George Smith

PhD Theoretical Physics, Imperial College London,
Phone: +44 7837 113358,
E-Mail: georgerobertsmith@gmail.com

Education

PhD – Exceptional Geometries in Modern Physics – Imperial College London ***2019-present***
Supervisor: Prof. Daniel Waldram

- Work applying methods of K-stability to Supergravity moduli problems. The project aims to translate methods from algebraic and differential geometry into Supergravity, producing new results and inspiring new methods where algebrogeometric methods fall short.
- Give regular research review lectures internally and externally to audiences of around 40 people.

Master of Mathematics (MMath) (Distinction) – Trinity Hall, Cambridge University ***2018-2019***
Awarded Vice Chancellor Award and PhD Scholarship

- Placed in the top 10% of all Mathematicians.
- Completed a Long Summer project on Existence and Uniqueness to the Vacuum Einstein Equations in General Relativity.

BA (Class I) - Trinity Hall, Cambridge University ***2015-2018***
Winner, Trinity Hall Thouless Physics Prize, for performance in physics

- Awarded a Scholars Bursary for academic performance after examination every year.
- Final year project: Used Python to simulate a 2D array of spins interacting under the Ising Model.

Peter Symonds Sixth Form ***2013-2015***

A levels (AS and A2): Mathematics (A*), Further Mathematics (A*), Physics (A*), Chemistry (A*)

Kings School Winchester ***2008-2013***

GCSEs: Completed 11 (4 at Grade A*, 7 at Grade A)

Computing languages and Experience

Python 3 – Numerical Methods Experience
Completed a collection of projects on: Solving ODE's using pre-existing library functions, Monte Carlo Methods, 2D FFTs and Vector Field calculations and plotting.

MATLAB
Data importing and visualisation, function definitions and loops for efficient work with data sets

Numerical methods in Excel
Numerical methods of ODEs, direct implementation of 4th order Runge-Kutta, Simpson and Euler methods. Numerical Solution of PDEs in 2 space dimensions. Numerical Greens function eigenfunction expansions.

HTML, CSS, JavaScript
Self-taught using online resources, to produce and maintain a website to publish my academic and teaching works.

Relevant Employment Experience

QED Tuition: Senior Science Tutor ***2019-present***

As a senior tutor I advise on and create courses for QED Tuition, last year creating and running classes on the creative solutions to problems found in mathematics and physics. I have run multiple large-scale outreach lectures to audiences of 300 or more, discussing topics like Special Relativity and the history of Quantum Mechanics.

U2 Tuition: Science Tutor ***2019-present***

For U2 Tuition I created and livestreamed two six-lecture summer school series aimed at students in their final school years. In each 60-minute lecture I spoke about an area of modern theoretical physics, using diagrams and discussion to introduce advanced concepts.

Imperial Outreach Leader ***2019-present***

As an outreach leader I created and delivered two-hour lessons to groups of students who are disadvantaged or underrepresented in STEM subjects at Imperial. Some of the topics I have created lectures on are Group theory, Geometry and Topology, Integration and Differentiation, Mechanics and Calculus, Probability and Measure and Vectors and their spaces.

Relevant Voluntary Positions

President of the Trinity Hall Natural Sciences Society (2017-18):

A society with around 80 members, I organised guest lectures and a large Natural Sciences event in the final term, attended by around 100 people.

Trinity Hall Undergraduate Body Treasurer (2018-19):

I reformed the society finance guidelines, helping to re-write the undergraduate constitution to increase transparency and reduce the Treasurers' power to deny legitimate spending.

Junior Treasurer (2017-18) and Novice coach (2016-18) of the Trinity Hall Boat Club:

As Junior Treasurer I took purchase requests and wrote cheques, ensuring we had enough money to continue entering races and funding kit orders.

As Novice Coach I coached a crew of 8 novice rowers and a cox over the course of an 8-week term, considering their constantly varying academic timetables and commitments.