

# Oscar Randal-Williams

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- POSITIONS**
- ◇ **University of Cambridge**, (October 2013 – )  
Lecturer (2013–), Reader (2017–), Professor (2020–), Sadleirian Professor (2024–).
  - ◇ **King’s College, University of Cambridge**, (October 2012 – September 2017)  
Research fellow (2012–2016), ordinary fellow (2016–2017).
  - ◇ **University of Cambridge**, (October 2012–October 2013)  
Herchel Smith postdoctoral research fellow.
  - ◇ **University of Copenhagen**, (September 2010–September 2012)  
Postdoctoral position and member of the Center for Symmetry and Deformation.
  - ◇ **Mathematical Institute, University of Oxford**, (January–August 2010)  
EPSRC PhD Plus postdoctoral position.
  - ◇ **Jesus College, University of Oxford**, (October–December 2009)  
Retained lecturer in Mathematics.
- EDUCATION**
- ◇ **Jesus College, University of Oxford**, (2006 – 2009)  
DPhil Mathematics, 2009.  
Thesis title: *Stable moduli spaces of manifolds*. Supervisor: U. Tillmann.
  - ◇ **Jesus College, University of Oxford**, (2002 – 2006)  
MMath Mathematics, First Class Honours.
- GRANTS**
- ◇ Co-PI, DNRF Grant *Copenhagen center for Geometry and Topology*, ~ DKK 60 million.
  - ◇ ERC Starting Grant, 756444 (HToMS), €974,526.
  - ◇ EPSRC First Grant, EP/M027783/1, £90,898.
  - ◇ LMS Scheme 1 grant, £5,000 (with J. Giansiracusa).
- HONOURS AND AWARDS**
- ◇ Fellow of the Royal Society, 2024.
  - ◇ Clay Research Award, 2022 (with S. Galatius).
  - ◇ Invited speaker, International Congress of Mathematicians 2022.
  - ◇ Oberwolfach prize, 2019.
  - ◇ Plenary speaker, Clay Research Conference 2019.
  - ◇ Dannie Heineman prize of the Akademie der Wissenschaften zu Göttingen, 2019.
  - ◇ Philip Leverhulme prize, 2017.
  - ◇ Whitehead prize of the London Mathematical Society, 2017.
  - ◇ Oxford University Senior Mathematical Prize, 2007.
- EDITORIAL WORK**
- ◇ Journal of Topology. Editor, 2018–
  - ◇ Proceedings of the London Mathematical Society. Managing editor, 2018–2023
  - ◇ London Mathematical Society. Editorial advisor, 2013–2018

- PUBLICATIONS S. Galatius, A. Kupers, and O. Randal-Williams,  *$E_\infty$ -cells and general linear groups of infinite fields*.  
Duke Mathematical Journal, **174** (2025) no. 14, 2927-3046.
- S. Galatius and O. Randal-Williams, *The Alexander trick for homology spheres*.  
International Mathematics Research Notices, **24** (2024), 14689-14703.
- O. Randal-Williams, *Monodromy and mapping class groups of 3-dimensional hypersurfaces*.  
Mathematische Annalen, **391** (2025), 1965–2003.
- Appendix to: J. Aramayona, K.-U. Bux, J. Flechsig, N. Petrosyan, X. Wu, *Asymptotic mapping class groups of Cantor manifolds and their finiteness properties*.  
Revista Matemática Iberoamericana, **40** (2024), no. 6, pp. 2003-2072.
- O. Randal-Williams (with an appendix with Quoc P. Ho), *Configuration spaces as commutative monoids*.  
Bulletin of the London Mathematical Society, **56** (2024) 2847-2862.
- B. Gripiaios, O. Randal-Williams, and J. Tooby-Smith, *Smooth generalized symmetries of quantum field theories*.  
Journal of Geometry and Physics **201** (2024) 105212.
- S. Galatius, A. Kupers, and O. Randal-Williams,  *$E_\infty$ -cells and general linear groups of finite fields*.  
Annales scientifiques de l'École normale supérieure, (4) **57** (2024), no. 6, 1845–1882.
- S. Galatius, A. Kupers, and O. Randal-Williams, *Cellular  $E_k$ -algebras*.  
Astérisque, No. 460 (2025), 299 pp.
- A. Kupers and O. Randal-Williams, *On diffeomorphisms of even-dimensional discs*.  
Journal of the American Mathematical Society, **38** (2025), 63-178.
- J. Davighi, B. Gripiaios and O. Randal-Williams, *Differential cohomology and topological actions in physics*.  
Advances in Theoretical and Mathematical Physics, **27** (2024), 2045-2085.
- S. Galatius and O. Randal-Williams, *Algebraic independence of topological Pontryagin classes*.  
Journal für die reine und angewandte Mathematik, **802** (2023), 287-305.
- O. Randal-Williams, *On the cohomology of Torelli groups. II*.  
International Mathematics Research Notices, **2024** No. 3 (2024), 2339-2381.
- B. Gripiaios, O. Randal-Williams, and J. Tooby-Smith, *Generalized symmetries of topological field theories*.  
Journal of High Energy Physics, **2023** No. 3 (2023), E87.
- A. Kupers and O. Randal-Williams, *On the Torelli Lie algebra*.  
Forum of Mathematics, Pi, **11** (2023) E13.
- O. Randal-Williams, *The family signature theorem*.  
Proceedings of the Royal Society of Edinburgh (Ranicki memorial issue), **154** (6) (2024) 2024-2067.
- O. Randal-Williams, *Classical homological stability from the point of view of cells*.  
Algebraic & Geometric Topology, **24** (2024) 1691-1712.
- M. Bustamante and O. Randal-Williams, *On automorphisms of high-dimensional solid tori*.  
Geometry & Topology, **28** (2024) 1629-1692.
- A. Keating and O. Randal-Williams, *On the order of Dehn twists*.  
New York Journal of Mathematics, **29** (2023), pp. 203-212.
- O. Randal-Williams, *Diffeomorphisms of discs*.  
Proceedings of the ICM, 2022.

