Will Donovan

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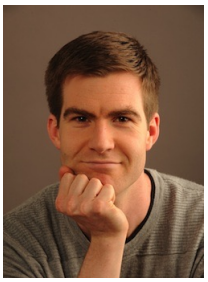

Academic positions

2021–	Yau MSC, Tsinghua University: Associate Professor
2018–21	Yau MSC, Tsinghua University: Assistant Professor
2014–18	Kavli IPMU, University of Tokyo: Postdoctoral Fellow
2011–14	University of Edinburgh: Research Assistant

Further affiliation

2021–	Yanqi Lake BIMSA: Adjunct Associate Professor
2020–	Kavli IPMU, University of Tokyo: Visiting Associate Scientist

Education

2007–11	PhD Mathematics, Imperial College London
2003–4	MMath Mathematics, University of Cambridge (Part III)
2000–3	BA Mathematics, University of Cambridge

Publications

1. Grassmannian twists on the derived category via spherical functors
   Proc. London Math. Soc. (2013) 107 (5): 1053–1090.

2. Window shifts, flop equivalences and Grassmannian twists (with E. Segal)
   Compositio Math. (2014) 150 (6): 942–978.

3. Mixed braid group actions from deformations of surface singularities (with E. Segal)
   Comm. Math. Phys. (2015) 335 (1): 497–543.

4. The Pfaffian-Grassmannian equivalence revisited (with N. Addington and E. Segal)
   Alg. Geom., Foundation Compositio Math. (2015) 2 (3): 332–364.

5. Noncommutative deformations and flops (with M. Wemyss)
   Duke Math. Jour. (2016) 165 (8): 1397–1474.

6. Moduli spaces of torsion sheaves on K3 surfaces (with N. Addington and C. Meachan)
   J. London Math. Soc. (2016) 93 (3): 846–865.

7. Mukai flops and $\mathbb{P}$-twists (with N. Addington and C. Meachan)
   J. Reine Angew. Math. (Crelle) (2019) 748: 227–240.

8. Contractions and deformations (with M. Wemyss)
   Amer. J. Math. (2019) 141 (3): 563–592.

9. Twists and braids for general 3-fold flops (with M. Wemyss)
   J. Eur. Math. Soc. (2019) 21 (6): 1641–1701.

10. Perverse schobers and wall crossing
    Int. Math. Res. Notices (2019) 18: 5777–5810.

11. Noncommutative enhancements of contractions (with M. Wemyss)
    Adv. Math. (2019) 344: 99–136.

12. Perverse schobers on Riemann surfaces: constructions and examples
    Eur. J. Math. (2019) 5: 771–797.

13. Mirror symmetry for perverse schobers from birational geometry (with T. Kuwagaki)
    Comm. Math. Phys. (2021) 381: 453–490.

14. Stringy Kähler moduli for the Pfaffian-Grassmannian correspondence
    SIGMA (2021) 17, 028.

15. Stringy Kähler moduli, mutation and monodromy (with M. Wemyss)
    To appear **J. Diff. Geom.**, `arXiv:1907.10891`.

16. Relating derived equivalences for simplices of higher-dimensional flops
    To appear **Adv. Stud. Pure Math.**, Math. Soc. Japan, `arXiv:2108.10541`.

Proceedings

17. Grassmannian twists, derived equivalences and brane transport
    Proc. Symp. Pure Math. (2015), Proc. String-Math 2012.

18. Contractions of 3-folds: deformations and invariants
    Internat. J. Math. (2016) 27 (7), special issue VBAC 2014.

19. Applications of noncommutative deformations
    Proc. Kinosaki Alg. Geom. Symp. (2016), available online.

Grants

2019–22 China central government **Thousand Talents** Plan
Value: 2.5 million yuan (∼$350k)

2016–18 Japan Soc. for Promotion of Science KAKENHI **Young Scientist** B
Value: 2.9 million yen (∼$25k)

