

CHARLOTTE CLARE-HUNT

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RESEARCH INTERESTS

Algebraic number theory, in particular the arithmetic of automorphic forms, p -adic aspects of the Langlands programme, Galois representations and eigenvarieties; arithmetic algebraic geometry and elliptic/higher genus curves, including Chabauty techniques, Jacobians of curves, the Brauer-Manin Obstruction and visualisation of the Tate–Shafarevich Group.

EDUCATION

DPhil Mathematics University of Oxford 2024-

- \circ *Supervisors:* James Newton and Victor Flynn.
- \circ *Graduate courses:* p -adic L -functions for modular forms, Formalising Fermat, Advanced Lie Algebras, Explicit Arithmetic of Modular Curves, Galois representations and L -functions, Algebraic Surfaces, The Inverse Galois Problem.

MSci Mathematics (First Class Honours) University College London (UCL) 2020-2024

Dissertation project: The Weil Conjectures. *Supervisor:* Dr Dario Beraldo.

RESEARCH

Undergraduate Research Summer Project UCL Summer 2023

Eight-week research project on *Mixed Moments of L -functions assuming the Grand Riemann Hypothesis*, supervised by Dr Ian Petrow, funded by the LMS. Analysed and adapted the ideas of Rudnick, Soundararajan and Young to achieve upper bound results in line with the conjectures of Keating and Snaith for the moments of different families, proving a new result on the distribution of central values of L -functions attached to elliptic curves.

Second Year Summer Project UCL Summer 2022

Collaborated with four other second year undergraduates researching the Binary Golay Code, focusing on the connections to sphere packing in 8 and 24 dimensions, the Leech lattice and the Kissing Number Problem. Explored the connections to Conway groups and the classification of finite simple groups, presenting the research to the supervisor, another member of the department, and other students.

TALKS

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| tbd (<i>Warwick Junior Number Theory Seminar</i>) | June 2026 |
| Vanishing theorems for Betti and de Rham cohomology (<i>Higher Coleman Theory</i>) | April 2026 |
| Eigenvarieties and p -adic rigidity for GSp_4 (<i>London Junior Number Theory Seminar</i>) | March 2026 |
| Modular analogs of character formulas and minimal lifts of modular forms (<i>Preprints</i>) | February 2026 |
| Automorphic Sheaves (<i>Modularity of Abelian Surfaces</i>) | November 2025 |
| Introduction to adic spaces (<i>Diamonds</i>) | January 2025 |
| Locally symmetric spaces and the main theorem on Shimura varieties (<i>Shimura Varieties</i>) | October 2024 |

SEMINARS/STUDY GROUPS

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| Oxford Junior Number Theory Seminar Organiser | 2025-26 |
| Higher Coleman Theory Study Group | February 2026 |
| Preprints Study Group | January 2026 |
| Modularity of Abelian Surfaces Study Group | October 2025 |
| p -adic Automorphic Forms | January 2025 |

Diamonds Study Group
Shimura Varieties Study Group

January 2025
October 2024

CONFERENCES

Classical and p-adic aspects of the Kudla program, CIRM GWNT, University of Oxford	June 2026 April 2026
Around the Langlands Programme (Weeks 1 and 3), CIRM CLAY Conference, University of Oxford	January/February 2026 September 2025
Women in Number Theory and Geometry (WINGS) 2025 CLAY Conference, University of Oxford	April 2025 September 2024
Great Western Number Theory (GWNT), University of Oxford Young Researchers in Algebraic Number Theory (Y-RANT) VI, University of Oxford	September 2024 August 2024

TEACHING

College/Intercollegiate Teaching University of Oxford	
M1 Groups and Group Actions TA (Merton College)	2025-26
M1 Linear Algebra II TA (Merton College)	2025-26
B3.4 Algebraic Number Theory TA	2025-26
M1 Linear Algebra I TA (Merton College)	2025-26
C3.7 Elliptic Curves TA	2025-26
B3.1 Galois Theory TA	2024-25
B3.4 Algebraic Number Theory TA	2024-25
M1 Linear Algebra I TA (Merton College)	2024-25
C3.4 Algebraic Geometry TA	2024-25

OTHER EXPERIENCE

Maths Tuition Ivy Education	2020-
Tutoring GCSE and A-level students in Mathematics, creating lesson plans and assessment resources, writing monthly feedback reports and refining exam technique.	

AWARDS

ESPRC Scholarship	2024-
The Kathleen Lonsdale Medal (UCL MAPS Faculty Medal)	2023
UCL Dean's List	2023
David G Larman Prize (UCL)	2023
Winton Prize (UCL)	2023
IMA Fourth Year Prize (UCL)	2023
LMS Undergraduate Research Bursary	2023
Departmental Undergraduate Second Year Prize in Mathematics (UCL)	2021
Filon 1st Departmental Undergraduate 1st Year Prize in Mathematics (UCL)	2020