

ELIZABETH J DENNE

CURRICULUM VITAE

CURRENT ADDRESS

Smith College
Department of Mathematics & Statistics
Northampton MA 01063
work: (413) 585 3757 fax: (413) 585 3786
edenne@smith.edu
<http://www.math.smith.edu/~edenne>

CITIZENSHIP Australian, US green-card holder

POSITIONS HELD

Assistant Professor July 2007—present.
Smith College, Department of Mathematics & Statistics.

Benjamin Peirce Assistant Professor July 2004—June 2007.
Harvard University, Department of Mathematics.

ACADEMIC DEGREES

Ph.D. Mathematics University of Illinois, Urbana-Champaign. Aug. 1998—May 2004.
Thesis Advisor: Professor John Sullivan.
Thesis Title: *Alternating Quadrisecants of Knots*.

B.Sc. (Hons) University of Sydney, Australia. Feb. 1993—Dec. 1997.
First class Honours in Pure Mathematics.
Thesis Advisor: Dr Donald Cartwright.
Honours Thesis: *The Uniformization Theorem for Riemann Surfaces*.

PUBLICATIONS

- (1) *Quadrisecants give new bounds for Ropelength*
with Y. Diao, J.M. Sullivan. *Geometry and Topology* Vol. 10, 2006 pp 1–26.
- (2) *Convergence and Isotopy for Graphs of Finite Total Curvature*
with J.M. Sullivan. In *Discrete Differential Geometry*, Birkhäuser, 2008 pp 163–174.
arXiv:math.GT/0606008.
- (3) *Alternating Quadrisecants of Knots*.
Submitted. arXiv:math.GT/0510561.
- (4) *The distortion of a knotted curve* with J.M. Sullivan.
Proc. Amer. Math. Soc. **137** no. 3 2009, pp 1139–1148. arXiv:math.GT/0409438.
- (5) *Further results on the “square-peg” problem*
with J. Cantarella and J. McCleary. Preprint 2008.
- (6) *Criticality for flat-ribbons*
with J.M. Sullivan and N. Wrinkle. In preparation.
- (7) *Quadrisecants and unknotting number*.
In preparation.

GRANTS and AWARDS

- Spring 2010 **Picker Fellowship** Smith College.
- Summer 2008 **AWM Mentoring Fellowship**. Associating for Women in Mathematics
- Spring 2004 **Bourgin Fellowship** Math Department, University of Illinois. Awarded to top student in topology or geometry.
- April 2002 **Liberal Arts and Sciences Award for Excellence in Undergraduate Teaching** University of Illinois. (Awarded to 6 out of 1000 LAS College TAs each year.)

RESEARCH EXPERIENCES for UNDERGRADUATES

- **Honors thesis advisor:**
 - Emma Schlatter ('10) *Knot theory and classifying 3-manifolds*.
 - Regin McNeill ('08) *Knots and the Alexander Polynomial*.
- **Summer Research Experiences**
 - 2009 SURF advisor to Shivani Aryal, Shorena Kalandarishvili, Sarah Meyer on *Knots and flat-ribbons*. Students presented their work at *Unknot Conference*, Denison Ohio.
 - 2005 & 2006 advised Gerardo con Diaz, a Mellon Mays Undergraduate Fellow in knot theory research. Mathematics Department, Harvard University.
 - 2001 & 2002 Mentor Illimath 2001 & 2002, Mathematics Department, University of Illinois, Urbana-Champaign.
- **Special Studies**
 - Fall 2009 Introduction to Algebraic Topology.
 - Spring 2008 Rosanna Speller ('08) on *The Minimum Distance Energy of Knots*.

TEACHING

Assistant Professor, Smith College. July 2007—present.

- Math 114 Calculus II (Fall 2007, 2008; Spring 2008)
- Math 211 Introduction to Linear Algebra. (Fall 2009; Spring 2008, 2009)
- Math 212 Multivariable Calculus. (Fall 2008)
- Math 225 Advanced Calculus. (Spring 2009)
- Math 342 Introduction to Topology: (Fall 2007, 2009)

Assistant Professor, Harvard University. July 2004—June 2007.

- Introduction to Knot Theory. (Spring 2007)
- Calculus on Manifolds: (Fall 2004, 2006)
- Math 25 Honors Multivariable Calculus and Linear Algebra: (Fall 2005, Spring 2006)
- Introduction to Linear Algebra. (Spring 2005, Fall 2006)
- Multivariable calculus. (Fall 2004)

Teaching Assistant, University of Illinois, Urbana-Champaign. Aug. 1998—May 2004.

- Calculus I (one semester), Calculus II (three semesters).
- Calculus III (three semesters) at Unit One Allen Hall
- Calculus III (one semester) taught using *Calculus & Mathematica*.

OTHER TEACHING RECOGNITION

Fall 2004 **CUE guide** Harvard University. Received “special recognition for teaching abilities” for multivariable calculus. Recognition based on student evaluations.

May 2000 **Mathematics Instructional Award** for excellence in teaching. (Awarded to 4 out of 110 TAs each year.) University of Illinois.

1999—2002 Placed on **UIUC List for Excellent Teachers**: Spring 1999, Fall 1999, Spring 2000, Fall 2000, Spring 2001, Fall 2001, Fall 2002.

