Curriculum Vitae
Emily Peters

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Education:

May 2009 Ph.D. University of California, Berkeley, Mathematics. Advisor: Vaughan Jones. Dissertation: "A planar algebra construction of the Haagerup subfactor"

June 2003 A.B. University of Chicago, Chicago, IL, Mathematics (Honors).

Employment:

2010-present NSF posdoctoral fellow, Department of Mathematics, Massachusetts Institute of Technology.

2009-2010 Lecturer, Department of Mathematics and Statistics, University of New Hampshire.

Publications and Preprints:

1. *Scott Morrison and Emily Peters. Fully automated constructions of subfactors. In preparation.*
2. Scott Morrison, David Penneys, Emily Peters and Noah Snyder. Subfactors of index less than 5, part 2: quadratic tangles and triple points. To appear in Internat. J. Math. (arXiv:1007.2240v1)
3. Scott Morrison, Emily Peters and Noah Snyder. Knot polynomial identities and quantum group coincidences. Quantum Topology, Vol. 2, No. 2 (2011) pp. 101–156. (arXiv:1003.0022v1)
4. Stephen Bigelow, Scott Morrison, Emily Peters and Noah Snyder. The extended Haagerup planar algebra. To appear in Acta Mathematica. (arXiv:0909.0499v1)
5. Emily Peters. Constructing the Haagerup planar algebra. Internat. J. Math, Vol. 21, No. 8 (2010), pp987–1045. (arXiv:0902.1294v2)
6. Scott Morrison, Emily Peters and Noah Snyder. Skein theory for the D_{2n} planar algebras. J. Pure Appl. Algebra, Vol. 214, No. 2 (2010) pp. 117-139. (arXiv:0808.0764v2)

Research Interests:

Planar Algebras. Subfactors. Fusion Categories. Knot Theory.

Grants, Honors, Awards:

2010-2013 Postdoctoral fellow, U.S. National Science Foundation

2008-2009 Dissertation-Year Fellowship, Soroptomist Founder Region (Northern California and Hawaii).

2007-2008 Outstanding Graduate Student Instructor Award, GSI Teaching and Resource Center, University of California Berkeley.

2003-2005 Graduate Opportunities Fellowship, University of California Berkeley.

Selected Invited Talks:

2011 Sept 24 IUPUI, Wabash analysis miniconference. Classifying subfactors up to index 5.

May 27 Institute Henri Poincare, conference on II_1 factors: Classifying subfactors up to index 5, part II.

2010 Dec 3 MIT, Infinite-dimensional algebras seminar. Constructing and classifying subfactors.

Oct 24 Dartmouth College, East Coast Operator Algebras Seminar: Classifying subfactors up to index 5.

2009 Nov 19 University of New Hampshire, colloquium: Planar algebras.

Oct 17 University of Nevada Reno, West coast operator algebras seminar. The extended Haagerup planar algebra.

2008 Dec 8 Ottawa, Ontario, Canada, CMS winter meeting, "Operator algebras" session. The D_{2n} planar algebra and knots.

Oct 23 University of Tokyo, operator algebras seminar. Planar algebras and the Haagerup subfactor.

Selected Expository Talks:

2011 Oct 13 Harvard, Conformal nets seminar: the Connes fusion tensor product.

2011 April 20 MIT, D.W. Weeks seminar: Knots, the four-color Theorem, and von Neumann Algebras.

2010 Aug 20 University of Oregon, Operator algebras and conformal field theories workshop: Boundary CFTs and their classification via Frobenius algebras.

2009 May 15 Student subfactor seminar, UC Berkeley: The Haagerup subfactor and graph planar algebras.

March 26 CFT seminar, University of Melbourne: The definition of a conformal field theory.

Teaching:

2009-2010 University of New Hampshire, Instructor for:

Calculus I (Spring). Course coordinator; taught about 150 students and supervised graduate TA.

Multidimensional Calculus (Fall and Spring). Taught about 75 students and supervised grad TAs.

Calculus for the social sciences (Fall). Taught about 150 students and supervised graduate TAs.

Knot Theory (Spring). Graduate seminar.

2005-2008 University of California, Berkeley, Graduate Student Instructor for :

Calculus, Linear Algbera, Linear Algebra Honors (various semesters). Led multiple recitation sections per week, supplementary to large lecture classes.

Complex Analysis (Spring 2008). Held ten hours of office hours per week for all students taking complex analysis (regular and honors).

Other Teaching:

2010-2011 Boston Math Circle: Taught extracurricular classes on tilings; voting theory; knot theory; coding theory; and auction theory to middle and high school students.

2010 Math Camp: Co-taught a class on the Temperley-Lieb algebra to high school students in a summer program.

2006, 2007, 2009 Hampshire College Summer Studies in Mathematics: taught topics including group theory; galois theory; polytopes; and knot theory to high school students in a summer program.

Talks for Students and Educators:

2011 Sept 30 Girls' Angle video series (for middle-school students): the Platonic solids. Video available at http://www.girlsangle.org/page/filmpages/WIM_EPeters.html

2009 Oct 8 University of New Hampshire, freshman seminar: Regular solids.

2008 April 7 Oakland/East Bay teachers' circle: Origami in the classroom.

2007 Dec 6 Smith College (Northampton, MA), Center for Women in Math: The Temperley-Lieb algebra and the Jones polynomial.

July 5 Hampshire College Summer Studies in Mathematics (Amherst, MA): The problem of the kissing spheres.

March 10 Davis math circle: Platonic solids in more dimensions. Transcript available at http://explore.math.ucdavis.edu/mathcircle/archive/day-in-the-life/emily-2007/

Professional Activities:

2010-2011 Refereed papers for Quantum Topology and Journal of the London Math Society.

2008 Feb 8-10 Led discussions and participated in panels to encourage women college students interested in math, at the Nebraska Conference for Undergraduate Women in Mathematics, in Lincoln, NE.