

Department of Mathematics  
University at Buffalo, SUNY  
Buffalo, NY 14260  
USA

+1 (716)645-6284 x154  
j399m@buffalo.edu  
<http://www.math.buffalo.edu/~j399m>

**Research interests:**

Geometric group theory and the geometry and topology of 3-manifolds.

**Appointments:**

2006–present: Assistant Professor, University at Buffalo, State University of New York.  
2003–2006: NSF Postdoctoral Fellow / Taussky-Todd Instructor, Caltech.

**Education:**

Ph.D., University of California at Santa Barbara, 2003. Dissertation: “Geometry of Pseudocharacters”. Advisor: Daryl Cooper.  
B.S. in Mathematics, and B.A. in Plan II, University of Texas at Austin, 1996.

**Grants and awards:**

2008: NSF grant #DMS-0804369, \$109,840, 2008–2011.  
2003: NSF Mathematical Sciences Postdoctoral Research Fellowship.  
2003: Special Graduate Division Dissertation Fellowship, University of California, Santa Barbara.  
1998: Raymond L. Wilder Award, University of California, Santa Barbara.

**Publications:**

(with Daniel Groves) Dehn filling in relatively hyperbolic groups. *Israel Journal of Mathematics* **168** (2008), 317–429.  
Actions of certain arithmetic groups on hyperbolic spaces. *Algebraic and Geometric Topology* **8** (2008), 1371–1402.  
(with Daniel Groves) Fillings, finite generation and direct limits of relatively hyperbolic groups. *Groups, Geometry and Dynamics* **1** (2007), no. 3, 329–342.  
Quasi-actions on trees and property (QFA). With appendix by Nicolas Monod and Bertrand Rémy, *J. London Math. Soc.* (2) **73** (2006), no. 1, 84–108.  
Geometry of pseudocharacters, *Geometry and Topology* **9** (2005), 1147–1185.  
Algorithmic detection and description of hyperbolic structures on 3-manifolds with solvable word problem, *Geometry and Topology* **6** (2002), 1–26.  
Measurement and localization of interface wave reflections from a buried target. D. E. Smith, P. S. Wilson, Fred W. Bacon, J. F. Manning, J. A. Behrens and T. G. Muir, *Journal of the Acoustical Society of America* **103** (1998), 2333–2343.  
Beamforming on seismic interface waves with an array of geophones on the shallow sea floor. J. A. TenCate, T. G. Muir, A. Caiti, Å. Kristensen, J. F. Manning, J. A. Shooter, R. A. Koch, E. Michelozzi, *IEEE Journal of Ocean Engineering* **20** (1995), 1–11.

**Preprints:**

(with Ian Agol and Daniel Groves) Residual finiteness, QCERF, and fillings of hyperbolic groups. [arXiv:0802.0709](https://arxiv.org/abs/0802.0709).

**Invited conference talks:**

Residual Finiteness and Separability of Quasi-convex Subgroups. *Topics in Geometric Group Theory, MSRI*, Berkeley, California, November 2007.  
Geometric Dehn filling of high-dimensional hyperbolic manifolds. *Spring Topology and Dynamics Conference*, Rolla, Missouri, March 2007.  
Relative hyperbolicity and Dehn filling of groups. *Georgia Topology Conference*, Athens, Georgia, May 2006.  
Exotic quasi-actions on trees. *Workshop on Group Actions and Rigidity*, Honolulu, Hawaii, March 2006.

Actions of Chevalley groups on hyperbolic spaces. *Special Session, AMS Sectional meeting*, Lubbock, Texas, March 2005.

The coarse geometry of the complex of curves. *Complex of Curves Fest*, Caltech, January 2005.

Pseudocharacters on groups and quasi-actions on trees. *Wasatch Topology Conference*, Park City, Utah, June 2003.

**Contributed conference talks:**

Geometric Dehn filling of high-dimensional hyperbolic manifolds. *Geometric Group Theory on the Gulf Coast*, Pensacola, Florida, March 2008.

Relative hyperbolicity and Dehn filling of groups. *Combinatorial and Geometric Group Theory (Ol'shanskii Fest)*, Nashville, Tennessee, May 2006.

Combinatorial horoballs, quasi-geodesic bicomings, and relative hyperbolicity. *University of Arkansas Spring Lecture Series*, Fayetteville, Arkansas, April 2006.

Quasi-actions on trees and the geometry of pseudocharacters. *University of Arkansas Spring Lecture Series*, Fayetteville, Arkansas, April 2003.

Algorithmic detection and description of hyperbolic structures on closed 3-manifolds with solvable word problem. *Spring Topology and Dynamics Conference*, Austin, Texas, March 2002.

Bushy pseudocharacters and quasi-actions on trees. *Geometric Group Theory on the Gulf Coast*, New Orleans, Louisiana, March 2002.

Ray theory in mode models: Demonstration of high-frequency collective-mode interference effects. *Joint Meeting of the Acoustical Society of America and the Acoustical Society of Japan*, Honolulu, Hawaii, December 1996.

**Departmental Colloquia:**

Filling Cusps and Subgroups: An Interaction Between Topology, Geometry and Group Theory. Cal Poly San Luis Obispo, March 2006.

Negative curvature and the geometry of group actions. University of Oklahoma Colloquium, September 2005.

**Seminars:**

2008: Cornell, UW Milwaukee, University of Illinois at Chicago.

2007: Caltech, University of Illinois at Chicago.

2006: Cornell, University of Chicago, University of Utah.

2005: New York Group Theory Seminar, UC Santa Barbara, UC Davis, University of Oklahoma, University of Southern California.

2004: Claremont Topology Seminar, University of Texas at Austin.

2003: Caltech, University of Illinois at Chicago.

2002: London Topology Seminar, Oxford, University of Warwick.

**Teaching:**

Courses taught:

Math 835, Geometric Group Theory: Groups of Polynomial Growth, UB, Fall 2008.

Math 309, Linear Algebra, UB, Spring 2008.

Math 141, Calculus 1, UB, Fall 2007.

Math 241, Multivariable Calculus, UB, Fall 2006 and Spring 2007.

Math 151b, Algebraic Topology (graduate course), Caltech, Winter 2005.

Math 1a, Freshman Mathematics, Caltech, Fall 2004.

Math 192a, Geometry of Graphs and Groups (graduate topics course), Caltech, Fall 2004.

Math 34B, Calculus for the Life and Social Sciences, UCSB Summer 1998 and Fall 2000.

Mentoring:

Mentored an undergraduate research project in the Caltech SURF program, Summer 2005.

**Service:**

Committees: Undergraduate Studies, Geometry/Topology Area, Geometry/Topology Exam, Colloquium, Fall 2006– .

Organizer:

Buffalo Geometry and Topology seminar, Fall 2007–.

*Buffalo Geometry and Topology Conference*, March 7-9, 2008.

Caltech Geometry and Topology seminar, 2003–2004.

Refereeing/Reviewing: *Geometry & Topology*, *Proceedings of the American Mathematical Society*, *Pacific Journal of Mathematics*.

**Personal:**

Born October 1973 in Juneau, AK. U.S. Citizen.

**References:**

Available on request.