

- Education**
- **Australian National University**, Ph.D. in Mathematics, 2008.
  - **University of Queensland**, B. Sc. (Honours) in Mathematics, 2003.

- Employment**
- **University of Melbourne**: Lecturer Level B, from 2015.
  - **USC, Los Angeles**: Assistant Professor, 2013-2015.
  - **UCLA**: E.R. Hedrick Assistant Professor, 2010-2013.
  - **Hausdorff Center for Mathematics, Bonn**: Postdoc, 2008-2010.

**Interests** Algebraic geometry, mathematical logic, statistical learning theory.

- Publications**
- S. Wei, D. Murfet, M. Gong, H. Li, J. Gell-Redman, T. Quella *Deep Learning is Singular and That's Good*, accepted in the IEEE Transactions on Neural Networks and Learning Systems.
  - J. Clift and D. Murfet, *Encodings of Turing Machines in Linear Logic*, Mathematical Structures in Computer Science, 30 (2020), 379-415.
  - J. Clift and D. Murfet, *Cofree coalgebras and differential linear logic*, Mathematical Structures in Computer Science, 30 (2020), 416-457.
  - J. Clift, D. Doryn, D. Murfet and J. Wallbridge, *Logic and the 2-simplicial Transformer*, International Conference on Learning Representations 2020.
  - D. Murfet, *The cut operation on matrix factorisations*, J. Pure and Applied Algebra, 222 (2018), 1911-1955.
  - N. Carqueville and D. Murfet, *Adjunctions and defects in Landau-Ginzburg models*, Adv. Math. 289 (2016), 480-566.
  - D. Murfet, *On Sweedler's cofree cocommutative coalgebra*, J. Pure and Applied Algebra, 219 (2015) 5289-5304.
  - N. Carqueville and D. Murfet, *Computing Khovanov-Rozansky link homology and defect fusion*, Algebraic & Geometric Topology 14 (2014), 489-537.
  - T. Dyckerhoff and D. Murfet, *Pushing forward matrix factorisations*, Duke Math. J. Volume 162, Number 7 (2013), 1249-1311.
  - D. Murfet, *Residues and duality for singularity categories of isolated Gorenstein singularities*, Compositio Mathematica, 149 (2013) 2071-2100.
  - N. Carqueville and D. Murfet, *A toolkit for defect computations in Landau-Ginzburg models*, String-Math 2012 proceedings.
  - T. Dyckerhoff and D. Murfet, *The Kapustin-Li formula revisited*, Adv. Math. 231 (2012), 1858-1885.
  - D. Murfet and S. Salarian: *Total acyclicity for complexes over a Noetherian scheme*, Adv. Math. 226 (2011), 1096-1133.
  - D. Murfet, *Rouquier's cocovering theorem and well-generated triangulated categories*, Journal of K-Theory 01 (2011) 31-57.
  - B. Keller, D. Murfet and M. Van den Bergh, *On two examples by Iyama and Yoshino*, Compositio Mathematica, 147 (2010) 591-612.

- Lecture series**
- **September 2017**, at the workshop “String Field Theory of Landau-Ginzburg models”, Institute for Basic Science, Korea.
  - **September 2016**, “Matrix factorizations and related topics” at the IPMU in Tokyo, September 2016.
  - **January 2016**, At the workshop “String Field Theory of the B-Model” at the Institute for Basic Science, Korea.
  - **May 2012**, At the workshop “Commutative Algebra and Its Interactions with Algebraic Geometry, Representation Theory, and Physics” at the Pan-American Advanced Studies Institute, Mexico.

- Conference talks**  
(since 2013)
- **January 2020**, Seoul, KIAS workshop “Atiyah classes and related topics”.
  - **July 2019**, Toronto, memorial conference for Ragnar Buchweitz.
  - **July 2019**, Melbourne, workshop on monoidal categories.
  - **June 2019**, Newcastle, CARMA workshop on computer-aided proof.
  - **November 2018**, Beijing, joint Peking University and University of Melbourne workshop.
  - **November 2018**, Beijing, joint Peking University and University of Melbourne workshop.
  - **September 2017**, Bielefeld, Neeman’s 60th birthday conference.
  - **June 2017**, Melbourne, “Tensor categories and field theory”.
  - **May 2017**, Melbourne, “Topology in Australia and South Korea”.
  - **August 2016**, Canberra, “Geometry at the ANU”.
  - **June 2016**, Banff, “Triangulated categories and applications”.
  - **June 2016**, Melbourne, AAL annual conference.
  - **December 2015**, Melbourne logic workshop.
  - **September 2014**, San Francisco, speaker in the AMS special session “Categorical Methods in Representation Theory”.
  - **September 2013**, Oberwolfach, speaker in the workshop “Matrix Factorizations in Algebra, Geometry, and Physics”.
  - **April 2013**, MSRI, “Interactions between Noncommutative Algebra, Representation Theory, and Algebraic Geometry”.
  - **February 2013**, MSRI, “Representation theory, homological algebra, and free resolutions”.

- Colloquia**
- **November 2019**, Macquarie University, “The mathematics of AlphaGo”.
  - **October 2015**, Vienna, “Two odd things about computation”.
  - **August 2012**, Purdue, “Hypersurface singularities in mathematics and physics”.
  - **October 2009**, University of Lincoln-Nebraska, “Duality in singularity categories and string theory”.

- Events organised**
- With Henning Krause and Greg Stevenson, the 60th birthday conference for Neeman in May 2017.
  - With Nils Carqueville and Ingo Runkel the workshop on “Higher Topological Quantum Field Theory and Categorical quantum mechanics” at the Erwin-Schrödinger Institute in Vienna in October 2015.
  - Together with Srikanth Iyengar and Ragnar Buchweitz I organised a month long focus period on matrix factorizations at the MSRI, as part of the MSRI program on Commutative Algebra from August 2012 - May 2013.

- Awards**
- **2003** - Ethel Raybould prize in Mathematics, University medal (University of Queensland).
  - **2001** - Michael P O'Donnell Memorial prize, Maude Walker prize (University of Queensland).

**Journals refereed** Advances in Mathematics, Journal of Algebra, Journal of Pure and Applied Algebra, Documenta Mathematica, Communications in Algebra, Duke Mathematical Journal, Algebra & Number Theory.

**Personal**

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Date of Birth:	1982 (Queensland, Australia)
Citizenship:	Australia