

# School of Mathematics and Statistics Newsletter

September 2023

## *Welcome to ...*

- our new research students who are starting this autumn: Lorna Jamieson, Cypres Verbeeck, Amund Klingborg (MathBio); Luke Derry, Ana De Orellana, Saeed Shaabani (Analysis); Yayi Zhu, Joseph Edwards (Algebra); Louis Backstrom, Rachel Drake, Xiahui Li, Grace Edmondson (Statistical Ecology); Gao Chao (Statistical Medicine).

## *Congratulations to ...*

- Robbie Mill, our Modern Apprentice, who has successfully completed his *Digital Support Modern Apprenticeship* qualification with QA in eight months since his official commencement of the qualification in January. Robbie has made very useful and significant contributions to the School since he joined us in late November 2022.

## *Visitors*

- Tom Elsdon hosted Alex Degeling from Shandong University, China from 6-8th September. Alex gave a talk to the Solar Theory Group on wave-particle interactions in Earth's magnetosphere.
- Giusi Capobianco, a PhD student from Rome Tor Vergata, is visiting Yoav Len this semester to work on a project about the Brill-Noether theory of metric graphs.

## *Conferences, Talks and Visits*

- Matthew Brookes, Yung Cho, Ashley Clayton and Nik Ruskuc attended a workshop on *Congruences and Acts in Semigroup Theory* from 22nd August-1st September supported by the EPSRC grant held by Nik and Vicky Gould in York. Matthew, Ashley and Cho all gave talks. Several ongoing sub-projects have been brought to pre-submission stage, and some new ones have been initiated.
- Nik Ruskuc is visiting Robert Gray at the University of East Anglia in Norwich from 11-15th September to work on their joint paper (also with Azeef and East) on free projection generated regular  $*$ -semigroups.
- Scott Harper was the plenary speaker at the joint meeting of *ARTIN (Algebra and Representation Theory In the North)* and *GEARS (Glasgow Edinburgh Algebra Research Students)* at the University of Glasgow on 11-12th September. His two-hour(!) lecture was entitled 'Generating sets for finite groups'.
- Mike Todd visited Fairfield University in Connecticut for ten days to work with Mark Demers on problems in hitting times and escape rates in dynamical systems.
- Alex Rutar and István Kolossváry visited the University of Bristol from 28th August-1st September to continue work on a joint project with Thomas Jordan (a former St Andrews student).
- In late August, Cornelia Oedekoven gave a talk on 'Gibbon monitoring in the digital age' in Kuching, Malaysian Borneo at the *IPS-MPS Congress Malaysia 2023* – the Joint Meeting of the International Primatological Society and the Malaysian Primatological Society.

- From 4-7th September, Rosemary Bailey and Peter Cameron attended the *Royal Statistical Society's International Conference*, held in Harrogate. Rosemary gave a talk on 'Why environmental and agricultural research still need statisticians'. Another speaker was Katharine Preedy, a co-author of Mark Chaplain's. She decided to organise a follow-up workshop on *Statistics in Agricultural Research* on 11th September at BioSS in the James Hutton Institute in Invergowrie in which Rosemary and Peter took part.



