Greg Stevenson

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Education

2011 Ph.D. in Mathematics: (June 2011) The Australian National University

- **Thesis:** *Tensor actions and locally complete intersections.*
- **Advisor:** Amnon Neeman

2006 B.Sc. (Honours) in Mathematics: The University of Queensland.

Employment

Universität Bielefeld: postdoc, April 2011 to June 2012

Universität Bielefeld: Humboldt postdoctoral fellow, July 2012 to December 2012

MSRI: Postdoctoral research fellow, January 2013 to May 2013

Universität Bielefeld: Humboldt postdoctoral fellow, June 2013 to November 2014

Universität Bielefeld: postdoc, since December 2014

Interests

General: Algebraic geometry, representation theory, category theory, homological algebra, abstract homotopy theory, triangulated categories and their enhancements.

Specific: Tensor triangular geometry, support theory for triangulated categories, dg-categories, structured ring spectra, singularity categories, representation theory of small categories, Gorenstein homological algebra.

Honours

ICRA Award: International Conference on Representations of Algebras Award 2016 for "[introducing] fundamental new ideas in the representation theory of algebras, based on geometric ideas and successfully using the framework of triangulated categories."

Publications and Preprints

- *Filtrations via tensor actions*, arXiv:1206.2721 (2012) (to appear in Int. Math. Res. Not.)

- *Support theory via actions of tensor triangulated categories*, J. Reine Angew. Math. **681** (2013) 219-254

- with I. Dell'Ambrogio, *On the derived category of a graded commutative noetherian ring*, J. Algebra **373** (2013) 356-376

- with H. Krause, *A note on thick subcategories of stable derived categories*, Nagoya Math. J. **212** (2013) 87-96

- appendix to D. Benson, S. Iyengar, and H. Krause, *Module categories for group algebras over commutative rings*, J. K-Theory **11** (2013) 297-329

- *Subcategories of singularity categories via tensor actions*, Compos. Math. **150** (2014) 229-272

- with I. Dell'Ambrogio, *Even more spectra: tensor triangular comparison maps via graded commutative 2-rings*, Appl. Categ. Structures **22** (2014) 169-210

- *Duality for bounded derived categories of complete intersections*, Bull. Lond. Math. Soc. **46** (2014), no. 2, 245-257.

- *Derived categories of absolutely flat rings*, Homology Homotopy Appl. **16** (2014), no. 2, 45-64

- with J. Burke, *The derived category of a graded Gorenstein ring*, "Commutative algebra and noncommutative algebraic geometry (II)", Math. Sci. Res. Inst. Publ. **68** (2015), pp. 93-123

- with J. Steen, *Strong generators in tensor triangulated categories*, Bull. Lond. Math. Soc. **47** (2015) 607-616

- with B. Antieau, *Derived categories of representations of small categories over commutative noetherian rings*, Pacific J. Math. **283** (2016) no. 1, 21-42

- with I. Dell'Ambrogio, and J. Stovicek, *Gorenstein homological algebra and universal coefficient theorems*, arXiv:1510.00426 (2015) (accepted for publication in Math. Z.)

- with S. Baland, and A. Chirvasitu, *The prime spectra of relative stable module categories*, arXiv:1511.03164 (2015)

- *The local-to-global principle for triangulated categories via dimension functions*,
  J. Algebra **473** (2017) 406-429

- *A tour of support theory for triangulated categories through tensor triangular geometry*, arXiv:1601.03595 (2016), to appear in the volume "Advanced Courses in Mathematics, CRM Barcelona"

- with S. Baland, *Comparisons between singularity categories and relative stable categories of finite groups*, arXiv:1601.07727 (2016)

- with J. Steen, *Enrichment and representability for triangulated categories*, arXiv:1604.00880 (2016)

- with S. Gratz, *On the graded dual numbers, arcs, and non-crossing partitions of the integers*, arXiv:1611.02070 (2016)

