Andrew R. **McCluskey**

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Education

University of Bath(UBath)/Diamond Light Source(DLS)

BATH/HARWELL-OXFORD, UK

PhD in Chemistry — *SEPT. 2015 - MAR. 2019*

- PhD supervised by Prof. Karen Edler (UBath), Prof. Stephen Parker (UBath), Dr Andrew Smith (DLS) and Dr Jonathan Rawle (DLS)
- Developing computational methodologies and software to improve the analysis of small angle scattering, reflectometry, and grazing incidence small angle scattering
- Applying classical atomistic and coarse-grained simulations to the study of soft matter systems

University of Edinburgh

EDINBURGH, UK

MChem in Materials Chemistry with a Year in Industry — *SEPT. 2010 - JUN. 2015*

- Degree Classification: **First Class**

Research Experience

The Nudelman Group, University of Edinburgh

EDINBURGH, UK

Summer Research & Master's Project Student — *JUN;. 2014 - APR. 2015*

- Using cryogenic transmission electron microscopy to investigate self-assembly of collagen

Cytec Industries

STAMFORD, USA

Temporary Research Intern — *JUN. 2013 - JUN. 2014*

- Researching on the functionalisation and application of polyelectrolyte emulsions

Teaching Experience

University of Bath

BATH, UK

Physical Chemistry Tutor — *SEPT. 2015 - PRESENT*

- Running physical chemistry tutorials for first year natural sciences undergraduate students
- Pioneered the use of Jupyter Notebooks in tutorials to both aid in the students understanding

Computational Laboratory Demonstrator — *JAN. 2016 - PRESENT*

- Demonstrated first and second year undergraduate computational chemistry laboratory exercises, particularly focussing on introducing Python programming
- Helped to develop laboratory exercises to develop skills in Microsoft Excel, an understanding of classical molecular dynamics simulations, and to introduce Python programming for data analysis

Mathematics for Chemistry Lecturer — *SEPT. 2016 - MAR. 2017*

- Delivery of workshops in fundemental mathematical concepts for chemists, ensuring that all chemistry first year students had consistent mathematical background

X-ray & Neutron Techniques for Chemists Lecturer — *JAN. 2016 - PRESENT*

- Delivery of workshops devoted to the analysis of small angle scattering and reflectometry as a component of a final year undergraduate course

Introduction to Unix & Programming Lecturer and Demonstrator — *FEB. 2018 - DEC. 2018*

- Twice assisted in the delivery of a practical workshop designed to introduce PhD student from through-out the university of Unix and programming
- Included leading the "Introduction of Python" workshop, based on Software Carpentry materials

ISIS Neutron Training Course

HARWELL-OXFORD, UK

Lecturer — *MAR. 2017 - PRESENT*

- Twice invited to lecture at the ISIS Neutron Training Course
- Developed and delivered a one hour lecture introducing classical molecular dynamics simulations and showing how they can be applied to neutron scattering
- Further prepared in interactive tutorial presenting how molecular dynamics simulation could be applied to the analysis of neutron reflectometry data

SASSIE Training Course

VARIOUS, UK

Demonstrator

MAR. 2017 - PRESENT

- Aided in the demonstration of the SASSIE biological small angle scattering package at training events for PhD students and Postdocs

pythoninchemistry.org

BATH, UK

Contributor

NOV. 2017 - PRESENT

- Webmaster and contributor to the pythoninchemistry web resource
- Resource designed to introduce chemistry students to aspects of programming, using Python and Jupyter Notebooks
- Developing teaching resources that introduce my basic concepts from programming, such as functions, loops, and plotting

Memberships & Committees

RSC/IOP Neutron Scattering Group Committee

PhD Representative

JUN. 2017 - PRESENT

- Served as a member of the NSG Committee offering the insight of student members

UK Research Software Engineer Association

Member

JUN. 2017 - PRESENT

- A member of UKRSE, a community and awareness organisation for the UK's Research Software Engineers

Royal Society of Chemistry

Associate Member (Postgraduate)

SEPT. 2010 - PRESENT

- Member of the RSC since start of undergraduate
- Took part in a young member focus group for the RSC Scottish Regional Steering Group

Funding Awarded

2018/08/28 **Travel Fund to Attend VICEPHEC18**, University of Bath Travel Fund for Teaching Development – £135

2018/08/28 **Group Bursary to Attend VICEPHEC18**, Royal Society of Chemistry Teriary Education Group Bursary – £70

2017/04/11 **Research Student Travel Grant**, Armourers & Brasiers' Gauntlet Trust – £900

Prizes

2018/10/12 **IUCr Journals Prize for the Best Student Lecture**, SAS2018

2018/06/14 **The Computational Prize – Best Oral Presentation**, University of Bath Bolland Symposium

2018/05/17 **Nominated for Faculty Teaching Assistant Award**, University of Bath Faculty of Science

2017/06/12 **Best Talk Award – Sponsored by Santander**, University of Bath Faculty of Science Graduate School Research Afternoon

Publications

5. McCluskey, A. R., Symington, A. R., Grant, J., Morgan, B. J., Parker, S. C., & Edler, K. J., 2018. Introducing classical molecular dynamics simulation to users of scattering. *(In Preparation)*
4. McCluskey, A. R., Grant, J., Smith, A. J., Rawle, J. L., Barlow, D. J., Lawrence, M. J., Parker, S. C., & Edler, K. J., 2018. Applying molecular simulation to the analysis of lipid monolayer reflectometry. *(In Preparation)*
3. McCluskey, A. R., Sanchez-Fernandez, A., Edler, K. J., Parker, S. C., Jackson, A. J., Campbell, R. A., & Arnold, T., 2018. Bayesian determination of the effect of a deep eutectic solvent on the structure of lipid monolayers. *(Submitted)*. arXiv:1810.07616
2. McCluskey, A. R., Morgan, B. J., Edler, K. J., & Parker, S. C., 2018. pylj: A teaching tool for classical atomistic simulation. *J. Open Source Educ.*, 1(2), 19. DOI: 10.21105/jose.00019
1. McCluskey, A. R., & Edler, K. J., 2018. Model-dependent small-angle scattering for the study of complex organic materials. *Curr. Org. Chem.*, 22(8), 750-757. DOI: 10.2174/1875692115666170612104439