

# School of Mathematics and Statistics Newsletter

April 2023

## ***Congratulations to ...***

- Ben Swallow, who is a member of the team of investigators from Scottish universities on the EAVE II project that has been awarded the Royal Society of Edinburgh *Mary Somerville Medal* for teamwork and collaborative endeavour. The project has generated scientific analyses and insights that have supported evidence-informed policy and public health response throughout the COVID-19 pandemic. See <https://news.st-andrews.ac.uk/archive/rse-honours-for-st-andrews-academics>  
Ben and Colin McCowan (Medicine) have just been awarded an additional £27k to fund a researcher on public health analyses as part of this.
- Jonathan Fraser on being awarded *Outstanding Teacher (Science/Medicine)* for this year's student-led Teaching Awards run by the St Andrews Students' Association. This is 10 years on from his receiving their *Best Postgraduate Tutor* award in 2013!

## ***Welcome back to ...***

- Lauren Gatherum who has returned to work in the Teaching Support Team following her period of maternity leave. Together with working from home during the covid epidemic, it is the first time for three years that she has actually been in the office!

## ***Visitors***

- In early April, Lindesay Scott-Hayward and Monique MacKenzie were delighted to host Corinne Kendall from North Carolina Zoo to discuss analysis of their Tanzanian vulture tagging project for investigating feeding behaviours and rapid response to poisonings.
- Craig Miller from York, formerly at St Andrews, visited Nik Ruskuc and Matthew Brookes from 3rd-7th April to continue their work on Noetherian semigroups, supported by EPSRC.

## ***Conferences, Talks and Visits***

- At the *British Applied Mathematics Colloquium* (BAMC) held from 3rd-5th April in Bristol, Ben Swallow co-organised a session on 'How to be better prepared for a future pandemic: lessons learned from COVID-19, mpox and the four historic influenza pandemics', in which he spoke on 'Importance of progressive transmissibility of emerging variants in sustaining the COVID-19 epidemic in England'. Also Kairui Li gave a talk entitled 'Quantifying Cytoskeletal Dynamics and Remodeling from Live-imaging Microscopy Data'.
- Colva was invited to give a Morning Lecture at the *British Mathematical Colloquium* (BMC) on the topic of Outreach, and decided to run it as a panel session. The panellists were Chris Budd, Marianne Freiberger and Colin Wright, who discussed why we get involved in outreach, our intended audience and on how the format (e.g. public lecture versus a book) influences what mathematics we describe.
- Tom Elsdon attended online an International Space Science Institute (ISSI) team meeting entitled *Magnetohydrodynamic Surface Waves at Earth's Magnetosphere (and Beyond)* from 27th-31st March, contributing a talk on the use of linear MHD codes in potentially modelling surface waves at sharp density gradients in Earth's magnetosphere.

