

Curriculum Vitae

for

Jeffrey Colin Morton

Professional Address

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Citizenship: Canadian

Languages: English, French

Research Interests: Category theory, Groupoids, Quantum Field Theory, Quantum Gravity, Representation Theory, Geometric Topology, Combinatorics

Current Position

Postdoctoral Fellow, University of Western Ontario Mathematics Dept. (July 2007-Dec 2009)

Education

- Ph.D in Mathematics, University of California, Riverside (June 2007)
Thesis Advisor: John Baez
Thesis Title: Extended TQFTs and Quantum Gravity
- M.Sc. in Mathematics, McGill University (Feb 2001)
Thesis Advisor: Niky Kamran
Thesis Title: Existence and Nonexistence Theorems for Solutions to the Einstein-Dirac-Maxwell Equations
- B.Math Double Major in Honours Pure Math and Honours Combinatorics & Optimization, University of Waterloo (June 1998)

Previous Positions

- Graduate Teaching Assistant, UC Riverside, Sept 2002 - Jun 2007
- Teaching Associate in Mathematics, UC Riverside, 2004-2006
- Lecturer, McGill University, Fall 2001
- Lecturer, Dawson College (Montreal), Summer 2001-2002

Publications

- Categorified Algebra and Quantum Mechanics; Theory and Applications of Categories, vol 16, pp 785-854, 2006
- Double Bicatagories and Double Cospans; accepted at Journal of Homotopy and Related Structures; available as arxiv:math/0611930
- 2-Vector Spaces and Groupoids; submitted to Applied Categorical Structures; (requested revisions submitted); available as arxiv:0810.2361

Research Visits

- Dorette Pronk, Atlantic Category Theory Seminar, Dalhousie University, Halifax, Nova Scotia, Canada, Aug/Sept 2009
- Derek Wise, for String Theory and Quantum Gravity Seminar, University of California, Davis, March 2008
- Short-Term Visitor at Perimeter Institute, Waterloo, Canada, June-July 2006

Conference Talks

- "2-Vector Spaces and Groupoids", presented at Groupoidfest 07, University of Iowa, November 2007; Ottawa Mathematics Conference, University of Ottawa, Canada, May 2008; Octoberfest 2008, Concordia University, Montreal, Canada, October 2008
- "Extended Topological Quantum Field Theories and 3D Quantum Gravity", presented at 23rd Pacific Coast Gravity Meeting, Pasadena, California, March 2007; Quantum Gravity and Quantum Geometry 2008, Nottingham, England, July 2008
- "Higher Algebra, Extended TQFT's and Quantum Gravity" talk presented at at Perimeter Institute, Waterloo, Ontario, Canada, July 2006
- "Categorifying the Quantum Harmonic Oscillator", talk presented at: International Category Theory Conference, White Point, Nova Scotia, Canada, June 2006; Union College Mathematics Conference, Schenectady, NY, December 2005; UC Riverside (Qualifying Exam Talk)
- "2D and 3D TQFT's and Higher Dimensional Algebra" (poster): presented at LOOPS '05 at Albert Einstein Institut fur Gravitationphysik, Potsdam, Germany, October 2005

Courses Taught As Primary Instructor

University of Western Ontario

- Introduction to Linear Algebra - Fall 2008, Fall 2009
- Complex Variables - Winter 2008, Winter 2009
- Topology - Fall 2007

UC Riverside

- Introduction to Discrete Structures - Summer 2005 and 2006
- Complex Analysis Qualifying Exam Seminar, Spring 2005
- First Year Calculus, Part C - Summer 2004

Dawson College, Summer 2001 - 2002

- Precalculus
- Calculus II

McGill, Fall 2001

- Vectors, Matrices and Geometry

Courses Taught as Teaching Assistant

UC Riverside, 2002-2006

- Precalculus (regular and for Life Sciences)
- First Year Calculus parts A,B, C (regular and for Business)
- Multidimensional Calculus parts A, B
- Linear Algebra (Advanced, and for Business)
- Introduction to Differential Equations
- Set Theory

McGill, 1998-2000

- 1st year calculus

Conferences Attended

- Quantum Gravity and Quantum Geometry 2008, University of Nottingham, July 2008
- Ottawa Mathematics Conference, University of Ottawa, May 2008
- Groupoidfest 07, University of Iowa, November 2007
- 23rd Pacific Coast Gravity Meeting, California Institute of Technology, March 2007
- International Category Theory Conference, White Point, Nova Scotia, Canada, June 2006
- Barrett Lectures, University of Tennessee, Knoxville, May 2006
- Union College Mathematics Conference, Schenectady, NY, December 2005
- LOOPS '05, Max Planck Institute, Potsdam, Germany, October 2005
- CBMS Conference on the Geometrical Study of Differential Equations, Howard University, Washington DC, June 2000

Service & Communication

- Maintain "Theoretical Atlas" mathematics research blog
- Mentor to new Graduate Teaching Assistants in UC Riverside Math Department, 2004 – 2007.

Honours

- Dean's Fellowship Award, UC Riverside, 2002-2003
- ISM Scholar Grant, McGill, 1998-2000
- Canada Scholarship, Waterloo, 1993-1998

References

- Dr. John Baez (UC Riverside Mathematics Dept.)
- Dr. Dan Christensen (UWO Mathematics Dept.)
- Dr. Masoud Khalkhali (UWO Mathematics Dept.)
- Dr. Ajneet Dhillon (Associate Chair, UWO Mathematics Dept. - Teaching)