- J. Ebert and O. Randal-Williams, *The positive scalar curvature cobordism category*.  
Duke Mathematical Journal, **171** (11) (2022), pp. 2275-2406.
- O. Randal-Williams, *Tautological rings and stabilisation*.  
Glasgow Mathematical Journal, **64** (2022) no. 1, pp. 231-242.
- M. Krannich, A. Kupers, and O. Randal-Williams, *An  $\mathbf{HP}^2$ -bundle over  $S^4$  with non-trivial  $\hat{A}$ -genus*.  
Comptes Rendus. Mathématique, Tome **359** (2021) no. 2, pp. 149-154.
- A. Kupers and O. Randal-Williams, *Framings of  $W_{g,1}$* .  
Quarterly Journal of Mathematics, **72** (2021) no. 3, pp. 1029-1053.
- O. Randal-Williams, *Homology of Hurwitz spaces and the Cohen–Lenstra heuristic for function fields (after Ellenberg, Venkatesh, and Westerland)*.  
Astérisque No. 422 Séminaire Bourbaki, volume 2018/2019, exposés 1151-1165 (2020), Exp. No. 1164, 469-497.
- A. Kupers and O. Randal-Williams, *The cohomology of Torelli groups is algebraic*.  
Forum of Mathematics, Sigma, **8** (2020), E64.
- M. Krannich and O. Randal-Williams, *Mapping class groups of simply connected high-dimensional manifolds need not be arithmetic*.  
Comptes Rendus. Mathématique, Tome **358** (2020) no. 4, pp. 469-473.
- S. Galatius and O. Randal-Williams, *Operations on stable moduli spaces*.  
Research in the Mathematical Sciences, **7** (2020), E9.
- A. Kupers and O. Randal-Williams, *On the cohomology of Torelli groups*.  
Forum of Mathematics, Pi, **8** (2020), E7.
- F. Hebestreit, M. Land, W. Lück, and O. Randal-Williams, *A vanishing theorem for tautological classes of aspherical manifolds*.  
Geometry & Topology **25** (2021) 47-110.
- S. Galatius and O. Randal-Williams, *Moduli spaces of manifolds: a user’s guide*.  
chapter for “Handbook of Homotopy theory”, arXiv:1811.08151.
- S. Galatius, A. Kupers, and O. Randal-Williams,  *$E_2$ -cells and mapping class groups*.  
Institut des Hautes Études Scientifiques. Publications Mathématiques **130** (1) (2019) 1-61.
- J. Ebert and O. Randal-Williams, *Semi-simplicial spaces*.  
Algebraic & Geometric Topology **19** (4) (2019) 2099-2150.
- J. Ebert and O. Randal-Williams, *Infinite loop spaces and positive scalar curvature in the presence of a fundamental group*.  
Geometry & Topology **23** (2019) 1549-1610.
- B. Gripaios, O. Randal-Williams, *Topology of Electroweak Vacua*.  
Physics Letters B **782** (2018) 94-98.
- O. Randal-Williams, *Some phenomena in tautological rings of manifolds*.  
Selecta Mathematica **24** (4) (2018) 3835-3873.
- O. Randal-Williams and N. Wahl, *Homological stability for automorphism groups*.  
Advances in Mathematics **318** (2017) 534-626.
- S. Galatius and O. Randal-Williams, *Homological stability for moduli spaces of high dimensional manifolds. I*.  
Journal of the American Mathematical Society **31** (1) (2018) 215-268.
- O. Randal-Williams, *Cohomology of automorphism groups of free groups with twisted coefficients*.  
Selecta Mathematica **24** (2) (2018) 1453-1478.

- S. Galatius and O. Randal-Williams, *Homological stability for moduli spaces of high dimensional manifolds. II*  
Annals of Mathematics **186** (1) (2017) 127-204.
- B. Botvinnik, J. Ebert, and O. Randal-Williams, *Infinite loop spaces and positive scalar curvature*.  
Inventiones mathematicae **209** (3) (2017), 749-835.
- O. Randal-Williams, *An upper bound for the pseudoisotopy stable range*.  
Mathematische Annalen **368** (3) (2017), 1081-1094.
- S. Galatius, I. Grigoriev, and O. Randal-Williams, *Tautological rings for high dimensional manifolds*.  
Compositio Mathematica **153** (4) (2017) 851-866.
- F. Cantero and O. Randal-Williams, *Homological stability for spaces of surfaces*.  
Geometry & Topology **21** (2017) 1387-1467.
- S. Galatius and O. Randal-Williams, *Abelian quotients of mapping class groups of highly connected manifolds*.  
Mathematische Annalen **365** (1) (2016) 857-879.
- O. Randal-Williams, *Resolutions of moduli spaces and homological stability*.  
Journal of the European Mathematical Society **18** (2016) 1-81.
- J. Ebert and O. Randal-Williams, *Torelli spaces of high-dimensional manifolds*.  
Journal of Topology **8** (1) (2015) 38-64.
- S. Galatius and O. Randal-Williams, *Stable moduli spaces of high dimensional manifolds*.  
Acta Mathematica **212** (2014), no. 2, 257-377.
- S. Galatius and O. Randal-Williams, *Detecting and realising characteristic classes of manifold bundles*.  
Algebraic Topology: Applications and New Directions (Stanford, CA, 2012), Contemp. Math.
- J. Ebert and O. Randal-Williams, *Generalised Miller-Morita-Mumford classes for block bundles and topological bundles*.  
Algebraic & Geometric Topology **14** (2014) 1181-1204.
- O. Randal-Williams, *"Topological chiral homology" and configuration spaces of spheres*.  
Morfismos (MIMS proceedings issue), **17** (2) (2013) 57-70.
- O. Randal-Williams, *Homology of the moduli spaces and mapping class groups of framed,  $r$ -Spin and Pin surfaces*.  
Journal of Topology **7** (1) (2014) 155-186.
- O. Randal-Williams, *"Group-Completion", local coefficient systems, and perfection*.  
Quarterly Journal of Mathematics (Quillen memorial issue) **64** (3) (2013) 795-803 .
- O. Randal-Williams, *The space of immersed surfaces in a manifold*.  
Mathematical Proceedings of the Cambridge Philosophical Society **154** (3) (2013) 419-438.
- O. Randal-Williams, *Relations among tautological classes revisited*.  
Advances in Mathematics, **231** (3-4) (2012) 1773-1785.
- O. Randal-Williams, *The Picard group of the moduli space of  $r$ -Spin Riemann surfaces*.  
Advances in Mathematics, **231** (1) (2012) 482-515.
- J. Ebert and O. Randal-Williams, *Stable cohomology of the universal Picard varieties and the extended mapping class group*.  
Documenta Mathematica, **17** (2012) 417-450.
- O. Randal-Williams, *Homological stability for unordered configuration spaces*.  
Quarterly Journal of Mathematics, **64**(1) (2013) 303-326.

