

ANDREW MCINTYRE

Bennington College
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RESEARCH INTERESTS

Spectral geometry of hyperbolic 2 and 3 manifolds associated with Kleinian groups, particularly functional determinants and Selberg type zeta functions, using tools from complex analytic Teichmüller theory and 2D conformal field theory.

EDUCATION

BSc Mathematics, University of Toronto	May 1995
MSc Mathematics, University of Toronto	August 1996
PhD Mathematics, SUNY Stony Brook (Advisor: Leon Takhtajan)	August 2002

APPOINTMENTS

Resource Assistant, School for Experiential Education	January 1989 – June 1995
Teaching Assistant, SUNY at Stony Brook	September 1996 – August 2002
Zassenhaus Assistant Professor, Ohio State University	September 2002 – June 2005
CRM-ISM Postdoctoral fellow, Centre de recherches mathématiques	September 2005 – May 2007
Research Assistant Professor, Concordia University	September 2005 – May 2007
Postdoctoral fellow, Max Planck Institute	May 2007 – August 2007
Instructor, Bennington College	August 2007 – present

PUBLICATIONS AND PREPRINTS

1. A. McIntyre, *Analytic torsion and Faddeev-Popov ghosts*, PhD Thesis, SUNY Stony Brook (2002)
2. A. McIntyre and L. A. Takhtajan, *Holomorphic factorization of determinants of laplacians on Riemann surfaces and a higher genus generalization of Kronecker's first limit formula*, Geometric and Functional Analysis, vol. 16 no. 6 (2006), [arXiv:math.CV/0410294](https://arxiv.org/abs/math.CV/0410294)
3. A. McIntyre and L. P. Teo, *Holomorphic factorization of determinants of Laplacians using quasi-Fuchsian uniformization*, Letters in Mathematical Physics, vol. 83 no.1 (2008), [arXiv:math.CV/0605605](https://arxiv.org/abs/math.CV/0605605)
4. A. McIntyre and L. A. Takhtajan, *Determinants of laplacians and higher genus generalizations of Kronecker's second limit formula and the Jacobi triple product*, to appear

TEACHING EXPERIENCE

- School for Experiential Education 1989–1995
- Taught at an alternative high school in Toronto
 - Responsible for OAC (equivalent of AP) Physics, Calculus, Finite Mathematics and Algebra&Geometry
 - Designed curricula and course materials to provincial requirements
 - Supervised a wide variety of independent student research projects
- University of Toronto 1994–1996
- Recitation instructor for calculus and linear algebra
- SUNY Stony Brook 1996–2002
- Taught mathematics courses at all levels; frequently sole lecturer, with responsibility for setting syllabus and exams
 - On several occasions, taught nonstandard courses which required me to design the course from scratch, including a graduate course for high school teachers on applications, a historically oriented course on classical algebra, and a senior seminar on logic and metamathematics
 - Taught a number of classes in the K–12 teacher preparation program, including an MSc course on probability and statistics
 - Taught a third year applied abstract algebra course which addressed cryptography and error-correcting codes
 - Frequently gave expository talks for the math club
 - Received Chair’s award for excellence in teaching
- Chautauqua program and Clay institute June 2002
- With I. Kra, taught a short course on partitions, theta functions, and the Jacobi triple product identity, with an audience of college mathematics instructors (Chatauqua) and gifted high school students (Clay institute).
- Ohio State University 2002–2005
- Taught calculus and linear algebra at all levels
 - Taught a number of third and fourth year courses with an intended audience of engineers, including a differential equations course that was taught jointly with aeronautical engineering faculty
 - Also taught graduate analysis and topology
 - With D. Burghelea, facilitated a VIGRE working group on quasicrystals and symmetry; presented in the VIGRE invitation to research series
- Concordia University 2005–2007
- Taught vector calculus for engineers, calculus for business and economics
- Bennington College 2007–present
- Designed courses in geometry, symmetry, networks
 - Developed new approaches for calculus
 - Taught group tutorials in real analysis and topology
 - Advised seniors in mathematics and beginning students

STUDENT EVALUATIONS

SUNY Stony Brook	Scale: 1 (best) to 7 (worst)	Mean: 1.50
Ohio State	Scale: 1 (worst) to 5 (best)	Mean: 4.35
Concordia	Scale: 1 (best) to 5 (worst)	Mean: 1.68

SELECTED TALKS AND MINICOURSES

<i>History of Uniformization</i> , guest lectures in grad course, Stony Brook	Spring 1999
<i>Quasiconformal mappings and measured foliations</i> , minicourse, Stony Brook	Fall 1999
<i>Conformal field theory</i> , minicourse, Stony Brook	Spring 2000
<i>Elliptic Functions and the Monster</i> , Mt Holyoke	Spring 2002
<i>Yang-Mills and 4-manifolds</i> , OSU	Fall 2003
<i>Physics and geometry</i> , introduction to research series, OSU	Spring 2004
<i>Percolation and field theory</i> , minicourse, OSU	Spring 2004
<i>Big numbers</i> , family weekend, Bennington College	Spring 2008

INVITED TALKS

Special session on inverse spectral geometry, AMS national meeting, Atlanta, Georgia	January 2005
Purdue University	April 2005
Indiana University	April 2005
Ahlfors-Bers colloquium, University of Michigan at Ann Arbor	May 2005
Special session on scattering and spectral problems in geometry, AMS sectional meeting, Lincoln, Nebraska (cancelled due to emergency)	October 2005
Korea Institute for Advanced Study	April 2006
Ahlfors-Bers colloquium, Rutgers University Newark	May 2008

SUPPORTED CONFERENCES AND VISITS

Ahlfors-Bers, Stony Brook	November 1998
Riemann Surfaces, Hebrew University of Jerusalem	May 1999
Simons workshop I (matrix models, gauge theories and geometry), Stony Brook	August 2003
Mathematical Physics (for Albert Schwarz), UC Davis	May 2004
Simons workshop II (topological strings), Stony Brook	August 2004
Great Lakes Geometry Conference, Notre Dame	April 2005
Korea Institute for Advanced Study	April 2006
Institut des Hautes Études Scientifiques	May–July 2006
Max Planck Institute for Mathematics	May–August 2007
	January–February 2008

SERVICE

Ran Algebraic Geometry Seminars (beginning and advanced)	Spring 1997
Organized Graduate Student Seminar	1998–1999
Graduate Student Representative	1998–1999
Ran problem seminar (preparation for qualifiers)	1998–2001
Organized Mathematical Physics Seminar	Spring 2000
Co-organized VIGRE working group on quasicrystals and symmetry	Fall 2002
Student advising	2007–2008
Co-teaching new junior science seminar	Fall 2008
Participating in “modules” pilot program	Fall 2008

REFERENCES

Leon Takhtajan	SUNY Stony Brook
Irwin Kra	SUNY Stony Brook
Dan Burghelea	Ohio State University
Ulrich Gerlach (teaching reference)	Ohio State University
Tony Philips (teaching reference)	SUNY Stony Brook

OTHER INTERESTS

Physics, astronomy, biology, history of sciences.

OTHER INFORMATION

I am a Canadian citizen, currently working in the United States on a TN-1 (NAFTA) visa. My native language is English.