Curriculum Vitae

Professor Dr. Frank Neumann Dipl.-Math.

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Education

PhD in Mathematics (Dr. rer. nat.), Georg-August-Universität Göttingen, Germany (August 1996)
Title: Bott's theorem for loop spaces of Lie type and the Eilenberg-Moore spectral sequence.
Advisor: Prof. Larry Smith Ph.D. *(Summa cum laude)*

Diploma in Mathematics (Dipl.-Math.), Georg-August-Universität Göttingen, Germany (August 1992)
Title: Homology and rational homotopy spectral sequences of cofibrations.
Advisor: Prof. Larry Smith Ph.D. *(Summa cum laude)*

Diploma Studies in Mathematics, Physics and Philosophy, Georg-August-Universität Göttingen and Rheinische-Friedrich-Wilhelms-Universität Bonn, Germany (September 1987-August 1992)

Academic Positions

Professore ass. di Algebra, Università di Pavia, Italy (since February 2023)

Associate Professor of Mathematics, University of Leicester, United Kingdom (April 2007–January 2023)

Lecturer in Pure Mathematics, University of Leicester, United Kingdom (September 2002–March 2007)

EU Marie Curie Mobility Research Fellow, Centre de Recerca Matemàtica (CRM), Barcelona, Spain (September 2000–August 2002)

Assistant professor (C1), Georg-August-Universität-Göttingen, Germany (September 1996–August 2000)

Honorary Positions

Honorary Full Professor of Mathematics, University of Leicester, United Kingdom (since February 2023)

Honorary Reader of Mathematics, University College London, United Kingdom (since September 2021)

Research

Research Interests and Areas: Algebraic Geometry, Homological Algebra, Algebraic Topology and its applications and interactions with Arithmetic Geometry, Mathematical Physics, Invariant Theory, Representation Theory, Differential Geometry and Category Theory.

Publications

Books and Monographs

1. F. Neumann: Geometry of Algebraic Stacks and Moduli of Vector Bundles. to appear: *IMPA Research Monographs*, Springer Verlag, Berlin-New York, 300 pp.

2. P. L. del Ángel Rodríguez, F. Neumann, A. Schmitt (Eds.): Moduli, Motives and Bundles – New Trends in Algebraic Geometry, to appear: *LMS Lecture Note Series*, Cambridge University Press, 400 pp.

3. F. Neumann, A. Pal (Eds.): Homotopy Theory and Arithmetic Geometry – Motivic and Diophantine Aspects, *Springer Lecture Notes in Mathematics* Vol. 2292, Springer Verlag, Berlin-New York 2021, 227 pp.

4. F. Neumann, S. Schroll (Eds.): Galois Covers, Grothendieck-Teichmüller Theory and Dessins d'Enfants – Interactions between Geometry, Topology, Number Theory and Algebra. *Springer Proceedings in Mathematics & Statistics* Vol. 330, Springer Verlag, Berlin-New York 2020, 248 pp.

5. F. Neumann: Algebraic Stacks and Moduli of Vector Bundles. *Publiçaçoes Matematicas* **36**, Research Monograph, IMPA Rio de Janeiro (2nd ed. 2011), 142pp.

Research Articles in Journals and Proceedings

1. F. Neumann, M. Szymik: Preludes to the Eilenberg-Moore and Leray-Serre spectral sequences. submitted.

2. P. L. del Angel Rodriguez, F. Neumann: Rational Homotopy and Hodge Theory of Moduli Stacks of Principal G-Bundles, to appear: Complex Geometry – Proceedings of the 14th ISAAC Congress, Ribeirão Preto, Brazil, 2023, *Research Perspectives*, *Trends in Mathematics*, Springer–Birkhäuser

3. L. A. Barbosa-Torres, F. Neumann: Deligne cohomology for differentiable stacks. to appear: Analysis and PDE in Latin America - ICMAM 2022 Latin America, Ghent Analysis and PDE Center, *Research Perspectives*, *Trends in Mathematics*, Springer–Birkhäuser

4. A. Castorena, F. Neumann: Cohomology of moduli stacks of principal $\mathbb{C}^*$-bundles over nodal algebraic curves. to appear: *Journal of Mathematical Sciences*

5. A. Castorena, F. Neumann: On actions of Frobenius morphisms for moduli stacks of principal bundles over algebraic curves. *Bulletin des Sciences Mathématiques* 193 (2024), 103450.

6. I. Biswas, S. Chatterjee, P. Koushik, F. Neumann: Connections on Lie groupoids and Chern-Weil theory, *Reviews in Mathematical Physics* 36 (2024), 2450002.

7. I. Biswas, S. Chatterjee, P. Koushik, F. Neumann: Atiyah sequences and connections on principal bundles over Lie groupoids and differentiable stacks. *J. Noncommut. Geom.* 17 (2023), 407–437.

8. F. Neumann, A. Pál: Homotopy Theory and Arithmetic Geometry – Motivic and Diophantine Aspects: An Introduction. Homotopy Theory and Arithmetic Geometry – Motivic and Diophantine Aspects. *Springer Lecture Notes in Mathematics* Vol. 2292, Springer Verlag, Berlin-New York 2021, 1–9.

9. L. A. Barbosa-Torres, F. Neumann: Equivariant cohomology for differentiable stacks. *Journal of Geometry and Physics* 160 (2021), 103974

10. I. Galvez-Carrillo, F. Neumann, A. Tonks: Gabriel-Zisman cohomology and spectral sequences. *Applied Categorical Structures* 29 (2021), 69–94.

11. S. Balchin, F. Neumann: On the number of rational points of classifying stacks for Chevalley group schemes. Galois Covers, Grothendieck-Teichmüller Theory and Dessins d'Enfants – Interactions between Geometry, Topology, Number Theory and Algebra, *Springer Proceedings in Mathematics & Statistics* Vol. 330, Springer Verlag, Berlin-New York, 2020, 9–30.

12. F. Neumann, S. Schroll: Galois Covers, Grothendieck-Teichmüller Theory and Dessins d'Enfants – An Introduction. Galois Covers, Grothendieck-Teichmüller Theory and Dessins d'Enfants – Interactions between Geometry, Topology, Number Theory and Algebra, *Springer Proceedings in Mathematics & Statistics* Vol. 330, Springer Verlag, Berlin-New York, 2020, 1–8.

13. F. Neumann, M. Szymik: Spectral sequences for Hochschild cohomology and graded centers of derived categories. *Selecta Mathematica* 23 (2017), 1997–2018.

14. S. Alsulami, H. Colman, F. Neumann: The Lusternik-Schnirelmann category for a differentiable stack. Mathematics across Contemporary Sciences, *Springer Proceedings in Mathematics & Statistics*, Vol. 190, Springer Verlag, Berlin-New York, 2017, 1–15.

15. O. Mata-Gutiérrez, F. Neumann: Geometry of moduli stacks of (k, l)-stable vector bundles over algebraic curves. *Journal of Geometry and Physics* 111 (2017), 54–70.

16. P. Frediani, F. Neumann: Étale homotopy types of moduli stacks of polarised abelian schemes. *Journal of Homotopy and Related Structures* 11 (4) (2016), 775–801.

17. I. Biswas, F. Neumann: Atiyah sequences, connections and characteristic forms for principal bundles over groupoids and stacks. *Comptes Rendus Math. Acad. Sci. Paris Ser I* 352 (2014), 59–64.

18. I. Galvez-Carrillo, F. Neumann, A. Tonks: Thomason cohomology of categories. *Journal of Pure and Applied Algebra* 217 (2013), 2163–2179.

19. I. Galvez-Carrillo, F. Neumann, A. Tonks: André spectral sequences for Baues-Wirsching cohomology of categories, *Journal of Pure and Applied Algebra* 216 (2012), 2549–2561.

20. M. Felisatti, F. Neumann: Secondary theories for etale groupoids. Regulators, *Contemporary Mathematics* 571 (2012), 135–151.

