Michael Spencer

Personal Data

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CURRENTLY BASED IN: GUILDFORD, SOUTHEAST ENGLAND

PhD student in physics researching biomimetic light harvesting at the new quantum biology doctoral training centre (QBDTC) at Surrey. I consider myself adept at picking up new skills as well as bringing enthusiasm to task when tackling new challenges. I am interested in bringing a scientific approach to a policy role, given the flexibility of approaches required as well as the varied and meaningful nature of the work. My wish is to tackle problems related to sustainability and climate change, the true challenge of our time. My non-scientific roles include; scientific writing (concise, factual and persuasive) and pitching proposals for new projects and funding, managing relationships with international research partners and stakeholders, advising & supervising junior colleagues, and leading experimental physics work for the QBDTC at the Advanced technology institute experimental facilities.

Work Experience

OCT 2018 - PRESENT: PhD candidate in bioinspired molecular photonics at the Leverhulme Quantum Biology Doctoral Training Centre, University of Surrey, Guildford

- Wrote state-of-the-art literature review with international collaborators, and a detailed year-end confirmation report discussing results and conclusions gathered in the context of contemporary scientific literature
- Prepared temperature-dependent high-vacuum photoluminescence experimental setup, writing the apparatus controller code and preparing the automated data analysis suite
- Contributed to a successful £250K grant for new equipment, liaising with industry and research collaborators
- Demonstrated in-class tutorials to both first and second year students, in person and over video conferencing software
- Test processor and results recorder at a COVID rapid testing facility on campus

JUNE – DECEMBER 2017: Master's placement at TRIUMF national particle accelerator lab, British Columbia, Canada

- Generated geometry-specific numerical corrections to experimental data via a (C++) GEANT4 simulation
- Contributed to group meetings, using my technical knowledge to influence others' methods and approaches to their projects
- Helped prepare and monitor the detector during a week-long experimental run

FEB 2013 - MAY 2017: Part-time kitchen assistant, and bar-staff at the ROYAL STANDARD, Wooburn Green

- Working within health and safety guidelines with the kitchen team whilst preparing all dessert dishes promptly during service

Education

MPhys (Hons) Masters degree in Physics, University of Surrey, Guildford (2014 - 2018**)**
Thesis: "A GEANT4 Simulation for Quantifying and Correcting Target and Kinematics Effects in SPICE" | Advisor: Zsolt Podolyak
Attained an average grade of 77% (First-class)

Secondary Education at Burnham Grammar School (2007 - 2014**)**
A-Levels (2014) A*AA, GCSEs (2012): 10 total

Skills

Teamwork and Communication:

- Helped to prepare a £250k grant for new equipment, writing a persuasive funding application

- Delivering presentations to both non-technical audiences and to experts in my field

- Contributed to a published review paper of quantum biology, liaising with internal and international collaborators

- Balanced my research and working with group members to take optical data measurements of their bespoke material systems on my experimental set-up

- Aided both first and second year undergraduate students with problems in tutorials, both in-person and over online video conferencing software

- Worked with collaborators under strict guidelines to develop a detector simulation package and analysis program at TRIUMF, whilst also training colleagues to use the simulation

- Aided with the running of the 'Advanced Energy Materials conference' at the University of Surrey in 2018 and 2019

Computing:

- Competent in use of LaTeX for document and report typesetting of professional documents, as well as Microsoft Office's full suite of software

- Created an optical analysis program alongside the apparatus controller code, both written in python, to visualise patterns in data taken from the experimental set-up

- Developed C++ code for the GRIFFIN collaboration's GEANT4 detector simulation package and used the ROOT data analysis framework to visualise simulation results and find causal relationships between datasets

- Developed FORTRAN 95 programs to solve certain differential equations and to process the graphical results, and created a separate model of the Rutherford Scattering experiment

Interests and Activities

Active gym member with a love of cooking, and an interest in home gardening.

References are available upon request