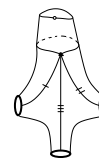


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Personal Information:

Date of Birth: October 6, 1974. **Married status:** Married.
Place of Birth: Canberra, Australia. **Citizenship:** U.K., Australia, Latvia
Permanent resident: USA

Research Interests:

Geometric group theory: relatively hyperbolic groups, limit groups and first order logic of groups, automorphisms of free groups, decision problems, nonpositive curvature and CAT(0) geometry.

Current Position:

2006-present **Senior Research Fellow**, California Institute of Technology
Pasadena, CA, USA.

Previous Positions:

2003-2006 **Olga Tausky-John Todd Instructor**, California Institute of
Technology, Pasadena, CA, USA.
2000-2003 **Junior Research Fellow in Mathematics**, Merton College, Oxford, UK.
2000-2003 **Lecturer**, Mathematical Institute, Oxford, UK.

Grants:

2005-2008 NSF Grant DMS-0504251

Education:

1993-1996 **B.Sc.(hons)**, (First Class), ANU, Australia. Received: April 1997.
1997 **M.Sc.**, ANU, Australia. Received: April 1999.
2000 **M.A.**, University of Oxford, UK. Received: October 2000.
1997-2000 **D.Phil**, University of Oxford, UK. Received: November 2000.

Published:

1. **A note on nonidentical Lie relators**, *Journal of Algebra*, **211** (1999), 15-25.
2. **Some properties of free groups of some soluble varieties of groups**, *Journal London Math. Soc. (2)*, **63** (2001), 592-606.
3. **Free groups of outer commutator varieties of groups**, *Journal London Math. Soc. (2)*, **64** (2001), 423-435.
4. (with Don Barnes) **The Wielandt subalgebra of a Lie algebra**, *J. Aust. Math. Soc.*, **74** (2003), 313-330.
5. (with Michael Vaughan-Lee) **Finite groups of bounded exponent**, *Bull. London Math. Soc.*, **35** (2003), 37-40.
6. **Limits of (certain) CAT(0) groups, I: Compactification**, *Alg. Geom. Top.* **5** (2005), 1325-1364.
7. **Limit groups for relatively hyperbolic groups, II: Makanin-Razborov diagrams**, *Geom. Top.* **9** (2005), 2319-2358.

Submitted:

8. (with Martin Bridson) **The quadratic isoperimetric inequality for mapping tori of free group automorphisms, I: Positive automorphisms**, submitted. Available at <http://arxiv.org/abs/math.GR/0211459>.
9. (with François Dahmani) **The Isomorphism Problem for toral relatively hyperbolic groups**, submitted. Available at <http://arxiv.org/abs/math.GR/0512605>.

10. (with Jason Manning) **Dehn filling in relatively hyperbolic groups**, submitted. Available at <http://arxiv.org/abs/math.GR/0601311>.
11. **Limits of (certain) CAT(0) groups, II: The Hopf property and the shortening argument**, submitted. Available at <http://arxiv.org/abs/math.GR/0408080>.
12. **Limit groups for relatively hyperbolic groups, I: The basic tools**, submitted. Available at <http://arxiv.org/abs/math.GR/0412492>.
13. (with Martin Bridson) **Free-group automorphisms, train tracks and the Beaded Decomposition**, submitted. Available at <http://arxiv.org/abs/math.GR/0507589>.
14. (with Jason Manning) **Fillings, finite generation and direct limits of relatively hyperbolic groups**, *Groups, geometry and dynamics*, to appear.
15. (with Martin Bridson) **The quadratic isoperimetric inequality for mapping tori of free group automorphisms, II: The general case**, submitted. Available at <http://arxiv.org/abs/math.GR/0610332>.
16. (with François Dahmani, **Detecting free splittings in relatively hyperbolic groups**, submitted. Available at <http://arxiv.org/abs/math.GR/0610967>.

In Preparation:

17. (with Martin R. Bridson) **The growth of conjugacy classes under free-group automorphisms**.
18. (with Martin R. Bridson) **Examples of groups with unstable elementary theory**.
19. (with Jason F. Manning) **Relative bounded cohomology and relatively hyperbolic groups**.
20. **Actions of relatively hyperbolic groups on strongly bolic spaces**.
21. (with Jason Manning and Denis Osin) **Applications of Dehn filling in relatively hyperbolic groups**.
22. (with Henry Wilton) **Enumerating limit groups**.
23. **Equations with constants and parameters over relatively hyperbolic groups**.
24. **Formal solutions for relatively hyperbolic groups**.
25. (with M. Bridson, J. Hillman and G. Martin) **The virtual Hopf property and knot complements**.

Dissertations:

- Problems in Lie rings and groups**, D.Phil thesis, University of Oxford, 2000. Supervisor: Prof. Michael Vaughan-Lee
- The Wielandt ideal of a Lie algebra**, M.Sc. thesis, Australian National University, 1998.