- Cosima Breu attended the spring meeting of the *Deutsche Physikalische Gesellschaft* (DPG) from 20-24th March in Dresden, Germany, and gave a talk entitled ‘A coronal loop in a box: From energy generation to coronal emission’.
- Charles Paxton and Hannah Worthington represented CREEM at the recent *Science Discovery Day* hosted by the School of Physics and Astronomy. They ran activities on mark-recapture and species discovery featuring some very popular rubber ducks and extremely high-tech deep-sea species fishing equipment.
- Amber Cowans and Mia Goldman, PhD students from CREEM, attended the *Academy for PhD Training in Statistics* training week in Oxford, for statistical modelling and applied stochastic processes.
- Last year Ursula Martin, Honorary Professor in the School, worked with colleagues in Oxford to tell the story of AI through items in Oxford’s Museums and Archives. Details are now online at [www.maths.ox.ac.uk/groups/history-mathematics/imagining-ai](http://www.maths.ox.ac.uk/groups/history-mathematics/imagining-ai) Displays at Oxford’s Bodleian Library and History of Science Museum placed artificial intelligence in its historical context, including the Bodleian’s manuscripts of computer pioneer Ada Lovelace, pages from Mary Shelley’s draft of *Frankenstein*, and notes on computer poetry and draughts from Turing’s collaborator Christopher Strachey. The History of Science Museum lent Stanley Jevons’s remarkable mechanical ‘reasoning piano’ from the 1860s, as well as the earliest plans and prototypes of Charles Babbage’s computers, and a copy of Ada Lovelace’s ‘first programme’. The Imagining AI workshop showcased current scholarship, and a day of live encounters included a Cybernetic Ladybug.
- On 24th March, Deborah Kent spoke at the *Molecular Palaeobotany and Evolution Group* seminar at the University of Edinburgh on ‘Only games with numbers? Phyllotaxis in *On Growth and Form*’. She is also giving a seminar for the *St Andrews Institute of Intellectual History* on 12th April titled ‘Unsuspected Wonders: D’Arcy Thompson and a vision for mathematics’.
- On 5th April, Isobel Falconer and Niels Martens (University of Bonn) gave a talk to the *Cross-Cultural Circa 19th Century Centre* at St Andrews, a group comprised mainly of linguists and historians. They spoke about their collaboration on ‘The Gravitational Constant 1890-1915: from the local to the universal’.
- Alex Stewart and Josh Plotkin (University of Pennsylvania) organised an interdisciplinary workshop *The Future of Mathematical Social Science* online on April 10-11th with around 60 attendees including Konstantinos Alexiou and several others from across St Andrews. The workshop featured 15 speakers from diverse fields including mathematics, journalism, biology, management, psychology and governance.
- Scott Harper visited the University of Bristol from 27th-31st March to see Tim Burness and speak at the conference *New Perspectives in Pure Mathematics*, the fifth and final conference celebrating the move of the mathematics department to the new Fry Building. Despite the namesake, Fry’s Chocolate Creams were sadly not provided at the coffee breaks.
- From 10-17th April, Nik Ruskuc is visiting Peter Mayr, who is spending his sabbatical in Vienna and Linz, to continue their collaboration on direct products in algebra.
- Collin Bleak travelled to Les Diablerets, Switzerland, as an invited speaker at the wonderful conference *Groups of Dynamical Origin, Automata and Spectra* from 19-24th March, and gave a talk ‘Embeddings into finitely presented simple groups’ featuring work with Jim Belk, Francesco Matucci, and Matthew Zaremsky. He also walked on the nearby glacier.
- Alex Rutar visited the *Geometric Analysis Group* at the University of Jyväskylä from 3rd-6th April and gave a talk ‘Assouad dimension and tangents of dynamically invariant sets’.

- Mike Todd and Amlan Banaji attended the event *Ergodic Theory of Group Extensions* at the University of Warwick, which consisted of an LMS Midlands Regional Meeting on 27th March followed by a workshop from 28-30th March. Mike gave a talk at the workshop entitled ‘Almost Anosov flows’.
- Jon Fraser gave a talk ‘Fourier analytic tools in geometric measure theory and dimension interpolation’ at the *Paris-London Analysis Seminar* at University College London on 31st March.

### ***Other News***



- At the annual SUMS *Staff-Student Charity Quiz*, the Applied Team comprised Mark Chaplain, Tom Elsdon, David Rees Jones and Jack Reid, the Statistics Team was made up of Charles Paxton, Michael Papathomas, and Valentin Popov, and there was also a student team. Sadly the Pure Division failed to produce a team. Rounds covered countries’ second largest cities, the foibles of Google Translate for song lyrics, and also mathematics. The students won with 170 points, with the Applied Team on 160, and the Statisticians on 60. While the Statistics Team competed for Scottish Mountain Rescue in honour of J. J. Valletta, the students have raised over £100 for Partners in Health, to bring healthcare to vulnerable communities [www.justgiving.com/page/st-andrews-student-team-1679837302784](http://www.justgiving.com/page/st-andrews-student-team-1679837302784)
- First year PhD student Amber Cowans won 2nd place in the *Scottish National Student Surfing Championships*, held in Aberdeen on 1st April.

### ***Next Issue***

- The next edition of the School Newsletter will be circulated in May. Items may be sent to [maths-news@st-andrews.ac.uk](mailto:maths-news@st-andrews.ac.uk) at any time but a reminder will be sent out a week before the deadline.