School of Mathematics and Statistics Newsletter

February 2018

Visits and conferences

• Peter Cameron visited Budapest for the week 15-19th January. Among other things, he gave a talk at the Rényi Institute on 'Permutation groups in semigroup theory' and a PhD student seminar at the Central European University on 'The ADE affair'.

• Sophie Huczynska made a week-long research trip from 22nd-26th January to visit Maura Paterson at Birkbeck, University of London, where they continued working on their Carnegie-funded project *Difference Families in Coding and Cryptography*. In the middle of the week, Sophie spent a day in Cambridge at the Isaac Newton Institute, in her role as the School's INI Correspondent. Maura will be making a return visit to St Andrews in late February to early March, to continue working with Sophie; she will be giving a seminar in the Pure Mathematics Colloquium on 1st March.

• Nik Ruskuc visited Robert Brignall at the Open University 23rd-25th January to work on completing a joint research proposal. Nik is currently visiting Peter Mayr at Colorado University in Boulder.

• Jon Fraser recently went on a tour of North-West England and gave a seminar in Liverpool on 9th February entitled 'Geometrically finite Kleinian groups and dimension' and one in Manchester on 12th February entitled 'Regularity of Kleinian limit sets and Patterson-Sullivan measures'. During the trip he met various friends and collaborators, including former members of the School, Tom Kempton and Xiong Jin.

• From 31st January to 2nd February, our Mathematics and Statistics PhD students had their annual *Postgraduate Interdisciplinary Mathematics Symposium* at the Burn, Ezdell. This conference was a chance for the postgrads to give talks, present posters, play games and otherwise bond with one another. Ashley Clayton won the prize for the best talk and Fiona Macfarlane won the prize for the best poster.

Our research students outside the Burn on their recent visit

- Louis Theran gave talks entitled 'Unlabelled rigidity problems' at the *LMS Network on Applied Algebra and Geometry* at the University of Nottingham on 31st January, and at the University of Aberdeen Algebra seminar on 5th February.

- Nayab Khalid gave an invited talk entitled 'A new normal form for Thompson's group *F*' on 12th February at the *Postgraduate Mathematics Forum* at the University of Lancaster.

- David Dritschel gave a talk in Leeds on 9th January at the final meeting of the EPSRC *Maths Foresees* project. He spoke about his funded feasibility study, in collaboration with researchers in Leeds, on modelling clouds and on the outlook for the future.

- Tom Elsden gave the *Astronomy and Astrophysics Group Seminar* at the University of Glasgow on 1st February, with a talk entitled '3D Alfven resonances in Earth's magnetosphere'.

- Helen Burgess gave an invited talk 'Vortex scaling ranges in two-dimensional turbulence' for the *Mathematics of Planet Earth EPSRC Center for Doctoral Training Lecture Series* run by Imperial College London and the University of Reading on 14th February.

- Craig Johnston and Patrick Antolin attended and presented their work at the *International Space Science Institute (ISSI) Team Meeting* on 'Observed Multi-scale Variability of Coronal Loops as a Probe for Coronal Heating', held in Bern-Switzerland on 22nd-26th January. Such meetings, which gather a small number (around 12) of experts around a particular topic are organised by the ISSI and are a wonderful opportunity for intense discussion and collaboration. See http://www.issibern.ch/teams/observecoronloop/

- Janine Illian was an opponent at the public defence of Guatier Viaud's PhD, entitled 'Statstical methods for genotypic differentiation of plants using growth models' at the Université Paris-Saclay.

- On 18th January Rosemary Bailey spoke in the Statistics seminar at Queen Mary University of London on 'Hasse diagrams as a visual aid for linear models and analysis of variance'. On 24th January she spoke on 'Some applications of finite group theory in the design of experiments' at a half-day workshop on *Groups, Generalizations and Applications* held at the University of Aberdeen.

- Lindesay Scott-Hayward gave an invited talk about power analysis at the *Joint Meeting of the RSS Environmental Statistics Section and Edinburgh Local Group* on 30th January. The session was entitled 'The power of policy - the role of statistics in designing studies to monitor the effectiveness of environmental policies'.

- Eric Rexstad and Dave Miller taught a four day workshop from 22nd-25th January on distance sampling, to participants from local and federal governments and NGOs interested in estimating the abundance of golden-cheeked warblers in Austin, Texas.

- Dave Miller attended the *rstudio::conf 2018* two day meeting on the R programming language on February 2nd-3rd in San Diego, California.

- On 3rd February, Charles Paxton took part in a Royal Society of Edinburgh event at Inverness – *Dino Digs and Monster Myths* a family event on how myths, legends and science enquiry have combined to fascinate and inspire our ancient ancestors through to current generations.

Public Engagement

- On 3rd February, Charles Paxton took part in a Royal Society of Edinburgh event in Inverness: *Dino Digs & Monster Myths* which considered how myths, legends and science enquiry have combined to fascinate and inspire our ancient ancestors through to current generations.

- On 14th February, Charles Paxton, Janine Illian and Claudia Faustino ran a one-hour maths activity for S5 students from across Fife as part of the *First Chances Maths and Science Workshop* in St Andrews. Their activity revolved around estimating abundance of wildlife populations and demonstrating Distance sampling. Jon Fraser and Aidan Naughton also spoke at the Workshop.

Visitors

• Len Thomas and Rick Camp hosted a two-week visit by Katrin Lohrengel of the Sea Watch Foundation in Wales, to discuss analysis of a time series of Cardigan Bay dolphin population surveys.

• In December and February Alexander Konovalov was visited by Leandro Vendramin (Buenos Aires) to work on a new GAP package *YangBaxter* to study braces and set-theoretic solutions of the Yang-Baxter equation.

Other News

• Alan Cairns was one of a number of referees recognised especially 'for their extraordinary service to the authors and readers of *Physics of Plasmas* by providing frequent, timely, and insightful reviews' during 2017.

• Sophie Huczynska has been appointed St Andrews Correspondent for the Isaac Newton Institute in Cambridge. The INI Correspondents act as a channel of communication between the Institute and the mathematical sciences community. They are kept informed about activities of the Institute to enable them to disseminate information to their institutions, as well as providing feedback to the Institute.

• Alexander Konovalov has become an Research Software Engineering (RSE) Cloud Computing Fellow. In January, he attended the launch event for the programme, organised at the Francis Crick Institute in London. The award runs for the duration of 2018 and provides support for training, workshops, cloud computing prototype designs and research solutions, and publication of open-source code and frameworks for Microsoft Azure cloud.

Future Events

• Mark Chaplain will give his Inaugural Lecture on Wednesday 11th April 2018 – colleagues are encouraged to note the date in their diaries.

• The next School History of Mathematics Lecture will be on Thursday 26th April 2018 at 4pm and will be given by Fenny Smith from the British Society for the History of Mathematics.

Next Issue

• The next edition of the School Newsletter will be circulated in March. Items for inclusion may be sent to schoolnews@mcs.st-andrews.ac.uk at any time but a reminder will be sent out a week before the deadline.