

James Newton

Updated July 2025

Employment

- 2023– **Professor**, Mathematical Institute, University of Oxford
- 2021– **Tutorial Fellow**, Merton College, University of Oxford
- 2021–2023 **Associate Professor**, Mathematical Institute, University of Oxford
- 2016–2021 **Lecturer/Senior Lecturer**, Department of Mathematics, King's College London
- 2014 – 2016 **Research associate**, Department of Mathematics, Imperial College London
- 2011 – 2014 **Research fellow**, DPMMS, University of Cambridge
- 2011 – 2014 **Junior research fellow**, Trinity College, Cambridge
- Jan–Apr 2011 **Member**, Institute for Advanced Study, Princeton

Education

- 2007 – 2011 **PhD**, Imperial College London
(advisor: Kevin Buzzard)
- 2006 – 2007 **Certificate of Advanced Study in Mathematics (Part III)**, University of Cambridge
- 2003 – 2006 **BA (Hons) Mathematics**, University of Cambridge

Grants

- 2021 – 2025 **UKRI Future Leaders Fellowship**, £990,077
Reciprocity, functoriality and the p -adic Langlands programme
- 2011 – 2014 **EPSRC postdoctoral fellowship**, £247,241
The arithmetic of p -adic automorphic forms and Galois representations

Prizes

- 2024 **LMS Whitehead Prize**
- 2024 **Clay Research Award**, *awarded jointly with Jack Thorne.*
- 2023 **AMS Cole Prize in Number Theory**, *awarded jointly with Jack Thorne.*

Doctoral students

- 2024 – present Charlotte Clare-Hunt (co-supervised with Victor Flynn)
- 2022 – present Zachary Feng
- 2022 – 2024 Håvard Damm-Johnsen (co-supervised with Jan Vonk)
- 2020 – 2023 Lambert A'Campo
- 2020 – 2021 Abigail Burton (secondary supervisor, primary supervisor Ana Caraiani)
- 2019 – 2022 Mafalda Santos (secondary supervisor, primary supervisor Ana Caraiani)
- 2018 – 2021 Ashwin Iyengar
- 2018 – 2021 Pol van Hoften

2018 – 2021 Hanneke Wiersema (secondary supervisor, primary supervisor Fred Diamond)

Postdocs mentored

2022 – present Aleksander Horawa

2024 – present Andrew Graham

Conferences organised

2024 Clay research workshop on the Langlands program, Oxford

2024 p -adic families of automorphic forms: theories and applications, ICMS Edinburgh

2019 The p -adic Langlands programme and related topics, King's College London

2018 UK–Japan Winter School, Galois Representations and Automorphic Forms, King's College London

2016 Automorphic forms: theory and computation, King's College London

Service and other professional activities

2023 – Chair, Joint Consultative Committee with Undergraduates
Mathematical Institute, University of Oxford

2022 – Organiser, Great Western Number Theory Seminar

2018 – 2021 Postgraduate Research Tutor, Department of Mathematics, King's College London

2017 – 2019 Programme Director for Year 3 BSc/MSci Mathematics, King's College London

2016 – 2021 Member, Equality & Diversity Committee and Athena SWAN Self-Assessment Team,
Department of Mathematics, King's College London

2019 – 2021 Admissions committee member, LSGNT Centre for Doctoral Training

2016 – 2021 Organiser, London Number Theory Seminar

2012 – 2014 Organiser, Number Theory Seminar, University of Cambridge

2011 – present Referee for journals including J. Amer. Math. Soc., Invent. Math., Math. Ann., Compos. Math., Duke Math. J., Algebra & Number Theory.

2021 – 2024 External examiner for Part III Mathematics, University of Cambridge
External examiner for PhDs at Cambridge, Concordia, Paris–Saclay and Warwick
Peer reviewer for EPSRC (UK), Irish Research Council and ANR (France)

2023 – Editor, Proceedings of the London Mathematical Society

2023 – Editor, Essential Number Theory

2024 – Editor, Quarterly Journal of Mathematics

Teaching

- Masters course, 'Elliptic Curves', University of Oxford (2024 – present)
- Undergraduate tutorials at Merton College, Oxford (2021 – present)
- Undergraduate course for first years, 'Linear Algebra & Geometry II', King's College London (2020/21)
- Undergraduate course for second and third years, 'Introduction to Number Theory', King's College London (2016 – 2020)
- Undergraduate course for third and fourth years, 'Group Representation Theory', Imperial College London (2016)
- Masters course, 'Modular Forms', University of Cambridge (2014)

- Graduate course, 'Mod p and p -adic modular forms', University of Cambridge (2012).
- Supervisions for third year undergraduate courses in mathematics, Trinity College, Cambridge (2011 – 2014)
- Assistant for a course given by Frank Calegari at the Arizona Winter School (2013).

