Dr. Chris Williams

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EMPLOYMENT

- **University of Nottingham** **2022–present**
  - Assistant Professor of Pure Mathematics
- **University of Warwick** **2019–2022**
  - Warwick Zeeman Lecturer (2021–2022)
  - EPSRC Postdoctoral Fellow (2019–2022)
- **Imperial College London** **2016–2019**
  - Heilbronn Research Fellow

QUALIFICATIONS

- **University of Nottingham** **2023–2025**
  - PGCHE (Distinction)
- **University of Warwick** **2012–2016**
  - PhD in Pure Mathematics
- **Trinity College, Cambridge** **2008–2012**
  - MMath (Distinction)
  - BA (Hons) in Mathematics (Double First)

RESEARCH PAPERS

19. Local-global compatibility and the exceptional zero conjecture for GL(3) (with D. Barrera and A. Graham). Preprint (arXiv: 2508:10225)
18. An introduction to p-adic L-functions (with J. Rodrigues Jacinto). *Essent. Number Theory* 4 (2025), no.1, pp.101–216.
17. On p-refined Friedberg–Jacquet integrals and the classical symplectic locus in the GL($2n$) eigenvariety (with D. Barrera and A. Graham). *Res. Number Theory*, 11 (2025), no.51, pp.1–57.
16. On p-adic L-functions for symplectic representations of GL(N) over number fields. 25pp. Submitted (arXiv: 2305.07809).
15. On the GL(2n) eigenvariety: branching laws, Shalika families and p-adic L-functions (with D. Barrera, M. Dimitrov, A. Graham and A. Jorza). 57pp. *J. Assoc. Math. Res.*, 3 (2025), no.2, pp.161–236 (arXiv: 2211.08126).
14. Speculative remarks on multi-signed p-adic L-functions for GSp(4). Appendix to 'On the Mordell-Weil Ranks of supersingular abelian varieties over $\mathbb{Z}_p^2$-extensions' by C. Dion and J. Ray. *Israel J. Math.*, (2025), pp.32–37.
13. P-adic L-functions for GL_3 (with D. Loeffler). 36pp. Submitted (arXiv: 2111.04535).
12. On p-adic L-functions for GL_{2n} in finite-slope Shalika families (with D. Barrera and M. Dimitrov). 69pp. Submitted (arXiv: 2103.10907).
11. Arithmetic of p-irregular modular forms: families and p-adic L-functions (with A. Betina). *Mathematika* 67 (2021), no.4, pp.917–948.

10. Parabolic eigenvarieties via overconvergent cohomology (with D. Barrera)
Math. Zeit. 299 (2021), no.1, pp.961–995.

9. Overconvergent cohomology, p-adic L-functions and families for GL(2) over CM fields (with D. Barrera).
J. Théor. Nombres Bordeaux 33 (2021), no.3, pp.659–701.

8. Stark–Heegner cycles attached to Bianchi modular forms (with G. Venkat).
J. Lond. Math. Soc. 104 (2021), no.1, pp.394–422.

7. Overconvergent Hilbert modular forms via perfectoid modular varieties (with C. Birkbeck and B. Heuer).
Ann. I. Fourier, 73 (2023), no.4, pp.1709–1794.

6. Families of Bianchi modular symbols: critical base-change p-adic L-functions and p-adic Artin formalism (with D. Barrera; appendix by C. Wang-Erickson).
Selecta Math. 27 (2021), no.82, pp.1–45.

5. P-adic Asai L-functions of Bianchi modular forms (with D. Loeffler)
Algebra & Number Theory 14 (2020), no.7, pp.1669–1710.

4. Exceptional zeros and $\mathcal{L}$-invariants of Bianchi modular forms (with D. Barrera)
Trans. Amer. Math. Soc. 372 (2019), no.1, pp.1–34.

3. P-adic L-functions for GL_2 (with D. Barrera)
Canad. J. Math. 71 (2019), no.5, pp.1019–1059.

2. Lifting non-ordinary cohomology classes for SL_3
Publ. Mat. 62 (2018), no.2, pp.651–675.

1. P-adic L-functions of Bianchi modular forms
Proc. Lond. Math. Soc. 114 (2017), no.4, pp.614–656.

FUNDING

- EPSRC Postdoctoral Fellowship, £310,002 2019–2023
EP/T001615/1: *Constructions and properties of p-adic L-functions for* GL(n)
- Heilbronn focused project grant, £800 Feb 2019
For *Families of Shalika models and p-adic L-functions*
- Oberwolfach Research in Pairs visit (all local costs) Aug 2018
For *The fine Selmer group and computing Bianchi p-adic L-functions*
- Heilbronn Fellowship (all employment costs and research grant) 2016–2019
- EPSRC DTG Doctoral grant (stipend and research grant) 2012–2016

