science in the City lecture series, 11 April 2006.
- ‘... As a Matter of Fact, Math is Fun,’ Mac Cafe Scientifique Series, Ancaster, 4 March 2006.
- ‘Infinity: The Most Fascinating of All Ideas,’ Royal Canadian Institute Lecture, 22 January 2006.
- ‘Mathematics and Beauty in Islamic Architecture,’ University of Toronto - Mississauga University Lecture Series, 6 December 2005.
- ‘Infinity: the Most Fascinating of all Ideas, University of Toronto - Oakville University Lecture Series, 30 November 2005.
- ‘Hold Infinity in the Palm of Your Hand, and Eternity in an Hour,’ Science in the City lecture series, Hamilton Spectator and McMaster University, 9 March 2004.

Other: presentation for high school students (selection):

- ‘Why Math, and Why Study Math?’ presentation on 28 March 2017
- ‘Why Math, and Why Study Math?’ presentations on 30 March, 11 November and 30 November 2016
- ‘What do Mathematicians do These Days?’ Lecture for visiting high school students, McMaster University, 24 March 2015.
- ‘What Does it Take to Succeed in Math,’ 2 October 2014
- ‘What's Happening in Mathematics Today? Math Where You Would not Expect to See it,’ 21 May 2014
- ‘Mathematics Today,’ ‘What Mathematicians Do,’ presentations for students from Bishop Ryan HS and from Sherwood HS (both in November 2013)
- ‘Mathematics in Art and Architecture,’ ‘Geodesic Domes,’ ‘About Smart Animals and Related Things,’ SHAD lectures and workshop, July 2010
- Infinity, SHAD Lecture , 5-6 July 2010 ‘What's Hot in Math Today?’ SHAD Valley lecture, July 2009
- ‘Using Math to Understand Universe,’ SHAD Valley lecture, July 2009
- ‘Mathematics Today: Modern Applications of Mathematics,’ Westdale High School, Hamilton, April 2009.
- ‘Math for the Universe,’ Bishop Tonnos Secondary School, Ancaster, 28 November 2007.
- ‘Math for the Universe,’ SHAD Valley Program, McMaster University, 25 July 2007.
- ‘What do Mathematicians do these Days?’ SHAD Valley Program, McMaster University, 12 July 2007.
- ‘What is New in Mathematics?’ McMaster University high school presentation, 16 November 2005.
- ‘Math for the Universe,’ McMaster University Engineering and Science Olympics, 20 October 2005.
- ‘Art, Architecture and Mathematics,’ Cardinal Newman Secondary School, Stoney Creek, 28 November 2005.
- ‘Mysteries of Infinity,’ Columbia International College, Hamilton, 26 October 2005.
- ‘Mathematics and Its Applications,’ SHAD Valley Math Program; total of six lectures and workshops (every year since 1998, except 2001 and 2006; doing it again in 2007).
- ‘Modern Mathematics: Present-Day Applications, St Mary's Catholic Secondary School, Hamilton, 26 September 2005.
- ‘Infinity - the Most Fascinating of All Ideas,’ McMaster Accelerated Students Workshop, 13 May 2005.
- ‘Can Mathematics Predict the Weather? Math@Mac presentation for high school students, 2 March 2005.
- ‘Do You Know How to Add Numbers? Math@Mac presentation for high school students, 9 February 2005.
- ‘What is Modern Math About,’ St. Mary’s Catholic High School, 29 November 2004.
- ‘Smart Numbers,’ Fireball Show for high school students, McMaster University, 26 February

2004.

- ‘Mathematics Research Today,’ Engineering and Science Olympics lecture, 21 October 2004
- ‘Transition from High School to University: Issues Related to Mathematics” Parkside High School, 2002.

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