

# FACULTY NEWS BULLETIN

8 October 2020

## ANNOUNCEMENTS

The Faculty would like to extend a warm welcome to all new members of staff, students and visitors who have joined us over the last few months.



### Professor John D Barrow FRS, 1952 - 2020

The Faculty is deeply saddened by the death of [John D Barrow FRS](#), Professor of Mathematical Sciences, on 26th September 2020. He was a renowned cosmologist and mathematical physicist who also had a profound influence on the public understanding of science through his outreach lectures, his many popular science books, and his leadership of the Millennium Mathematics Project.

### Translating Genomics in Oncology 2020

The CRUK Cambridge Centre's [Onco-Innovation Programme](#), jointly with the [Early Detection Programme](#) and [University Enterprise Zone](#) are launching an exciting virtual event and online multidisciplinary challenge on Monday 12<sup>th</sup> October, which features the opportunity to win amazing prizes and develop collaborative research.

The event entitled [Translating Genomics in Oncology 2020](#) (TGIO) takes place from 10:00 - 14:30 BST and aims to increase awareness of entrepreneurship opportunities in Cambridge related to genomics in oncology, and foster multidisciplinary collaboration to solve key challenges across the entire patient pathway from risk prediction to treatment monitoring.

They are encouraging participation from researchers involved across all relevant disciplines, including clinical, biological, mathematical, and computational sciences to name a few. Please [click here to register](#) and to find out more details.

Come and hear from our speakers discussing the challenges of translation, funding opportunities and routes for translation, clinical considerations, and experiences from their own translational journey. Our expert panel will also be on hand to offer their top tips for commercialisation and answer your questions.

### Challenge Launch

Supported by the [University Enterprise Zone](#), [Start Codon](#), [Illumina Accelerator](#) and [Cancer Research UK](#), the TGIO event will see the launch of the multidisciplinary entrepreneurial challenge titled **"Use of Genomics to Transform the Cancer Patient Pathway: Addressing Unmet Needs"**

They are seeking to build on your ambitious, multidisciplinary ideas to provide solutions for key unmet needs in areas such as Prediction, Early Detection & Diagnosis, Patient Treatment & Response, Data Analysis, Interpretation & Presentation, Translation & Clinical Adoption, to drive forward the use of genomics for the benefit of cancer patients.

Participation will mean you will receive mentoring and guidance to help frame your research in an entrepreneurial context and support your future steps towards translation, with prizes awarded to the most successful applications. Prizes include:

- £10,000 Sequencing Grant from Illumina Accelerator Cambridge
- £5,000 Entrepreneurial Research Grant from Cancer Research UK
- Entrepreneurial Mentorship and Coaching Sessions from the Illumina Accelerator and Start Codon teams
- Fast-track to final application round of Illumina Accelerator Cambridge

To enter the challenge, your lead applicant must be an academic based in Cambridge, have attended the TGIO event on 12<sup>th</sup> October and be part of a multidisciplinary team application.

To register for the TGIO event, click [here](#). If you have any questions or would like more information, please contact the TGIO Team at [tgio@crukcambridgecentre.org.uk](mailto:tgio@crukcambridgecentre.org.uk).

## EVENTS

### World Mental Health Day

As [World Mental Health Awareness Day](#) approaches on 10 October please be aware of the events and resources available to support staff wellbeing across the University.

### Well being Workshops

A series of four, hour-long workshops facilitated by Kate Ahl of the [Staff Counselling Centre](#), have been designed to help participants build sustainable practices to support their wellbeing and resilience in the face of life's inevitable stresses.

#### **Workshop 1: The Concept of Wellbeing**

This workshop starts from the premise that wellbeing is not the absence of suffering, but a sustaining engagement with activities that buffer us against life's stressors. In this workshop, the focus is on wellbeing in the context of our own lives, taking in our interactions with others; our engagement with the time and place we live in; our relationship with ourselves; and the values, principles, and beliefs that make life meaningful for us. Through reflective exercises, we will consider what we might like to do differently, to support our long-term wellbeing. View the recorded talk [here](#).

#### **9 October, 2pm-3pm - Workshop 2: Self-Compassion**

Self-compassion is a way of relating to ourselves with kindness, even when we experience the inevitable failures and setbacks that are part of life and learning for everyone. In this workshop, we will consider how self-compassion can help with nervous system regulation and increase our resilience. We will address common points of resistance to the idea of self-compassion, and introduce some simple ways to cultivate a compassionate relationship to ourselves. Book your place [here](#).

#### **16 October, 2pm-3pm - Workshop 3: Mindfulness and Emotion**

We often regard emotions as inconvenient, or unprofessional. But our emotions can give us important information about our environment, and if we are able to identify them and tolerate them, we are less likely to 'act out', to become overwhelmed, or to get stuck in cycles of unhelpful behaviour. This workshop invites us to expand our emotional vocabulary and to be curious and non-judgmental about our emotions, with the view that the more we know about how we feel, the more choice we have in how we respond to our feelings. Book your place [here](#).

