

Research Interests

- Geometric Analysis, Calculus of Variations, Elliptic + Parabolic PDE, Geometric Measure theory.

Papers

- *Gradient flow of phase transitions with fixed contact angle*. Joint with Mayu Takada, Yoshihiro Tonegawa, and Myles Workman - arXiv:2411.17979, submitted.
- *On isolated singularities and generic regularity of min-max CMC hypersurfaces*. Joint with Costante Bellettini - arXiv:2307.10388, submitted.

Employment

- J.J. Sylvester Assistant Professor at **Johns Hopkins University**.
From: July 2024 – July 2027.

Education

- PhD in mathematics at **University College London**.
Supervisor: Costante Bellettini.
Completed: July 2024.
- Master of mathematics (MMATH) at **The University of Warwick**.
Completed: July 2020.

Teaching

- Course leader and instructor at **Johns Hopkins University**, since 2024:
 - Calculus on Manifolds, Spring 2025.
 - Calculus I (Physical Sciences and Engineering), Fall 2024.
- Teaching assistant at **University College London**, 2020 – 2024:
 - Foundations, Mathematics for Science, Measure Theory, Probability Theory.
- Undergraduate supervisor at **The University of Warwick**, 2019 – 2020:
 - Abstract Algebra, Analysis I + II, Differential Equations, Foundations, Geometry & Motion.

Organisation

- Department representative for early career researchers at University College London, 2022 – 2024.
- Lead organiser for *Early Career Researchers in Mathematics*, June 2022.
- Co-organiser for the *Warwick Imperial Autumn Meeting*, November 2019.

Awards

- PhD studentship funded by the *Engineering and Physical Sciences Research Council*.
- For *Early Career Researchers in Mathematics 2022*:
 - Heilbronn Institute for Mathematical Research, £7000.
 - London School of Geometry and Number Theory, £6200.
 - London Mathematical Society, Scheme 8 - Postgraduate Research Conference Grants, £2500.

Seminar Talks and Research Visits

- Invited speaker at the *Johns Hopkins Analysis & PDE seminar*, September 2024.
- Invited by Martin Li to the *Chinese University of Hong Kong* for one week, March 2024.
- Invited by Yoshihiro Tonegawa to the *Tokyo Institute of Technology* for two weeks, March 2024.
- Invited speaker at the *University of Tokyo Analysis seminar*, March 2024.
- Invited speaker at the *King's College London Analysis seminar*, February 2024.
- Invited speaker at the *CUHK Joint Geometric Analysis Seminar*, December 2023.
- Talks at the *Imperial College Learning Seminar in Geometric Analysis*:
 - *The Regularity Theory of Stable Minimal Hypersurfaces*, November 2023.
 - *Tangent Cones and the Singular Set of Area Minimisers*, November 2023.
- Talks at the *London Geometric Analysis Reading Seminar*:
 - *The Frequency Function for $\mathbb{Z}/2$ Harmonic Spinors*, March 2023.
 - *L^p Bounds and Bernstein Theorems*, October 2021.
 - *The Isoperimetric Inequality for a Minimal Submanifold in Euclidean Space*, June 2021.