O. Randal-Williams, *Embedded cobordism categories and spaces of submanifolds*. International Mathematics Research Notices **3** (2011) 572–608.

S. Galatius and O. Randal-Williams, *Monoids of moduli spaces of manifolds*. Geometry & Topology **14** (3) (2010) 1243–1302.

O. Randal-Williams, *The homology of the stable non-orientable mapping class group*. Algebraic & Geometric Topology **8** (2008) 1811–1832.

#### PREPRINTS

B. Gripaos, O. Randal-Williams, *TQFTs do not detect the Milnor sphere*, 10 pages. arXiv:2601.20828.

R. Boyd, G. Boyd, O. Randal-Williams, and R. Sroka, *Even Temperley-Lieb algebras and the dga of planar loops*, 43 pages. arXiv:2511.08550.

O. Randal-Williams, *A chromatic approach to homological stability*, 70 pages. arXiv:2508.20629.

P. Orson, M. Powell, and O. Randal-Williams, *Smoothing topological pseudo-isotopies of 4-manifolds*, 36 pages. arXiv:2507.16984.

O. Randal-Williams, *Homological stability for general linear groups over Dedekind domains*, 18 pages. arXiv:2405.07566.

J. Miller, P. Patzt, D. Petersen, and O. Randal-Williams, *Uniform twisted homological stability*, 35 pages. arXiv:2402.00354.

O. Randal-Williams, *Stable cohomology of congruence subgroups*, 27 pages. arXiv:2203.01697.

M. Krannich and O. Randal-Williams, *Diffeomorphisms of discs and the second Weiss derivative of  $B\mathrm{Top}(-)$* , 83 pages. arXiv:2109.03500.

O. Randal-Williams, L. Tsui, and X.-G. Wen, *Quantization of Chern-Simons topological invariants for  $H$ -type and  $L$ -type quantum systems*, 17 pages. arXiv:2008.02613.

#### TEACHING

##### ◇ **Lecturer** (at Cambridge)

- Part IA Groups, Michaelmas 2018, 2019.
- Part IB Groups, Rings, and Modules, Lent 2016, 2017, 2018, 2024.
- Part IB Topological Spaces, Lent 2026.
- Part II Algebraic Topology, Michaelmas 2013, 2014, Lent 2024.
- Part III Homotopy Theory, Lent 2015, (2016 as reading course), 2021.
- Part III Algebraic Topology, Michaelmas 2016, 2021, 2025.
- Part III Characteristic classes and  $K$ -theory, Lent 2018, (2019 as reading course), 2023.

##### ◇ **Part III essay advisor** (at Cambridge), with titles *Complex cobordism and formal group laws*, *Algebraic $K$ -theory of finite fields*, *Homological stability*, *Finite $H$ -spaces*, *Representation stability*, *Topics in geometric topology*, *Vassiliev theory*, *Algebraic $K$ -theory*, *Exotic spheres*, *Topological Hochschild homology*, *Surface bundles*, *Group cohomology from the topological viewpoint*, *$E_k$ -algebras*, *Bott periodicity and the $J$ -homomorphism*, *Nilpotence in stable homotopy theory*, *The Goodwillie–Weiss calculus of embeddings*, *Topics in complex cobordism*, *The Madsen–Weiss theorem*, *Stable homotopy groups of spheres*, *Introduction to the classification of manifolds*.

##### ◇ **Examiner** (at Cambridge), IA 2015, 2016; IB 2018, 2019, 2023 (chair); II 2024; III 2026, 2027 (chair).

##### ◇ **Supervisor** (at King’s college Cambridge)

- IA Groups, revision Easter 2016, Michaelmas 2016, revision Easter 2017.
- IA Numbers & Sets, revision Easter 2014.
- IB Linear Algebra, Michaelmas 2014, revision Easter 2015, Michaelmas 2016, revision Easter 2017.

- IB Groups, Rings, and Modules, Lent 2017, revision Easter 2017.
- IB Geometry, Lent 2013.
- ◇ **Lecturer** (at Copenhagen)
  - Topology, Autumn 2011.
  - Algebraic Topology 1.5, Spring 2011.
- ◇ **Graduate supervisor**
  - Cambridge PhD supervisor for Nina Friedrich 2014-17, Nils Prigge 2016-20, Ismael Sierra 2019-23, Andreas Stavrou 2019-23, Samuel Muñoz-Echániz 2021-25, Kelly Wang 2024-, Matteo Poletto 2025-.
  - Co-supervisor of Copenhagen PhD thesis of Mauricio Esteban Gómez López. Co-supervisor of Barcelona PhD thesis of Federico Cantero Morán.
  - Advisor for two MS theses and two BSc theses, at Copenhagen.
- ◇ **Postdoctoral advisor**
  - Robin Stoll 2024-, Alexis Aumonier 2023-24, Zachary Himes 2022-23, Rachael Boyd 2021-22, Jan Steinebrunner 2021-, Arthur Soulié 2019, Mauricio Bustamante 2019-21, Manuel Krannich 2018-21.
- ◇ **Graduate lectures**
  - Lecture course on *A chromatic view of homological stability* – Cambridge, Michaelmas 2024.
  - Week-long Oberwolfach seminar on *Cellular  $E_k$ -algebras*, 23rd-29th May 2021.
  - Mentor for Talbot workshop on *Moduli spaces of manifolds*, 7th-13th April 2019.
  - Lecture series on *Characteristic classes and moduli spaces of manifolds* – Algebraic Topology of Manifolds, Oxford, 11th-15th September 2017.
  - Lecture series on *Cohomology of moduli spaces of manifolds* – European Autumn School in Topology, Utrecht, September 19-23 2016.
  - Lecture series on *Moduli Spaces of Manifolds* – Young Topologists' Meeting, Copenhagen, 4th July 2016.
  - Lecture series on *Moduli spaces of manifolds*, Hausdorff Institute for Mathematics, Bonn, 4th-8th May 2015.
  - Lecture series on *Moduli spaces of high-dimensional manifolds and applications to positive scalar curvature metrics* – Westfälischen Wilhelms-Universität Münster, 9th-13th June 2014.
  - Co-organiser of lecture series *Moduli spaces of manifolds*, Copenhagen, February–June 2012.
  - Organiser of seminar series *Surgery theory*, Copenhagen, 2011.
  - Organiser of lecture series *Surgery theory*, Oxford, 2010.
  - Lecture course on *Resolutions of moduli spaces and homological stability*, Oxford, 2010.
  - Organiser of seminar series *Classification of Topological Quantum Field Theories [after J. Lurie]*, Oxford, 2009.
  - Organiser of seminar series *Nilpotence and periodicity in stable homotopy theory*, Oxford, 2008.

