Luke Kristopher Davis

Contact Information

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patherlkd

Research Interests

Statistical mechanics, Nuclear pore complex, polymer physics, diffusion through polymer networks and nanoscale physical phenomena.

Education

University College London, Bloomsbury, LDN

Ph.D., Theoretical Biophysics, *Expected:* Winter 2020

- Thesis Topic: *Understanding the Physics Behind the Nuclear Pore Complex*
- Advisors: Bart W. Hoogenboom and Andela Saric

Swansea University, Swansea, Wales

Mphys, Physics (First Class Honours), 20 July 2016

- Thesis: A Parallel Trajectory Swapping Wang-Landau Study Of The HP Protein Model

Mphys Grades

- Quantum Field Theory [85/100]
- The Standard Model of Particle Physics [81/100]
- Phase Transitions and Critical Phenomena [92/100]
- Physics Simulation using High Performance Computing [87/100]
- Quantum Information Processing [80/100]
- Large Molecules and Life [72/100]
- Research Project [84/100]

Awards

University Student Awards — Swansea University, Department of Physics

- PM Davidson Prize for Best Theoretical Project at Level M

Secondary School Awards — Chenderit Secondary School

- **Atticus Cup** For public enthusiam of education.
- **Philosophy Prize** For effort and engagement at AS level Philosophy.
- **Physics Prize** For effort and engagement at AS level Physics.

Programming experience

Languages

- C (4+ years) , C++ (3+ years), Java, Rust, Bash, LaTeX, Perl and Mathematica.

Computing Interests

- OOP, natural language processing, machine learning and high performance computing.

Operating Systems

- Linux, Unix, Windows.

Simulation Methods

- Monte Carlo, Molecular Dynamics and Density Functional Theory (MPI and OPENMP experience).

Teaching Experience

University

- PHAS3459: Scientific programming using object-oriented languages.

Private Tuition

- Mathematics, Physics, Computing [GCSE - University level].

Publications

1. *"A programmable DNA-origami platform for organizing intrinsically disordered nucleoporins"*
   Qi Shen, Patrick D. E. Fisher, Bernice Akpinar, **Luke K. Davis**, Kenny Chung, David Baddeley, Andela Sări ć, Thomas Melia, Bart W. Hoogenboom, C. Patrick Lusk, and Chenxiang Lin. ***ACS Nano***

Conferences

Talks

- Fundamental theoretical approaches to the equation of state, Manchester Jan 2018

Poster Presentations

- *Physical Aspects of Polymer Physics* , Bay campus, Swansea University Sept 2017
- Israel Biophysics Conference Sept 2016

References

Biagio Lucini (Masters Supervisor)
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Swansea University

Bart Hoogenboom (Ph.D Supervisor and Principle Investigator)
Professor Phone: +44(0)20 7679 0606
Department of Physics and Astronomy E-mail: b.hoogenboom@ucl.ac.uk
University College London, London Centre for Nanotechnology