21. F. Neumann, J. L. Rodriguez: On cellularization for simplicial presheaves and motivic homotopy theory. *Topology and its Applications* 154 (2007), 1481–1488.

22. M. Felisatti, F. Neumann: Secondary theories for simplicial manifolds and classifying spaces, *Geometry & Topology Mon.* 11 (2007), 33–58.

23. F. Neumann: Variations on the cohomology of loop spaces on generalized homogeneous spaces. *Proceedings of the Steklov Institute of Mathematics* 252 (2006), 205–211.

24. F. Neumann, U. Stuhler: Moduli stacks of vector bundles and Frobenius morphisms. *Algebra and Number Theory, Proc. of the Inter. Conf.*, HIN/AMS Publ. Delhi, 2005, 126–146.

25. P. Frediani, F. Neumann: Étale homotopy types of moduli stacks of algebraic curves with symmetries. *K-Theory* 30 (2003), 315–340.

26. J. P. May, F. Neumann: On the cohomology of generalized homogeneous spaces. *Proceedings of the American Math. Society* 130 (2002), no. 1, 267–270.

27. F. Neumann: Torsion in the cohomology of finite loop spaces and the Eilenberg-Moore spectral sequence. *Topology and its Applications* 100 (2000), no. 2-3, 133–150.

28. F. Neumann: A theorem of Tits, normalizers of maximal tori and fibrewise Bousfield-Kan completions. *Publications RIMS Kyoto* 35 (1999), no. 5, 711–723.

29. F. Neumann: On the cohomology of homogeneous spaces of finite loop spaces and the Eilenberg-Moore spectral sequence. *Journal of Pure and Applied Algebra* 140 (1999), no. 3, 261–287.

30. F. Neumann: Quillen spectral sequences in rational homotopy theory. *Algebraic K-theory and its applications* (ICTP, Trieste, 1997), 536–566, World Sci. Publishing, River Edge, NJ, 1999.

31. F. Neumann, M. D. Neusel, L. Smith: Rings of generalized and stable invariants and classifying spaces of compact Lie groups. Higher homotopy structures in topology and mathematical physics, *Contemporary Mathematics*, 227 (1999), 267–285.

32. F. Neumann, M. D. Neusel, L. Smith: Rings of generalized and stable invariants of pseudoreflections and pseudoreflection groups. *Journal of Algebra* 182 (1996), no. 1, 85–122.

33. F. Neumann: Der Satz von Bott für Liesche Schleifenräume und die Eilenberg-Moore Spektralsequenz. PhD thesis, Georg-August-Universität Göttingen. *Mathematica Gottingensis* 9/96.

34. F. Neumann: Homology and rational homotopy spectral sequences of cofibrations. Diploma thesis, Georg-August-Universität Göttingen. *Mathematica Gottingensis* 2/96.

Work in Progress

35. A. Castorena, F. Neumann: Cohomology of Moduli Stacks of Vector Bundles on Nodal Algebraic Curves, in preparation.

36. A. González-Prieto, M. Logares, F. Neumann: Topological quantum field theories, Higgs bundles and moduli stacks, in preparation.

37. F. Neumann, A. Pal: An arithmetic Yau-Zaslow formula, in preparation.

38. U. Buijs, F. Neumann: On the rational homotopy type of the moduli stack of G-bundles over an algebraic curve. in preparation.

39. P. L. del Ángel Rodríguez, F. Neumann: Mixed Hodge theory of algebraic stacks, in preparation.

40. F. Neumann, T. Pirashvili, A. Tonks: Cohomology of stacks with values in Picard categories, in preparation.

41. I. Gàlvez Carrillo, F. Neumann, S. Paoli, A. Tonks: Cohomology of higher categories. in preparation.

42. P. Frediani, F. Neumann: On the étale homotopy type of real algebraic stacks. in preparation.

43. P. Frediani, F. Neumann: Étale homotopy types of Hurwitz stacks. in preparation.

Other Publications (Lecture Notes & Outreach Publications)

44. F. Neumann: Elementary Algebraic Topology, Lecture Notes, AIMS Senegal, March 2022, 62pp.

45. F. Neumann: Mathematical Problem Solving, Lecture Notes, AIMS Senegal, September 2019, 50pp.

46. F. Neumann: Department of Mathematics supports gifted mathematics students through the Midlands, *E-ZINE*, College of Science and Engineering, University of Leicester, Issue 11, October 2018, 10-11.

47. F. Neumann, S. Schroll: LMS Midlands Regional Meeting, *London Mathematical Society Newsletter*, No. 478 September 2018, 11–12.

48. P. Dorey, S. Huggett, J. Hunton, F. Neumann: Initiatives for the Mathematical Sciences in Africa, *London Mathematical Society Newsletter*, No. 475 March 2018, 24–28.

49. F. Neumann: Sublime Symmetry, *London Mathematical Society Newsletter*, No. 456 January 2017, 23–24.

50. F. Neumann: LMS Hardy Lecturer Jacob Lurie at the University of Leicester, *London Mathematical Society Newsletter*, No. 461 September 2016, 33–34.

51. F. Neumann: LMS 150th Anniversary Departmental Celebrations - University of Leicester, *London Mathematical Society Newsletter*, No. 449 July 2015, 5–6.

52. F. Neumann: Algebraic Topology, Lecture Notes, MAGIC UK Postgraduate Network Grid Course 064, Leicester 2014, 57pp.

53. F. Neumann: The Beauty Of Shapes: Encounters With The Weird World of Topology, Royal Institution Master Class, London-Leicester 2013, 72pp.

54. F. Neumann, J. L. Rodriguez: Meditaciones topológicas de Salvador Dalí, *Divulgacíon Matemática*, Vol. VI., Núm. 1 (2012), 15–16.

55. F. Neumann: Dali, Surrealism and Mathematics, Lecture Notes, University of Leicester 2010, 18pp.

56. F. Neumann: Social Choice, Economic Theory and Algebraic Topology–Applications of Homotopy Theory to Economics and Sociology, EU Erasmus/Socrates Programme Lecture Notes, NTUA Athens 2005, 53pp.

57. F. Neumann: K-Theory, Geometry and Physics - Sir Michael Atiyah Gets Abel Prize, *The Leicester Maths Wrangler*, No. 3 (2004), 3–4.

58. F. Neumann: Topology Or What's The Shape Of The Universe, *The Leicester Maths Wrangler*, No. 2 (2003), 3–4.

Grants, Fellowships, & Awards

IMU Voluntary Lecturer Grant (01/2024)

Visiting Researcher and Conference Grant (Government of Georgia) (09/2023)

UNAM Distinguished Visiting Professor Research Grant, Project *Algebraic Stacks and Moduli of Bundles* (08/2022-10/2022)

ICMS Research in Groups (RIGs) Grant, Project: *Topological Quantum Field Theories, Higgs Bundles and Moduli Stacks* (01/2022)

UKRI/EPSRC PhD Fellowship Grant, Project: *Moduli spaces and algebraic stacks* (10/2021-09/2024)

AMSP/FMSP/MEI Mathematics Problem Courses Outreach Grant (UK Government) (07/2021)

BIRS Workshop Grant: BIRS/CMO Workshop Moduli, Motives and Bundles – New Trends in Algebraic Geometry (02/2021)

IRDF Global Research Award, 'Supporting African Research in Mathematics through a Focused Research Partnership (SARMFRP)' (01/2021-07/2021)

Heilbronn Institute for Mathematical Research (HIMR) Focused Research Group Grant: Local-global conjectures, finite loop spaces, classifying stacks and ℓ-adic cohomology (01/2019–12/2019)

UKRI/EPSRC PhD Fellowship Grant, Project: *Hochschild and Cyclic Cohomology of dg-categories* (10/2019-09/2022)

LMS Conference Grant: LMS Regional Meeting and Workshop on Galois covers, Grothendieck-Teichmueller theory and Dessins d'Enfants (06/2018)

LMS-CMI-EPSRC Research School Grant: London Mathematical Society, Clay Mathematics Institute and Heilbronn Institute for Mathematical Research: Research School on Homotopy Theory and Arithmetic Geometry: Motivic and Diophantine Aspects (with A. Pal (Imperial College)) (07/2018)

