Edwina Aylward

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EDUCATION

University College London September 2023 – September 2027 (Expected)

PhD student. *London, England*

- Undertaking a PhD with the London School of Geometry and Number Theory, supervised by Vladimir Dokchitser.
- Current interests: Elliptic curves, algebraic number theory.
- Completed two mini projects in first year, the first relating to L-functions of elliptic curves, and the second on positive depth representations in the local Langlands correspondence.

Cambridge University October 2022 – June 2023

Master of Advanced Study (MASt) in Pure Mathematics. *Trinity College, Cambridge, England*

- Final grade: 88% (Distinction). Ranked 20/282.
- Focused on algebraic number theory and algebra courses. Wrote an essay titled 'The Modularity Theorem and the Modular Approach'.

Trinity College Dublin September 2018 – May 2022

B.A. (Mod) in Mathematics. *Dublin, Ireland*

- Final grade: 92%. Achieved gold medal for academic merit, and graduated first in class.
- Final year thesis area: Algebraic topology and Steenrod operations.

EXPERIENCE

Undergraduate Hamilton Research Assistant May 2022 – June 2022

Trinity College Dublin *Dublin, Ireland*

- Six week internship funded by TCD.
- Supervisor: Dr. Jack Kelly (TCD). Project area: algebraic geometry. Studied the Picard Fuchs equation associated to families of elliptic curves, and more generally the Gauss-Manin connection for algebraic varieties. Study of theory, and algorithmic implementations using Mathematica.

Mary Lister McCammon Research Fellow July 2021 – September 2021

Imperial College London *London, United Kingdom*

- Ten week fellowship funded by the London School of Geometry and Number Theory and Imperial College London.
- Supervisor: Dr. Vladimir Dokchitser (UCL). Project area: representation theory and group theory, with applications in number theory. Studying extensions of Brauer relations.
- Developed skills in working with computational algebra softwares Magma and SageMath.
- Additionally attended weekly communications training and seminars.

UCD Summer Undergraduate Research Assistant May 2021 – June 2021

University College Dublin *Completed remotely*

- Six week research internship funded by UCD.
- Supervisors: Dr. Rupert Levene and Dr. Helena Šmigoc (UCD). Project area: spectral graph theory. Studied patterns in orthogonal matrices, inspired by recent work of Levene and Šmigoc.

Undergraduate Hamilton Research Assistant May 2020 – June 2020

Trinity College Dublin *Completed remotely*

- Six week research internship funded by TCD. Group project, worked with two other students.
- Supervisor: Dr. Nicolas Mascot (TCD). Project area: symbolic integration. Wrote symbolic integration algorithms in C.

Mathematics Teaching Assistant September 2019 – May 2022

Trinity College Dublin *Dublin, Ireland*

- Acted as teaching assistant for 3rd/4th year maths MAU34107 Combinatorics module in Autumn 2021 term. This involved organizing and teaching weekly tutorial sessions, and correcting homework assignments. Lecturer: Dr. Ruth Britto
- Previously corrected assignments for MAU22101 Fields, Rings, and Modules, MAU33E01 Third year maths for engineering, MAU11101 Linear Algebra I, and MAU11204 Analysis on the real line.

Academic Achievements

Scholarships:

- Trinity Studentship in Mathematics (2022): Awarded by Trinity College, Cambridge. One year studentship covering course fees and living expenses during completion of MASt.
- George Moore Scholarship (2022): Succesful in Irish scholarship programme which supports students who wish to undertake a Master's degree in the US, Canada, Europe or the UK. Accepted funding partially, due to the above.

Prizes:

- Trinity Dublin Research Prize (2022): Awarded by Trinity College, Cambridge for being the strongest candidate admitted from Trinity Collge, Dublin.
- Bishop Law Prize (2022): Award presented for graduating first in class.
- Hamilton Prize (2021): Awarded by the Royal Irish Academy. Award presented to the best undergraduate mathematics students in their final year of study, as nominated by their university.
- Minchin Prize (2021): Award presented for achieving highest third year math/physics results.
- Lloyd Exhibition Prize (2021): Award presented for achieving highest third year mathematics results.
- Michael Roberts Prize (2020): Award presented for performance in TCD Scholarship Exams.
- Rowe Prize (2020): Award presented for achieving highest second year mathematics results.
- Townsend Memorial Prize (2019): Award presented for achieving highest first year mathematics results.

Technical Skills

Programming Languages: C, Python, Haskell, Prolog, HTML/CSS.
Others: Git, LaTeX, Mathematica, Magma, GAP, SageMath, Microsoft Office, Linux, RStudio.