PRIZES

- Faculty of Science Postdoctoral prize (best Warwick-affiliated research output of the year, for *P-adic Asai L-functions of Bianchi modular forms*) 2020
- Doctoral thesis prize (top Warwick Mathematics thesis of the year) 2016
- Heilbronn prize (for excellent performance in examinations) 2011
- Trinity College Senior Scholarship 2010–2012

TEACHING EXPERIENCE

- **Courses lectured**
  - *Algebra* (Nottingham) 2024–present
  Wrote Nottingham's new 1st year course.
  - *Coding and Cryptography* (Nottingham) 2022–present
  - *Local Fields* (Warwick) 2022
  Proposed, wrote and lectured a new 30 lecture undergraduate course.
  - *Introduction to p-adic L-functions* (Warwick TCC) 2020
  Wrote and lectured a graduate course for 5 universities.

  - *Iwasawa theory* (Imperial) 2017
    Wrote and lectured a graduate course jointly with J. Rodrigues.

- **Personal tutor** (Warwick & Nottingham) 2021–present
  Provided weekly pastoral and academic support for undergraduate students.

- **Teaching Assistant, Warwick** 2013–2015
  Modular Forms (2013 & 2014), Further Representation Theory (2014).

SUPERVISION

- **PhD supervision**
  - F. Thogersen (Nottingham) 2023–present
  - X. Dimitrakopoulou (Warwick) 2020–24
- **Project supervision** 2018–present
  - Supervised and assessed 9 Master's/undergraduate theses.
  - Applied for and supervised 3 funded undergraduate projects.
- **Undergraduate supervisor, Warwick** Oct 2012 – Jun 2013
  Supervised ten first year undergraduates in all major modules, meeting twice a week during term time; responsible for the marking of their assessed work.

INVITED TALKS

- *The exceptional zero conjecture for* GL(3) 2025
  - Barcelona, Oxford, Exeter
- *Classical locus in the* GL($2n$) *eigenvariety* 2023–25
  - Warwick, Dublin, Cardedeu, Queen Mary, UEA, Nottingham, Santiago, Kyoto
- *P-adic L-functions for* GL(3) 2021–23
  - London, Cambridge, Warwick, Vienna, Laval, Sun Yat-sen, Manchester, Sheffield, Notre Dame, Durham, Paderborn, UCL
- *Overconvergent modular forms via perfectoid modular varieties* 2020
  - Regensburg (cancelled), Lille (cancelled)
- *Overconvergent cohomology and p-adic L-functions for* GL($2n$) 2019-2020
  - Barcelona, Sheffield, Warwick, Nottingham, Dublin
- *Factorisation of base-change Bianchi p-adic L-functions* 2018
  - Cardedeu
- *P-adic Asai L-functions of Bianchi modular forms* 2017–19
  - Barcelona, Warwick, London, Heidelberg, Sheffield, Lille, Oxford
- *P-adic L-functions for* GL_2 2016
  - Warwick, Cambridge, London
- *Overconvergent modular symbols over imaginary quadratic fields* 2014–15
  - London, Sheffield, Bristol
- *Other invited workshops*
  - Seminari de teoria de nombres, Barcelona Jan 2017
  - The arithmetic of Euler systems, Benasque Aug 2015

INVITED MINICOURSES

- *Introduction to p-adic L-functions*, Dublin 2024
- *p-adic L-functions for $GL(2n)$* (joint course, Lille) 2019

AFFILIATIONS

- Fellow of the Higher Education Academy 2024–
- Member of the London Mathematical Society 2024–

SERVICE

- Invited referee for more than 20 journals including JEMS, Compositio, Algebra & Number Theory, IMRN, and TAMS
- Invited referee for the Springer Birkhäuser textbook series
- PhD external examiner for 2 students
- Grant reviewer for the Leverhulme Trust and IRC.
- Organiser of Nottingham number theory seminar 2023–24
- Organised one-day workshop 'p-adic Methods in automorphic forms' in Warwick Jul 2022
- Member of Warwick Mathematics Early Careers committee 2020–2022
- Organiser of the Warwick number theory seminar 2020–2022
- Organised study groups on Algebraic geometry (2013), Complex multiplication (2015), p-adic Hodge theory (2019), Adic spaces (2020), Class Field Theory (2020), Singular Moduli (2021), Bianchi modular forms (2023) and Automorphic representations (2024).
- Organiser of the London number theory seminar 2018
- Reviewer for MathSciNet 2017–present