EMILY GAMBLEN

Lancaster, UK • https://emily-gamblen.github.io
emily.gamblen@gmail.com • +44 7413 608 929

CURRENT EMPLOYMENT

• **Lancaster University and University of Manchester** *September 2019 - present*
PhD Candidate in Physics(**Nanoscience**) - Graphene NowNano CDT
Postgraduate Teaching Assistant (PGTA), PG Student Representative & Outreach Ambassador

SKILLS

• **Device and materials characterisation** with AFM, Raman spectroscopy, SEM, low-temperature electronic characterisation in a closed-circuit dilution refrigerator and helium evaporation cryostat, including use of superconducting magnet
• **Clean room device fabrication** including optical lithography, device design and 2D materials
• **Python** for data handling, analysis, graphing and numerical simulation, LaTeX, html
• Native **English** speaker, basic **French** (GCSE) and **Chinese (Mandarin)** (Confucius Institute)

PROJECTS AND EXPERIENCE

• **Using 2D Materials-Based Sensors to Measure Magnetism in 2D Materials** *2020 - present*
PhD Project - Ongoing

· Supervised by Dr Jonathan Prance and Dr Michael Thompson (Lancaster University Physics Dept.)
· In collaboration with Dr Roman Gorbachev (National Graphene Institute, University of Manchester)

• **Postgraduate Representative** *2020 - present*

· Acting representative for all postgraduate research students in the department for both the Student-Staff Consultative Committee and the Physics Staff Advisory Committee
· Successfully lobbied the university to provide a concrete policy on parental leave for PhD Students, improved PGTA access to HR resources and ensured department policy on entitlements, responsibilities and guidelines for PG study is available, in writing, to all PGs

• **Postgraduate Teaching Assistant** *2020 - present*

· Teaching responsibilities (including solo teaching), exam invigilation, marking coursework and chairing presentations from the entire range of undergraduate level courses

• **2D Conference Organising Committee** *2021 - 2022*
https://www.2dconference.co.uk/

· Responsible in collaboration with the other committee members for timetabling, venue, sign-up, sponsorship and transport for 2D Conference 2022, with over 100 participants from Lancaster, Manchester and Cambridge Universities plus invited speakers and exhibitors

• **MPhys Project** *October 2018 - March 2019*
Investigating Development of a New Plastic Dilution Refrigerator

· Development of research skills and gaining experience of the operation and cooling mechanisms of commonly used ultra-cold refrigeration methods including the basics of magnetic and dilution refrigerators
· Produced a prototype design for and investigated the practical feasibility of a miniature plastic dilution refrigerator.

CONFERENCES, PRESENTATIONS AND PRIZES

- **Upcoming: CMQM 2023, Birmingham** *28-30 Jun 23*
  talk: Probing the Superconducting Transition in 2D Materials with Graphene-Based SQUIDs
- **Upcoming: CMD-30, Milan** *4-8 Sept 23*
  talk: In Search of the Meissner Effect in 2D $NbSe_2$

- **Winner: Faculty of Science and Technology PhD Speed Talk Competition** *27 Mar 23*
  talk: 2D Superconductors: Do they levitate?

- **29th International Conference on Low Temperature Physics, Sapporo** *18-24 Aug 22*
  poster: Exploring Applications of Graphene-Based Josephson Junctions
- **International Conference on Ultra Low Temperature Physics, Otaru** *25-28 Aug 22*
  poster as above
- **CMD-29 (IOP Condensed Matter Division)(remote)** *21-26 Aug 22*
  poster as above
- **2D Conference 2022 (Student Conference)** *27-30 June 22*
  poster: Investigating Properties of 2D Materials Using 2D Materials-Based Sensors

EDUCATION AND TRAINING

- **Mandarin Chinese Language Course** *2022 - present*
  Lancaster University Confucius Institute

· Level 1 and 2 complete, Level 3 ongoing

- **Condensed Matter Group Postgraduate Lectures** *2021 - present*
  Condensed Matter Physics group at Lancaster University

· Wide range of topics in short 5-week courses, from advanced condensed matter theory (e.g. topology) to practical electronics to using blender to generate 3d images to scientific programming skills

- **Commercialisation and Innovation Course** *2022*
  Offered by Graphene NowNano CDT with University of Manchester Business School

· Focused on pitching to a business audience for scientific start-up enterprise and intellectual property

- **Advanced European School on Cryogenics Cryocourse** *20-28 Sept 2021*
  European Microkelvin Platform

- **NowNano CDT Training** *2019 - present*
  Manchester and Lancaster Universities

· Training in nanomaterials, broader lectures in ongoing research in other related fields, such as biophysics and medicine, and in project management and commercialisation

- **MPhys Physics Hons** *2015 - 2019*
  Lancaster Unviersity, Lancaster, UK **2i (Upper 2nd Class)**

· Including courses in fluid dynamics, waves and optics, quantum information processing, low temperature physics and semiconductor devices

- **Secondary Education** *2008 - 2015*
  Oldham Hulme Grammar School, Oldham, UK

· A-levels in Biology, Maths, Physics, Gen. Studies, Further Maths, Chemistry **AAAABb**
· 10 GCSEs including English(**A***), Maths(**A***), French(**A**) and Sciences(**A***) **A* - B**