Invited talks (2016 – present)

- Journées Arithmétiques, Luxembourg, 07/2025 (plenary talk)
- Samsung Global Research Symposium, Santa Ana, USA, 06/2025
- European Congress of Mathematics, Seville, 07/2024 (invited lecture)
- Conference in Memory of Joël Bellaïche, Paris, 06/2024
- Oxford Algebra Seminar, 06/2024
- Exeter Algebra & Number Theory Seminar, 03/2024
- London Number Theory Seminar, 02/2024
- Conference in Memory of Jan Nekovář, IHES Paris, 10/2023
- Heilbronn Conference, Bristol, 09/2023
- QuINGS (Queer In Number Theory and Geometry) workshop, 08/2023
- Conference on Global Langlands, Bonn, 08/2023
- Summer School, Bonn, 05/2023
- Spring School, Heidelberg, 03/2023
- Cambridge, Number theory seminar, 02/2023
- COGENT Online Seminar, 11/2022
- Young Researchers in Algebraic Number Theory, Glasgow, 08/2022
- Community-building in the Langlands Program, Bonn, Germany, 08/2022
- Journal of Number Theory Conference, Cetraro, Italy, 07/2022
- British Mathematical Colloquium, Number theory workshop, 06/2022
- Warwick, Number theory seminar, 05/2022
- ETH Zürich, Number theory seminar, 05/2022
- QMUL, Algebra & Number theory seminar, 05/2022
- Durham, Pure Maths Colloquium, 02/2022
- Canadian Mathematical Society Winter Meeting, Galois representations and L -functions, 12/2021
- Purdue Number Theory seminar, 11/2021
- Paris–Orsay Séminaire Arithmétique et Géométrie Algébrique, 04/2021
- Recent Advances in Modern p -Adic Geometry (RAMpAGe) Seminar, 12/2020
- UCD Algebra & Number Theory Seminar, Dublin, 11/2020
- Columbia–CUNY–NYU Number Theory Seminar, 10/2020
- Berkeley–Caltech–Stanford Number Theory Seminar, 10/2020
- Global Langlands, Shimura varieties, and $shtukas$, Bonn, 08/2020 (*cancelled due to COVID-19*)
- PIMS–Germany Summer School on Eigenvarieties, Vancouver, 08/2020 (*cancelled due to COVID-19*)
- Summer School on the Arithmetic of the Langlands Program, Bonn, 05/2020 (*cancelled due to COVID-19*)
- HUI–BGU Algebraic Geometry & Number Theory Seminar, 05/2020
- Peking Online International Number Theory Seminar, 05/2020
- Harvard Number Theory Seminar, 05/2020
- Journées arithmétiques de LAGA, Paris, 03/2020
- Oxford Number Theory Seminar, 02/2020
- London Number Theory Seminar, 2019
- Hausdorff School on the Emerton–Gee stack and related topics, summer school, Bonn, 2019
- p -adic modular forms and Galois representations, conference, Sheffield, UK, 2019
- p -adic methods in arithmetic Cardedeu, Spain, 2019

- p -adic Langlands correspondence and Iwasawa theory, conference, Lille, France, 2019
- University of Gothenburg/Chalmers Number Theory Seminar, 2019
- Workshop on Galois Representations, Heidelberg, Germany, 2018
- Number Theory Seminar, University of Warwick, UK, 2018
- Summer School on Modular Forms, workshop, Padova, Italy, 2017
- London Number Theory Seminar, 2016
- Deformation theory, completed cohomology, Leopoldt conjecture and \bar{K} -theory, workshop, CIRM, Luminy, France, 2016
- London–Paris Number Theory Seminar, UPMC, Paris, France, 2016
- Number Theory Seminar, University of Sheffield, UK, 2016
- Number Theory Seminar, University of Cambridge, UK, 2016
- The p -adic Langlands program and related topics, conference, Indiana University, USA, 2016

