

Graduate Studies in Pure Mathematics

Nice Guy
on behalf of
Nico Spronk, Associate Chair for Graduate Affairs

September 17, 2015

Why be a Pure Math Graduate Student?

- To become a mathematician
- Personal interest

Preparation for professional careers

- Computer industry
- Finance
- Government
- Education

Being a Pure Math Graduate Student

Courses

We offer a variety of intellectually stimulating and challenging courses.

Project/thesis

- work one-one-one with a supervisor, or multiple advisors.
- learn how to do mathematical research.
- explore a topic in depth.

Financial support (MMath)

- \geq \$26 300/year (domestic); \$33 000/year (visa)
- \geq \$31 680/year (OGS); \geq \$34 180/year (NSERC)

Faculty

K. Davidson	B. Forrest	K.E. Hare	M. Kennedy
L. Marcoux	A. Nica	H. Radjavi	N. Spronk

- harmonic analysis
 - abstract
 - commutative/real line
 - Lie groups
- non-commutative probability
- fractal analysis
- operator theory
 - single operators
 - operator/ C^* -algebras
 - operator spaces
- topological quantum groups
- financial mathematics

Research area: Number Theory

Faculty

J. Bell	K.G. Hare	W. Kuo
Y.-R. Liu	D. McKinnon	M. Rubinstein
M. Satriano	C. Stewart	S. Yazdani

- analytic number theory
 - Diophantine equations
 - modular forms/L-functions
 - p -adic analysis
 - function fields
 - circle methods
 - probabilistic number theory
- algebraic number theory
 - algebraic geometry
 - arithmetic geometry
 - elliptic curves
- computational number theory
 - fractal analysis
- automatic sequences

Research area: Geometry and Topology

Faculty

B. Charbonneau	S. Karigiannis	D. McKinnon	R. Moosa
R. Moraru	B.D. Park	M. Satriano	

- Differential/algebraic geometry
 - mathematical physics
 - global analysis
 - PDEs on manifolds
 - gauge theory
 - complex geometry
- low dimensional topology
 - 4-manifolds
 - exotic smooth structures
- algebraic topology
- differential fields
 - Galois theory of Lie groups

Research area: Algebra and Logic

Faculty

J. Bell	B. Csima	W. Kuo	D. McKinnon
R. Moosa	M. Satriano	R. Willard	

- model theory
- universal algebra
- ring theory
 - dimension theory
 - Grobner bases
- constraint satisfaction problems
- computability theory
- logical limit laws
- representation theory
 - Lie groups
- algebraic geometry
 - Langlands program

Next steps – thinking about Pure Math

Course preparation

- Take advanced sections
- Take a broad selection of the hardest, deepest mathematics courses.

Undergraduate research

- Apply for a USRA; learn more:
<http://math.uwaterloo.ca/pure-mathematics/>

Faculty mentorship

- Engage a PMath faculty member to advise you on a possible academic plan, based on your interests.

Practicalities of applying

Applying

- Application deadline January 15.
— start thinking about suitable people to write letters of reference.
<http://math.uwaterloo.ca/pure-mathematics/graduate-studies/application-procedure-admissions>

Scholarships

- Apply for NSERC and OGS through Pure Math.
- For important information, visit the

Graduate Scholarship Information Meeting

Sept. 14, 2015, 4:00 - 6:00 p.m.

or, Sept. 17, 2015, 5:00 - 7:00 p.m.

J.G. Hagey Hall of the Humanities, Theatre of the Humanities

Contact information

Nico Spronk – Pure Math Associate Chair Graduate Affairs
MC 5332, nspronk@uwaterloo.ca

Nancy Maloney – Pure Math Graduate Assistant
MC 5314, nfmaloney@uwaterloo.ca, pmgrad@uwaterloo.ca