CONFERENCE TALKS, SEMINARS, AND COLLOQUIA	<p><i>Stable cohomology of congruence subgroups</i> – Topology seminar, Warwick, 13th January 2026.</p> <p><i>A chromatic approach to homological stability</i> – 38th British Topology Meeting, 9th September 2025.</p>
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Three talks on *A chromatic approach to homological stability* – Clay Lectures at Fields Institute, Toronto, 15-17 July 2025.

Three talks on  *$E_\infty$ -algebras of general linear groups* – Les Diablerets, 9-11 June 2025.

*Cohomology of moduli spaces: a case study* – IMU-INI Mathematical Colloquia, 7th March 2025.

*Cohomology of moduli spaces: a case study* – Dublin Mathematics Colloquium, 20th February 2025.

*Configuration spaces as commutative monoids* – Algebraic Topology seminar, Sheffield, 28th November 2024.

*Symmetries of manifolds* – Colloquium, Columbia University, 17th April 2024.

Three talks on *Symmetries of manifolds* – Namboodiri Lectures in Geometry and Topology, Chicago, 8th-10th April 2024.

*Cohomology of moduli spaces: a case study* – Mathematics Münster Mid-Term Conference, 25th March 2024.

*Symmetries of manifolds* – Pontificia Universidad Católica de Chile, 6th December 2023.

*Homeomorphisms of contractible manifolds* – Spaces of manifolds: algebraic and geometric approaches, Banff, 27th November 2023.

*Symmetries of manifolds* – LMS Annual General Meeting and Presidential Address, 17th November 2023.

*Homeomorphisms of contractible manifolds* – Algebra and Topology seminar, Copenhagen, 30th October 2023.

*Monodromy and mapping class groups of 3-dimensional hypersurfaces* – KCL Geometry seminar, London, 24th October 2023.

*One-sided  $h$ -cobordisms* – Scottish topology seminar, Glasgow, 13th October 2023.

*Homeomorphisms of Euclidean space* – Panorama of Mathematics II, Bonn. 6th October 2023.

*Cobordism and spaces of manifolds* – Centenaire de René Thom, IHÉS, 20th September 2023.

Two talks on *Homological stability via higher algebra* – Homology of Configuration Spaces and related topics, Paris, 15th-17th May 2023.

*Homeomorphisms of Euclidean space* – Geometry seminar, UCL, 22nd March 2023.

*Algebraic independence of topological Pontrjagin classes* – Seminario de topología algebraica y geométrica, Mexico (online), 15th March 2023.

*Homeomorphisms of Euclidean space* – YMSC Colloquium, Beijing (online), 25th November 2022.

*Algebraic independence of topological Pontrjagin classes* – Ib Fest, Copenhagen, 3rd October 2022.

*Algebraic independence of topological Pontrjagin classes* – Physics from the Point of View of Geometry, Oxford, 30th September 2022.

*Homeomorphisms of Euclidean space* – DMV-Jahrestagung, Berlin, 16th September 2022.

*On topological Pontrjagin classes* – Topologie, Oberwolfach, 24th July 2022.

*Diffeomorphisms of discs* – ICM, at satellite event in Copenhagen, 12th July 2022.

*The family signature theorem* – Twinned Conference on Homotopy Theory with Applications to Arithmetic and Geometry, Bonn, 29th June 2022.

*Spaces of manifolds* – Colloquium, Southampton, 27th May 2022.

*Stable cohomology of congruence subgroups* – COGENT seminar (online), 16th May 2022.

*On topological Pontrjagin classes* – Topology seminar, Melbourne (online), 2nd May 2022.

*Spaces of manifolds* – Colloquium, Princeton (online), 13th April 2022.

*The Torelli Lie algebra* – Johnson homomorphisms and related topics (online), 7th February 2022.

*The Torelli Lie algebra* – Seminar, Mittag-Leffler institute, 25th January 2022.

*On the Torelli Lie algebra* – Topology seminar, Copenhagen, 10th December 2021.

*Tautological rings for smooth manifolds* – Lecture, Delhi (online), 30th November 2021.

*Homeomorphisms of  $\mathbb{R}^d$*  – Colloquium, Sheffield (online), 24th November 2021.

*The second Weiss derivative of  $B\mathrm{Top}(-)$*  – Topology seminar, Warwick, 9th November 2021.

*$E_\infty$ -algebras and general linear groups* – Cohomology of Arithmetic Groups, Banff (online), 14th October 2021.

*Spaces of positive scalar curvature metrics* – The unity of mathematics: A conference in honour of Sir Michael Atiyah, Cambridge, 23rd September 2021.

*Modular operads, modular sequences, and the downward Brauer category* – Operads, Calculus, and Homotopy theory methods in Topology (online), 7th July 2021.

*Diffeomorphisms of odd-dimensional discs* – Building Bridges Seminar (online), 14th April 2021.

*$E_\infty$ -algebras and general linear groups* – Regensburg SFB-Lecture (online), 13th April 2021.