- with P. Balmer, and H. Krause, *The frame of smashing tensor-ideals*, arXiv:1701.05937 (2017)

Invited Talks
- *"Bounded derived categories, normalisations, and duality"*, Non-commutative, Derived and Homotopical Methods in Geometry, University of Antwerp, Antwerp, September 2016.
- *"Categories with sufficiently many exact sequences"*, Special plenary lecture at the International Conference on Representations of Algebras 2016, Syracuse University, Syracuse, August 2016.
- *"Relative stable categories of finite groups"*, PIMS Summer School and Workshop on Geometric and Topological Aspects of the Representation Theory of Finite Groups, University of British Columbia, Vancouver, August 2016.
- *"Triangles, tensors, and triples"*, Triangulated Categories and Applications, 5 Day Workshop, Banff International Research Stations, Banff, June 2016.
- *"Gorenstein categories and universal coefficient theorems"*, Colloque 2015 du GDR 2875, Topologie Algébrique et Applications, Institut de Mathématiques de Toulouse, Toulouse, October 2015.
- *"Derived categories of quivers over Noetherian rings"*, Brave New Algebra, CRM, Barcelona, April 2015.
- *"Support theory for triangulated categories"*, Advanced course as part of the series "Building bridges between algebra and topology", CRM, Barcelona, April 2015.
- *"Strong generators in tensor triangulated categories"*, Mini-symposium on Category Theory and Algebraic Geometry, Universiteit Utrecht, Utrecht, September 2014.

- *"Singularity categories of complete intersections"*, SFB-Kolloquium, Johannes Gutenberg Universität Mainz, Mainz, June 2014.

- *"Noncommutative hypersurfaces and matrix factorisations"*, Noncommutative Algebraic Geometry and Related Topics, RIMS, Kyoto, July 2013.

- *"Derived and singularity categories of complete intersections"*, Colloquium, University of California Los Angeles, Los Angeles, April 2013.

- *"Grothendieck duality and complete intersections"*, Representation Theory, Homological Algebra, and Free Resolutions, MSRI, Berkeley, February 2013.

- *"Singularity categories of complete intersections"*, Cohomology and Support in Representation Theory and Related Topics, University of Washington, Seattle, August 2012.

- *"Tensor actions and hypersurfaces"*, Workshop on t-structures and Related Topics, Universität Stuttgart, Stuttgart, July 2011.

- *"Actions by tensor triangulated categories and applications"*, Triangulated Categories and Applications, 5 Day Workshop, Banff International Research Stations, Banff, June 2011.

Other talks

- *"Enhancements, enrichments, and Eilenberg-Watts theorems"*, Algebra and Geometry 2016, Universitat de Barcelona, Barcelona, November 2016.

- *"Representations of finite groups over self-injective rings"*, Algebra seminar, University of Oxford, Oxford, November 2016.

- *"Representations of Dynkin quivers over commutative Noetherian rings"*, Cluster Algebras and Geometry, Universität Münster, Münster, March 2016.

- *"A new approach to the local-to-global principle"*, Mini-workshop on Triangulated Categories and Geometry, Universität Bielefeld, Bielefeld, March 2016.

- *"Relative stable categories of finite groups"*, Birep Seminar, Universität Bielefeld, Bielefeld, January 2016.

- *"Categories with sufficiently many exact sequences"*, Algebra Seminar, Universität Bonn, Bonn, October 2015.

- *"Derived categories of quivers over Noetherian rings"*, Algebra and Topology Seminar, The Australian National University, Canberra, March 2015.

- *"Classification problems in triangulated categories"*, Topology Seminar, Radboud University, Nijmegen, May 2014.

- *"Derived categories of quivers over Noetherian rings"*, Birep Seminar, Universität Bielefeld, Bielefeld, January 2014.