SPHEIR Grant British Council: Achieving eXcellence by InnOvations in MathematicS (AXIOMS) (confirmed partner with AIMS (applied 02/2017, reapplication in progress))

Banco Santander Research Travel Grant UK-Mexico (08/2013, 07/2016, 05/2017)

Spanish Government Research Project Grant (with UB Barcelona): Algebraic and Low-Dimensional Topology (MTM2016-76453-C2-2-P) (project member 01/2017-12/2021)

Spanish Government Research Project Grant (with UB Barcelona): Enhanced Homotopy (MTM2013-42178-P) (project member 09/2014–08/2018)

AMSP/FMSP/MEI Mathematics Outreach Grant (Government of the United Kingdom) (07/2014–06/2021)

Colciencias (Columbian Government) collaborative PhD Fellowship research grant (1/2015–12/2018)

London Mathematical Society (LMS) travel grant (08/2014)

Research grant ivisit12 of the Universitat Autonoma de Barcelona (UAB), Government of Catalunya, Project: *Homotopy theory and classifying spaces* (visiting research fellow 04/2012–05/2012)

Banco Santander travel grant UK-Brazil (08/2011)

London Mathematical Society (LMS) collaborative research grant (08/2010)

LMS-IMU-AMMSI Mentoring African Research in Mathematics (MARM) collaborative research grant (10/2009–12/2015)

London Mathematical Society collaborative research grant, Project: *Cohomology of moduli stacks of*

vector bundles (05/2009)

Research grant of the Instituto Nazionale Di Alta Matematica (INDAM, CNR) Project: *Étale homotopy types of moduli stacks* (visiting research fellow 06/2007–09/2007)

Nuffield Foundation Grant as part of LMS-IMU-AMMSI initiative Mentoring African Research in Mathematics (MARM) (06/2007–10/2009)

London Mathematical Society collaborative research grant, Project: *Homotopy theory of Hopf spaces* (05/2007)

Research grant ivisit06 of the Universitat Autonoma de Barcelona (UAB), Government of Catalunya, Project: *Homotopy theory of profinite simplicial sets, classifying spaces of profinite groups and étale homotopy* (visiting researcher 06/2006–08/2006)

LMS conference grant: LMS Regional Meeting and Workshop on Teichmüller Theory and Cluster Algebras (organiser 05/2006)

Research grant of the College of Science and Engineering, University of Leicester (02/2006)

London Mathematical Society collaborative research grant, Project: *Homotopy theory and algebraic K-theory* (10/2005)

EU Erasmus/Socrates Mobility Grant (07/2005)

Royal Society Conference and Travel Grant (UK-Russia) (08/2004)

Collaborative research grant from the Spanish Government, Project: *Localization and cellularisation in motivic homotopy theory* (06/2004–07/2004)

Nuffield Foundation collaborative research grant, Project: *Profinite Homotopy theory, generalised cohomology and étale homotopy* (04/2002–04/2004)

EU Marie Curie Training and Mobility Research Grant (09/2000–08/2002)

Prize and Award of the Georg-August-Universität Göttingen for best PhD thesis of the year (08/1996)

Prize and Award of Bundesland Niedersachsen for best Diploma thesis of the year (08/1992)

Grant and Prize of the S. Berliner Stiftung (11/1992–12/1993)

Fellow of the Studienstiftung des Deutschen Volkes (01/1988–01/1993)

Visting Positions and Talks

Selected Visiting Positions and Research Visit Invitations

LUMS-SBASSE, LUMS Lahore, Pakistan (01/2024)

CCEN-UFERSA, Universidade Federal Rural do Semi-Árido, Mossoró, Brazil (08/2023)

IME-USP, University of São Paulo, Brazil (07/2023)

Queen Mary University of London, UK (12/2022)

AIMS South Africa, Muizenberg, Cape Town, South Africa (12/2022)

BIRS-CMO Oaxaca, Mexico (09/2022)

BIRS Banff, Canada (06/2022)

Fudan University, Shanghai, China (04/2019)

AIMS Senegal, Mbour, Senegal (09/2019)

CCM-UNAM, Morelia, Mexico (12/2017, 08-10/2022)

International Centre for Mathematical Sciences (ICMS) Edinburgh (01/2018, 01/2020, 07/2022)

Imperial College London, UK (03/2016, 06/2017, 06/2018)

CIMAT, Guanajuato, Mexico (12/2011, 08-09/2013, 09-10/2014, 10-12/2015, 08-09/2016, 09/2017, 08/2022)

TIFR, Mumbai, India (03-04/2005, 04/2007, 04-05/2009, 09-10/2010, 08-09/2011, 08/2012, 07/2013, 09/2014)

IMPA, Rio de Janeiro, Brazil (02-03/2006, 07-08/2009, 07/2011, 12/2015-01/2016)

CRM, Barcelona, Spain (09/2000-08/2001, 04-07/2008)

Isaac Newton Institute for the Mathematical Sciences (INI), Cambridge, United Kingdom (12/2009, 01/2011, 09/2021)

Steklov Institute, Moscow, Russia (08/2004)

Mathematisches Forschungsinstitut Oberwolfach (MFO), Oberwolfach, Germany (04/1998, 03/2003)

UAB, Barcelona, Spain (03-05/2003, 06-08/2006, 04-05/2012)

UB, Barcelona, Spain (03/2010, 01/2014)

NTNU, Trondheim, Norway (01/2015)

IMUS, Sevilla, Spain (09/2012)

University of Almeria, Spain (08/2003, 09/2008, 10/2009)

University of Pavia, Italy (05/2006, 06-07/2007, 11/2021, 12/2022)

University of Nice, France (04/2002, 01/2004, 04-05/2010, 04/2013)

Georg-August-Universität Göttingen, Germany (08/2007, 05/2010, 07/2022)

University of Chicago, USA (05/2011)

ANU, Canberra, Australia (07-08/2003)

Yale University, New Haven, USA (03-04/1997)

Selected Invited and Plenary Talks at Workshops and Congresses (since 2000)

XIII International Conference of the Georgian Mathematical Union, Batumi, Georgia (09/2023)

14th ISAAC Congress, Complex Geometry, University of São Paulo, Ribeirão Preto, Brazil (07/2023)

Workshop 'Mathematics building partnerships with Africa', Politecnico di Torino, Turin, Italy (06/2023)

IMU-EMS-ICTP-CIMPA Workshop on 'Mathematics in the Developing World', CIRM, Luminy, France (06/2023)

Topology for Tomorrow (T4T 2022) Round Table Panel on 'Is there any topology in TDA?', AIMS South Africa, Muizenberg, Cape Town, South Africa (12/2022)

Topology for Tomorrow (T4T 2022), AIMS South Africa, Muizenberg, Cape Town, South Africa (invited research lecture series), 12/2022

International Workshop 'Poisson Geometry, Lie Groupoids and Differentiable Stacks', Banff International Research Station (BIRS), Banff, Canada (06/2022)

Research Away Day, University of Leicester, Leicester, UK (05/2022)

International Workshop on 'Algebraic Geometry', Chicheley Hall, UK (02/2022)

International Workshop on 'Geometry in Algebra and Algebra in Geometry VI (GAAG 2020)', UFF, Niteroi, Brazil (12/2020)

LMS-IMU-AMMSI-UNAM MARM International Round Table on Mathematics and Society, UNAM Windhoek, Namibia (12/2020)

International Conference on 'Differential, Algebraic and Topological Methods in Complex Algebraic Ge-

ometry', CIME, Cetraro, Italy (09/2018)

LMS-IMU-AMMSI MARM Workshop: Around Algebra, Combinatorics and Number Theory, Chancellor College, University of Malawi, Zomba, Malawi (08/2018)

IV. International Scientific Conference 'Actual Problems of Applied Mathematics', Institute of Applied Mathematics and Automation KBRC RAS Nalchik, Terskol, Russia (05/2018)

