

Contact Information:

Address: 2420 Virginia St. #304, Berkeley, CA 94709
 Email: dpenneys@math.berkeley.edu
 Cell Phone: (302) 893-2999
 Website: <http://math.berkeley.edu/~dpenneys>

Education:

May 2012 PhD Mathematics. University of California, Berkeley. GPA 3.91. Dissertation on subfactors, planar algebras, tensor and fusion categories

Advisor: Vaughan Jones, Fields Medalist 1990

- NSF East Asia and Pacific Summer Institute Research Fellow 2010, Tokyo, Japan
- Gave over 13 invited talks at Purdue ([ECOAS](#)); [Subfactors in Maui](#); Oregon; Vanderbilt ([NCGOA](#)); the American Mathematical Society Joint Meetings 2011; Kyushu, Kyoto, and Tokyo (Japan); Institute for the Mathematical Sciences (Chennai, India); George Washington
- Gave over 30 talks at UC Berkeley from 2007-2011

May 2005 BA Mathematics, BS Physics, BS Chemistry. The George Washington University, Washington, D.C. GPA 3.96

- 2005 Columbian Scholar (Valedictorian). Summa Cum Laude. Science Scholars (honors program for math/science majors)
- 2005 Phi Beta Kappa
- 2003,5 Ruggles Prize in Mathematics
- 2004 Howard Hughes Fellow in Bioinformatics (Physics)
- 2003 George Gamow Fellowship in undergraduate research (Chemistry)
- Conducted research projects in three fields (mathematics, physics, chemistry), including two senior theses (mathematics, physics).

Employment:

2005-2011 UC Berkeley Graduate Student Instructor (instructor and teaching assistant)

- Instructor: calculus (16B), matrix theory and differential equations (54), introduction to proof writing (74), linear algebra (110), complex analysis (185), undergraduate research seminar (191), graduate Prelim workshop
- Teaching Assistant: calculus (1A, 16A, 16B), multivariable calculus (53), matrix theory and differential equations (54), discrete mathematics (55), linear algebra (110), complex analysis (185), topology and analysis (202B, graduate course)
- 2008-9 Outstanding GSI Award (can only receive once)

Spring 2009,11 UC Berkeley Graduate Student Researcher

2004 Physics undergraduate researcher, GWU/Naval Research Labs, Washington, D.C.

2003-4 Chemistry undergraduate researcher, GWU

Visiting Mathematics Research Positions:

May-June 2011 Institut Henri Poincaré, Paris, France
 January 2011 Vanderbilt University, Nashville, Tennessee
 Summer 2010 University of Tokyo, Japan. NSF/JSPS EAPSI Fellow
 February 2009 Institute for the Mathematical Sciences, Chennai, India

Skills:

Programming: Some programming in Mathematica, Python, and Scala for my dissertation.

- Currently auditing classes in statistical learning, AI, probability
- Current goals: learn C, OpenCL for research with GPU's

Organization: Organized 3 national subfactor conferences, 3 weekly seminars at UC Berkeley

- Subfactors in Maui [July 2011], Subfactors in Tahoe [Feb 2010, Feb 2011]
- UC Berkeley Subfactor seminar (2009-present)
- UC Berkeley Undergraduate research seminar 191 (Fall 2009)
- UC Berkeley Student subfactor seminar (2008-9)

Peer reviewed journal articles:

1. *The embedding theorem for finite depth subfactor planar algebras* (with Vaughan F.R. Jones), *Quantum Topol.* 2 (2011), no. 3, 301337, [arXiv:1007.3173](https://arxiv.org/abs/1007.3173), DOI:10.4171/QT/23.
2. *Subfactors of index less than 5, part 4: vines* (with James Tener), *Internat. J. Math.* (2011), [arXiv:1010.3797](https://arxiv.org/abs/1010.3797), DOI:10.1142/S0129167X11007641.
3. *Subfactors of index less than 5, part 2: triple points* (with Scott Morrison, Emily Peters, and Noah Snyder), *Internat. J. Math.* (2011), [arXiv:1007.2240](https://arxiv.org/abs/1007.2240), DOI:10.1142/S0129167X11007586.
4. *A cyclic approach to the annular Temperley-Lieb category*, *J. Knot Theory and its Ramifications* (2011), [arXiv:0912.1320](https://arxiv.org/abs/0912.1320), DOI:10.1142/S0218216511010012.

Preprints and computing packages:

1. *A planar calculus for infinite index subfactors*, [arXiv:1110.3504](https://arxiv.org/abs/1110.3504), 2011.
2. *Infinite index subfactors and the GICAR algebras* (with Vaughan F. R. Jones), pre-preprint available at <http://math.berkeley.edu/~dpenneys/GICAR.pdf>.
3. *FusionAtlas, a package for Mathematica and Scala* (with Scott Morrison, Emily Peters, Noah Snyder, and James Tener), 2011, available at http://tqft.net/wiki/Atlas_of_subfactors.
4. A book on linear algebra (149 pages), written Summer 2008, available at <http://math.berkeley.edu/~dpenneys/math110/110notes.pdf>.

Athletics:

- | | |
|-----------|--|
| 2005-2011 | University of California Triathlon Club <ul style="list-style-type: none">• 2007-2010 Volunteer swim coach (2 practices/week)• Competed in many triathlons, including a half ironman (1.2 mile swim, 56 mile bike, 13.1 mile run) and US Collegiate Nationals |
| 2001-2005 | GWU Varsity Men's Swimming <ul style="list-style-type: none">• 2005 Awarded senior GWU athlete with highest GPA• 2004-5 Awarded athletic scholarship• 2003-4 Atlantic-10 All-Academic |

Music:

- | | |
|--------------|--|
| 2001-present | Composed and performed original music <ul style="list-style-type: none">• Recorded 6 times in recording studio, most recently in 2009• Played over 25 shows in Philadelphia, PA, Newark, DE, Washington, D.C.• Placed in Battle of the Bands for GWU, U Maryland 2002-2005 |
|--------------|--|