

Méabh Allen

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EDUCATION

UC Berkeley <i>PhD candidate in Physics</i>	Berkeley, USA <i>Jan. 2022 - Present</i>
Imperial College London <i>Masters in Quantum Fields and Fundamental Forces</i>	London, UK <i>Oct. 2020 - Oct. 2021</i>
Technical University of Munich <i>Erasmus Exchange Program</i>	Munich, Germany <i>Oct. 2018 - Sep. 2019</i>
University College Cork <i>Joint First Class Honours B.S. in Mathematics and Physics</i>	Cork, Ireland <i>Sep. 2016 - May 2020</i>

AWARDS

CIQC Seed Funding	2024
Leo Falicov Fellow	2023
Heising-Simons Fellow	2022

RESEARCH EXPERIENCE

PhD Thesis <i>Prof. Joel Moore</i> Non-equilibrium quantum dynamics of critical systems.	Jan. 2022 – Present <i>University of California, Berkeley</i>
Masters Dissertation <i>Prof. Arttu Rajantie</i> “The Kosterlitz-Thouless phase transition in spin models and quantum field theory.”	May 2021 – Oct 2021 <i>Imperial College London</i>
Tyndall National Institute Research Assistant <i>Dr. Stefan Schulz</i> “Modelling the temperature dependence of photoluminescence properties of disordered AlGaN quantum wells for ultraviolet light emission: A kinetic Monte Carlo study.”	May. 2020 – Aug. 2020 <i>Tyndall National Institute, Ireland</i>
Bachelors Thesis <i>Prof. Stephen Fahy</i> “Surface vibrational modes in Bi ₂ Te ₃ & Bi ₂ Se ₃ , two layered topological insulators.”	Jan. 2020 – May 2020 <i>University College Cork, Ireland</i>

PRESENTATIONS AND PUBLICATIONS

J. Wei and M. Allen et al., “Shallow Global Quenches in Critical Spin Chains,” <i>in preparation</i> .
“Kibble-Zurek dynamics vs dissipation in critical spin chains,” <i>APS Global Summit</i> (Mar 2025).
“Correlations induced by quench protocols in critical spin chains,” <i>APS March Meeting</i> (Mar 2024).
J. A. Sobota et al., “Influence of Local Symmetry on Lattice Dynamics Coupled to Topological Surface States,” <i>Phys. Rev. B</i> , 107, 014305 (Jan 2023).
Y. Huang et al., “Ultrafast Measurements of Mode-Specific Deformation Potentials of Bi ₂ Te ₃ and Bi ₂ Se ₃ ,” <i>Phys. Rev. X</i> , 13(4), 041050 (Dec 2023).

TEACHING/OUTREACH EXPERIENCE

- Graduate Student Instructor** | *Physics 141b* Jan. 2024 - Present
Teaching assistant for UC Berkeley's Physics 141b, an upper-level solid state course for Physics majors.
- Graduate Student Instructor** | *Physics 7a* Aug. 2023 - Dec. 2023
Teaching assistant for UC Berkeley's Physics 7a, an introductory course on mechanics for non-Physics track students.
- Graduate Student Manager** | *CIQC, UC Berkeley* Jan. 2023 - Present
Lead role on the Challenge Institute for Quantum Computation organizing team planning quantum computing-related seminars and networking events. Graduate representative of CIQC on outreach trips, such as to the Chicago Quantum Forum, NSF HQ and the Quantum Showcase on Capitol Hill.
- Undergraduate Student Instructor** | *Physics 2106* Jan. 2020 - May. 2020
Teaching assistant for University College Cork's Physics 2106, an astrophysics and special relativity course for Physics majors.
- Graduate Mentor** | *UC Berkeley COMPASS Mentoring Program* Aug. 2022 - Present
Connect with physics majors from underrepresented backgrounds to discuss questions about STEM, undergraduate life, research and internship plans.
- Founding Committee Member** | *EPONA, University College Cork* Sep. 2019
Equal Physics Opportunities Network in Academia network aimed at promoting gender equality & inclusivity within the physics department & community through workshops, seminars & outreach.

EXTRACURRICULAR

- Volunteer Assistant Trainer at Kheystone Stables** 2023-Present
Equestrian training program.
- University College Cork Physics & Astronomy Club** 2017 - 2020
Lead committee roles in organization of societal events to foster community within the department.
- Founder & Co-Director, Munster Schools Integrated Oratory Competition** 2016 - 2019
Debating competition for high schools throughout southern Ireland.

TECHNICAL SKILLS

Programming: high proficiency in Python and Mathematica for use in coursework and most research to date. Experience modelling molecular dynamics with C++, Monte Carlo simulations with Matlab.

Other languages: CEFR C1 German speaker, proficient in French.

Relevant Masters and graduate school coursework: special topics in many body physics, non-equilibrium statistical physics, quantum field theory, quantum electrodynamics, advanced field theory, unification, particle symmetries, quantum theory of matter, quantum information, differential geometry.