

HELEN PARKER

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www.mywebsite.com

EDUCATION

University of Edinburgh

October 2015 - (expected graduation date: October 2019)

College of Medicine and Veterinary Medicine Ph.D. Candidate - Inflammation

- Collaborating with a team of internationally-recognised and multidisciplinary researchers to deliver innovative healthcare technology to critically ill patients
- Performing optical fibre testing for assessment and clinical applicability for molecular microscopy of the distal human lung
- Improving clinical ease-of-use of a fibre-based lung imaging technology through a post acquisition imaging analysis technique
- Developing a multispectral fibred imaging system to capture biological events and confidently quantify bacterial burdens within the human lung

Conferences and Papers

- **Paper** - *Characterisation and Modelling of Inter-Core Coupling in Coherent Fibre Bundles* - Optics Express, Vol. 25, Issue 10, pp. 11932-11953 (12 May 2017)
- **Invited talk** - *Multispectral fibre endoscope imaging system for enhanced visualisation of smartprobes* - EPSRC All-IRC Conference, The Future of Healthcare Technology, 28th-29th June 2017, Bath, UK
- **Poster** - *Core coupling in coherent fibre bundles for imaging of pathologies in the distal lung* - EPSRC All-IRC Conference, The Future of Healthcare Technology, 28th-29th June 2017, Bath, UK - **poster prize 2nd place**
- **Poster** - *Core coupling in coherent fibre bundles for imaging of pathologies in the distal lung* - Photon16, 5th-8th September 2016, Leeds, UK
- **Poster** - *Imaging and spectroscopic data of pathologies in the distal lung using coherent fibre bundles* - Photonic Systems for Sensing and Metrology Summer School, 25th June 1st July 2016, St. Andrews, UK - **poster prize 1st place**

University of Southampton

Graduated July 2015

MPhys Physics

Selection of Modules: Medical Physics, Applied Nuclear Physics, Wave Physics, Advanced Quantum Physics, Lasers, Vector Calculus, Mathematical Methods for Physical Scientists, Computer Techniques in Physics

MPhys Project

September 2014 - June 2015

- Part of a research group investigating the *chemical synthesis of colloidal nanocrystals for biomedical and physicochemical applications*

Dissertation

September 2013 - January 2014

- Specified my interest in nanoparticle applications to medicine to individually research and write a literature review titled *Laser-Induced Nanoparticle Hyperthermia in Biomedicine*

OUTREACH AND KNOWLEDGE EXCHANGE

Circuits!

Ongoing

Engineer

University of Edinburgh and University of Strathclyde

- Circuits! project is connecting teachers and engineers within Scotland to enable engaging lessons in cutting-edge biomedical engineering research

- Development of an innovative teaching tool to explain how biomedical engineering impacts lives and to inspire the next generation of engineers

The Brilliant Club

Scholars Programme Tutor

January 2017 - present

Glasgow

- The Brilliant Club is the largest university access programme for secondary schools in the UK (England and Wales)
- Selected as one of two PhD students for pilot Scholars Programme tutors in Scotland
- Designed a six week course based on my own PhD research titled *Manipulating the Physics of Light: How We Can Use Lasers to Cure Disease* and produced course handbook

Various Public Engagement Experience

PhD Student Representative

- Edinburgh International Science Festival - assistant on interactive exhibit and performing demonstrations
- British Science Festival - taking the work of my research group to Wales and delivering demonstrations

PROFESSIONAL EXPERIENCE

The Tutor Company

Mathematics and Science Tutor

October 2015 - January 2017

Edinburgh

- Built confidence and interest of children between the ages of 12 and 18 in Mathematics and Science
- Produced learning resources and online articles to engage students with classroom material and science in a wider context

Magnetic Shields Ltd

Research Placement Physicist

Summer months between June 2014 - September 2015

Staplehurst

- Successfully designed a prototype as a solution to a long-standing engineering problem
- Fully redesigned company website, published lay and technical articles on the physics of magnetic shielding for customer audience, and delivered product testing reports for universities and industry

NHS

Volunteer

December 2014 - July 2015

Southampton General Hospital

- Main role involved assisting a group of clinical scientists with analysing and formatting their data investigating a novel method of non-invasive intracranial pressure measurement in patients with severe head trauma

CONTINUING PROFESSIONAL DEVELOPMENT

STEAM Summer School

Student

July 2017

Marathon, Greece

- Transcultural and interdisciplinary summer school designed to train students in science communication through politics, theory and practice
- Wrote an educational play on the science of biodegradable plastic using the framework of the classic story of Cinderella
- Produced a video on the future of robotics and the rapidly changing boundaries of human-robot interactions

Innovation-Driven Entrepreneurship

Student

January - March 2016

University of Edinburgh

- Given training by experts in entrepreneurship, industry and market analysis, business models, growth strategies and leadership

- Worked within a group to initiate a service-based business and analytically assessed its viability based on acquired data

Student Consultancy Program

Volunteer

Academic year 2014/2015

Southampton

- Southampton University in partnership with IBM provides consultancy training to enable students to work with local businesses and charities on eight week long projects
- Exposure to diverse business problems and delivering solutions to local businesses as part of a small team

SKILLS

Experienced on Windows and Mac OS

Programming languages: python, MATLAB

Website development - www.magneticshields.co.uk, www.mywebsite.co.uk

Proficient in a wide range of advanced mathematics

INTERESTS AND ACTIVITIES

As a keen runner I have taken part in half marathons in Edinburgh, Utrecht, and Leiden. I have also recently completed my first marathon in Amsterdam and hope to improve my time in the Brighton marathon in Spring 2018. I am also currently enrolled on a French language course.