Publications

1. *Geometric level raising for p -adic automorphic forms.*
Compos. Math., 147(2):335–354, 2011.
2. *Level raising and completed cohomology.*
IMRN, (11):2565–2576, 2011.
3. *Completed cohomology of Shimura curves and a p -adic Jacquet-Langlands correspondence.*
Math. Ann., 355(2):729–763, 2013.
4. *Serre weights and Shimura curves.*
Proc. LMS, 108(6):1471–1500, 2014.
5. *Towards local-global compatibility for Hilbert modular forms of low weight.*
Algebra & Number Theory, 9(4):957–980, 2015.
6. *Level raising for p -adic Hilbert modular forms.*
J. Théor. Nombres Bordeaux, 28(3):621–653, 2016.
7. *Torsion Galois representations over CM fields and Hecke algebras in the derived category.*
Forum Math. Sigma, 4:e21, 88, 2016. (Joint with J. Thorne)
8. *The dimension of irreducible components, an appendix to Universal eigenvarieties, trianguline Galois representations, and p -adic Langlands functoriality* by D. Hansen
J. Reine Angew. Math., 730:60–62, 2017.
9. *Extended eigenvarieties for overconvergent cohomology.*
Algebra & Number Theory, 13(1):93–158, 2019. (Joint with C. Johansson)
10. *Irreducible components of extended eigenvarieties and interpolating Langlands functoriality.*
Math. Res. Lett., 26(1):159–201, 2019. (Joint with C. Johansson)
11. *Irreducible components of the eigencurve of finite degree are finite over the weight space.*
J. Reine Angew. Math., 763:251–269, 2020. (Joint with S. Hattori)
12. *Parallel weight 2 points on Hilbert modular eigenvarieties and the parity conjecture.*
Forum Math. Sigma, 7:e27, 2019. (Joint with C. Johansson)
13. *Local Langlands correspondence in rigid families.*
Pacific J. Math., 304(1):65–102, 2020. (Joint with C. Johansson and C. Sorensen)
14. *Patching and the completed homology of locally symmetric spaces.*
J. Inst. Math. Jussieu, 21(2):395–458, 2022. (Joint with T. Gee)
15. *Adjoint Selmer groups of automorphic Galois representations of unitary type*
J. Eur. Math. Soc., 25(5):1919–1967, 2023. (Joint with J. Thorne)
16. *Automorphy lifting for residually reducible ℓ -adic Galois representations, II*
Compos. Math., 156(11):2399–2422, 2020 (Joint with P. Allen and J. Thorne)
17. *Monodromy for some rank two Galois representations over CM fields.*

- Doc. Math., 25:2487–2506, 2020 (Joint with P. Allen)
18. *Symmetric power functoriality for holomorphic modular forms.*
Publ. Math. IHÉS, 134:1–116, 2021. (Joint with J. Thorne)
 19. *Symmetric power functoriality for holomorphic modular forms, II.*
Publ. Math. IHÉS, 134:117–152, 2021. (Joint with J. Thorne)
 20. *Modularity of Galois representations and Langlands functoriality.* (Expository article.)
J. Indian Inst. Sci., 102:861–884, 2022.
 21. *Potential automorphy over CM fields.*
Ann. of Math., 197(3):897–1113, 2023. (Joint with P. Allen, F. Calegari, A. Caraiani, T. Gee, D. Helm, B. V. Le Hung, P. Scholze, R. Taylor and J. Thorne)
 22. *Construction of eigenvarieties.* (Expository article.)
In *Non-Archimedean Geometry and Eigenvarieties*, pp. 267–304, Münster Lectures in Mathematics, edited by E. Hellmann, J. Ludwig and O. Venjakob.
 23. *The Ramanujan and Sato–Tate Conjectures for Bianchi modular forms.*
Preprint, <https://arxiv.org/abs/2309.15880>. Forum Math. Pi, 13:e10, 2025. (Joint with G. Boxer, F. Calegari, T. Gee and J. Thorne)

Preprints

1. *Symmetric power functoriality for Hilbert modular forms.*
Preprint, <https://arxiv.org/abs/2212.03595>. To appear in Ann. of Math. (Joint with J. Thorne)
2. *On the modularity of elliptic curves over imaginary quadratic fields.*
Preprint, <https://arxiv.org/abs/2301.10509>. (Joint with A. Caraiani)
3. *Non-abelian base change for symmetric power liftings of holomorphic modular forms.*
Preprint, <https://arxiv.org/abs/2312.01774>. (Joint with L. Clozel and J. Thorne)
4. *Moduli stacks of Galois representations and the p -adic local Langlands correspondence for $\mathrm{GL}_2(\mathbf{Q}_p)$.*
Preprint, <https://arxiv.org/abs/2403.19565>.
(Joint with C. Johansson and C. Wang-Erickson)