

Mathematics alumni

Welcome to our Cambridge Mathematics Faculty alumni newsletter. From a groundbreaking collaboration with the BBC to the appointment of the Chief Scientific Advisor at the Home Office, and from research advances and Part III to our new support programme for university applicants, we hope you enjoy learning more about some of the Faculty's many and diverse activities over this busy term.

We were delighted with the enthusiastic response to our first alumni newsletter in July. Thank you to everyone who took the time to write to us – we very much value your feedback, so do please keep your responses coming (our email address is at the bottom of this newsletter).

Best wishes for the holiday season and for 2018,

Nigel Peake (Head of Department, DAMTP) and Gabriel Paternain (Head of Department, DPMMS)

Fighting flu with maths: BBC Pandemic



Discover how Cambridge mathematicians have joined forces with the BBC to launch a UK-wide experiment combining outreach, citizen science and new research – and what you can do to help!

Nearly a century after the 1918 Spanish Influenza outbreak, which killed at least 50 million people worldwide, the potential threat posed by a global flu pandemic is still so serious that it is identified as a possible civil emergency in the UK Government's Risk Register. Mathematical models which simulate how a highly contagious disease may spread are crucial in formulating a response plan – but the accuracy of the models depends on the data that goes into them.

Now, a groundbreaking citizen science collaboration between Faculty of Mathematics researchers and the BBC invites every adult in the UK to contribute to research to combat future pandemics.

[Read more](#)

[Read more](#)



Cambridge Perspectives: Professor Julia Gog and the BBC Pandemic project

Julia Gog is Professor of Mathematical Biology in the Department of Applied Mathematics and Theoretical Physics. In this video she explains the mathematics behind the BBC Pandemic project, and how public engagement can contribute to scientific advances.

[Watch](#)

Welcome to the Stats Lab

DNA, driverless cars and random walks: discover the work of the Statistics Laboratory

"The societal impact of statistics is enormous", says Professor Richard Samworth, the new Director of the Statistical Laboratory in the Department of Pure Mathematics and Mathematical Statistics.

Covering statistics, probability theory, mathematical finance and operations research, the economic potential of the research conducted within the Statistics Laboratory is also huge. We talked to Richard Samworth to gain an insight into the work of this world-leading research centre.

[Read more](#)



Cambridge statistician appointed as Home Office's Chief Scientific Adviser

John Aston, Professor of Statistics at the Department for Pure Mathematics and Mathematical Statistics, has been appointed as the Home Office's new Chief Scientific Adviser.

[Read more](#)



Student life: from application to Part III

A 'globally unique' experience: Part III

Part III, the final, optional, year of the Cambridge Mathematical Tripos, is one of the oldest taught masters courses in the world. Attracting outstanding students from across the globe, it is renowned for teaching content based on such cutting-edge research that it may not even have made it into the textbooks yet.

We talked to students and staff to discover more about what makes Part III unique.

[Read more](#)



Widening access: helping university applicants take the next STEP

The Faculty's new free online STEP Support Programme helps school students prepare for the STEP exam, which forms part of conditional offers to read Maths at Cambridge. The programme aims to give all university applicants the opportunity to reach their mathematical potential, no matter what their educational background. "The hope is to make a real difference by levelling the playing field", says Faculty Admissions Officer Dr Orsola Rath Spivack.

As this year's applicants arrive in Cambridge for admissions interviews, we asked some of the first students to benefit from the STEP Support Programme last year about the difference it made to them.

[Read more](#)





Solving a very hard problem with a quantum device

Mathematicians know that problems can get a lot harder as their size grows. A famous example is the travelling salesman problem, a so-called 'NP-hard problem'. Now, Professor Natalia Berloff and colleagues have proposed and built a new quantum device that can solve an NP-hard problem using particles that are both light and matter.

[Read more](#)

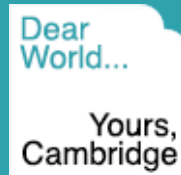


'The Unreasonable Effectiveness of Physics in Mathematics'

In his 2017 London Mathematical Society Popular Lecture, Professor David Tong explored the relationship between physics and mathematics. Watch his fascinating and accessible talk to discover how in the past few decades this relationship has taken a surprising – and exciting – twist.

[Watch](#)

Our campaign for the University and Colleges of Cambridge is raising funds to attract the brightest minds, create the finest facilities and give the freedom to create more world-changing ideas. To do this, we need your help.



Faculty of Mathematics

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