

Gary Davies

EDUCATION

- 2010 - 2011 University of Cambridge – Master of Advanced Study (M.A.St) in Experimental & Theoretical Physics.**
- Part III project – “Energy Distributions of Silicon Nanoclusters” under the supervision of Dr. Gábor Csányi.
 - Courses taken: *Atomic & Optical Physics, Particle Physics, Quantum Condensed Matter Field Theory, Quantum Field Theory, Gauge Field Theory, Quantum Information, Superconductivity and Quantum Coherence.*
- 2007 - 2010 University of Nottingham - BSc (Honours) Mathematical Physics – First Class.**
- **Dissertation:** “*Many-body spin models: Entanglement versus ground state factorisation*” – Supervised by Dr. Gerardo Adesso.
 - Received highest mark in the year for dissertation – results from dissertation published in Physical Review A. URL: <http://pra.aps.org/abstract/PRA/v84/i1/e012301>.
 - **Maths:** Real Analysis, Complex Analysis, Differential Equations & Fourier Analysis, Probability, Vector Calculus, Lagrangian & Hamiltonian Mechanics, Calculus, Linear Algebra.
 - **Physics:** General Relativity, Special Relativity, Quantum Physics, Quantum Statistics, Semi-Classical Quantum Theory, Statistical & Thermal Physics, Advanced Electromagnetism, Solid State Physics.

RESEARCH EXPERIENCE

- Summer 2010 – 10 weeks University of Nottingham Physics Department *Atomic & Optical Physics***
- Awarded a competitive paid summer studentship to work in the ultra-cold atoms lab under the supervision of Prof. Peter Kruger.
 - Turned a £30 webcam into a Beam-Profiler using the Image Acquisition, Image Processing and Optimisation toolboxes in Matlab.
 - Carried out laser-optics calculations to assist in experiment design and setup.
 - Designed and built several electronic components such as differential amplifiers etc.
- Summer 2009 - 8 Weeks University of Nottingham Physics Department *Quantum Condensed Matter Theory***
- Awarded a £1,500 competitive bursary from the Nuffield Foundation to undertake original research into the Jahn-Teller effect in a C60 fullerene ion.
 - Worked on implementing a new algorithm to solve a multi-dimensional unconstrained optimisation problem using Maple.

EXTRA-CURRICULAR RESPONSIBILITIES

- Elected Treasurer of the Physics Society, responsible for managing a budget of over £5,000 and assisting in general management.
- Elected to the Student Staff Feedback Committee for Mathematical Physics, responsible for representing peers’ views on the Mathematical Physics course to the faculty.

INTERESTS

- Basketball - previously played for Cambridge University Lions - Men’s Basketball 2nd team (half-blue standard) and for University of Nottingham Men’s Basketball club.
- Amateur musician - electric guitar, classical guitar and drums.

AWARDS

- Awarded £2,000 scholarship in January 2009 from British Petroleum for excellent academic achievement.