- *"On more general notions of noncommutative or categorical resolutions"*, Noncommutative resolutions of singularities reading seminar, Universität Bielefeld, Bielefeld, December 2013.
- *"The derived category of a graded Gorenstein ring"*, Algebra Seminar, University of Nebraska - Lincoln, Lincoln, November 2013.
- *"Derived categories of quivers over Noetherian rings"*, Algebra Seminar, Universität Bonn, Bonn, November 2013.
- *"Graded modules versus dg-modules"*, Birep Seminar, Universität Bielefeld, Bielefeld, October 2013.
- *"Derived categories of quivers over Noetherian rings"*, Algebra Seminar, Norwegian University of Science and Technology, Trondheim, September 2013.
- *"Duality for complete intersections"*, Algebra Seminar, Universität Münster, Münster, July 2013.
- *"Singularity categories of small categories"*, Postdoc Seminar, MSRI, Berkeley, February 2013.
- *"Gorenstein small categories and representations of finite projective dimension"*, Birep Seminar, Universität Bielefeld, Bielefeld, November 2012.
- *"Derived categories of absolutely flat rings"*, Categorical Methods in Representation Theory, University of Bristol, September 2012.
- *"Classification problems for triangulated categories"*, Algebra Seminar, Charles University in Prague, June 2012.
- *"What is categorification?"*, DFG-Schwerpunkttagung - "Darstellungstheorie", Thurnau, March 2012.
- *"The derived category of a graded commutative noetherian ring"*, Birep Seminar, Universität Bielefeld, Bielefeld, July 2011.
- *"Tensor actions and local complete intersections"*, Birep Seminar, Universität Bielefeld, Bielefeld, April 2011.
- *"Singularity categories of complete intersections"*, 54th Annual Meeting of the Australian Mathematical Society, The University of Queensland, Brisbane, September 2010.
- *"Singularity categories of local complete intersections"*, Algebra and Topology Seminar, The Australian National University, Canberra, August 2010.
- *"Universal support for triangulated categories"*, Third Morgan-Phoa Workshop on Category Theory, The Australian National University, Canberra, January 2010.
- *"An introduction to Bridgeland stability conditions"*, Algebra and Topology Seminar, The Australian National University, Canberra, September 2008.
- *"An introduction to elliptic curves"*, Computational Mathematics Seminar, The Australian National University, Canberra, July 2008.

- *"Introduction to category theory I and II"*, Graduate Seminar, The Australian National University, Canberra, September 2007.

Teaching
- Exercise sessions for the course of Peter Symonds at the PIMS Summer School and Workshop on Geometric and Topological Aspects of the Representation Theory of Finite Groups, July 2016, University of British Columbia, Vancouver
- Gorenstein Homological Algebra, winter semester 2015-16, Universität Bielefeld
- Enriched Categories and Homotopy Theory, summer semester 2014, Universität Bielefeld
- Exercise sessions for the course of Henning Krause at the GRIFGA/Lesbegue Summer School - Derived Categories, June 2014, Nantes
- Coherent Sheaves and Cohomology, winter semester 2011-12, Universität Bielefeld
- Academic mentor, mathematics, 2008, Bruce Hall, The Australian National University
- Tutor, calculus and linear algebra, 2007, The Australian National University
- Tutor, calculus and linear algebra, 2006, The University of Queensland

Organisational work (responsibilities included developing the program)
- BIREP Summer School on Koszul Duality, Bad Driburg, August 2015
- Anglo-Franco-German Representation Theory Network Summer School: Support varieties in modular representation theory, Sabhal Mòr Ostaig, Isle of Skye, Scotland, June 2015
- Joint Algebraic Geometry and Representation Theory reading seminar on Noncommutative resolutions of singularities, Winter 2013-14

Scholarships
- **2007-2010** Australian Postgraduate Award
- **2007-2010** College of Science supplementary scholarship
- **2005-2006** Summer research scholarship in mathematics, The University of Queensland
- **2004-2005** Summer research scholarship, Nanomaterials Centre, The University of Queensland

Personal Details

Email: gstevens@math.uni-bielefeld.de
Born: 1984 (Queensland, Australia)
Citizenship: Australian