Awards

2020 Yau MSC Ruolin 若琳 Research Excellence Award

2019 Yau MSC Outstanding Paper Award 'Twists and braids for general 3-fold flops'

Visits

Aug–Sep 2020	University of Glasgow, UK
Jun–Jul 2020	Korean Institute of Advanced Study, Seoul
Feb–Jun 2020	Kavli IPMU, University of Tokyo
Jul–Aug 2014	Korean Institute of Advanced Study, Seoul
Jan–Apr 2014	Hausdorff Institute, Bonn
Apr–Jul 2013	Schrödinger Institute, Vienna
May 2012	Steklov Institute, Moscow

Postgraduate students

2019– **Xun Lin**: derived categories, birational geometry, Hodge theory
2019– **Weilin Su**: categorification, mirror symmetry
2020– **Luyu Zheng**: D-modules, perverse sheaves, toric geometry
2021– **Nantao Zhang**: enumerative geometry, derived geometry

Teaching

Yanqi Lake BIMSA

2022 Categorical and geometric aspects of quantum mechanics

Yau MSC, Tsinghua University

2022 Lie groups and Lie algebras
2021 Geometric representation theory 2 (with Penghui Li)
2021 Derived functors in algebraic and birational geometry
2020 Calculus 1
2020 Mirror symmetry: categories and constructions
2019 Geometric representation theory 2 (with Peng Shan)
2019 Calculus 2
2018 Derived functors in algebraic and birational geometry

Project supervision

2020 Michael Zhao (visiting from Sydney U)

Edinburgh University

2011–12 Mathematical Communication and Computation
Teaching award nomination, University Students' Association.

Service

Yau MSC, Tsinghua

Events Hub program organizer (2022–)
Geometric representation theory seminar organizer (2021–)
Colloqium committee member (2019–21)

Conference organization

Workshop 'Homological algebra of the infrared' at TSIMF, Sanya, organizer (2023)
Workshop 'Categorified wall crossing' at U California, Davis, mentor (2021)
Workshop 'Derived categories' at Hausdorff Institute, Bonn, organizer (2014)

Outreach

– Workshop series, for University of Tokyo 'Soap bubbles and spacetime' (2017–)
At 6 locations, including Tamarokuto Science Centre and Kavli IPMU

– Interviewed, for University of Tokyo 'Discover Our People' (2016)

– Talk: 'The frontiers of symmetry: hidden geometry and tangled superstrings'
King's College London Math School (2015)
Summerhall, Edinburgh, for International Year of Crystallography (2014)

Selected talks

2022
ICCM, Beijing
Oberwolfach

2021
BICMR, Peking U
Cardiff U
CMSA, Harvard U

2020
CNU, Beijing
IASM, Hangzhou
Kavli IPMU, Tokyo
KAIST, Korea
KIAS, Seoul
Steklov Inst, Moscow
Warwick U

2019
Auckland U, New Zealand
Australian National U
BIRS Oaxaca, Mexico
CTU, Prague
Fudan U
Kyoto U
Liverpool U
Osaka U
Sydney U
SYSU, Guangzhou

2018
Hokkaido U
Nayoga U
TSIMF Sanya, Hainan
Yau MSC Tsinghua, Beijing

2017
Australian National U
Bath U
ICMS, Edinburgh U
Nayoga U
Osaka U
SISSA, Trieste

2016
BIRS Banff
ECM, Berlin
Freie Universität, Berlin
Hanga Roa, Chile
Hong Kong U
Kinosaki Symposium
Kyoto U
METU, Ankara
Nayoga U
Tokyo U

2015
Fields Institute, Toronto
Kent U
Max Planck Inst, Bonn
Oberwolfach
Warwick U

2014
Freie Universität, Berlin
BICMR, Beijing
Hamburg U
Kavli IPMU, Tokyo
KIAS, Seoul
Sheffield U

2013
Cardiff U
Columbia U
Duke U
Edinburgh U
Imperial College London
Leeds U
Oxford U
Schrödinger Inst, Vienna

2012
ETH Zürich
Glasgow U
Hausdorff Institute, Bonn
Newcastle U
Steklov Inst, Moscow
Queen Mary, U London
Warwick U

2011
Edinburgh U
Warwick U

2008
CSIC, Madrid

Previous employment

2006–7 Lead programmer, Bloomberg LP: financial research and development
2005 TEFL teacher, Kyoto, Japan

Languages

– English (native)
– Japanese, Mandarin (advanced)
– French, German (elementary)