Workshop and School on Algebraic Geometry, CCM-UNAM Morelia, Mexico (12/2017)

Algebraic Geometry in Mexico 2017, CMO-BIRS Oaxaca, Mexico (11/2017)

SMF Algebraic Topology Conference in the Honour of Said Zarati, Tunis, Tunesia (10/2016)

9th Siberian Congress of Mathematics, Algebra and Topology, Krasnoyarsk, Russia (05/2016)

Workshop and School on Algebraic Geometry, CCM-UNAM Morelia, Mexico (12/2015)

Workshop on 'Interactions between Arithmetic and Homotopy', Imperial College London, UK (09/2015)

AMS-AUS International Conference on Mathematics and Statistics, Sharjah, UAE (04/2015)

XLVII Congreso Nacional SMM, Algebra section, Durango, Mexico (10/2014)

Moduli Spaces, CIMAT, Guanajuato, Mexico (08/2013)

Workshop on Homotopical Algebra, IMUB Barcelona, Spain (07/2012)

First International Kenyatta Conference on Mathematics, Nairobi, Kenya (panellist at AMMSI-LMS-IMU MARM round table session) (06/2011)

ICM 2010, Hyderabad, India (panellist at LMS-IMU session on 'Mechanisms for Strengthening Mathematics in Developing Countries') (08/2010)

BMC/BAMC 2010 British Mathematics Colloquium, Edinburgh, UK (04/2010)

XVIII Latin American Algebra Colloquium, Sao Pedro, Brazil (07/2009)

27th Brazilian Mathematics Colloquium, IMPA, Rio de Janeiro, Brazil (07/2009)

SECA V International Conference on Category Theory and its Applications, Pontevedra, Spain (09/2008)

Erasmus Conference on Interfaces between Mathematics and its Applications, Götingen, Germany (plenary speaker 07/2008)

CTS Conference on Vector Bundles, TIFR, Mumbai, India (plenary speaker 03/2008)

Max Kelly Memorial Conference on Category Theory, University of Cape Town (UCT), Cape Town, South Africa (01/2008)

Algebraic Topology and Invariant Theory, Mathematisches Institut, Göttingen, Germany (07/2007)

Algebraic Geometry at Recife, Olinda and Recife, Brazil (plenary speaker 02/2007)

21st BTM British Topology Meeting, Gregynog Hall, Wales, UK (09/2006)

3rd Barcelona Topology Workshop, UB Barcelona, Spain (07/2006)

Workshop on Stacks in Topology and Geometry, Instituto Superior Technico (IST), Lisbon, Portugal (06/2006)

SECA III International Conference on Category Theory and its Applications, University of Santiago de Compostela, Spain (09/2005)

Teichmueller theory and Moduli Problems, HRI Allahabad, India (plenary speaker 05/2005)

III Joint Meeting Japan-Mexico in Topology and its Applications, Oaxaca, Mexico (12/2004)

L. V. Keldysh Centennial Conference on Geometric Topology, Discrete Geometry and Set Theory, Moscow State University and Steklov Institute, Moscow, Russia (08/2004)

International Conference on Algebraic K-Theory and its Applications, Safi, Morocco (06/2004)

Algebraic Geometry and Topology, ANU, Canberra, Australia (08/2003)

Journées de Topologie et Géométrie Algebriques, Carthage, Tunesia (07/2003)

Séminaire de Topologie Algébrique (Lens-Lille-Louvain-la-Neuve), Université Catholique de Louvain, Louvain-la-Neuve, Belgium (03/2003)

3rd Meeting of the Leicester-Oxford-Warwick (LOW) Study Group in Algebraic Lie Theory, University of Leicester, United Kingdom (04/2002)

EURO Conference on Homotopy Theory and Applications, CRM, Barcelona, Spain (07/2001)

Summer School and Workshop on Interactions between Algebraic Topology and Invariant Theory, Ioannina, Greece (06/2000)

Selected Invited Talks at Research Seminars and Colloquia (since 2000)

Academy of Distinction, La Classe di Matematica, Pavia, Italy (03/2024)

John Conway Spirited Seminar Series, LUMS, Lahore, Pakistan (02/2024)

Mathematics Seminar, Kinnaird College for Women, Lahore, Pakistan (01/2024)

LUMS Mathematics Seminar, LUMS, Lahore, Pakistan (01/2024)

Algebra and Topology Seminar, University of Roma 2 Tor Vergata, Italy (11/2023)

Mathematics Colloquium, CCEN-UFERSA, Universidade Federal Rural do Semi-Árido, Mossoró, Brazil (08/2023)

Pure Mathematics Colloquium, University of Southampton, United Kingdom (01/2023)

London Algebra Colloquium (Queen Mary University of London, Imperial College London, City University of London), London Institute for Mathematical Sciences (LIMS), Royal Institution, London, United Kingdom (12/2022)

Students Union Mathematics Society (SUMS) Colloquium, University of Leicester, United Kingdom (12/2022)

Pure Mathematics Seminar, Newcastle University, United Kingdom (11/2022)

Seminars of the Institute of Mathematics Series, The University of Georgia and Razmadze Mathematical Institute, Tbilisi, Georgia (06/2022)

Mathematics Research Seminar, University of Tabuk, Tabuk, Kingdom of Saudi Arabia (03/2022)

Algebraic Geometry Research Seminar, Politecnico de Torino, Turin, Italy (11/2021)

Mathematics Colloquium, University of Pavia, Italy (11/2021)

Mathematical Physics and Algebraic Geometry Research Seminar (MAPHYAG), Complutense University, Madrid, Spain (10/2021)

Warwick Algebraic Topology Seminar, University of Warwick, United Kingdom (06/2020)

AIMS Senegal Research Seminar, Mbour, Senegal (09/2019)

AIMS Senegal Journal Club Seminar, Mbour, Senegal (09/2019)

Algebraic Geometry Seminar, Fudan University, Shanghai, China (04/2019)

Number Theory Seminar, University of Exeter, Exeter, United Kingdom (11/2018)

Research Seminar Complex Analysis, FU Berlin, Germany (07/2018)

Geometry and Topology Seminar, Durham University, United Kingdom (03/2018)

Pure Mathematics Seminar, Plymouth University, Plymouth, United Kingdom (10/2017)

Mathematical Colloquium, Stellenbosch University, Stellenbosch, South Africa (08/2017)

Algebra Research Seminar, University of Leicester, United Kingdom (01/2017)

Mathematics Research Seminar, University of Dodoma, Dodoma, Tanzania (01/2017)

Mathematics Colloquium, CIMAT Guanajuato, Mexico (09/2016)

Mathematics Colloquium, UNAM Oaxaca, Mexico (09/2016)

Mathematics Colloquium, CCM-UNAM Morelia, Mexico (09/2013, 09/2016, 10/2022)

Mathematical Physics Seminar, IMPA Rio de Janeiro, Brazil (01/2016)

Algebra and Geometry Seminar, Newcastle University, United Kingdom (05/2015)

Algebraic Geometry Seminar, CIMAT Guanajuato (08/2013, 11/2014, 11/2015, 09/2017)

Algebraic Geometry Seminar, UB Barcelona, Spain (12/2003, 05/2015)

Algebraic Geometry and Number Theory Seminar, University of Padua, Italy (09/2014)

Topology Seminar, CRM and UAB Barcelona, Spain (10/2000, 12/2000, 03/2001, 06/2001, 12/2003, 04/2004, 06/2008, 04/2013, 05/2014)

Mathematics Colloquium, TIFR, Mumbai, India (03/2005, 04/2007, 05/2009, 10/2010, 09/2011)

Algebraic Geometry Seminar, TIFR, Mumbai, India (03/2005)

Algebra-Topology Seminar, ETH Zürich, Switzerland (11/2010)

Algebraic Geometry Seminar, Ludwig-Maximilians-Universität (LMU), Munich, Germany (11/2010)

Algebraic Geometry Seminar, CMI, Chennai, India (10/2010)

Mathematics Seminar, King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia (06/2011)

