

Curriculum Vitae

ANDREW J. TOLLAND

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Date of Birth: August 4th, 1979 Citizenship: USA

Education:

2002 – 2009 **Ph.D. in Mathematics**, University of California, Berkeley (expected).
Supervisor: E. Frenkel
Thesis: “Gromov-Witten Gauge Theory”
2001-2002 **Graduate Student in Physics**, University of Chicago,
Supervisor: S. Sethi
1997 – 2001 **B.A. in Physics**, University of Chicago, with honors

Scientific/Academic Honors and Grants:

2003 – 2006 NSF Graduate Research Fellowship
2001 – 2003 NDSEG Fellowship
1999 – 2001 Student Marshall, University of Chicago
1999 – 2001 Barry Goldwater Scholarship

Research Interests:

Topological gauge theory, Gromov-Witten theory, and the Geometric Langlands Program.

Publications and Preprints:

in prep. 1. (with E. Frenkel & C. Teleman) *Gromov-Witten Gauge Theory, Part I(Invariants for pt/\mathbb{C}^\times)*.
in prep. 2. (with E. Frenkel & C. Teleman) *Gromov-Witten Gauge Theory, Part II (Invariants for X/G)*.
in prep. 3. *Wilsonian Quantum Field Theory for Mathematicians*

Invited Lectures:

2008 Nov. **Northwestern** (Geometry & Physics seminar):
Gromov-Witten Gauge Theory
2008 Oct. **Berkeley** (Representation Theory, Geometry and Combinatorics seminar):
Gromov-Witten Invariants for pt/\mathbb{C}^\times
2008 Apr. **Stanford** (Algebraic Geometry seminar):
Gromov-Witten Invariants for pt/\mathbb{C}^\times
2007 Mar. **Berkeley** (Representation Theory, Geometry and Combinatorics seminar):
Moduli Spaces for Gauged Gromov-Witten Invariants

Expository Talks:

2006 **Berkeley Geometric Langlands Seminar**
Opers and the Center of $U(\hat{\mathfrak{g}})$ at Critical Level
Hecke Eigensheaves from Kac-Moody Algebras
2008 **Learning Seminar, KITP Miniprogram on Gauge Theory & Langlands Duality**
Supersymmetry & Cohomological QFT
Conformal Field Theory, Vertex Algebras, & Moduli Spaces
D-Modules & D-Branes

- 2007-2008 **Berkeley Student Algebraic Geometry Seminar**
Stable Maps & Gromov-Witten Invariants
Boundary Divisors on $\overline{M}_{g,n}$
- 2003-2007 **Berkeley Student Representation Theory Seminar**
Character Formulae via Fixed Point Localization
Quantum Groups and Categorified TQFT, parts I & II (after D. Freed)
A Proof of the Borel-Weil-Bott Theorem
Introduction to Vertex Algebras
- 2002-2007 **Berkeley Subfactor Seminar:**
Chern-Simons Theory and the Organizer's Polynomial
Feynman Graphs, Renormalization and Hopf Algebras, parts I,II, & III
The String Group and von Neumann Algebras
- 2007 **Berkeley Perverse Sheaves Seminar:**
Gluing Perverse Sheaves on \mathbb{A}^1
- 2006 **Berkeley Derived Algebraic Geometry Seminar:**
The Homotopy Category of a Stable Infinity-Category is Triangulated
- 2004-2007 **Berkeley Student Topology Seminar**
Introduction to Cohomological Field Theory
The Chiral de Rham Complex

Professional Activities:

- 2008, Summer Organized the “Learning Seminar” at KITP’s Miniprogram on Gauge Theory & Langlands Duality
- 2007 Co-founder of the “Secret Blogging Seminar”, a mathematics blog

Conferences & Research Programs :

- 2008 July-Aug “Gauge Theory & Langlands Duality” Miniprogram at KITP (mini-program).
- 2007 Nov “Gauge Theory and Representation Theory” at IAS.
- 2007 May “Trends in Noncommutative Geometry” at Northwestern U.
- 2006 Spring “New Topological Structures in Physics” Program at MSRI.
- 2005 June ESI Summer School on “Vertex Algebras and Related Topics”.
- 2005 February Talbot 2005: “The Geometric Langlands Program”.
- 2000 Summer University of Chicago NSF Math REU (supervisor: Paul Sally)

Teaching Activities:

- 2006 Spring Teaching assistant for calculus 1B with Prof. Michael Hutchings.
- 2005 Fall Teaching assistant for calculus 1A with Prof. Ai-Ko Liu.
- 2005 Sep. Attended Berkeley Mathematics Department training course for teaching assistants.
- 2000–2001 Tutor in mathematics at Shoreland Hall dormitory, University of Chicago.