Xander Povey
+44(0)7759 439983, xpdirect@outlook.com

EDUCATION

PhD *Low-Dimensional Topology (ongoing)* 2024-2028
Imperial College London
Supervisor: Steven Sivek

MSc *Pure Mathematics* 2023-2024
Imperial College London
Thesis supervisor: Simon Donaldson

BA, MA *Mathematics* 2020-2023
Trinity College, University of Cambridge

A-Levels 2018-2020
Exeter Mathematics School
   Three A*s in Mathematics, Further Mathematics and Physics.

GCSEs 2016-2018
Torquay Boys' Grammar School
   Six 9s, one 8, three 7s and a 6.

RESEARCH INTERESTS

My interests lie in low-dimensional topology and gauge theory. Specifically, I am thinking about problems of knot concordance using equivariant Seiberg-Witten theory.

PROJECTS

Serre spectral sequences and homotopy theory 2025
Supervisor: Steven Sivek

Family Seiberg-Witten equations 2025
Supervisor: Aleksander Doan

The Seiberg-Witten equations and four-manifolds 2024
Supervisor: Simon Donaldson

Cameras on trains 2024
Solve for X, Martingale Foundation

Curvature estimates and Bernsein's problem 2023
Supervisor: Neshan Wickramasekera

TEACHING

- At Imperial:
  - Senior Graduate Teaching Assistant:
    - Groups and Rings Term 1 2025/26,
  - Graduate Teaching Assistant:
    - Analysis II Term 2 2024/25,
    - Linear Algebra and Numerical Analysis Term 2024/25,
    - Linear Algebra and Numerical Analysis Term 2 2023/24,
    - Analysis II Term 1 2023/24,
- At Cambridge:
  - Part IB Topology Lent 2025/26,
  - Part II Algebraic Topology Michaelmas 2025/26,
  - Part II Differential Geometry Lent 2024/25,
  - Part II Algebraic Topology Michaelmas 2024/25,
- STEP II & III marking 2025.

FUNDING AND AWARDS

- Best MSc Pure Mathematics student in cohort award 2024.
- Best MSc Pure Mathematics poster presentation award 2024.
- Winner of "Solve for X 2024". Awarded for best presentation of research to a panel of judges from both industry and academia.
- Martingale Scholarship (2023-2028) for postgraduate study in mathematics.
- Keasbey Bursary (2022) for assistance in achieving my academic goals by recommendation of my tutor.
- Trinity College exam prize (2021) for exceptional performance in exams.
- Trinity College Junior Scholarship (2021-2022) for exceptional performance in exams.
- Cambridge Bursary (2020-2022) and Trinity College Maintenance Grant (2022-2023).

TALKS AND PRESENTATIONS

- Imperial Junior Geometry Seminar Autumn 2025, title: "The manifold faces of the manifolds of the fourth dimension",
- Two talks at Aleksander Doan's geometry reading seminar on the Seiberg-Witten family equations,
- Keynote speaker at Imperial MSc poster presentation 2025,
- London low-dimensional topology seminar Autumn 2024: "Introduction to Seiberg-Witten Theory".