Algebra, Topology and Geometry Seminar, University of Nice, France (01/2004, 05/2010, 11/2013)

Algebraic Geometry Seminar, University of Bayreuth, Germany (09/2007)

Algebraic Geometry Seminar, University of Pavia, Italia (05/2006, 07/2007)

Algebra Seminar, IMPA Rio de Janeiro, Brazil (02/2006)

Geometry Seminar, HRI, Allahabad, India (05/2005)

COW (Cambridge-Oxford-Warwick Algebraic Geometry Seminar), Bath, United Kingdom (03/2009)

London Number Theory Seminar (University College London, King's College London, Imperial College London), London, United Kingdom (06/2003, 02/2010, 12/2012)

Transpennine Topology Triangle (TTT), Sheffield, Leicester and Manchester, United Kingdom (11/2001, 11/2004, 12/2007)

Pure Mathematics Colloquium, Queen Mary University of London, United Kingdom (05/2012)

Mathematical Colloquium, Durham University, United Kingdom (05/2011)

Topology Seminar, University of Sheffield, United Kingdom (05/2014, 11/2016)

Topology Seminar, University of Glasgow, United Kingdom (01/2011)

Mathematisches Kolloquium, University of Bremen, Germany (05/2010)

Topology Seminar, Vrije Universiteit Amsterdam (UVA), Netherlands (03/2008)

Geometry Seminar, University of Manchester, United Kingdom (05/2004, 11/2006)

Pure Mathematics Colloquium, Queen's University, Belfast, United Kingdom (02/2005, 10/2010)

Algebra Seminar, University of Leeds, United Kingdom (11/2004)

Geometry and Topology Seminar, University of Glasgow (11/2004)

Geometry and Topology Seminar, University of Almeria, Spain (09/2003, 06/2004)

Pure Mathematics Seminar, University of Southampton, United Kingdom (05/2004)

Geometry, Topology and Analysis Seminar, University of Cologne, Germany (12/2003)

Geometry and Topology Seminar, University of Utrecht, Netherlands (12/2003)

Pure Mathematics Seminar, University of Bristol, United Kingdom (02/2003)

Pure Mathematics Colloquium, University of St Andrews, United Kingdom (05/2002)

Topology Seminar, Mathematical Institute, University of Oxford, United Kingdom (02/2002)

Pure Mathematics Seminar, University of Leicester, United Kingdom (11/2000, 04/2001)

Pure Mathematics Seminar, University College London (UCL), United Kingdom (06/2000)

Algebraic Geometry and Complex Analysis Seminar (Catanese-Bauer-Grauert), Mathematisches Institut, Göttingen, Germany (06/2000)

Number Theory Seminar, Mathematisches Institut, Göttingen, Germany (01/2000)

Invited Research Lecture Series and Advanced Courses (since 2000)

ICTP-LUMS International Mathematics Master (IMM) Course on 'Advanced Complex Analysis' (12 hrs), LUMS, Lahore, Pakistan (01/2024)

UNAM Advanced Course on 'Algebraic Stacks and Moduli of Vector Bundles' (24 hrs), CCM-UNAM Morelia, Mexico (08-10/2022)

AIMS Advanced Master Course on 'Algebraic Topology' (30 hrs), AIMS Senegal, Mbour, Senegal (03-04/2022)

Virtual Research Lecture Series on 'Hochschild Cohomology of dg-Categories, Spectral Sequences and Coherent Sheaves', University of Leicester, United Kingdom (08-09/2020)

AIMS Advanced Master Course on 'Mathematical Problem Solving' (30 hrs), AIMS Senegal, Mbour, Senegal (09/2019)

Advanced Course on 'Homotopy Types of Algebraic Stacks', CCM-UNAM Morelia, Mexico (12/2017)

Advanced Course on 'Characteristic Classes in Algebraic Geometry', CIMAT Guanajuato, Mexico (10/2015)

Advanced Course on 'Algebraic Stacks and Moduli of Vector Bundles', IMUS Sevilla, Spain (09/2012)

Advanced Course on 'Algebraic Stacks and Moduli of Vector Bundles', CIMAT Guanajuato, Mexico (12/2011)

Research Lecture Course on 'Algebraic Stacks and Moduli Problems', TIFR Mumbai, India (09/2010)

Advanced Course on 'Algebraic Stacks and Moduli of Vector Bundles', 27th Colloquio Brasileiro de Matematica, IMPA, Rio de Janeiro, Brazil (07/2009)

Advanced Lecture course on 'Groupoids in Geometry and Topology', TIFR, Mumbai, India (04/2007)

KNUST Jubilee Lecture Series in Mathematics on 'Algebraic Topology, Economic Theory and Sociology', KNUST, Kumasi, Ghana (03/2007)

Erasmus/Socrates Lecture Series on 'Social Choice, Economic Theory and Algebraic Topology–Applications of Homotopy Theory to Economics and Sociology', NTUA, Athens, Greece (07/2005)

Advanced course on 'Generalised Eilenberg-Moore Spectral Sequences and Applications to Finite Loop Spaces' UAB Barcelona, Spain (04-05/2005)

Advanced Lecture Series on 'Groupoids, Orbifolds and Stacks in Topology and Geometry', University of Leicester, United Kingdom (05-06/2003)

Advanced Lecture Series on 'Simplicial Homotopy Theory', Georg-August-University Göttingen, Germany (01-06/2000)

Organisational Activities

Member of Advisory Board, Workshop 'Mathematics building partnerships with Africa', Politecnico di Torino, Turin (06/2023)

Member of Scientific Board, LMS-IMU-AMMSI-MARM and EMS-TWAS Namibian International Spring School in Mathematics (NAISSMA 2022), Windhoek, Namibia (10/2022)

Main Organiser, BIRS Workshop on 'Moduli, Motives and Bundles - New Trends in Algebraic Geometry', Casa Matemática, Oaxaca, Mexico (09/2022)

Main organiser, ICMS/INI Research Webinar Series Longitudinal Algebra and Geometry Open ONline Seminar (LAGOON) (since 05/2020)

Scientific Committee Member, Workshop 'From MARM to NARM: From Mentoring to Networking African Researchers in Mathematics', Windhoek, Namibia (10/2021)

Main Organiser, International Centre for Mathematical Sciences (ICMS), Institute of Mathematics and its Applications (IMA) and London Mathematical Society (LMS) and British Society for the History of Mathematics (BSHM) Conference 'Black Heroes of Mathematics' (10/2020, 10/2021, 10/2022 and 10/2023)

Main organiser, HIMR Heilbronn Institute for Mathematical Research Focus Workshop on 'Topological Methods in Group Representation Theory', Leicester, United Kingdom (11/2019)

Main organiser, Transpennine Topology Triangle (TTT) Memorial Meeting for Sir Michael Atiyah, Leicester, United Kingdom (03/2019)

Main organiser, LMS-IMU-AMMSI MARM Workshop: Around Algebra, Combinatorics and Number Theory, Chancellor College, University of Malawi, Zomba, Malawi (08/2018)

Main organiser, LMS-CMI-HIMR Research School: Homotopy Theory and Arithmetic Geometry: Motivic and Diophantine Aspects, Imperial College London, United Kingdom (07/2018)

Main Organiser, LMS Midlands Regional Meeting and Workshop on Galois Covers, Grothendieck-Teichmüller Theory and Dessin d'Enfants, Leicester, United Kingdom (06/2018)

Main organiser, 32nd British Topology Meeting (BTM), Leicester, United Kingdom (09/2017)

Main organiser, LMS Mathematics Symposium, Leicester, United Kingdom (Speaker: Martin Hairer) (05/2017)

Main organiser, LMS Hardy Lecture, Leicester, United Kingdom (Speaker: Jacob Lurie) (06/2016)

Organiser, British Mathematics Colloquium (BMC 2011) and main organiser of the BMC workshop on 'Number Theory and Algebraic Geometry', Leicester, United Kingdom (04/2011)