*$E_\infty$ -algebras and general linear groups* – Oxford topology seminar (online), 18th January 2021.

*Diffeomorphisms of discs. I* – Münster topology seminar (online), 9th November 2020.

*Diffeomorphisms of discs* – Princeton algebraic topology seminar (online), 15th November 2020.

*Diffeomorphisms of discs* – MIT topology seminar (online), 14th September 2020.

*Diffeomorphisms of discs* – opening of the Copenhagen center for Geometry and Topology (online), 27th August 2020.

*$E_\infty$ -algebras and general linear groups* – Bonn topology seminar (online), 28th April 2020.

*$E_k$ -algebras and homological stability* – electronic Computational Homotopy Theory seminar, 16th January 2020.

*Spaces of manifolds* – Colloquium, Warwick, 11th October 2019.

*Spaces of manifolds* – Colloquium, Durham, 7th October 2019.

*Cohomology of moduli spaces* – Clay research conference, Oxford, 2nd October 2019.

Two talks on *Cohomology of Torelli groups* – Automorphisms of Manifolds, Bonn, 2nd September 2019.

*Stable cohomology of diffeomorphism groups of 4-manifolds* – Four Manifolds: Confluence of High and Low Dimensions, Toronto, 9th July 2019.

*Cohomology of Torelli groups* – SYM 10 Years Old, Copenhagen, 27th June 2019.

*Homology of Hurwitz spaces and the Cohen–Lenstra heuristic for function fields (after Ellenberg, Venkatesh, and Westerland)* – Séminaire Bourbaki, Paris, 15th June 2019.



*Cohomology of Torelli groups* – Johnson homomorphisms and related topics, Tokyo, 15th May 2019.

*Cohomology of Torelli groups* – Geometry at infinity, Münster, 2nd April 2019.

*Tautological rings for smooth manifolds* – Geometry and Topology seminar, Málaga, 5th March 2019.

*Metastability in the homology of mapping class groups* – Geometry and Topology seminar, Imperial College London, 12th October 2018.

*On Rognes' connectivity conjecture* – Topologie, Oberwolfach, 12nd July 2018.

*Metastability in the homology of mapping class groups* – Manifolds, Groups, and Homotopy, Skye, 18th-23rd June 2018.

*On Rognes' connectivity conjecture* –  $K$ -theory,  $A^1$ -homotopy and quadratic forms, Warwick, 15th-16th February 2018.

Two talks on *Metastable cohomology of moduli spaces of Riemann surfaces* – Bavarian Geometry and Topology Meeting, Augsburg, 14th-15th December 2017.

*Tautological rings* – Groups, Manifolds, and  $K$ -theory, Münster, 9th June 2017.

*Stable twisted cohomology via scanning* – Johnson homomorphisms and related topics, Tokyo, 26th May 2017.

*$E_n$ -cells and applications* – Moduli and Traces, Copenhagen, 21st April 2017.

*Metastable cohomology of moduli spaces of Riemann surfaces* – British Mathematical Colloquium morning talk, Durham, 4th April 2017.

*Stable twisted cohomology via scanning* – OAC-manifolds, Oxford, 13th March 2016.

*Stable moduli spaces of manifolds* – Topology Seminar, QMUL, 11th March 2016.

*Cohomology of  $\text{Aut}(F_n)$  with twisted coefficients* – Topologie, Oberwolfach, 18th July 2016.

*$E_2$ -cells and homological stability* – Topology of manifolds, Lisbon, 27th June 2016.

*Realising characteristic numbers of fibre bundles* – Scottish Topology Seminar, Edinburgh, 11th March 2016.

*Characteristic classes of fibre bundles* – OAC-manifolds, Oxford, 22nd February 2016.

*Tautological rings for high-dimensional manifolds* – Warwick, 18th February 2016.

*Infinite loop spaces and positive scalar curvature* – Aspects of Homotopy Theory, Southampton, 15th December 2015.

*Moduli spaces of manifolds* – Colloquium, Columbia University, New York, 15th October 2015.

*Tautological rings for high-dimensional manifolds* – Stanford University, 6th October 2015.

*Tautological rings for high-dimensional manifolds* – Manifolds Unlocking Higher Structures, Clay Mathematical Institute Workshop, Oxford, 28th September-2nd October 2015.

*Moduli spaces of high-dimensional manifolds* – Moduli spaces and their applications, Liverpool, 21st September 2015.

*Moduli spaces of high-dimensional manifolds* – PIMS Symposium on the Geometry and Topology of Manifolds, Vancouver.

*Infinite loop spaces and positive scalar curvature* – PIMS Symposium on the Geometry and Topology of Manifolds, Vancouver.

*Tautological rings for high-dimensional manifolds* – Stockholm, 15th April 2015.