#### **23 October 2pm-3pm - Workshop 4: Freedom and Responsibility**

The feeling of being 'stuck' can cause great distress. This workshop looks at how we can identify opportunities for choice and freedom even in situations where our options may seem very limited. We will consider ways to take up our responsibility to ourselves, by making deliberate choices about how to use our time and emotional energy, bolstering our sense of dignity and autonomy. Book your place [here](#).

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### Summer Research Festival

A series of student summer research talks to coincide with the start of term will be held in the afternoon of Monday 12 October. This year will feature talks from the CMP programme (which facilitates projects in other Departments and in industry) as well as research done in the CMS. All talks will be delivered via Zoom, and anyone is welcome to attend; the links will be sent out on Monday morning. Please see the programme attached at the end of this Bulletin.

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### The Emmy Noether Society

The Emmy Noether Society are holding an informal welcome event for new female & non-binary maths undergraduates, 4.30-5.30pm on Wednesday 14 October.

This event will be held via Zoom with a brief general welcome and then "breakout rooms", where attendees will split up into groups of 6-7 people, and will get to chat among themselves. There will be some faculty members scattered across the rooms, and they are hoping that some of you will join, as the new students are expected to have lots of questions! In order to join, please register [here](#) - you will then receive a link for the meeting. (If you're planning on attending, please register ahead of time).

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### Race Awareness Session: Whiteness and Being a White Ally

14 October, 11am & 15 October, 12noon and 27 October, 11am & 29 October, 12 noon

Come along to these sessions if you'd like to develop some practical tools for becoming a white ally and build a strong antiracist identity. The training will be split into two 1hour sessions and you must be able to attend both sessions. Book [here](#) for 14 & 15 October or [here](#) for 27 & 29 October.

## LGBT+ Staff Network Welcome Event

21 October, 5.30pm-7pm

Following a few short introductions from the LGBT+ Staff Network Committee, Matthew Psycharis will join the event talking about his first-hand experience in the legal fight for marriage equality in Australia. You will then have the opportunity to meet each other informally over ZOOM to discuss the talk amongst other topics of interest.

In many of the world's liberal democracies, we may now take for granted the simple proposition that two consenting adults, regardless of sex or gender, may be lawfully married. The recognition of marriage equality speaks to a more fundamental principle – that our law ought not to discriminate between persons on the basis of gender, sex or sexuality. And yet, until only a few years ago, Australia had outlawed same-sex marriage ('SSM'). In 2016-2017 this became a bitter battleground, which, after stasis in Parliament, ultimately culminated in a High Court constitutional challenge and a legally-mired national plebiscite.

Matthew was one of the lawyers who advised the SSM campaigners, and who ran the court case challenging the lawfulness of the government's stance. His legal team was comprised entirely of volunteers and was arrayed against the full resources of the Australian Government. In this Chatham House talk, he will describe how a strategy of marriage equality didn't just mean marriage equality at all costs – in the eyes of the campaigners, it had to be done the right way. With dignity. And that meant a constitutional showdown with a government committed to dragging the question of legal equality through an ugly public vote. It also meant dealing with opposition from within the legal profession. It's a story of how, when pursuing change, means can be just as important as ends.

To attend, please book [here](#).

## GENERAL INFORMATION

### Return to Work Protocol

At the end of September updates were made to the CMS COVID protocol. Please read the updated version of the [CMS COVID Protocol](#) to ensure you are aware of the procedures to follow and measures in place when visiting CMS. This is particularly important to those of you who have recently or who are about to join us in Cambridge.

As a reminder, please also ensure that you sign in and out when arriving or leaving CMS <https://register.maths.cam.ac.uk/>.

### Update for staff and students with possible COVID-19

The University testing pod outside the Department of Engineering has now re-opened, and staff and students showing possible symptoms of COVID-19 can now request a test at this location or at the Cambridge University Hospitals (CUH) pod on the Addenbrooke's site. Please note that access to the Engineering pod is by bike or on foot while wearing a mask; access by car is possible but very limited.

As a reminder, there is a revised list of symptoms for you to be aware of, and which you should act on to request a test for COVID-19. These now ONLY include one or more of the following:

- High temperature: this means a feeling of feverishness, or a measured temperature higher than 37.8C.
- New cough: this means a new intermittent or persistent cough, or worsening of your usual cough if you have one.
- Loss or change in your sense of taste or smell, particularly in the absence of nasal congestion.

Should you develop any of these symptoms, please isolate immediately and contact CUH Occupational Health to arrange a test on 01223 216767.

We regret that, from now on, we will only be able to offer swab tests to students, University and College staff, and certain defined affiliates, but NOT household contacts of staff and students. This is because thousands of students have returned to Cambridge and testing capacity is limited. Therefore the need is to focus this capacity on directly reducing transmission within the University. This decision may be revised if greater capacity becomes available. For more information, please see the [StaySafeCambridgeUni website testing page](#).