Member of the scientific organisation committee and organiser, XVI Spanish Topology Meeting and Advanced Course on 'Topological Quantum Field Theories', Almeria, Spain (10/2009)

Main organiser, 24th British Topology Meeting (BTM), Leicester, United Kingdom (09/2009)

Main organiser and scientific advisor of the 'International Conference on Mathematics and its Applications', Accra, Ghana (06/2009)

Main organiser, Workshop on 'Topological and Differentiable Stacks', CRM, Barcelona, Spain (04/2008)

Member of the scientific organisation committee and organiser, CRM Research Programme for Academic Year 2007/08 'Homotopy Theory and Higher Categories', CRM, Barcelona, Spain (08/2007-07/2008)

Member of the scientific organisation committee and organiser, CRM International Conference HOCAT 2008 'Homotopy Structures in Geometry and Algebra – Derived Categories, Higher Categories', CRM, Barcelona, Spain (07/2008)

Main organiser, LMS Regional Meeting and International Workshop on 'Teichmüller Theory and Cluster Algebras', Leicester, United Kingdom (05/2006)

Member of the scientific organisation committee and organiser of the 'International Mediterranean Congress of Mathematics (CIMMA 2005)', Almeria, Spain (06/2005)

Main organiser, 17th British Topology Meeting (BTM), Leicester, United Kingdom (04/2002)

Main organiser, Transpennine Topology Triangle (TTT) (LMS funded collaborative periodic research seminar Sheffield-Leicester-Liverpool-Manchester) (since 09/2012)

Main organiser, East Midlands Seminar on Geometry (EMSG) (LMS funded collaborative periodic research seminar Nottingham-Leicester-Loughborough-Sheffield) (since 09/2015)

Main organiser, Midlands Universities Pure Mathematics Seminar (MUPMS) (Speakers: Frances Kirwan, Martin J. Taylor) (11/2002)

Main organiser, Pure Mathematics Colloquium, Leicester, United Kingdom (09/2004–08/2008)

Professional Activities, Membership in Committees and other Leadership

Member of the Global Engagement Working Group of the London Mathematical Society (LMS) (since 04/2024)

Member of Executive Board for the International Mathematics Masters (IMM) program of the Abdus Salam International Centre for Theoretical Physics (ICTP) (since 05/2024)

Member-at-Large of the Council of the London Mathematical Society (LMS) (11/2019-11/2023)

Member of the Research Grants Committee of the London Mathematical Society (LMS) (since 01/2020)

Member of the Nominating Committee of the London Mathematical Society (LMS) (01/2022-12/2022)

Correspondent for the Isaac Newton Institute for Mathematical Sciences (INI) Cambridge and the International Centre for Mathematical Sciences (ICMS) Edinburgh (01/2007-01/2024)

Delegate of the 19th International Mathematical Union (IMU) General Assembly and Fields Medal Award Ceremony, Helsinki, Finland (07/2022)

Chair of the International Mathematical Union (IMU) Credentials Committee (07/2022 at ICM2022)

Delegate of the European Mathematical Society (EMS) Council Meeting, Bled, Slovenia (06/2022)

Board Member of the Advisory Committee of the International Centre for Mathematical Sciences (ICMS) Edinburgh and the Isaac Newton Institute for Mathematical Sciences (INI) Cambridge for the Mathematical Sciences Engagement with the Global Challenges Research Fund Initiative (10/2017-01/2019)

Member of ICMS Hybrid Futures Group of the International Centre for Mathematical Sciences (ICMS) Edinburgh on hybrid research activities delivery (since 03/2021)

Chair of the Board for the LMS-IMU-AMMSI research initiative Mentoring African Research in Mathematics (MARM) (since 01/2020)

Board Member for the LMS-IMU-AMMSI committee on the research initiative Mentoring African Research in Mathematics (MARM) (since 08/2010)

Research Mentor for the LMS-IMU-AMMSI research initiative Mentoring African Research in Mathematics (MARM) (01/2007-08/2018)

Associate Board Member of the European Mathematical Society (EMS) Committee for Developing Countries (CDC) (since 05/2022)

Board Member of the European Mathematical Society (EMS) Committee for European Solidarity (10/2013-12/2018)

Board Member of the European Mathematical Society (EMS) Committee for the Support of Eastern European Mathematicians (06/2011-09/2013)

Representative for the London Mathematical Society (LMS) (04/2012-05/2023)

Member of the IMA-LMS-BSHM Committee for the 'Black Heroes in Mathematics' conferences (since 09/2020)

Chair of the Advisory Board and Steering Committee for collaborative research and education projects between Norwegian Petroleum Geo-Services (PGS), The Norwegian Academy of Science and Letters (DNVA), Abel Prize Fund, Kwame Nkrumah University of Science and Technology Kumasi Ghana (KNUST), and the National Institute for Mathematical Science Ghana (NIMS) (11/2016-10/2018)

Referee and Reviewer for research grants of the Engineering and Physical Sciences Research Council (EPSRC) of the United Kingdom (since 10/2007)

Referee and Reviewer for research grants of the Chilean National Commission for Scientific and Technological Research (CONICYT) (since 10/2014)

Referee and Reviewer for research grants of the Mexican Research Council (CONACYT) (since 01/2015)

Editor for the proceedings Galois Covers, Grothendieck-Teichmüller Theory and Dessins d'Enfants – Interactions between Geometry, Topology, Number Theory and Algebra, Springer Proceedings in Mathematics & Statistics.

Editor for the proceedings Homotopy Theory and Arithmetic Geometry – Motivic and Diophantine Aspects. Springer Lecture Notes in Mathematics.

Referee for *London Mathematical Society (LMS) journals, Journal of Topology, Annals of K-Theory, Journal of Algebraic Geometry, Compositio Mathematica, Astérisque, Journal of Number Theory, Algebraic & Geometric Topology, Journal of Geometry and Physics, Bulletin des Sciences Mathematiques, Journal for Mathematical Sciences, Forum Mathematicum, Mediterranean Journal of Mathematics, Annali di Matematica Pura ed Applicata, SIGMA, Marie Curie Fellows Annals, Graduate Journal of Mathematics (GJM)*

Reviewer for Mathematical Reviews and Zentralblatt der Mathematik

Referee and Reviewer for the UK Higher Education Academy

External referee for promotion and tenure procedures at University of Western Ontario, London, Canada

External member of examining board for habilitation theses at University of Tunis, Tunis, Tunesia

External examiner for Undergraduate Programmes in Mathematics at University College London (UCL) (since 09/2017)

External examiner for Master Programmes in Mathematics at Queen Mary University of London (QMUL) (since 09/2019)

External examiner and board member for several PhD theses at University College London (UCL), Queen Mary University of London (QMUL), IISER Bhopal, University of Sheffield, Cardiff University, University of Barcelona (UB), Autonomous University of Barcelona (UAB), Georg-August-Universität Göttingen, CIMAT Guanajuato, University of Tunis, University of Mines and Technology (UMaT) Tarkwa

Internal examiner, chair and board member for several PhD theses at the University of Leicester

Member of the London Mathematical Society (LMS)

Member of the American Mathematical Society (AMS)

Member of the European Mathematical Society (EMS)

Research Students and Postdoctoral Researchers

Postdoctoral Researchers:

    Cerene Rathilal, Area: Topology, NITheCS-NRF Research Visiting Fellow (10/2023)

    Yadira Valdivieso, Area: Algebra, EU Marie Curie Fellow (09/2020–08/2022)

    Lang Mou, Area: Algebra, Royal Society Newton International Fellow (01/21-09/21)

PhD Students:

Luca Dal Molin, Area: Algebraic Geometry, Topic: Algebraic Geometry (University of Trento, to complete 06/2027)

Alec Sloan, Area: Algebraic Geometry, Topic: *Cohomology of moduli stacks* (University of Leicester, to complete 06/2025)

Itidal Musaad Almutairi, Area: Algebraic Topology, Topic: *Algebraic Topology of Data Sets* (University of Leicester, to complete 06/2025)

