JUSTIN WHITEHOUSE

PERSONAL INFORMATION

email justin.t.whitehouse@gmail.com

phone +44 (0) 7587 224446

EDUCATION

2011–2015 University of Edinburgh, Edinburgh, UK

PhD Statistical Physics

School of Physics and Astronomy
Thesis: *Stochasticity and Fluctuations in Non-equilibrium Transport Models*
Description: I created and analysed models of stochastic processes using mathematical tools, such as stochastic master equations, and Monte Carlo simulations. Understanding these is important for gaining insight into a wide array of mass transport phenomena which are out of equilibrium. This field of research is particularly useful for understanding complex biochemical processes in cells, which are inherently out of equilibrium.
Supervisors: Prof. Martin R. Evans, Dr. Richard A. Blythe

2007–2011 Imperial College London, London, UK

MSci Physics with Theoretical Physics

First Class Honours · Department of Physics
Courses include: Statistical Mechanics, Quantum Field Theory, General Relativity, Group Theory
Masters Project: In this project, I investigated the formation and collapse of communities in social networks with numerical simulations and compared the results with data collected from the interactions between users of an online game.
Masters Project Supervisor: Dr. Tim Evans

2005–2007 Dame Alice Owen's School, Herts, UK

A-Level

Grade A: Physics, Chemistry, Maths, Further Maths.

2005 Dame Alice Owen's School, Herts, UK

GCSE

Grade A*: Maths, Physics, Chemistry, Biology, Japanese
Grade A: English Language, English Literature, History, German

WORK EXPERIENCE

2015–present Personal Tutor, Self Employed

Personal Tutor

I tutor high school students Mathematics and Physics.
I schedule lessons and prepare lesson plans. I accommodate the specific needs of my students to provide different kinds of teaching, such as practicing exam technique or explaining specific topics in detail. I also create and provide my own teaching aids, and additional practice exercises for the students.

2011–2015 Teaching Assistant, University of Edinburgh

Teaching Assistant

Tutor in junior honours courses:
Electromagnetism (1 year), Thermodynamics (1 year), Statistical Mechanics (3 years).
Demonstrator in computing lab sessions for Scientific Programming course (Java).
I assist undergraduate students with the mathematical, computational and conceptual understanding of their assigned problem sets.

Summer 2010 Undergraduate Research Opportunities Placement, Imperial College London

Research Project

I completed a numerical study of community detection algorithms in complex networks with particular emphasis on how well different algorithms perform on networks with different community structures (C++, Python).

Summer 2009 Undergraduate Research Opportunities Placement, Imperial College London

Research Project — I developed time-stamping functionality for grid-computing software used by many universities around the world to process data for CERN, written in Python (https://ganga.web.cern.ch/ganga/).

Summer 2007 — Bar Staff, Strafford Arms, Potters Bar, Herts.

Bar Staff — My duties included serving customers food and drink, and handling money.

PRESENTATIONS

Prize Poster Presentation — March 2013 · ICTP Trieste · Joint winner of the poster prize at the conference: 38th Middle European Cooperation in Statistical Physics.

Poster Presentation — June 2013 · KU Leuven · Presented a poster at the summer school: Fundamental Problems in Statistical Physics XIII.

Oral Presentation — May 2012 · King's College London · Gave a presentation at conference on Statistical Mechanics of Glassy and Disordered Systems.

Oral Presentation — May 2014 · King's College London · Gave a presentation at conference on Statistical Mechanics of Glassy and Disordered Systems.

PUBLICATIONS

November 2014 — Maintenance of order in a moving strong condensate

Journal of Statistical Mechanics: Theory and Experiment — Summary: In this paper we investigated the dynamics of a stochastic model of non-equilibrium mass transport, of the kind which are crucial for understanding, for example, biochemical processes which occur in living cells. I developed Java code to perform numerical simulations, and used python and bash scripts to process the data. I also helped develop a mathematical theory which explains the nature of a phase transition which occurs in this system, and drafted the paper for scientific publication.
Authors: Justin Whitehouse, André Costa, Richard A. Blythe, Martin R. Evans

February 2013 — Effect of partial absorption on diffusion with resetting

Physical Review E — Summary: In this paper I studied a model strategy for searching and locating a target, which involves undergoing diffusion and then reseting one's position to some location to try again, as an improvement on a purely diffusion based search strategy. I derived mathematical formulae for the Mean Time to Absorption of the searcher by the target, and other quantities of interest, in the case where the target has some probability of being receptive to the searcher.
Authors: Justin Whitehouse, Martin R. Evans, Satya N. Majumdar

SKILLS

Computing — Java, Python (Main); C++, bash, git, make, LaTeX, html (Familiarity); LibreOffice, Microsoft Office, Linux, Microsoft Windows, Mac (General Experience)

Languages — English (native) · German (intermediate)

PERSONAL

Interests — In my spare time I enjoy playing the guitar. I also play football and compete in fellrunning and orienteering competitions, and like to go walking in the highlands.

STUDENT ACTIVITIES

University of Edinburgh — 2014–Present · *Condensed Matter Doctoral Training Centre*
I am the current editor of the Outreach Magazine of the Scottish Condensed Matter Doctoral Training Centre. In this project management role, I have edited popular science articles written by other PhD students, organised the submission of these articles, and worked with the layout team in producing a high quality publication. The magazine is scheduled for publication in August 2015.

University of Edinburgh

2012–2015 · *Edinburgh University Hillwalking Club*
I was an active member of the hillwalking club, regularly taking on the responsibility of leading groups on walks in the Scottish Highlands. I have undertaken training for the Mountain Leader (ML) award, and I am working towards the full ML qualification.

University of Edinburgh

2012–2013 · *PIPC President*
I was the president of the Physics Intergroup Postgraduate Committee (PIPC). With my committee we organised social events for the PhD students in the School of Physics, as well as starting the Postgraduate Forum, a regular meeting between PhD student representatives and the Graduate School, to raise issues concerning the PhD student body.

Imperial College London

2008–2011 · *Committee, Imperial College Union Outdoor Club*
I was a committee member of the Imperial College Outdoor Club, for 3 years. As Treasurer for 1 year, I had significant financial responsibilities as well as being responsible for costing all events, setting fees, and balancing the club budget. As Social Secretary for 2 years, I organised social events and helped to increase our membership base.

Imperial College London

2007–2011 · *Imperial College Union Association Football Club*
I was a member of the Imperial College Union Association Football Club for 4 years, strengthening my leadership and teamwork abilities.