

Curriculum Vitae

University of California at Riverside
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Current Research Interests

Topological invariants and representation theory via categorification, higher category theory, topos theory and geometric representation theory.

Education

- 2005 – 2010 **University of California at Riverside**, Riverside, CA, USA
Ph.D. in Mathematics, expected June 2010
Thesis Advisor: Professor John Baez
M.S. in Mathematics, June 2007
- 2001 – 2005 **City University of New York, Brooklyn College**, Brooklyn, NY, USA
B.Sci. in Mathematics, B.Sci. in Computer Science, June 2005
summa cum laude.

Teaching Experience

- 2005 – 2009 **Teaching Assistant** in Mathematics, University of California at Riverside
College Algebra and Calculus courses
Introduction to Topology
History of Mathematics
Introduction to Complex Variables
- 2006 – 2007 **Associate** in Mathematics, University of California at Riverside
First Year Calculus
- 2005 **Adjunct Professor and Program Coordinator** in Mathematics, City
University of New York, Brooklyn College
Mathematics Immersion Program

Scientific/Academic Awards and Grants

2009 – 2010	UC Riverside Dissertation Year Fellowship
2008 – 2009	UC Riverside Graduate Dean's Dissertation Research Grant
2005 – 2007	UC Riverside Chancellor's Fellowship
2004 – 2005	James Singer Mathematics Award, Milton Abramowitz Mathematics Award Harry Rosenfeld-Berle and Ida Fischer Reade Mathematics Prize
2001 – 2005	Brooklyn College Foundation Presidential Scholarship

Synergistic activities

2008 – 2009	Contribute both content and ideas to the <i>creation</i> and <i>development</i> of the online mathematics encyclopedia, the <i>nLab</i> .
2007 – 2009	Contribute to widespread <i>dissemination</i> of ideas and facilitate largescale <i>collaboration</i> in research as a host of the mathematics, physics and philosophy blog, the <i>n-Category Cafe</i> .

Publications and Preprints

2009	<i>The Hecke bicategory and the Zamolodchikov tetrahedron equation</i> , (in progress).
2009	<i>HDA8: The Hecke Bicategory</i> , joint w. John Baez, (in progress).
2009	<i>Nilpotency in type A cyclotomic quotients</i> , joint w. Aaron Lauda, (submitted).
2009	<i>HDA7: Groupoidification</i> , joint w. John Baez and Christopher Walker, arXiv:0812.4864 (submitted).
2008	<i>Categorified Symplectic Geometry and the Classical String</i> , joint w. John Baez and Chris Rogers, arXiv:0808.0246 (to appear in <i>Communications in Mathematical Physics</i>).
2008	<i>Convenient Categories of Smooth Spaces</i> , joint w. John Baez, arXiv:0807.1704 (to appear in <i>Transactions of the American Mathematical Society</i>).

Selected Conference and Seminar Talks

November 23, 2009	“The Hecke bicategory and the Zamolodchikov tetrahedron equation”, <i>New York City Category Theory Seminar</i> , City University of New York - Graduate Center, New York, NY, USA.
November 7 – 8, 2009	“A categorification of the Hecke algebra and the Zamolodchikov tetrahedron equation”, <i>AMS 2009 Fall Western Section Meeting - Special Session on Homotopy Theory and Higher Algebraic Structures</i> , University of California at Riverside.
September 15, 2009	“A categorification of Hecke algebras”, <i>Seminar on Categorified Quantum Group</i> , Columbia University, New York, NY, USA.

- June 15 – 27, 2009 “A Categorification of Hecke Algebras” (poster), *Summer School and Conference in Geometric Representation Theory and Extended Affine Lie Algebras*, University of Ottawa, Ontario, Canada.
- May 15, 2009 “Antigravity method for simply-laced cyclotomic quotients of Khovanov-Lauda algebras”, *Graduate Student Seminar*, University of California at Riverside.
- May 1 – 3, 2009 “From Smooth Spaces to Smooth Categories”, *Workshop on Smooth Structures in Logic, Category Theory and Physics*, University of Ottawa, Ontario, Canada.
- February 23, 2009 “Groupoidification: Techniques of Categorification”, *New York City Category Theory Seminar*, City University of New York - Graduate Center, New York, NY, USA.
- February 5 – 6, 2009 “Smooth Spaces: Convenient Categories for Differential Geometry”, *CRCG Workshop - Higher Structures in Topology and Geometry II*, Mathematisches Institut, Georg-August-Universität, Göttingen, Germany.
- February 4, 2009 “A Categorification of Hecke Algebras”, preconference seminar, Mathematisches Institut, Georg-August-Universität, Göttingen, Germany.
- January 9 – 11, 2009 “A Categorification of Hecke Algebras”, *Knots in Washington XXVII: 3rd Japan-USA Workshop in Knot Theory*, Washington D.C., USA.
- January 5 – 8, 2009 “A Categorification of Hecke Algebras”, *AMS Special Session on Categorification and Link Homology*, Washington D.C., USA.
- November 22 – 23, 2008 “A Categorification of Hecke Algebras”, *Groupoidfest 2008*, University of California at Riverside.
- November 11, 2008 “Multisymplectic Geometry”, Claremont Topology Seminar, Pitzer College, Claremont, CA, USA.
- November 11, 2008 “Groupoidification”, The Claremont Colleges Algebra/ Number Theory/ Combinatorics Seminar, Pomona College, Claremont, CA, USA.
- November 6, 2008 “Introduction to categorification”, Groupoids Seminar, University of California at Riverside.
- May 15, 2008 “Categorifying Hamiltonian Mechanics: Motivation and Theory”, Seminar in Mathematical Physics and Dynamical Systems, University of California at Riverside.
- April 18 – 20, 2008 “Smooth spaces: convenient categories for differential geometry”, *Knots in Washington XXVI; Interconnections between Khovanov, Khovanov-Rozansky and Ozsvath-Szabo homology; categorification of skein modules*, George Washington University, Washington D.C., USA.
- Spring, 2008 “Quasitopoi and concrete sheaves”, Series of five talks in the Riverside Quantum Gravity Seminar, University of California at Riverside.

Selected Conferences and Workshops

- May 18 – 22, 2009 *Representation Theory and Mathematical Physics Conference in honor of Gregg Zuckerman's 60th birthday*, Yale University, New Haven, CT, USA.
- May 18 – 22, 2009 *Workshop on Topological Field Theories*, Northwestern University, Evanston, IL, USA.
- April 13 – 18, 2009 *ICMS - Categorification and Geometrisation from Representation Theory*, University of Glasgow, Glasgow, Scotland.
- January 5 – 8, 2009 *AMS Special Session on Homotopy Theory and Higher Categories*, Washington D.C., USA.
- June 30 – July 5, 2008 *Homotopy Structures in Geometry and Algebra; Derived Categories, Higher Categories*, Universitat Politècnica de Catalunya, Barcelona, Spain.
- March 24 – 27, 2008 *Young Person's Workshop on String Topology and the Topology of Moduli Spaces*, Stanford University, Palo Alto, CA, USA.
- June 4 – 16, 2007 *Derived Categories Summer 2007 VIGRE Mini-course*, University of Utah, Salt Lake City, Utah, USA.
- March 16-17, 2007 *23rd Pacific Coast Gravity Meeting*, California Institute of Technology, Pasadena, CA, USA.