

Vincent Quenneville-Belair

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Objectives

Academic research and teaching in applied mathematics with a specialization in numerical analysis of partial differential equations inspired by multidisciplinary mathematical modeling.

Skills

Languages: French and English (Fluent), Spanish (Basic), Esperanto (Read)
Computer Abilities: Win/Linux, C/C++/QuickBasic, SQL, LaTeX/HTML/Vim
Science Software: Matlab/Maple/Mathematica, Origin

Education

Ph.D. Mathematics 2008-2013
Adviser: Prof. Bernardo Cockburn, University of Minnesota, USA expected

- NSERC Alexander Graham Bell Canada Graduate Scholarship for Doctoral Studies (3 years; declined)
- FQRNT Master's Research Scholarships (2 years)
- Teaching Assistantship
- Preliminary Examinations successfully passed (Spring 2009)

B.Sc. First Class Honours in Mathematics and Physics 2005-2008
McGill University, Canada

- Mathematical Contest in Modeling by COMAP: Meritorious Winner (twice; coached by Prof. Nilima Nigam)
- DAAD-RISE Internship in Germany (declined)
- Association of Universities and Colleges of Canada: Gaz Métro Scholarship (twice)

Research

Summer Projects

- Elastodynamics Modeling in an Idealized Ear Canal (Research Assistant) 2009
Prof. Fadil Santosa, University of Minnesota
- Oscillatory Networks of Genes in Bacteria Modeling (NSERC Award) 2008
Prof. Jay Louise Nadeau, McGill University
- Rational Detection with p -adic Approximation Lattices Sequences (ISM Award) 2007
Prof. Henri Darmon & Dr. Christian Wüthrich, McGill University
- Optical Fiber Walker Designing for an Atomic Force Microscope 2006
Prof. Peter Grütter, McGill University
- Molecular Heat and Strain Distribution Modeling using Finite Elements 2005
Prof. Srikar Vengallatore & Prof. Peter Grütter, McGill University
- pH-Dependent Reversible Luminous Polymers Synthesis and Characterization 2004
Prof. William Skene, Université de Montréal, Canada

Workshops

- High Local Synchronization in Brain Recordings: Natural or Artifactual? 2008
Fields-MITACS Industrial Problem-Solving Workshop, Canada
- Associating Earth-Orbiting Objects Detected by Astronomical Telescopes 2007
Mathematical Modeling in Industry XI, Institute for Mathematics and its Applications, USA
- Simple Filtration Using Porous Media 2007
Mathematical Problems in Industry Workshop, University of Delaware, USA
- My Air Conditioner? You're Standing on It! 2007
Graduate Student Mathematical Modeling Camp, Rensselaer Polytechnic Institute, USA

Communication

Refereed Publications

- A. Ortan, V. Q.-Belair, B. S. Tilley, and J. Townsend. *On Taylor Dispersion Effects for Transient Solutions in Geothermal Heating Systems*. International Journal of Heat and Mass Transfer, 52(21–22):5072–5080, 2009.
- A. Ortan, E. Prosk, and V. Q.-Belair. *The Airplane Seating Problem*. MUMM¹, 2:23–25, 2008.
- A. Ortan and V. Q.-Belair. *Optimizing Efficiency of a Geothermal Air Conditioner*. MUMM, 2:13–15, 2008.
- V. Q.-Belair. *On Primes in Arithmetic Progressions*. MUMM, 2:7–9, 2008.
- V. Q.-Belair. *Once Upon a Time in a p -adic Approximation Lattice*. MUMM, 2:41–43, 2008.
- A. Ortan and V. Q.-Belair. *Euler's Brick*. MUMM, 1:30–33, 2006.

Presentations

- V. Q.-Belair. *Associating Earth-Orbiting Objects*. Mathematical Modeling in Industry XI, Institute for Mathematics and its Applications, 2007.
- V. Q.-Belair. *A Crowning Achievement of XIXth Century: Dirichlet's Theorem*. Canadian Undergraduate Mathematics Conferences, Simon Fraser University, 2007.
- V. Q.-Belair. *Dirichlet's Theorem on Primes in Arithmetic Progressions*. Undergraduate Summer Seminar in Number Theory, McGill University, 2007.
- V. Q.-Belair. *p -adic Approximation Lattices*. Undergraduate Summer Seminar in Number Theory, McGill University, 2007.
- V. Q.-Belair. *Poster: Designing of an Optical Fiber Walker for an Atomic Force Microscope*. Physics Department Poster Session, McGill University, 2006.

Teaching Assistant

- IT Linear Algebra and Differential Equations, 2009
- Excursions in Mathematics, Precalculus II, College Algebra and Probability, 2008-2009
- Honours PDE (Grading), 2007

Activities and Interests

Graduate Courses Taken

- Numerical Analysis of Differential Equations
- Numerical Analysis and Scientific Computing
- Sparse Matrix Computations
- Mathematical Modeling and Methods of Applied Mathematics
- Theory of Partial Differential Equations
- Real Analysis
- General Algebra
- General Relativity
- Electromagnetic Theory

McGill Undergraduate Mathematics Magazine (ISSN: 1911-9003)

- Co-founding and editing 2 issues between 2006 and 2008 with 50 pages and 400 copies each
- Maintaining the website on <http://sums.mcgill.ca/delta-epsilon>

Sports

- Hiking: Grand Canyon, Grand Teton, Jasper, Yoho, Banff, Corsica
- Wilderness First Aid with CPR by Sirius Wilderness Medicine
- Lead Rock Climbing at Horizon Roc and Alley Up, Québec
- Senior-Elite and 3A Kin-Ball Player
- Canadian Alpine Ski Alliance Instructor Level 1
- Tango, Salsa and Meringue

Cultural Activities

- Playing Western Concert Flute since 1998
- Visits: Egypt, Morocco, Spain, Italy, Cuba
- Rubik's Standard Cube in 2 minutes. Erdős Number 5. ;-)

¹McGill Undergraduate Mathematics Magazine