

# Curriculum Vitae

## NOAH SNYDER

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Date of Birth: 1980, Pennsylvania, USA

### Education:

- 2002-2009 **Ph.D. in Mathematics**, University of California, Berkeley (expected)  
Advisor: Nicolai Reshetikhin  
Thesis: “Quantum groups, tensor categories, and knot invariants”  
1998-2002 **A.B.**, Harvard College, *magna cum laude with highest honors in Mathematics*  
Advisor: Benedict Gross

### Scientific/Academic Honors and Grants:

- 2002 – 2006 National Science Foundation Graduate Research Fellowship

### Research Interests:

Quantum algebra, quantum topology, and representation theory

### Publications and Preprints:

Peer-reviewed journal articles

- 2008 1. *Groups with a Character of Large Degree*, Proc. Amer. Math. Soc. 136, no. 6, 1893–1903.  
[arXiv:math/0603239](https://arxiv.org/abs/math/0603239)  
2007 2. (with Elizabeth Dan-Cohen and Ivan Penkov) *Cartan Subalgebras of Root-Reductive Lie algebras*, J. Algebra 308, no. 2, 583–611. [arXiv:math/0603004](https://arxiv.org/abs/math/0603004)  
2000 3. *An Alternate Proof of Mason’s Theorem*, Elemente Mathematik **55** (2000), no. 3, 93–94.

Preprints

- 2008 4. (with Peter Tingley) *The half-twist for  $U_q(\mathfrak{g})$  representations*, [arxiv:0810.0084](https://arxiv.org/abs/0810.0084).  
2008 5. (with Scott Morrison and Emily Peters) *Skein theory for the  $D_{2n}$  planar algebras*, [arXiv:0808.0764](https://arxiv.org/abs/0808.0764).  
2007 6. *Mednykh’s Formula via Lattice Topological Quantum Field Theories*, [arXiv:math/0703073](https://arxiv.org/abs/math/0703073).

Articles in progress

7. (with Scott Morrison and Emily Peters) *Link invariants from the  $D_{2n}$  planar algebras*.  
8. (with Scott Morrison) *Kashaev-Reshetikhin knot invariants*

### Invited Lectures:

- 2008 Apr. Vanderbilt (Subfactors and Planar Algebras Workshop): Unoriented or disoriented?  
2007 Dec. Wellington, New Zealand (joint AMS/NZMS meeting): The ribbon half-twist  
2007 Nov. U.C. Santa Barbara (Station Q): Kashaev-Reshetikhin knot invariants  
2007 Nov. U.C. Santa Barbara (Station Q): Cactus knots and finite type knot invariants  
2006 Oct. U.C. Davis (Representation theory seminar): Braidings for quantum groups at roots of 1.  
2005 Oct. University of Oregon (U.C. Lie theory): Cartan subalgebras of root-reductive Lie algebras  
2004 Jun. U.C. Davis: The *abc* conjecture for polynomials

**Berkeley Seminar Talks:**

- 2005 **Topological invariants and quantum algebra:** “Braided and planar categories,” “The Drinfel’d double,” “Frobenius algebras and invariants of 2-manifolds,” and “Spherical categories and invariants of 3-manifolds.”
- 2004-2007 **Student representation theory seminar:** “Deligne’s paper Categories Tensorielle,” “Introduction to subfactors for representation theorists,” “R-matrices and the Drinfel’d double,” “Representation theory of finite dimensional Hopf algebras,” “Representation theory of the unrestricted quantum group at roots of unity,” and “Vershik and Okounkov’s approach to representations of  $S_n$ .”
- 2004-2008 **Representation theory, geometry, and combinatorics RTG seminar** “Finite analogues of quantum groups.”
- 2005-2008 **Subfactor seminar** “Planar algebras and 2-categories,” “Towers of categories and HOMFLY homology,” “Cactus knots and finite type knot invariants,” “Kashaev-Reshetikhin knot invariants,” “A link invariant from the  $D_4$  subfactor,” and “Level-Rank Duality.”
- 2007-2009 **Student subfactor seminar** “Highly transitive group actions and subfactors,” “The structure of the Temperley-Lieb planar algebra,” “Translating between two ways of talking about subfactors,” and “Skein theory for the  $D_{2n}$  planar algebras.”
- 2007-2008 **Student topology seminar** “An Elementary Approach to Mednykh’s Formula” and “Kashaev-Reshetikhin knot invariants.”
- 2008-2009 **Topology seminar** “Knot invariants and the  $D_{2n}$  planar algebras.”

**Professional Activities:**

- Organized the three day 2007 RTG workshop (with Nicolai Reshetikhin)
- Organized student representation theory seminar (with Jennifer Berg)
- Organized topological invariants and quantum algebra seminar

**Teaching Activities:**

- 2008 – 2009 Canada/USA Mathcamp academic coordinator  
— Organized and oversaw all academics, including hiring and training of new mentors, recruitment and interactions with visiting professors, and creating a 5-week class schedule with over a dozen teachers and 20 classes per day
- 2006 – 2008 Canada/USA Mathcamp mentor  
— Designed and taught classes for advanced high-school students on topics ranging from unique factorization to continued fractions to planar algebras
- 2004 – 2005 Graduate Student Instructor at UC Berkeley  
— Calculus (first and second semesters of two-semester course)
- 2002 Summer Sophomore tutorial instructor at Harvard  
—  $L$ -functions and  $\zeta$ -functions
- 2000 – 2001 Teaching assistant at Harvard
- 1998 – 2002 Ross Summer Math Program in number theory at the Ohio State University  
— Taught a biweekly seminar on number theory  
— Revised the daily problem sets  
— Lived in the dorm for 8 weeks each summer with advanced high-school students, helping with math questions
- 2000 Tutor for Harvard University mathematics department