- Infinite loop spaces and positive scalar curvature* – Stockholm, 14th April 2015.
- Homological stability and abelianness* – Teichmüller Modular Groups: A Celebration of Nikolai Ivanov's 60th Birthday, Chicago, 21st March 2015.
- Cohomology of some diffeomorphism groups* – Southampton, 23th February 2015.
- Infinite loop spaces and positive scalar curvature* – Oxford, 19th January 2015.
- Cohomology of some diffeomorphism groups* – Aberdeen, 15th December 2014.
- Stable moduli spaces of high-dimensional manifolds* – Topologie; Oberwolfach, 15th September 2014.
- Stable moduli spaces of high-dimensional manifolds: applications* – ICM Satellite Conference on Algebraic Topology, Dalian, China, 10th August 2014.
- Cohomology of diffeomorphism groups* – Workshop on Algebraic Topology and its Applications, Dalian, China, 7th August 2014.
- Infinite loop spaces and positive scalar curvature* – Analysis and Topology in Interaction, Cortona, 16th June 2014.
- Moduli spaces of high-dimensional manifolds* – British Mathematical Colloquium, Queen Mary, London, 9th April 2014.
- Moduli spaces of high-dimensional manifolds* – Algebraic Topology, MSRI, 27th February 2014.
- Abelianisations of the mapping class groups of some highly-connected manifolds* – Rice, Houston, 17th February 2014.
- The tautological class  $\kappa_{-1}$*  – Topology seminar, Stanford, 11th February 2014.
- Homological stability of moduli spaces of manifolds* – Algebraic Topology, MSRI, 31st January 2014.
- Infinite loop spaces and positive scalar curvature* – Geometry seminar, UCL, 14th January 2014.
- Infinite loop spaces and positive scalar curvature* – Glasgow, 2nd December 2013.
- Stable moduli spaces of high-dimensional manifolds* – Manchester, 18th November 2013.
- The tautological class  $\kappa_{-1}$*  – Cohomology of the moduli space of curves, Zürich, 11th October 2013.
- Infinite loop spaces and positive scalar curvature* – British Topology Meeting, Aberdeen, 9th September 2013.
- Homological stability and moduli spaces* – Homology Stability Workshop, Copenhagen, 26th August 2013.
- The Picard groups of moduli spaces of  $r$ -Spin Riemann surfaces* – Séminaire de géométrie algébrique; Jussieu, Paris, 16th May 2013.
- Infinite loop spaces and positive scalar curvature* – Sheffield, 2nd May 2013.
- Infinite loop spaces and positive scalar curvature* – Stanford, 9th April 2013.
- Stable moduli spaces of high-dimensional manifolds* – Nottingham, 7th December 2012.
- Cohomology of the universal Picard varieties, and tautological relations* – Algebraic geometry seminar; Humboldt-Universität zu Berlin, 5th December 2012.
- The “Mumford conjecture” package, with applications* – SFB colloquium; Humboldt-Universität zu Berlin, 4th December 2012.
- The “Mumford conjecture” package, with applications* – GQT colloquium; Universiteit van Amsterdam, 16th November 2012.
- Stable moduli spaces of high-dimensional manifolds* – Oxford, 29th October 2012.

*El espacio de superficies en una variedad* – XIX Encuentro de Topología, La Coruña, 19th October 2012.

*Homological stability for moduli spaces of manifolds* – Topologie; Oberwolfach, 19th September 2012.

*Homological stability for moduli spaces of manifolds* – 27th British Topology Meeting; Cambridge, 6th September 2012.

*Stable moduli spaces of high-dimensional manifolds* – Fourth Arolla Conference on Algebraic Topology; Arolla, 23rd August 2012.

*Homological stability for moduli spaces of manifolds* – Algebraic Topology: Applications and New Directions; Stanford, 27th July 2012.

*Homological stability for moduli spaces of manifolds* – 17th NRW meeting; Münster, 4th May 2012.

*Stable moduli spaces of high-dimensional manifolds* – Universitat de Barcelona, 6th February 2012.

*Stable moduli spaces of high-dimensional manifolds* – MPIM Bonn, 23rd January 2012.

*Stable moduli spaces of high-dimensional manifolds* – Edinburgh, 26th October 2011.

*Stable moduli spaces of high-dimensional manifolds* – Glasgow, 24th October 2011.

*Universal Picard varieties and tautological relations* – ETH, Zürich, 7th October 2011.

*Stable moduli spaces of high-dimensional manifolds* – MIT, 26th September 2011.

*Picard group of the moduli space of  $r$ -Spin Riemann surfaces* – Riemann Surfaces; PCMI, Utah, 12th July 2011.

*Universal Picard varieties, extended mapping class groups, and tautological relations* – Stanford, 3rd May 2011.

*Two lectures on spaces of manifolds* – NTNU, Trondheim, 28th-29th October 2010.

*Monoids of moduli spaces of manifolds, II* – Topologie; Oberwolfach, 22nd September 2010.

*The Picard group of the moduli space of  $r$ -Spin curves* – Summer Topology Workshop; Stanford University, 5th August 2010.

*Resolutions of moduli spaces* – Stanford University, 13th April 2010.

*Resolutions of moduli spaces* – TTT meeting; University of Warwick, 23rd March 2010.

*Resolutions of moduli spaces and homology stability* – University of Copenhagen, 1st February 2010.

*Monoids of moduli spaces of manifolds* – 25th Nordic and 1st British–Nordic congress of Mathematicians; Oslo, 8th June 2009.

*Monoids of moduli spaces of manifolds* – Manifold Perspectives; Oberwolfach, 27th May 2009.

*Monoids of moduli spaces of manifolds* – University of Bonn, 12th May 2009.

*Homology of the stable non-orientable mapping class group* – Stanford University, 13th January 2009.

*Homology of the stable non-orientable mapping class group* – TTT meeting; University of Sheffield, 9th December 2008.

*Geometric delooping of cobordism categories* – Westfälischen Wilhelms-Universität Münster, 24th April 2008.

*Spaces of manifolds and tangential structures* – Moduli spaces; University of Bonn / Max Planck Institute, 10th January 2008.