Andrew Phimister, Area: Homological Algebra and Algebraic Geometry, Topic: *Hochschild and Cyclic Cohomology for DG-categories and Applications to Algebra, Geometry and Topology* (University of Leicester, to complete 10/2024)

Elena Caviglia, Area: Algebraic Geometry, PhD Thesis: *Generalised principal bundles and quotient stacks* (University of Leicester, completed 01/2024)

Luis Alejandro Barbosa Torres, Area: Algebraic Topology and Differential Topology, PhD Thesis: *Differentiable Stacks and Equivariant Cohomology* (University of Leicester, completed 06/2019)

Mudheher Al-Bayati, Area: Algebraic Topology and Dynamical Systems, PhD Thesis: *Dynamical Systems, Cocycles and Cohomology of Action Groupoids* (University of Leicester, completed 06/2018)

Jinan Al-Asady, Area: Homological Algebra and Higher Category Theory, PhD Thesis: *Representations of Crossed Squares and Cat^2-Groups* (University of Leicester, completed 06/2018)

Scott Balchin, Area: Algebraic Geometry, PhD thesis: *Augmented Homotopical Algebraic Geometry* (University of Leicester, 06/2017)

Lewis Brew, Area: Algebraic Topology and Dynamical Systems, PhD Thesis: *Extensions of Dynamical Systems - Homological Algebra Perspective* (University of Mines and Technology (UMaT) Tarkwa and KNUST Ghana, completed 06/2017)

Samirah Alsulami, Area: Algebraic Topology, PhD Thesis: *Homotopy Types of Topological Groupoids and Lusternik-Schnirelmann Category of Topological Stacks* (University of Leicester, completd 06/2016)

Ilia Pirashvili, Area: Algebraic Geometry, PhD Thesis: *The Fundamental Groupoid and the Geometry of Monoids* (University of Leicester, completed 06/2016)

Khadijah Sharaf, Area: Differential Geometry, PhD Thesis: *On the Prescribed Mean Curvature Problem on the Standard N-dimensional Ball* (University of Leicester, completed 06/2013)

Master Students:

Luca Dal Molin, Area: Algebraic Geometry, Dissertation: *Hilbert's 16th Problem: the shapes of real planar curves* (University of Pavia, completed 09/2023)

Ablaye Diallo, Area: Algebraic Topology, Dissertation: *Persistent Homology and Topological Data Analysis: Applications of Algebraic Topology* (AIMS Senegal, completed 07/2022)

Irina Sura, Area: Algebraic Topology, Dissertation: *Homology and understanding the shape of complex data with Topological Data Analysis (TDA)*, (University of Leicester, completed 06/2022)

Mortimer Smith, Area: Number Theory, Dissertation: *Riemann Zeta Function and the Distributions of Primes*, (University of Leicester, completed 06/2022)

Mark Bowen, Area: Number Theory and Algebraic Topology, Dissertation: *Zeta Functions and their Applications*, (University of Leicester, completed 06/2022)

Grace Watters, Area: Number Theory, Dissertation: *Quadratic Reciprocity Laws*, (University of Leicester, completed 06/2021)

Richard Phiri, Area: Number Theory, Dissertation: *Diophantine Triples and Generalised Fibonacci Sequences* (AIMS Senegal, completed 07/2020)

Kirsty Campbell, Area: Number Theory and Algebraic Geometry, Dissertation: *The Group of Ratio-*

nal Points on Elliptic Curves (University of Leicester, completed 06/2020)

Emilia Campman, Area: Algebraic Topology, Dissertation: *Fundamental Groups, Covering Spaces and Applications* (University of Leicester, completed 06/2018)

Alvaro Torras Casas, Area: Algebraic Topology, Dissertation: *Spectral Sequences in Algebra, Topology and Geometry* (University of Leicester, completed 09/2017)

Rudradip Biswas, Area: Number Theory and Algebraic Geometry, Dissertation: *Finiteness Theorems on Algebraic Curves and Galois Representations* (University of Leicester, completed 09/2016)

Scott Balchin, Area: Algebraic Geometry and Category Theory, Dissertation: *Cohomology of Infinity Categories* (University of Leicester, completed 06/2014)

Pearce Paul Dedmon, Area: Algebraic Topology, Dissertation: *Homotopy Theory and the Seifert-Van Kampen Theorem* (University of Leicester, completed 06/2014)

Emily Phipps, Area: Number Theory and Algebraic Geometry, Dissertation: *Rational Points on Elliptic Curves* (University of Leicester, completed 06/2014)

Oliver Jones, Area: Number Theory and Algebraic Geometry, Dissertation: *Cryptography and Elliptic Curves* (University of Leicester, completed 06/2013)

Hannah Abbas, Area: Algebra, Dissertation: *On the Construction of Regular Polygons with Ruler and Compass* (University of Leicester, completed 06/2013)

Craig Emery, Area: Number Theory, Dissertation: *Fermat's Polynomial Number Theorem and Variations* (University of Leicester, completed 06/2012)

Rebecca James, Area: Number Theory, Dissertation: *The Law of Quadratic Reciprocity and Applications* (University of Leicester, completed 06/2012)

Ruth Gardiner, Area: Number Theory and Algebraic Geometry, Dissertation: *Elliptic Curves and Mordell's Theorem* (University of Leicester, completed 06/2011)

Anisha Trivedi, Area: Algebraic Topology, Dissertation: *Fundamental Groups and Covering Spaces* (University of Leicester, completed 06/2010)

Isaac Owusu-Mensah, Area: Algebraic Topology and Economics, Dissertation: *The Topological Social Choice Model* (KNUST, Kumasi, Ghana, completed 06/2008)

Mark Parsons, Area: Algebra, Complex Analysis and Algebraic Topology, Dissertation: *Variations on the Fundamental Theorem of Algebra* (University of Leicester, completed 06/2003)

Mark James Hudson, Area: Geometry, Dissertation: *On the Classification of Platonic and Archimedean Solids* (University of Leicester, completed 06/2002)

In addition, I supervised so far 6 industrial master students for the MSc programme Data Analysis for Business Intelligence (DABI).
I have also supervised 10 BSc Mathematics students with BSc projects in pure mathematics.

Teaching

Teaching Portfolio at the University of Pavia, Pavia

Undergraduate Teaching:
Third Year and Master: I am teaching an Undergraduate Course (Laurea triennale) in Number Theory (Teoria dei Numeri).

Postgraduate Teaching:
I am teaching a Master Course (Laurea magistrale) in Algebraic Geometry (Geometria Algebrica) .

Teaching Portfolio at the University of Leicester, United Kingdom

Undergraduate Teaching:
I taught mathematics modules for undergraduate students across all years (lectures, problem classes, surgeries, tutorials):
First Year: Proof and Logical Structures, Algebraic Structures and Number Systems, Introductory Real Analysis, Introductory Linear Algebra, Elements of Number Theory
Second Year: Linear Algebra, Algebra, Real Analysis, Abstract Analysis, Geometry, Investigations in Mathematics, Elements of Topology
Third Year and Fourth Year: Methods of Applied Mathematics, Topology, Complex Analysis, Geometry II, Number Theory, Communicating Mathematics, Module convenor for BSc Mathematics Research Projects
Supervision of 3rd year final undergraduate BSc projects.
I was a personal tutor across all years of undergraduate studies.

Postgraduate Teaching:
I taught the MAGIC PhD postgraduate research course on Algebraic Topology via Access Grid video-conferencing technology for the MAGIC network of 21 universities in the United Kingdom (since 2011).
I gave lecture courses for postgraduate students (Master and PhD) on the following subjects:
Algebraic Geometry of Algebraic Stacks, Homotopy Theory of Classifying Spaces, Étale Homotopy and Topos Theory, Groupoids, Orbifolds and Stacks in Topology and Geometry
I supervised 8 PhD students and have currently 4 PhD students working with me.
I supervised 22 Master students and have have currently 1 Master students working with me.