Research Presentations:

Conferences:

- Group theory conference, Australian National University, August 1998.
- Workshop on geometric group theory, CRM Montreal, July 2001.
- Geometric Groups on the Gulf Coast, New Orleans, April 2002.
- CBMS Conference, Albany, NY, August 2004.
- AMS Sectional Meeting, Santa Barbara, April 2005.
- Wasatch Topology Conference, Park City, Utah, June 2005.
- AIM conference on boundaries in geometric group theory, June 2005.
- Barcelona conference on geometric group theory, July 2005.
- International conference and workshops on geometric topology, Bedlewo, Poland, July 2005.
- Geometric and probabilistic methods in group theory and dynamical systems, College Station, Texas, Nov. 2005.
- Spring Lecture Series, Fayetteville, Arkansas, April 2006.
- William Rowen Hamilton Geometry and Topology Workshop, September 2006.
- Invited mini-course for Geometric Group Theory month 'Groups 007' in Marseille, February 2007.

Seminars:

- Algebra seminar, University of Oxford (twice);
- Algebra seminar, Australian National University;
- Algebra and combinatorics seminar, Texas A&M University;
- Group theory seminar, Tufts Univ;

Geometric topology seminar, Columbia University;
 Topology seminar, University of Oxford;
 Algebra seminar, University of Warwick;
 Topology seminar, University of Illinois at Chicago;
 Geometry/topology seminar, University of Chicago;
 Topology seminar, University of California, Santa Barbara (twice);
 Geometry and topology seminar, Caltech (three times);
 Max Dehn seminar, University of Utah;
 Algebra/Topology/Geometry seminar, University of Melbourne;
 London Algebra Colloquium;
 London Geometry and Topology seminar;
 Algebra Seminar, Heriot-Watt University, Edinburgh;
 Claremont Topology Seminar;
 New York Group Theory Seminar.
 Topology Seminar, University of Texas.

Referee for:

Annals of Mathematics
 Geometry and Topology
 Annales de l'Institut Fourier
 Transactions of the American Mathematical Society
 Journal of the London Mathematical Society
 Journal of Algebra
 Bulletin of the London Mathematical Society

Courses taught:

2001 **Finite group theory** (undergraduate), University of Oxford.
 2002–3 **Infinite group theory** (undergraduate), University of Oxford.
 2003 **Introduction to topology** (undergraduate), Caltech.
 2004 **Introduction to geometry** (undergraduate), Caltech.
 2004 **Reading course in geometric group theory** (reading), Caltech
 2004 **\mathbb{R} -trees in group theory and topology** (topics course), Caltech
 2005 **Introduction to geometry** (undergraduate), Caltech
 2005 **Introduction to differentiable and Riemannian manifolds** (undergraduate), Caltech
 2005 **Algebraic and differential topology** (graduate), Caltech
 2006 **Characteristic classes** (graduate), Caltech
 2006 **Freshman mathematics** (undergraduate), Caltech

Prizes/Scholarships:

1997–2000 **Commonwealth Scholarship**, University of Oxford.
 1996 **University Medal**, ANU, Canberra, Australia.
 1995 and 1996 **Hanna Neumann Prize for Mathematics**, ANU, Canberra, Australia.
 1992 **Australian Students Prize**, Canberra, Australia.

Other Professional Experience:

2005–present **Reviewer for Mathematical Reviews.**
 2006 **Examiner for Topology Qualifying Exam**, Caltech.
 2006 **Examiner for candidacy exam of Rupert Venzke**, Caltech.
 2005 **Examiner for candidacy exam of Robert Pelayo**, Caltech.
 2004 **Mentor for undergraduate research project**, Peter Samuelson: 'Which free-by-cyclic groups are CAT(0)?', Caltech.
 2002 - 2004 **PhD supervisor**, Adam Piggott, University of Oxford. Now a postdoc at Tufts.
 2002 **Examiner**, PhD transfer theses in low-dimensional topology and group theory for Simon Smith and Vivien Easson, University of Oxford.

- 2001 - 2003 **Undergraduate thesis supervisor** for two students: in geometric group theory, University of Oxford.
- 2001 **Tutor**, Post-graduate workshop, Bath, UK, entitled 'Geometric aspects of group theory', under the auspices of the LMS and EPSRC.
- 2001 **Member of organising committee** for the conference '**Groups St. Andrews Oxford 2001**'.
- 2001 **Examiner** for M.Sc. Thesis, University of Oxford
- 2001 **Convenor and Speaker** of seminar: 'Introduction to \mathbb{R} -trees', Oxford.
- 1997–2003 **Co-organiser and regular speaker** of weekly seminars: 'Algebra advanced class' and 'Junior Group Theory', University of Oxford.
- 1997–2000 **Tutor/Teaching Assistant**, Mathematical Institute, Oxford.
- 1996–1997 **Tutor**, Australian National University, Canberra, Australia.

Other experience:

- 2000–2003 **Member of Governing Body** of Merton College, Oxford.
- 2000–2003 **Member of Congregation**, University of Oxford.
- 1997–1998 **President of the Weir Common Room**, University College, Oxford.

Memberships:

- American Mathematical Society, London Mathematical Society.

References:

- Mladen Bestvina
Martin Bridson
Benson Farb
Zlil Sela
Gary Lorden (teaching)