

Mathematical Sciences Institute, Bldg 27, The Australian National University, ACT 0200 Australia  
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**Personal** United States citizen, Australian permanent resident

**Research Interests** contact geometry, Heegaard Floer theory, knot theory, three-manifolds

**Employment** The Australian National University  
Lecturer, Mathematical Sciences Institute, appointed 2011

Institute for Advanced Study  
Princeton, New Jersey, USA  
Member, School of Mathematics, 2011 – 2012

Stanford University  
Szegö Assistant Professor of Mathematics, 2007 – 2011

Max Planck Institute for Mathematics  
Visiting Scientist, 2008 – 2009

**Education** Yale University, 2001-2007  
PhD, Mathematics  
Thesis advisors: Andrew Casson, Peter Ozsváth

Columbia University, Fall 2006  
Exchange Scholar

Brown University, 1997-2001  
ScB Magna Cum Laude, Mathematics

Budapest Semesters in Mathematics, Spring 2000

**Distinctions** Cheryl E Praeger Award  
Australian Mathematical Society, 2014

Anne Penfold Street Award  
Australian Mathematical Society, 2014

National Science Foundation research grant DMS-1105312  
*Knots and Surfaces in Three-Manifolds*  
sole PI, \$83,000

Hoagland Award for Innovations in Undergraduate Teaching  
Stanford University, 2008

David Howell Premium for Excellence in Mathematics  
Brown University Department of Mathematics, 2001

Phi Beta Kappa, inducted 2001  
Oldest academic honour society in the United States

**Refereed  
Papers**

*Morse structures on open books*

joint with D Gay

to appear in Transactions of the AMS, arXiv1508.05307

*Asymmetric hyperbolic L-spaces, Heegaard genus, and Dehn filling*

joint with N Dunfield and N Hoffman

Math. Res. Lett. Vol 22, No. 6, 1679 - 1698, 2015

*A dynamical characterization of universally tight lens spaces*

joint with U Hryniewicz and P A S Salomão

Proc. London Math. Soc. (2014), DOI 10.1112/plms/pdu043

*Legendrian Contact Homology in Seifert Fibered Spaces*

Quantum Topology, Vol 4-3 (2013), 265-301.

joint with J Sabloff, DOI: 10.4171/QT/40.

*Rational Seifert Surfaces in Seifert Fibered Spaces*

Pacific Journal of Mathematics 258-1 (2012), 199-221.

joint with J Sabloff, DOI No. 10.2140/pjm.2012.258.199

*Invariants for Legendrian knots in lens spaces*

Communications in Contemporary Mathematics, Vol. 13, No.1, 91-121.

DOI No. 10.1142/S0219199711004178, 2011

*Legendrian grid number one knots and augmentations of their differential algebras*

The Mathematics of Knots: Theory and Application (Computations in Mathematical and Computational Sciences), ed. by Markus Banagl and Denis Vogel, Springer (2010) 143-168.

*Constructing Seifert surfaces for n-bridge link projections*

Journal of Knot Theory and Its Ramifications, Vol 19, No 3.

*The Thurston polytope for four-stranded pretzel links*

Algebraic & Geometric Topology 8 (2008) 211-243

**Preprints**

*Unifying Unexpected Exceptional Dehn Surgeries*

joint with Kenneth L Baker and Neil Hoffman, in preparation

*Legendrian contact homology via open book decompositions*

joint with J Sabloff, in preparation

*Heegaard Floer homology of  $(n, n)$ -torus links: computations and questions*

arXiv.1208.0394

*Heegaard Floer link homology, the Thurston norm, and minimal-complexity surfaces*

PhD Thesis, Yale University, 2007

**Textbooks**     *Introduction to Contact and Symplectic Geometry*  
joint with M Symington  
undergraduate textbook, electronic copy available by request

*Differential Vector Calculus*  
University Custom Publishing  
undergraduate textbook for Math 51 at Stanford  
used by 600 students annually, 2010-2015

**Professional Service**     Australian Mathematical Society Council, elected 2016

Organiser, Workshop on Low-Dimensional Topology and Quantum Algebra  
*The Australian National University, 31 October - 4 November 2016*  
*Competitive funding awarded by the Australian Mathematical Society and AMSI*

Honours Convener, 2014 –  
*Mathematics program, ANU*

2016 Australian Mathematical Society Meeting  
*Local Organising Committee*  
*Organiser, Topology Special Session*

Chair, Mathematical Sciences Institute Equity and Diversity Committee

Member, College of Physical and Mathematical Sciences Access and Equity Committee

Education Standards and Quality Committee  
*College of Physical and Mathematical Sciences alternate*

Acting Honours Convener, Spring 2014  
*Mathematical Applications and Computations program, ANU*

Hiring Committee, ANU, 2013-2016  
*Member of 7 search committees in mathematics and statistics*

ANU College of Physical and Mathematical Sciences Advising, 2014 –

Organiser, Geometry and Topology Session  
*2013 Australian Mathematical Society Meeting*

