School of Mathematics and Statistics Newsletter

August 2023

Welcome to …

- Ben Baer who joins us as a Lecturer in Statistics. Ben completed his PhD at Cornell University and was a postdoc at the University of Rochester, New York State. His recent work applies semi- and non-parametric efficiency theory to missing data problems such as causal inference and lifetime/survival analysis.

- Chrissy Fell who returns to the School as an Associate Lecturer (Education Focused) in Statistics. Her research interests are in deep learning on images; in her PhD at CREEM this was applied to ecological images. Since leaving CREEM in 2020 she has worked in the departments of Computer Science and Medicine in St Andrews applying deep learning to tasks in medical imagery.

- Alex Russell who is back in St Andrews as a Senior Lecturer in the Solar and Magnetospheric Theory group. Alex was an undergraduate in the School and then a PhD student with Andy Wright and has since worked at the Universities of Glasgow and Dundee. Alex's research interests include magnetic reconnection, MHD waves, magnetic topology, solar flares and space weather.

- Stefania Lisai who joins the School as an Associate Lecturer (Education Focused) in Applied Mathematics. She completed her PhD in analysis of PDEs in the context of geophysical fluid dynamics at Heriot-Watt University. Since then she has been focusing on education, in particular in research in inclusive education. After a postdoc at the Maxwell Institute in Edinburgh, she worked at the African Institute for Mathematical Sciences (AIMS), Rwanda, for the past academic year.

- Natalia Jurga who was recently appointed Lecturer in Pure Mathematics. Already in the School as a Leverhulme Fellow in the Analysis Group, she will start as lecturer when her fellowship ends.

Visitors

- Gareth Tracey from the University of Warwick visited for the week beginning 31st July to collaborate with Colva on counting subgroups of the symmetric group. There are many of them!

- Jonathan Jedwab (Simon Fraser University) will be visiting Sophie Huczynska and Laura Johnson for research discussions during the week of 20th August. Tuvi Etzion (Technion) will also be visiting at various times during August.

Conferences, Talks and Visit

- Yoav Len organised a conference at BIRS (Banff International Research Institute) from 7-11th August: *Curves: Algebraic, Tropical, and Logarithmic*. Thibault Poiret also participated.

- From 9-14th July, Rosemary Bailey and Peter Cameron attended the conference *mODa2023* on *Model-Oriented Data Analysis and Optimal Design* at the University of Southampton. The number of speakers had doubled from what was usual in past mODas, so all talks were strictly required to fit in 22.5 minutes. Fortunately, Rosemary managed to keep her talk 'Valid restricted randomization for small experiments' within this limit.

- On 27th July, Rosemary Bailey and Peter Cameron took part in a one-day meeting on *Robust Experimentation* at Brunel University. One of the speakers was our statistics external examiner, Anthony Overstall. This time the talks were allowed 30 minutes each, so Rosemary was delighted to be able to give a more relaxed version of her mODa talk.

- Rosemary Bailey and Peter Cameron attended the (invitation-only) *Midsummer Combinatorics Workshop* in Prague from 31st July-4th August. Rosemary gave a talk on 'Latin cubes' and Peter spoke on 'Sylvester designs'.

- Collin Bleak was an invited speaker at the 16th annual conference on *Geometric and Asymptotic Group Theory with Applications* (*GAGTA*) at the Erwin Schrödinger International Institute for Mathematics and Physics (ESI), Vienna, Austria, 17th-21st July, where he spoke on 'Embeddings into Finitely Presented Simple Groups'. Collin also travelled to Milan and Florence for 25th July-1st August where he spoke on 3/2s generation for Thompson-esque groups' at the *Algebra in Bicocca Algebra Seminar* in Milan, which hosted a one-day Thompson Groups workshop.

- Martyn Quick was one of the invited speakers at the *Postgraduate Group Theory Conference* (*PGTC*) *2023*, held from 11-14th July at Heriot-Watt University. Martyn gave a survey talk titled 'Just infinite groups: their structure, applications and generalizations'.

- Jack Southgate attended the *Workshop on Constraint Systems* at the Fields Institute in Toronto from 8-11th August where he gave a talk 'Minimal Face Numbers for Volume Rigidity'. He also attended the meeting *Applied Algebra and Geometry* at the University of Edinburgh on 20th August.

- During the week of 10th July, Jon Fraser gave an online mini-course *Assouad dimension and fractal geometry* at East China Normal University, Shanghai, aimed at postgraduate students in fractals.

- Peiran Wu attended the *Fourteenth Conference on Interactive Theorem Proving* (*ITP 2023*) in Białystok, Poland, where he learnt about the latest in the formalisation of mathematics using proof assistants such as Lean, Isabelle, and the 50-year-old Mizar. The conference was co-located with *Women in EuroProofNet 2023*.

- Alex Stewart attended the *Diverse Intelligences Summit* held in St Andrews from 17-20th July. The DI Summit is a 4-day international conference exploring the diverse manifestations of intelligence in biological and artificial systems.

Future Events

- The School will host the *STFC introductory Course on Solar and Solar-Terrestrial Physics* from 21st-25th August. This summer school, with about 40 participants, is aimed at students at the start of their PhDs at UK universities and is organised by a different research group each year. More information about the summer school, including a time table, is available on the Solar and Magnetospheric Theory Group website.

- On 5th October the *History for Diversity in Mathematics Network*, funded by the INI and led by St Andrews, is running a focus group in Edinburgh. Our aim is to build a network around using history of mathematics to promote equality, diversity and inclusion in the mathematics curriculum in UK HE. For further details, and to sign up or indicate interest visit https://mathshist4edi.wp.st-andrews.ac.uk/events-2/ David Dritschel has indicated that the EDI budget may be available to cover travel expenses to the focus group.

Next Issue

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