

School of Mathematics and Statistics Newsletter

January 2023

Congratulations to ...

- Sam Wallace who successfully defended his PhD on 21st December with a thesis entitled ‘Mathematical models of atmospheric convection: a Lagrangian perspective’.
- to our School’s former undergraduate and PhD student Oliver Allanson, now at Exeter, who has been awarded the *Royal Astronomical Society Fowler Award in Geophysics* for 2023 for early career achievements in astronomy. The award recognised his breakthroughs in quasilinear and non-linear physics of wave-particle interactions in the radiation belts.
- Hazel Wallace for winning the School sweepstake on the World Cup. Hazel had the ticket for Argentina and was presented with the Jules Rimet trophy along with her winnings. Thanks to our Head of School for organising the sweepstake.

Welcome to ...

- Daniel Johnson who joins the Solar and Magnetospheric Theory Group as a new post-doc. Daniel comes to us from the University of Central Lancashire, where he did his PhD with our alumnus, Daniel Brown. Daniel is working on the coronal heating problem with Ineke de Moortel and Alan Hood.

Farewell to ...

- Alan Logan who returns to Heriot-Watt University as a lecturer for their graduate apprentices programme. Alan was a postdoc at Heriot-Watt before coming to St Andrews.

Conferences, Talks and Visits

- On 11th January Deborah Kent visited the University of Edinburgh to use the Edinburgh Mathematical Society archive. She was met with over 100 unlabelled boxes piled in an office. In opening over half of them, she found general maths department detritus: unwashed coffee mugs, decades of departmental paperwork, leftover conference tote bags, loads of mid-1980s journals, and stacks of old MSc theses. What she wanted – but did not find – were manuscripts related to the EMS colloquium associated with the Napier Tercentenary Celebrations in July 1914. The disappointing day was slightly saved by a fruitful stop at the NLS on the way back to Waverley station.





- From 11-17th December, Rosemary Bailey, Peter Cameron, Saul Freedman, Scott Harper, and Colva Roney-Dougal attended a workshop in Arrábida, Portugal. Former School President Kamilla Rekvényi also attended. The workshop was on a problem about permutation groups connected to idempotent-generated semigroups, and in particular the Road Closure Problem (a name that was inspired by recent events around St Andrews!). The workshop was held in an old Franciscan monastery in a national forest on the side of a mountain overlooking the sea south of Lisbon.
- On 29th December, Peter Cameron spoke remotely at a symposium on Discrete Mathematics at the *88th Annual Meeting of the Indian Mathematical Society* at the Birla Institute of Technology in Ranchi, India. His topic was ‘Graphs defined on groups’.
- On 13th January 2023, Kate Mowbray, Thomas Neukirch (in person) and Jack Reid (online) attended the Royal Astronomical Society Specialist Discussion Meeting on *Multi-Dimensional (2D/3D) and Multi-Scale Modelling of Solar Flares* in London. Kate gave a contributed talk ‘Particle energisation in a 3D collapsing magnetic trap model with a braking jet’.
- Cosima Breu visited the Max Planck Institute for Solar System Research in Göttingen from 19th-23rd December where she gave a seminar on ‘Big whirls have little whirls-energy cascades in coronal loops’.
- In the first week of January, Mike Todd visited the Sorbonne in Paris to examine a PhD thesis ‘Ergodic properties of low dimensional flows including dispersive billiards’ by Jérôme Carrand, who passed his viva, and for research discussions on ongoing projects with people there.
- Jonathan Fraser and Natalia Jurga organised an online *One World Fractals* event on 18th January. The speakers were Amlan Banaji, who gave a talk entitled ‘Dimensions of self-affine carpets’, and Hong Wang (UCLA), who spoke on ‘Restricted projections in \mathbb{R}^d ’.
- Michael Papathomas gave an invited seminar to the Department of Mathematics, Statistics and Actuarial Science of the University of Kent on the 8th December, with title ‘Reliable variance matrix priors for Bayesian mixture models with Gaussian kernels for problems of moderately high-dimensionality’.
- Over the winter, Paul van Dam-Bates taught a 4 week applied data analysis course at the Bamfield Marine Science Centre, Bamfield on the West Coast of Vancouver Island, off Canada’s Pacific Coast. During his first ever field trip sampling a beach at night there was a small nearby earthquake. The next night students had a cougar encounter at the same beach that resulted in missing data. Otherwise, the course was safe and indoors.

- On the 26th December Yoav Len gave a talk at the Hebrew University of Jerusalem on ‘Tropical Prym varieties’.

Visitors

- Rebecca Walwyn, from the University of Leeds, is visiting Rosemary Bailey for the whole of the Candlemas semester to have discussions about the design and analysis of clinical trials.

Other News

- Ben Swallow is co-investigator on a grant proposal that has just been funded for about £61k for three months by HDRUKH(Health Data Research UK) and NIHR (National Institute for Health and Care Research) entitled ‘Describing, characterising and predicting winter respiratory accident and emergency attendances, hospital and intensive care unit admissions and deaths’. He is also a collaborator on the grant ‘TARGET-ID Phase 2: Digitally targeted testing for blood-borne virus infections’ which has just been funded for 2 years.
- Sophie Huczynska has been appointed as a member of the *Ethics Committee* of the *European Mathematical Society* from 1st January.

Next Issue

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