# Summer Research Festival 2020

## Room A (CMP)

<b>Session 1</b>	<b>2:00-3:30</b>	<b>Host/Supervisor</b>	
Sam Martin	Motion Tracking in Synthetic Embryos	Leila Muresan	CAIC
Chelsea Williams	Understanding chromatography failure using time series analysis	Georgina Armstrong	GSK
David Orrell	Dynamic borrowing in clinical trials	Douglas Thompson	GSK
<b>Introductions and Thanks</b>	<b>3:15-3:30</b>	<b>Main Room</b>	
<b>Session 2</b>	<b>3:30-4:40</b>		
Simon Heuveline	Gaussian Distributions on Riemannian Symmetric Spaces	Cyrus Mostajeran	Dept of Engineering
Matteo Lyon	Symmetry invariant feature maps for ML	Gabor Csanyi	Dept of Engineering
Vincent Tse	Iterative solver for highly ill conditioned system	Gabor Csanyi	Dept of Engineering
<b>CMP Feedback Session</b>	<b>3:30-4:00</b>		
<b>Session 3</b>	<b>5:00-6:00</b>		
James Bayliss	Towards a quality metric for volcanic ash detection	Joelle Buxmann	The Met Office
Daniel Puerta Magias	Verification of stress simulator against analytical results	Artem Babayan	Silvaco
Alex Souly	Modelling disease dynamics in a population of bats	Olivier Restif	Dept. of Veterinary Medicine

# Summer Research Festival 2020

## Room B

<b>Session 1</b>	<b>2:00-3:00</b>	<b>Host/Supervisor</b>	
Jiyang Du	Deep Plug-and-Play Algorithms for Inverse Problems	Angelica Aviles-Rivero and Carola-Bibiane Schönlieb	DAMTP
Mark Schoene	Incorporating Natural Language Processing into Optical Character Recognition	Julian Gilbey	DAMTP
Zakhar Shumaylov	Mathematical protein model for density structure estimation	Carola Schonlieb	DAMTP
<b>Introductions and Thanks</b>	<b>3:15-3:30</b>	<b>Main Room</b>	
<b>Session 2</b>	<b>3:30-4:30</b>		
Maria Gutierrez	Graviton correlations from inflation	Enrico Pajer	DAMTP
Charalambos Roussos	Dark matter effects on supermassive BH binaries	Michalis Agathos	DAMTP
Pinphong Sukkaew	Gauge theory origin of Bosonic String Theory	David Skinner	DAMTP
<b>Session 3</b>	<b>5:00-6:00</b>		
Luke Phillips	Random forests: Change point regression meets machine learning	Florian Pein	Statslab
Etaash Katiyar	Causal Inference in Genetics	Qingyuan Zhao	DAMTP
Ming Yang	Optical and Fluid-dynamical Properties of a kind of Dinoflagellate	Raymond E Goldstein	DAMTP

# Summer Research Festival 2020

## Room C

<b>Session 1</b>	<b>2:00-3:00</b>	<b>Host/Supervisor</b>	
Jiacheng Tang	Stable Commutator Length	Nicolaus Heuer	DPMMS
Beomseok Kwon	SL(2)-characters of free groups and trace equivalency	Prof Emmanuel Breuillard	DPMMS
Pavel Turek	Bruhat Tits tree and its Nekrashevych-Rover group	Dr Chris Brookes	DPMMS
<b>Introductions and Thanks</b>	<b>3:15-3:30</b>	<b>Main Room</b>	
<b>Session 2</b>	<b>3:30-4:30</b>		
Thomas Read	Algebraic theories	Martin Hyland	DPMMS
Zev Shirazi	Dynamic Algebra	Martin Hyland	DPMMS
<b>Session 3</b>	<b>5:00-6:00</b>		
Segev Gonen	Stability rates of equations in permutations	Oren Becker	DPMMS
David Wörn	Increasing and decreasing subsequences	Imre Leader	DPMMS
Harvey Yau	Periodicity in Infinite Arrays	Professor Imre Leader	DPMMS

# Summer Research Festival 2020

## Room D

<b>Session 1</b>	<b>2:00-3:00</b>	<b>Host/Supervisor</b>	
James Coe	Asymptotic series for a highly oscillatory wave equation	Dr Claude Warnick	DAMTP/DPMMS
Pascal Jelinek	Scattering resonances and wave propagation in boreholes	Dr Claude Warnick	DAMTP/DPMMS
Euan Tebbutt	Computing Solutions of the Hartree-Fock Equation on $R^3$	Simon Becker	DAMTP
<b>Introductions and Thanks</b>	<b>3:15-3:30</b>	<b>Main Room</b>	
<b>Session 2</b>	<b>3:30-4:30</b>		
Alexander Kent	Percolation and The Bunkbed Conjecture	Dr Tom Hutchcroft	DPMMS
Petar Nizic-Nikolac	Percolation and The Bunkbed Conjecture	Dr Tom Hutchcroft	DPMMS
Mervyn Tong	Faithfulness of the canonical representations of a generalisation of Coxeter groups	Ailsa Keating	DPMMS