INVITED TALKS — conferences

July 2009 **Unknot Conference** Denison University, Granville, OH. *How much string do you need to tie your shoelaces?*

Sept. 2008 **AMS Sectional Meeting** Wesleyan University, Middletown CT.

Low dimensional topology Special Session — *Further results on the “Square-peg” problem.*

Nov. 2007 **AMS Sectional Meeting** Murfreesboro, Tennessee.

Physical Knots and Links Special Session — *Further results on the “Square-peg” problem.*

May 2007 **Invited participant** for *The Mathematics of Knotting and Linking in Polymer Physics and Molecular Biology* workshop at Banff International Research Station, Banff Canada.

May 2007 **Southeast Geometry Seminar** Georgia Institute of Technology, Atlanta GA.

The distortion of a knotted curve.

Oct. 2006 **AMS Sectional Meeting** Cincinnati, OH.

Knot Theory Special Session — *Convergence and isotopy type of knotted graphs.*

Jan. 2006 **Invited participant** for the *Moduli spaces of knots* ARCC workshop

American Institute of Mathematics, Palo Alto, CA.

Mar. 2005 **AMS Sectional Meeting** Bowling Green, KY.

Knot Theory and its Applications Special Session — *The distortion of knotted curves.*

Mar. 2004 **AMS Sectional Meeting** Tallahassee, FA.

Knot Theory Special Session — *Quadriseccants give new lower bounds for ropelength.*

Jan. 2004 **AMS Joint Meeting** Phoenix, AZ.

Low-Dimensional Topology Special Session — *Geometric Knot Theory.*

Apr. 2002 **Southeast Geometry Conference** University of Georgia, Athens, GA.

Quadriseccants of Knots.

INVITED TALKS — colloquia and seminars

July 2009 **Prime Time Talk** Hampshire College Summer Studies in Mathematics, Hampshire College, MA.

Apr. 2009 **Topology et al. seminar** Wesleyan University, Middletown CT.

Dec. 2008 **Geometry Seminar** University of Massachusetts, Amherst MA.

Dec. 2007 **Geometry and Topology seminar** Dartmouth College, Hanover NH.

April 2007 **Geometry and Topology seminar** Toronto University, Toronto Canada.

Dec. 2006 **Gauge Theory and Topology seminar** Harvard University, Cambridge MA.

Nov. 2006 **Geometry Seminar** University of Georgia, Athens, GA.

Oct. 2006 **Geometry Seminar** University of Connecticut, Storrs, CT.

Oct. 2006 **Valley Geometry Seminar** University of Massachusetts, Amherst, MA.

Mar. 2006 **Topology Seminar** Brown University, Providence, RI.

Nov. 2005 **Topology Seminar** Brandeis University, Boston, MA.

Oct. 2005 **Geometric Topology Seminar** Columbia University, New York, NY.

Sept. 2005 **Topology Seminar** Yale University, New Haven, CT.

Aug. 2005 **VIGRE seminar** University of Georgia, Athens, GA.

Oct. 2004 **Gauge Theory and Topology Seminar** Harvard University, MA.
Oct. 2004 **Colloquium** Vassar College, Poughkeepsie, NY.
Feb. 2003 **Geometry Seminar** University of Georgia, Athens, GA.

SERVICE

Fall 2009 **Organizer** for the session on *Life as a graduate student* at WiMiN 2009 conference
Fall 2008 **Committee on refurnishing** the math forum
Department of Mathematics & Statistics, Smith College.
Fall 2008 **Organizer** for the session on *Life as a graduate student* at WiMiN 2008 conference
(Women in Math in New England) held Sept 27, 2008.
March 2008—present **Departmental representative** consulting with architects on remodeling
Sabin-Reed/Burton Hall. Department of Mathematics & Statistics, Smith College.
July 2007—present **Course Assignment Committee**
Department of Mathematics & Statistics, Smith College.
July 2007—present **Career and graduate school advising**
Department of Mathematics & Statistics, Smith College.

June 2005—June 2007 **Assistant** to the Director of Graduate Studies,
Mathematics Department, Harvard University.
Spring 2005, 2006, 2007 **Member** Graduate Admissions Committee,
Mathematics Department, Harvard University.
Spring 2002 **Organizer** Graduate Student Research Seminar,
Mathematics Department, University of Illinois.
Spring 2002 **Chair** Teaching Assistant Teaching Awards Committee,
Mathematics Department, University of Illinois.
Spring 2001 **Student Representative** Teaching Assistant Teaching Awards Committee,
Mathematics Department, University of Illinois.
Fall 2000 and Spring 2001 **Student Representative** Graduate Affairs Committee,
Mathematics Department, University of Illinois.

PROFESSIONAL ACTIVITIES and SERVICE

Fall 2008 **Reviewer** for undergraduate topology text (editor Bob Stern) for CRC press.
July 2007—present **Referee** for articles for mathematics journals (Geometry and Topology, Kobe
Journal of Mathematics, Involve - a Journal of Mathematics.)

PROFESSIONAL SOCIETIES

Aug. 1998—present **American Mathematical Society**
Aug. 2001—present **Association for Women in Mathematics**
Aug. 2004—present **Mathematical Association of America**

LETTERS OF REFERENCE

Professor Cliff Taubes, Harvard University

chtaubes@math.harvard.edu

Associate Professor Jason Cantarella, University of Georgia, Athens

jason.cantarella@gmail.com

Professor Chris Golé, Smith College

cgole@smith.edu