

Curriculum Vitae

BEN WEBSTER

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Citizenship: USA

Employment/Education:

- 2008 – **C.L.E. Moore Instructor and NSF Postdoctoral Fellow**, M.I.T.
Sponsoring Scientist: R. Bezrukavnikov.
- 2007 – 2008 **Member and NSF Postdoctoral Fellow**, Institute for Advanced Study.
- 2002 – 2007 **Ph.D. in Mathematics**, University of California, Berkeley.
Supervisor: N. Reshetikhin.
Thesis: “Algebraic Poisson Geometry in Representation Theory and Combinatorics.”
- 1998 – 2002 **B.A. in Mathematics**, Simon’s Rock College, *summa cum laude*.
Supervisor: W. Dunbar

As visitor

- 2006 Fall Center for the Topology and Quantization of Moduli Spaces, (Århus, Denmark).
2001 Spring Budapest Semesters in Mathematics, (Budapest, Hungary).

Scientific/Academic Honors and Grants:

- 2007 – 2011 NSF Postdoctoral Research Fellowship
2007 June Clay Liftoff Fellowship
2003 – 2007 NSF Graduate Research Fellowship

Research Interests:

Knot theory and representation theory via algebraic and Poisson geometry.

Publications and Preprints:

available at <http://math.ias.edu/~bwebste/publications.html>

1. *Gale and Koszul dualities* (with T. Braden, A. Licata, and N. Proudfoot). In preparation.
2. *2-block Springer fibers: convolution algebras, coherent sheaves, and disoriented TQFT* (with C. Stropel). In preparation.
3. *Moduli spaces of flat connections and symmetrically factorizable groups* (with R. Kashaev, N. Reshetikhin and M. Yakimov). In preparation.
- 2008 4. *A geometrical model for the Hochschild homology of Soergel bimodules* (with G. Williamson). To appear in *Geometry and Topology*. [arXiv:0707.2003](https://arxiv.org/abs/0707.2003).
- 2007 5. *Cramped subgroups and generalized Harish-Chandra modules*. To appear in the *Proceedings of the AMS*. [arXiv:math.RT/0609846](https://arxiv.org/abs/math.RT/0609846).
6. *Small linearly equivalent G -sets and a construction of Beaulieu*. *Journal of Algebra*, **317** (2007), no. 1, 306–323. [arXiv:math.GR/0610205](https://arxiv.org/abs/math.GR/0610205).
7. *Khovanov-Rozansky homology via a canopolis formalism*. *Algebraic and Geometric Topology*, **7** (2007), 673–699. [arXiv:math.GT/0610650](https://arxiv.org/abs/math.GT/0610650).
8. *A Deodhar type stratification of the double flag variety* (with M. Yakimov). *Transformation Groups*, **12** (2007), no. 4, 769–785. [arXiv:math.SG/0607374](https://arxiv.org/abs/math.SG/0607374).
9. *Intersection cohomology of hypertoric varieties* (with N. Proudfoot). *Journal of Algebraic Geometry* **16** (2007), 39–63. [arXiv:math.AG/0411350](https://arxiv.org/abs/math.AG/0411350).
- 2006 10. *Stabilization phenomena in Kac-Moody algebras and quiver varieties*. *International Mathematics Research Notices*, vol. 2006, Article ID 36856, 17 pages. [arXiv:math.RT/0505619](https://arxiv.org/abs/math.RT/0505619).

Selected Lectures:

- 2008 Apr. **U. Mass.** (Geometry Seminar): *2-block Springer fibers and Khovanov's arc algebra.*
 Apr. **IAS** (Special Lecture): *Hypertoric varieties and Koszul duality.*
- 2007 Dec. **Princeton** (Topology Seminar): *2-block Springer fibers and Khovanov's arc algebra.*
 Nov. **Edinburgh** (Maxwell Colloquium): *A sheaf-theoretic approach to knot homology.*
 Oct. **Berkeley** (RTCG Seminar): *2-block Springer fibers and category \mathcal{O} .*
 Oct. **U. of Oregon** (Algebra Seminar): *2-block Springer fibers and category \mathcal{O} .*
 Aug. **Kahului** (Subfactors in Maui): *A categorification of the Hecke algebra and knot invariants.*
 July **Freiburg** (Seminar in Arbeitsgruppe Algebra):
Knot homology and geometric representation theory.
 July **Faro** (Oporto meeting on link homology): *The geometry of Soergel bimodules.*
 June **Århus** (Conference on TQFT and Geometry): *The geometry of Soergel bimodules.*
 May **Davis** (Quantum Algebra seminar): *Computation in Khovanov-Rozansky homology.*
 May **Berkeley** (RTG Workshop on Representation Theory): *The geometry of Soergel bimodules.*
 Mar. **AIM** (Representations of Surface Groups): *Fock-Goncharov coordinates.*
 Feb. **Stanford** (Symplectic Geometry seminar): *Computation in Khovanov-Rozansky homology.*
- 2006 Dec. **Sandbjerg, Denmark** (CTQM Retreat): *Computation in Khovanov-Rozansky homology.*
 Nov. **Århus, Denmark** (Topology Seminar): *Computation in Khovanov-Rozansky homology.*
 July **Reisenburg, Germany** (IRTG Summer School): *Stratifications à la Deodhar.*
 Feb. **Columbia** (Gauge Theory seminar): *Computation in Khovanov-Rozansky homology.*
- 2005 Dec. **GWU** (Knots in Washington):
Khovanov-Rozansky homology and a graphical calculus for tensor products.
 Oct. **Oregon** (Lie Groups, Lie Algebras and their Representations):
Stabilization in Kac-Moody algebras and quiver varieties.
 May **Berkeley** (Workshop on Representation Theory and Geometry):
Stabilization in Kac-Moody algebras and quiver varieties.
 Apr. **Santa Barbara** (AMS Meeting): *Kazhdan-Lusztig polynomials for hypertoric varieties.*
- 2003 Mar. **Baton Rouge** (AMS meeting):
Beaulieu's construction/Mackey functors and Sunada's theorem.

Professional Activities:

- Journals refereed:
 Algebraic & Geometric Topology Banach Center Publications
- *Math Reviews* reviewer

- 2005 May Organizer (with N. Reshetikhin) for workshop "Representation Theory and Geometry" in Berkeley.
- 2004 June Participant in "MRI Spring School on Lie Groups in Analysis, Geometry and Mechanics" in Utrecht, The Netherlands.
- 2003 Co-organizer of weekly graduate student seminar "Many Cheerful Facts" at Berkeley.
- 2001 Summer Participant in "Research Experiences for Undergraduates" at Louisiana State University (supervisor: Robert Perlis)

Teaching Activities:

- 2007 Feb. Gave mini-course on "The geometry of category \mathcal{O} " in Berkeley.
- 2006 Fall Tutor for graduate students as complement to course "Quantization of Moduli Spaces."
- 2005 Fall Teaching assistant for multivariable calculus with Prof. Alan Weinstein.
- 2002 Fall Teaching assistant for calculus (second of two semesters) with Prof. Hung-Hsi Wu.
- 2002 Sep. Attended Berkeley Mathematics Department training course for teaching assistants.
- 1999–2002 Tutor for Simon's Rock Tutoring and Writing Center.