Rosemary at the RSS Conference

- Mark Chaplain delivered a talk in [Minisymposium 00114, 'Computational Biology'](#), at *ICIAM (International Congress on Industrial and Applied Mathematics) 2023* in Waseda University, Tokyo. The talk focussed on computational simulation results from a three-dimensional hybrid atomistic-continuum model that describes the invasive growth dynamics of individual cancer cells in tissue. This is joint work with Nikos Sfakianakis and former St Andrews PhD student Dr Linnea Franssen now at Roche Pharmaceuticals, Basel.
- Nikolaos Sfakianakis is participating in the workshop *Modelling Diffusive Systems 2023: Theory and Biological Applications* from 11-15th September at the International Centre for Mathematical Sciences (ICMS) in Edinburgh, website [ICMS-MoDIS 2023](#).
- Fiona Macfarlane gave an invited mini-symposium talk on her research at the *European Conference on Numerical Mathematics and Advanced Applications (ENUMATH)*, held from the 4-8th September at the Instituto Superior Técnico in Lisbon.
- Andy Wright ran his third and final workshop at the *International Space Science Institute* in Bern, Switzerland. The workshop focused on the theory and observations of waves in the medium surrounding the Earth permeated by the terrestrial magnetic field. This comprised an intensive week 14-18th August of research presentations and discussions, as well as identifying collaborative projects for the team of nine international scientists. Andy and Tom Elsdon (in person), and Rachel Davies (remotely) all participated and gave talks.
- *PiFORUM 23*, an annual conference for women and non-binary maths students and early career researchers organised by the Piscopia Initiative, took place on 7th September at the University of Birmingham. Victoria Ironmonger and former St Andrews students Gemma Crowe, Kamilla Rekvényi and Ailsa Robertson attended. Gemma and Victoria were part of the organising team, Gemma and Kamilla were panellists in a discussion on career paths in mathematics, and Victoria gave a short talk 'Well quasi-order for combinatorial structures under consecutive orderings' and took part in a poster competition.
- Sophie Huczynska visited Warsaw for an in-person meeting of the *Ethics Committee of the European Mathematical Society* on 8-9th September. The meeting was held partly in the Banach Centre and partly at the University of Warsaw.
- In early September, Isobel Falconer ran two focus groups around *Using History for Diversity in the HE Mathematics Curriculum* at the University of Leeds and Maynooth University in Ireland. Whilst at Maynooth she attended the two-day *Consonances* conference on mathematics in the late medieval and early modern period, where she gave a talk on 'Colin Maclaurin on Morality: De Viribus Mentium Bonipetis', and also attended the *6th Irish History of Mathematics Conference*.

## ***Outreach***

- Catriona Harris, Charles Paxton and Hannah Worthington were out entertaining and educating the people of Dundee in the Wellgate shopping centre on 8th September, with CREEM outreach activities on photo-ID matching and estimating the number of rubber ducks. This was part of *Explorathon 2023* which continues for the rest of the month. CREEM has also been participating through *Skype a Scientist* and the *Scottish Research Showcase*, which was a social media take-over event on 8th September during which some CREEM research videos were shared @GlobalSciShow.
- In the latest edition of the Radio Times (covering 16th-22nd September) there is an article by Melvyn Bragg ‘Science must be on the BBC’, where he talks about his programme *In Our Time*, about to reach its 1,000th edition. He writes “The people on our programme can talk about science and some of the most arcane aspects of the explosion in the world knowledge in a way that reaches out to people whose previous interest has often been slight. It is a joy to watch them at work. ... with the likes of mathematician Colva Roney-Dougal who’s discussed topics including the prolific Hungarian mathematician Paul Erdős and maths in the early Islamic world.” Well done, Colva!
- Isobel Falconer gave two talks at the *Orkney International Science Festival* from 8-9th September. The first was on ‘D’Arcy Wentworth Thompson: On Growth and Form’, in conjunction with an exhibition exhibiting Thompson’s influence on 20th century sculptors and artists such as Henry Moore, Barbara Hepworth and Naum Gabo. The second was a co-presentation with Frances Fowles of the National Gallery of Scotland, ‘Painters, Pendulums and Ghosts of Culloden’, where she talked about Hugh and Jemima Blackburn: Hugh was Professor of Mathematics at Glasgow and inventor of the ‘Blackburn Pendulum’, while his wife Jemima was a noted Scottish water colourist and first cousin of James Clerk Maxwell.
- Len Thomas’s stunning inaugural professorial lecture given last November has finally appeared online, entitled [Fantastic beasts and how to count them](#).

## ***Next Issue***

- The next edition of the School Newsletter will be circulated in October. 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.