

# School of Mathematics and Statistics Newsletter

June 2023

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

- Amlan Banaji for successfully defending his PhD thesis ‘Interpolating between Hausdorff and box dimension’ on 23rd May. Amlan is now working as a postdoc at Loughborough University.

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

- Thibault Poiret who has joined us as a postdoc to work with Yoav Len on the EPSRC project ‘Tropical geometry and the moduli space of Prym varieties’. Thibault did his PhD at Leiden and a first postdoc at Cambridge.
- ‘CJ’ Davies who has returned to the School as a Technician, having left us in July 2022 to work in a company.
- Our Summer Vacation students, about 23 of them in all, who are undertaking a wide range of projects supervised by staff from across the School.

## ***Farewell to ...***

- Qi Su who has left the Mathematical Biology group to take up a tenure track position at Shanghai Jiaotong University.

## ***Visitors***

- Pascal Schweitzer (TU Darmstadt) visited on 10th May and gave a CIRCA talk whilst he was here.

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

- Rosemary Bailey, Peter Cameron, Sophie Huczynska, Victoria Ironmonger and Laura Johnson attended the *Scottish Combinatorics Meeting*, held at the University of Strathclyde on 22nd-23rd May. Our CIRCA colleague Ruth Hoffmann (Computer Science) gave the opening talk, and Laura gave a talk on ‘Applications of partial difference families to partial designs’. Other attendees with St Andrews connections were former PhD student Robert Brignall (Open University), and former undergraduates Christian Bean (Keele), Gemma Crowe (current PhD student at Heriot Watt) and Matthew McIlree (current PhD student at Glasgow).
- Nik Ruskuc is visiting James East at the Western Sydney University 15 May-15 June. They are continuing their work on congruences and diagram monoids, as well as on a new topic of free projection-generated semigroups.
- Colva Roney-Dougal continued the long tradition of there being a St Andrews-based speaker at *Groups in Galway* by giving a talk on 18th May ‘Base size and relational complexity’.
- Mike Todd gave an invited talk on ‘New spaces for the convergence of partial sum processes with clustering’ at the workshop *Probabilistic Methods in Dynamics* from 29th May-3rd June at the Centro di Ricerca Matematica Ennio De Giorgi (CRM) in Pisa, Italy. He also gave the *Dynamics Seminar* on 8th June at the University of Exeter on ‘Limit theorems with clustering’.

- Amlan Banaji visited Thomas Jordan and Henna Koivusalo at the University of Bristol from 20th-21st April. He gave a talk entitled ‘Dimensions of infinitely generated self-conformal sets’ at their *Ergodic Theory and Dynamical Systems Seminar*.
- Alex Rutar attended the Oberwolfach workshop *Incidence Problems in Harmonic Analysis, Geometric Measure Theory, and Ergodic Theory* from 4-9th June.
- Yoav Len participated in the *Berlin-Hannover Algebraic Geometry Workshop* at the Humboldt-Universität zu Berlin from 11-12th May where he spoke on the ‘Geometry of Prym varieties’.
- The American Geophysical Union held a *Chapman Conference* in Berlin from 28th May-2nd June on ‘Advances in Understanding Alfvén Waves in the Sun and the Heliosphere’ aimed at bringing together researchers from different communities. It was well attended (in person) by several people with a St Andrews connection. In particular, Andy Wright and three of his former PhD students all gave invited talks and wrote monograph chapters. Tom Howson also attended and gave a talk as did Peter Damiano, a postdoc of Andy’s now at the University of Alaska.

Pictured from left to right are: Alex Russell (PhD 2010, from 1st August 2023 Alex will be a Senior Lecturer in St Andrews); Andy Wright; Tom Elsdén (PhD 2016, currently Lecturer in St Andrews); Ian Mann (PhD 1995, currently Professor at the University of Alberta). Ian was Andy’s first ever PhD student!



- Dimitrios Katsaounis attended a *Spring School on Structured Population Models* organised by the Interdisciplinary Centre for Mathematical and Computational Modelling at the University of Warsaw, Poland, from 15-19th May. He also presented a poster with the title ‘Hybrid Modelling for Cancer Invasion and Metastasis’.
- Alex Stewart gave a seminar on ‘Modelling polarization and identity’ as part of the *Identity, Belonging and Democracy Workshop* at the Institute of European Studies, Jagiellonian University, Kraków. He also spoke (online) at the *Conceptualizing Polarization Workshop* hosted by the Institute for Humane Studies at George Mason University.
- David Dritschel attended the thematic programme *The Dynamics of Planetary Scale Fluid Flows* at the Erwin Schrodinger Institute, Vienna, from 14th May-3rd June. He gave a mini-course (four 2-hour lectures) on ‘Balance, jets and coherent structures in geophysical fluid dynamics’ and a talk ‘Wavy jets and potential vorticity staircases’. Previously David gave a seminar at the University of Oslo on 20th April, and an online talk at the conference ‘Scale interactions, data-driven modeling, and uncertainty in weather and climate’ from 27-30th March, in Ingolstadt, Germany.
- Thomas Neukirch visited the *Institute for Theoretical Astrophysics*, University of Oslo, from 12-14th June. He discussed potential research collaborations, took part in a Masters thesis viva and gave a seminar ‘Aspects of solar flare particle acceleration using test particle calculations’.