Referee  
*Topology and Its Applications*  
*Proceedings of the American Mathematical Society*

Reviewer for Zentralblatt

Course coordinator for Math 51, Stanford University, Fall 2010  
*Administrative head for course with 370 students, 4 instructors,*  
*£ 9 teaching assistants*

<b>Outreach</b>	<i>From Triangles to Computer Graphics</i> <i>joint with A Licata, ABC Science article</i>
	Mathematicians in Schools <i>partnered with Daramalan College, Canberra ACT</i>
	Organiser, Women in Mathematics at ANU <i>AustMS WIMSIG affiliate</i>
	Stanford Women in Math (SWiM), 2009-2011 <i>Organised group for undergraduate women in mathematics</i>
	Association for Women in Science (AWIS) Mentor, 2007-2008
<b>Supervision and Advising</b>	Ms Zaiga Thomann <i>Honours 2014</i>
	Mr Dominic Weiller <i>Honours 2015</i>
	Mr Lachlan Maynard <i>Honours 2015 - 2016</i>
<b>Research Visits</b>	Banff International Research Station, March 2013, March 2014, November 2015
	Max Planck Institute for Mathematics, April-May, 2012
	Simons Center for Geometry and Physics, December, 2012
<b>Teaching at ANU</b>	Mathematics and Applications 2 <i>Lecture course: Autumn 2013, Autumn 2014, Autumn 2015</i>
	Algebra 1 Honours <i>Lecture course: Spring 2013, Spring 2014, Spring 2015</i>
	Modern Knot Theory <i>Seminar course: Autumn 2015</i>
	Morse Theory <i>Undergraduate reading course: Summer 2014 - 2015</i>
	Topics in Low-Dimensional Topology <i>Honours reading course: Autumn 2013</i>
	Contact Geometry <i>Undergraduate reading course: Autumn 2013, Autumn 2014, Spring 2014</i>
	Hyperbolic Geometry <i>Undergraduate reading course: Summer 2013-2014</i>

**Special Programs**      AMSI Winter School  
*Lecturer, Introduction to Symplectic Geometry, 2015*

Institute for Advanced Study Women and Mathematics Program  
*Lecturer, Legendrian Knot Theory, 2012*  
*Teaching assistant for graduate course, Foliations and Laminations, 2008*

Park City Mathematics Institute Graduate Summer School  
*Teaching assistant for graduate course, Dehn Surgery and 3-manifolds, 2006*

**Teaching at Stanford**      Linear Algebra and Calculus of Several Variables  
*Undergraduate lecture course: Autumn 2007, 2009, & 2010*

Graduate lecture course on 3-manifolds, Spring 2011

Applied Group Theory  
*Undergraduate lecture course: Winter 2010*

Linear Algebra and Matrix Theory  
*Undergraduate lecture course: Winter 2010 & Spring 2011*

Fundamental Concepts of Analysis, Spring 2008  
*Undergraduate lecture course: Spring 2008*

Complex Analysis, Winter 2008  
*Undergraduate lecture course: Winter 2008*

**Teaching at Yale**      Undergraduate lecture courses  
*Multivariable Calculus, Fall 2005, Spring 2007*  
*Differential Calculus, Fall 2004*  
*Integral Calculus, Fall 2003*

Graduate Teaching Center staff member, Yale University  
*Led workshop series "Fundamentals of Teaching Quantitative Reasoning"*  
*Led workshops on teaching undergraduate science courses:*  
*"Teaching Problem Solving"*  
*Co-organizer of Spring Teaching Forum at Yale, 2006 & 2007*

Yale College Math and Science Tutor  
*Undergraduate tutoring*  
*Academic orientation sessions for incoming minority students*

**Selected  
Invited  
Talks**

William Rowan Hamilton Geometry and Topology Workshop  
Trinity College, Dublin, 2015

Workshop on Low-Dimensional Topology, Chinese University of Hong Kong, 2015

Computational and Algebraic Topology in Sydney, Sydney University, 2014

Representation Theory in Geometry, Topology and Combinatorics  
Melbourne University, 2013

Workshop on contact geometry (lecture series), Melbourne University, 2013

Colloquium, Dartmouth University, 2011

Colloquium, Swarthmore College, Swarthmore, PA, 2011

Plenary talk at Knots in Washington XXXII, 2011

Southern California Topology Conference, 2011

Colloquium, University of Arkansas, Fayetteville, AR, 2011

Connections for Women: Homology Theories of Knots and Links, MSRI 2010

Wasatch Topology Conference, Park City, 2009

Bi-College Colloquium, Haverford College, 2009

Advanced School and Conference on Knot Theory and Its Applications  
to Physics and Biology, Trieste, Italy, 2009

Istanbul Contact Topology Workshop, Istanbul, Turkey, 2009

The Mathematics of Knots: Theory and Application  
Heidelberg, 2008

Colloquium, Kansas State University, 2007

Georgia Topology Conference, Athens, Georgia, 2007