	<i>Embedded cobordism categories</i> – University of Copenhagen, 15th October 2007.
	<i>Characteristic classes of bundles of non-orientable surfaces</i> – 22nd British Topology Meeting; Sheffield, 10th September 2007.
LOCAL SEMINARS	<p><i>A chromatic view of homological stability</i> – INI, Cambridge, 4th March 2025.</p> <p><i>Homeomorphisms of contractible manifolds</i> – DG&amp;T seminar, Cambridge, 22nd May 2024.</p> <p><i>Cohomology of Torelli groups</i> – DG&amp;T seminar, Cambridge, 13th March 2019.</p> <p><i>Cellular <math>E_k</math>-algebras and homological stability</i> – INI, Cambridge, 7th August 2018.</p> <p><i>Applications of cellular <math>E_2</math>-algebras</i> – DG&amp;T seminar, Cambridge, 16th November 2016.</p> <p><i>Infinite loop spaces and positive scalar curvature</i> – DG&amp;T seminar, Cambridge, 16th October 2013.</p> <p><i>Cohomology of braid groups and mapping class groups</i> – INI, Cambridge, 28th February 2013.</p> <p><i>The “Mumford conjecture” package, with applications</i> – DG&amp;T seminar, Cambridge, 14th November 2012.</p> <p><i>The Picard group of the moduli space of <math>r</math>-Spin curves</i> – Algebra and Topology seminar, Copenhagen, 11th October 2010.</p> <p><i>Cohomology of moduli spaces</i> – Junior Geometry and Topology seminar, Oxford, 3rd June 2010.</p> <p><i>Arc complexes</i> – Junior Geometric Group Theory seminar, Oxford, 25th May 2010.</p> <p><i>Homology stability of spaces of surfaces</i> – Topology seminar, 23rd November 2009.</p> <p><i>Monoids of moduli spaces of manifolds</i> – Geometry seminar, Oxford, 1st June 2009.</p> <p><i>Descent in algebra, geometry and topology</i> – Junior Geometry and Topology seminar, Oxford, October 2008.</p> <p><i>The Hopf invariant one problem</i> – Junior Geometry and Topology seminar, Oxford March 2008.</p> <p><i>Poincaré–Hopf index theorem and the transfer</i> – Junior Geometry and Topology seminar, Oxford, October 2007.</p> <p><i>Classification of smooth manifolds up to cobordism</i> – Junior Geometry and Topology seminar, Oxford, February 2007.</p>
EXTENDED VISITS	<p>“Higher algebraic structures in algebra, topology and geometry”, Mittag-Leffler institute, Stockholm. 10th January–12th February 2022.</p> <p>Sabbatical at Stanford University. 4th October–5th December 2015.</p> <p>“Homotopy theory, manifolds, and field theories” programme, Hausdorff Centre for Mathematics, Bonn. 27th July–21st August 2015.</p> <p>Research member at the “Algebraic Topology” programme, MSRI, Berkeley. 27th January–28th February 2014.</p>
CONFERENCES AND WORKSHOPS ATTENDED	<p><i>38th British Topology Meeting</i> – Cardiff, 9th–11th September 2025.</p> <p><i>Workshop on Homotopy Theory</i> – Fields Institute, Toronto, 7th–11th July 2025.</p> <p><i>Polylogarithms, homology of linear groups, and Steinberg modules</i> – Les Diablerets, 8th–13th June 2025.</p> <p><i>Topology of moduli spaces (Tillmann’s 60th)</i> – Copenhagen, 19th–24th August 2024.</p> <p><i>Topologie</i> – Oberwolfach, 21st–26th July 2024.</p> <p><i>Mid-term conference</i> – Münster, 25th–28th March 2024.</p>

*Spaces of manifolds: algebraic and geometric approaches* – Banff, 26th November-1st December 2023.

*Panorama of Mathematics II* – Bonn, 4th-6th October 2023.

*Centenaire de René Thom* – IHÉS, 20th-22nd September 2023.

*Homotopy Theory* – Oberwolfach, 6th-12th August 2023.

*Workshop on Homology of Configuration Spaces and related topics* – Paris, 15th-17th March 2023.

*Ib Fest* – Copenhagen, 3rd-4th October 2022.

*Clay research conference* – Oxford, 26th-30th September 2022.

*DMV-Jahrestagung* – Berlin, 12th-16th September 2022.

*Topologie* – Oberwolfach, 24th-28 July 2022.

*ICM* – satellite event in Copenhagen, 6th-14th July 2022.

*Twinned Conference on Homotopy Theory with Applications to Arithmetic and Geometry* – Bonn, 27th-30th June 2022.

*Johnson homomorphisms and related topics* (online), 7th February 2022.

*Johnson homomorphisms and related topics* (online), 23rd November 2021.

*Cohomology of Arithmetic Groups* (online), 10th-15th October 2021.

*The unity of mathematics: A conference in honour of Sir Michael Atiyah*, Cambridge 21st-23rd September 2021.

*Operads, Calculus, and Homotopy theory methods in Topology* (online), 5th-7th July 2021.

*Manifolds and K-Theory: the legacy of Andrew Ranicki* (organiser) (online), 21st-25th June 2021.

*Opening Symposium* – Copenhagen Centre for Geometry and Topology (online), 27th August 2020.

*Topologie* – Oberwolfach (online), 26th July-1 August 2020.

*Manifolds and groups* – Oberwolfach (organiser), 9th-15th February 2020.

*Clay research conference and workshops* – Oxford, 30th September-4th October 2019.

*Automorphisms of Manifolds* – Bonn, 2nd-6th September 2019.

*Four Manifolds: Confluence of High and Low Dimensions* – Toronto, 8th-12th July 2019.

*SYM 10 Years Old* – Copenhagen, 24th-28th June 2019

*Séminaire Bourbaki* – Paris, 15th June 2019.

*Johnson homomorphisms and related topics* – Tokyo, 13th-17th May 2019.

*Geometry at infinity* – Münster, 1st-5th April 2019.

*Manifolds* – INI, Cambridge, 3rd-7th December 2018.

*Derived algebraic geometry and chromatic homotopy theory* – INI, Cambridge, 24th-28th September 2018.

*Equivariant and motivic homotopy theory* – INI, Cambridge, 13th-17th August 2018.

*Topologie* – Oberwolfach, 2nd-6th July 2018.

*Manifolds, Groups, and Homotopy* – Skye, 18th-23rd June 2018.

*OAC-manifolds* – Cambridge, 20th April 2018.

*K-theory,  $A^1$ -homotopy and quadratic forms*, Warwick, 12th-16th February 2018.