- Giorgos Minas and Konstantinos Alexiou attended the *10th International Workshop on Applied Probability (IWAP)* at Thessaloniki, Greece from 7-10th June, with more than 200 participants. Giorgos organised a session ‘Stochastic modelling for dynamical biological systems’ and presented a talk ‘Stochastic simulation, analysis, and inference for reaction networks’, while Konstantinos gave a talk ‘A stochastic multiscale modelling framework for the evolution of phenotype-structured cell populations’.
- Andy Lynch attended the *Conference of the European Human Genetics Society* from 10-13th June in Glasgow, where he presented a poster ‘Methylation sequencing identifies an epigenetic role for a GWAS-identified cancer risk allele’. He also attended part of *Burwalls 2023: the Annual Meeting for Teachers of Statistics in Medicine and Allied Health Sciences*, hosted by Queen's University Belfast.
- Ursula Martin gave the 2023 *Rankin-Sneddon Lecture* at the University of Glasgow on 18th April, on ‘The social machine of mathematics’. She also spoke on *AI to Assist Mathematical Reasoning* at a workshop organised by the US National Academy of Science from 12-14th June.
- On 24-26th May, Deborah Kent was a featured speaker at the *Association for Women in Mathematics (AWM) Summer Workshop* at the University of Illinois at Urbana Champaign and also led a visit to special collections in the library. Deborah has also been elected a fellow of the Royal Astronomical Society.
- On 25th May, Isobel Falconer participated in a discussion meeting on *Decolonising Computer Science* at the University of Leicester.

### ***Future Events***

- Collin Bleak and Colva Roney-Dougal are organising an afternoon meeting of the *North British Geometric Group Theory Seminar* on Friday 16th June. Talks are from 1pm - 4.45pm in Theatre C, and the speakers are Tara Brendle (Glasgow), Armando Martino (Southampton) and our own Scott Harper. All are welcome to join; let Collin or Colva know if you would like to join for dinner afterwards.
- The Algebra and Combinatorics Group will hold a *Semigroups Day* on 22nd June. It will consist of a full day of talks by local speakers, followed by a pub trip. The speakers will be Matthew Brookes, Reinis Cirpons, Ashley Clayton, Nik Ruskuc, Finn Smith and Jung Won Cho. The timetable will be circulated nearer the time. For information please contact Cho <mailto:jwc21@st-andrews.ac.uk> or Nik <mailto:nr1@st-andrews.ac.uk>

### ***Other News***

- Our Head of School gave the *University Graduation Address* on Tuesday 13th June to graduands from the Schools of Mathematics and Statistics and English. In his inspiring oration he looked for common themes in the two disciplines, quoting Karl Weierstrass ‘A mathematician who is not also something of a poet will never be a complete mathematician’. He ended by wishing the graduands ‘failure and success in the future’, claiming that one does not come without the other. He illustrated this by demonstrating his own complete failure as a literary critic, making the outrageous assertion that the poetic output of our Regius Professor was closer to William McGonagall than to William Shakespeare.
- The School organised the award ceremony for the *Scottish Mathematical Challenge (SMC)* competition on 8th June, attended by school pupils, their teachers and a few parents. Lars gave a much appreciated talk on Fermat’s last theorem. Jean, who is Regional SMC Organiser, thanks Lars, as well as Robbie and Valerie for their help in organising the event.

- Scott Harper has taken over from Nikos Sfakianakis as School representative on the General Council of the Edinburgh Mathematical Society, attending his first meeting on 19th May at the University of Stirling. He will formally join the Council at their AGM in October.



- Jon Fraser received a surprising email a few weeks ago from a Rich Read, son of the late Arthur Hinton Read, a former Lecturer in Pure Maths at St Andrews and keen mountaineer, who died tragically in an avalanche in the Highlands in 1961. Rich, a reporter of some renown, based in Seattle, was on a trip to Scotland, and returned to St Andrews where he was only four when his father died and before his family's move to the USA. The School still awards the *Arthur Hinton Read Memorial Prize* to the top senior honours student in pure maths, and Rich wanted to connect with the School, partly to thank it for honouring his father for so long. Rich identified Jon when he found on the web that Jon had won the Prize in 2009.



Intrigued by his story, Jon met Rich and his wife Brenda and daughter Nehalem for coffee and an impromptu tour of the town. The tour ended in the Maths Institute common room where they met Edmund Robertson who recounted tales of being taught linear algebra by Arthur Hinton Read in 1961 and of the class receiving tragic news from Edward Copson.

Top: Arthur Hinton Read with his mother Ida in St Andrews

Bottom: Jon, Rich, Brenda and Nehalem

### *Next Issue*

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