Teaching Portfolio at the Georg-August-Universität Göttingen, Germany

Undergraduate Teaching:
I organised and taught problem classes for undergraduate courses across all years:
Linear Algebra and Analytic Geometry I+II, Algebra, Number Theory, Differential Equations, Algebraic Topology, Homotopy Theory, Complex Analysis
I organised and taught tutorials for undergraduate seminars on the following subjects:
Algebraic Topology, Algebraic Geometry, Riemannian and Differential Geometry, Representation Theory, Algebra, Number Theory
I gave undergraduate lecture courses for other faculties:
Mathematics for Biologists, Mathematics for Geologists.

Postgraduate Teaching:
I gave lecture courses for postgraduate students (Diploma and PhD) on the following subjects:
Motivic Homotopy Theory, Simplicial Homotopy Theory, Algebraic K-Theory
I co-supervised several diploma and Staatsexamen theses in Topology and Algebra.

Outreach and Public Engagement, Recognition and Awards

Finalist of University of Leicester 'The Citizens' Awards 2022' in the category 'Inclusivity Champion' and in the category 'Student Recruitment and Retention Award' (11/2022)

Organiser of AccessLeicester: Maths–Levelling Up Mathematics Project Courses as partnership between University of Durham and University of Leicester externally funded by LMS (since (02/2021)

Leicester Students' Union Superstar 2019/20 Awards Nominee in the category 'Best Lecturer'

Organizer of STEM events as part of 'Black History Month' at the University of Leicester (10/2019)

Organizer of weekly Mathematics Advanced Problem Solving Courses for year 12 and 13 college students externally funded by AMSP/FMSP/MEI Mathematics Outreach Grant (Government of the United Kingdom), Leicester (since 07/2014)

Organizer of Mathematics A-level support courses for year 13 college students and prospective students,

Leicester (since 09/2015)

Editor of Leicester Mathematics Newsletter for Schools (09/2015–present)

Organizer of Royal Institution (RI) Masterclasses in mathematics for year 8 and 9 college students, Leicester (04/2012- 04/2013)

Organizer G-STEM conference for year 12 college students and teachers, Leicester (06/2013)

Invited plenary outreach speaker at London Student Conferences, London (11/2013)

Invited outreach speaker at National Science and Engineering Week (NSEW) (03/2013)

Organizer of the UK Open 2012 Speedcubing Championship (11/2012)

Invited speaker at the T3M2 outreach event for high school teachers, Leicester (02/2010)

Frequent invited speaker at several local schools in Leicester, Leicestershire, Warwick, Birmingham and London (since 01/2002)

Editor of the Leicester Maths Wrangler Newsletter (08/2002–12/2006)

Administration

Administrative Duties at the University of Leicester, United Kingdom

Director of Recruitment, Admissions and Outreach, School of Computing and Mathematical Sciences: responsible for all undergraduate and postgraduate recruitment; principal organiser of open days, taster courses and offer holder days including outreach with schools and the public (08/2021–01/2023)

Director of Undergraduate Admissions, School of Mathematics and Actuarial Science: responsible for admissions of all undergraduate students; principal organiser of open days, taster courses and offer holder days (01/2019–07/2021)

Director for Outreach, WP and Public Awareness, School of Mathematics and Actuarial Science: responsible for outreach activities, widening participation, liaison with schools and public relations (09/2011–07/2021)

Member of the Department of Mathematics, the School of Mathematics and Actuarial Sciences and the School of Computing and Mathematical Sciences Management Groups (09/2011–12/2014, 01/2019–01/2023)

Chair of the School of Computing and Mathematical Sciences Recruitment, Admissions and Outreach Committee (08/2021-01/2023)

Member of the School of Computing and Mathematical Sciences Equality, Diversity and Inclusion (EDI) Committee (01/2022-01/2023)

Member of the School of Mathematics and Actuarial Science Research Committee (02/2015–07/2021)

Member of the School of Mathematics and Actuarial Science Student Staff Council (12/2019–07/2021)

Deputy Research Excellence Framework (REF) lead for the School of Mathematics and Actuarial Science (03/2020–04/2021)

Director of Teaching and Learning, Department of Mathematics: responsible for strategic curriculum planning, organisation of taught modules, teaching resources, virtual learning environments for online teaching and e-learning, lecture capture and video grid network courses, exam procedures, tutorial system (09/2008–08/2011)

Director of Undergraduate Admissions, Department of Mathematics: responsible for admissions of all undergraduate students; principal organiser of UCAS Visit Days, taster courses and open days (09/2002–08/2008)

Foundation Year Tutor for students in the mathematics foundation pre-university year (09/2008–08/2011)

Chair of the Outreach and Public Awareness Committee, Department of Mathematics (09/2011–12/2018)

Chair of the Learning and Teaching Committee, Department of Mathematics (09/2008–08/2011)

Member of the College of Science and Engineering Outreach and Widening Participation Committee (09/2011-12/2018)

Member of the College of Science and Engineering Foundation Year Committee (09/2008–08/2011)

Member of the College of Science and Engineering Learning and Teaching Committee (09/2008–08/2011)

Member of the University of Leicester Management and Admissions Committee (09/2002–08/2008)

Panel member of several hiring committees for the School of Mathematics and Actuarial Science, the School of Computing and Mathematical Sciences and the College of Science and Engineering (01/2006–01/2023)

Probation Mentor for academic staff at the Department of Mathematics, the School of Mathematics and Actuarial Sciences and the School of Computing and Mathematical Sciences (09/2011–01/2023)

Mentor, Mentoring Academy of the University of Leicester (03/2022–06/2023)

Mentor for Appraisals and Personal Development Discussions (PDD), School of Computing and Mathematical Sciences (01/2022–01/2023)

Administrative Duties at the Georg-August-Universität Göttingen, Germany

Elected member of the Faculty Council of the Faculty of Mathematics

Panel member of several hiring committees for the Faculty of Mathematics

Member of university delegation for setting up exchange programmes with universities in the former Soviet Union

Administrator for departmental webpages

Administrator for faculty preprint series 'Mathematica Gottingensis'

Library representative

Professional Training and Personal Development

Protect ACT Counter Terrorism Training, University of Leicester (08/2023)

Cyber Security, University of Leicester (08/2023)

CSE Worktribe Briefing Session, University of Leicester (01/2023)

Zoom and MS Teams Presentation and Producer Training, University of Leicester (02/2021)

Grant Writing Support Programme Training, University of Leicester (11/2020)

SAP Business Objects Training, University of Leicester (11/2020)

COVID-19 Return to Working on Campus, University of Leicester (09/2020)

Challenging Unconscious Bias, London Mathematical Society (02/2020)

Charity Work and its Legislation, London Mathematical Society (02/2020)

Standing Together at the University of Leicester, University of Leicester (11/2019)

Data Protection and Information Security Training, University of Leicester (11/2019, 12/2021, 11/2022)

Display Screen Equipment Assessment, University of Leicester (10/2019)

Fire Safety Awareness, University of Leicester (10/2019)

Challenging Unconscious Bias, University of Leicester (11/2018, 11/2021, 11/2022)

Information Security Awareness, University of Leicester (11/2018)

Introduction to Fraud Response and the Criminal Finances Act, University of Leicester (11/2021, 11/2022)

Fraud Awareness: Getting to Grips with Fraud and Corruption, University of Leicester (01/2018)

Equality, Diversity and Inclusion, University of Leicester (09/2016, 11/2019, 11/2021)

Safeguarding Awareness, University of Leicester (01/2015, 11/2019, 11/2022)

Health and Safety Core Essentials, University of Leicester (11/2021, 11/2022)

Introduction to Health and Safety, University of Leicester (09/2001)

Introduction to Learning and Teaching in Higher Education, University of Leicester (09/2001)

Miscellaneous

Programming Languages and IT Skills: HTML, Java, LaTeX, Mathematica, Macaulay2, Matlab, GeoGebra, Imaginary Surfer, C++, Basic, SAP Business Objects, Word, Excel

Languages: German (mother tongue), English (fluent), Spanish (intermediate), French (intermediate), Italian (basic), Russian (basic)