- Bavarian Geometry and Topology Meeting*, Augsburg, 14th-15th December 2017.
- OAC-manifolds* – Aberdeen, 5th October 2017.
- Algebraic Topology of Manifolds* – Oxford, 11th-15th September 2017.
- Analysis and Topology in Interaction* – Cortona, 26th-30th June 2017.
- Groups, Manifolds, and K-theory* – Münster, 5th-9th June 2017.
- Johnson homomorphisms and related topics* – Tokyo, 22nd-26th May 2017.
- Moduli and Traces* – Copenhagen, 20th-21st April 2017.
- British Mathematical Colloquium* – Durham, 3rd-6th April 2017.
- OAC-manifolds* – Oxford, 13th March 2017.
- European Autumn School in Topology* – Utrecht, September 19-23 2016.
- OAC-manifolds* – Cambridge, 9th September 2016.
- Topologie* – Oberwolfach, 17th-23rd July 2016.
- Young Topologists' Meeting* – Copenhagen, 4th-8th July 2016.
- Topology of manifolds* – Lisbon, 27th June-1st July 2016.
- OAC-manifolds* – Aberdeen, 9th May 2016.
- Scottish Topology Seminar* – Edinburgh, 11th March 2016.
- OAC-manifolds* – Oxford, 22nd February 2016.
- Aspects of Homotopy Theory* – Southampton, 14th-19th December 2015.
- Manifolds Unlocking Higher Structures* – Oxford, 28th September-2nd October 2015.
- Homotopy theory, manifolds, and field theories* – Bonn, 17th-21st August 2015.
- PIMS Symposium on the Geometry and Topology of Manifolds* – Vancouver, 29th June-5th July 2015.
- Introductory School: Homotopy theory, manifolds, and field theories* – Bonn, 4th-8th May 2015.
- Teichmüller Modular Groups* – Chicago, 20th-22nd March 2015.
- ICM Satellite Conference on Algebraic Topology* – Dalian, China, 3rd-13th August 2014.
- Manifolds, K-theory, and related topics* – Dubrovnik. 23rd-27th June 2014.
- Analysis and Topology in Interaction* – Cortona. 16th-20th June 2014.
- Surgery theory and its applications in geometry* – Münster. 9th-13th June 2014.
- British Mathematical Colloquium* – Queen Mary, London. 7th-10th April 2014.
- Introductory Workshop: Algebraic Topology* – MSRI, Berkeley. 27th-31st January 2014.
- Cohomology of the moduli space of curves* – Zürich. 10th-13th October 2013.
- British Topology Meeting 2013* – Aberdeen. 9th-11th September 2013.
- Homology Stability Workshop* – Copenhagen. 26th-30th August 2012.
- BMC 2013* – Sheffield. 25th-28th March 2013.
- Aspects of Topology* – Oxford. 17th-19th December 2012.
- XIX Encuentro de Topología* – La Coruña. 19th-21st October 2012.
- Topologie* – Oberwolfach. 17th-22nd September 2012.
- 27th British Topology Meeting* – Cambridge. 6th-8th September 2012.
- Fourth Arolla Conference on Algebraic Topology* – Arolla, Switzerland. 20th-26th August 2012.
- Algebraic Topology: Applications and New Directions* – Stanford. 23rd-27th July 2012.

- Homotopy Algebra and Its Applications* – Luminy. 25th-29th June 2012.
- 17th NRW meeting* – Münster. 4th-5th May 2012.
- Riemann surfaces* – PCMI, Park City, Utah. 3rd-17th July 2011.
- The Kervaire invariant and stable homotopy theory* – ICMS, Edinburgh. 25th-29th April 2011.
- Topologie* – Oberwolfach. 19th-25th September 2010.
- 25th British Topology Meeting* (organiser) – Oxford. 6th-9th September 2010.
- West Coast Algebraic Topology Summer School* (scientific committee) – Eugene, Oregon. 9th-15th August 2010.
- Summer Topology Workshop* – Stanford. 2nd-6th August 2010.
- 24th British Topology Meeting* – Leicester. 14th-15th September 2009.
- 25th Nordic and 1st British-Nordic congress of Mathematicians* – Oslo. 8th-11th June 2009.
- Manifold Perspectives* – Oberwolfach. 24th-30th May 2009.
- Third Arolla Conference on Algebraic Topology* – Arolla. 18th-24th August 2008.
- Homotopical Group Theory and Topological Algebraic Geometry* Conference and Workshop – Copenhagen  $\rightsquigarrow$  Bonn. 16th-27th June 2008.
- Topology in the Swiss Alps, Young Topologists’ Meeting* – Le Châtelard. 26th-31st May 2008.
- Moduli spaces* Conference and Workshop – University of Bonn / Max Planck Institute. 1th-11th January 2008.
- 22nd British Topology Meeting* – Sheffield. 10th-12th September 2007.
- Workshop on Homological Algebra – Southampton. 8th-14th July 2007.
- Postnikov Memorial Conference – Będlewo. 18th-24th June 2007.
- Workshop on Stable Homotopy Theory – Strasbourg. 7th-11th May 2007.
- MEETINGS ORGANISED “Topologie”, Oberwolfach, 2026. (with G. Arone, C. Löh, A. Stipsicz)
- “Topology of moduli spaces (Tillmann’s 60th)”, Copenhagen, 2024. (with N. Wahl)
- “Topologie”, Oberwolfach, 2024. (with M. Behrens, R. Charney, A. Stipsicz)
- “Manifolds and K-Theory: the legacy of Andrew Ranicki”, ICMS Edinburgh, 2021. (with C. Barwick, D. Crowley, U. Tillmann)
- “Cellular  $E_k$ -algebras”, Oberwolfach, 2021. (with A. Kupers, S. Galatius)
- “Manifolds and Groups”, Oberwolfach, 2020. (with C. Löh, Th. Schick)
- “Patterns in cohomology of moduli spaces”, Clay Research Conference Workshop, Oxford, 2019. (with S. Galatius)
- “Manifolds”, Cambridge, 2018. (with D. Ayala, U. Tillmann, M. Weiss)
- “Analysis and Topology in Interaction”, Cortona, 2017. (with W. Lück, R. Melrose, P. Piazza, Th. Schick)
- OAC-manifolds meetings, 2016-2018. (with U. Tillmann, R. Hepworth)
- 25th British Topology Meeting, Oxford, 2010. (with J. Giansiracusa)
- Scientific committee for “West Coast Algebraic Topology Summer School”, August 2010.
- Copenhagen Topology seminar 2010-2012.
- Oxford Junior Geometry & Topology Seminar 2007-2008.
- SERVICE Undergraduate admissions – Jesus College, Oxford, 2006-2009.

Undergraduate admissions – King’s College, Cambridge, 2012-2016.

Computing committee – DPMMS, 2018–24.

Hiring committee – DPMMS, 2018, 2019, 2024, 2025.

Hiring committee – Radboud University Nijmegen, 2020.

Elector – Rouse Ball Professorship, 2022.

LMS Publications committee, 2022–.

Part III committee – DPMMS, 2024–

AI working group – DPMMS, 2025–