School of Mathematics and Statistics Newsletter

June 2020

Welcome…

- to our new staff members: Deborah Kent coming from Drake University in Iowa to work in History of Mathematics, Yoav Len from Georgia Tech is joining the Pure Mathematics Division and Chris Sutherland comes to us from the University of Massachusetts to work in Statistical Ecology. We hope they will soon be with us in St Andrews in person rather than just virtually.

- to Timo Adam, a new Research Fellow who will be with us for two years and working with Richard Glennie on methods in spatial capture-recapture and with hidden Markov models. Timo is looking forward to joining in person soon!

- to our Summer Vacation Project Students. A number of undergraduates are working on supervised research projects during the vacation, including at least eight students funded by the Laidlaw Scholarship Programme.

Congratulations…

- to Ruth Bowness on her appointment as an Applied Mathematics Lecturer in the Mathematical Biology Group at the University of Bath. We wish her all the best in the new job. Ruth is a former Solar Theory Group PhD student and is currently an MRC Fellow jointly between our School and the School of Medicine. It is really pleasing to see how the skills learnt during her research training in one area can be transferred successfully to another topic.

- to PhD student Stuart Burrell who has become an *Associate Fellow of the Higher Education Academy*. Fellowship of the HEA is awarded at four levels following a formal assessment of evidence of ongoing commitment to professionalism in learning and teaching in higher education.

Virtual Activities

- Nik Ruskuc was meant to be in York in the week beginning 8th June, as the algebra external examiner and to work with Victoria Gould. Both activities took place online instead.

- Peter Cameron spoke remotely to the *Group Theory and Combinatorics Seminar* at the University of Western Australia on 'The geometry of diagonal groups' to an audience spread over at least 12 different countries. This work was joint with Rosemary Bailey, Cheryl Praeger and Csaba Schneider, and it was particularly pleasing that the main theorem had been proved during lockdown. Peter also chaired the first virtual meeting of the *British Combinatorial Committee* on 14th May. Peter had been due to attend a conference for Aart Blokhuis' birthday at the Mathematical Village in Turkey, but this was postponed because of COVID-19.

- Most of the Analysis Group should have been at the *Fractals and Related Fields 4* conference on the Île de Porquerolles off the south coast of France from 13-19th May but sadly this was postponed until 2022. However, it was replaced by the *One-World Fractals and Related Fields Seminar* with online talks by the main invited speakers for the conference, the first of which was given by Kenneth Falconer on 'Intermediate dimensions, properties and an capacity approach'.

- Analysis Group seminars have restarted online with Natalia Jurga speaking at the first one. There is an international flavour with 50 participants from countries including Hong Kong, Germany, Israel, USA, France and Canada.

- Mike Todd gave a Zoom talk on 5th June on 'Escape of Entropy' at the *Resistência Dinamica* seminar, based in Rio, to perhaps his biggest research talk audience so far. Local sunshine and showers made for a rapidly changing set of lighting effects on his 'whiteboard', but attendees seemed forgiving.

- Kenneth Falconer spoke on 'Symmetry and enumeration of fractals' at the *Edinburgh Mathematical Society* meeting on 22nd May. The meeting was organised by Nikos Sfakianakis and this was the first time in the 137 year history of the Society that a meeting was held online.

- Edmund Robertson was Chair of the *History of Mathematics and Teaching of Mathematics* online conference in May. He gave the lecture 'The International Congresses of Mathematics - Politics and Mathematics' as a Zoom lecture on 21st May, and also gave a joint lecture with Colin Campbell 'The Copson and Curle Lectures, University of St Andrews' on 22nd May. Edmund should have given a public lecture 'Hanna Neumann (1914-1971) - a remarkable person' at the *Hanna Neumann Day* meeting at the University of Hull on 12th June but this was postponed due to COVID-19.

- Isobel Falconer organised and ran an all-day online meeting of the *Scotland's Historians of Science* network on 9th June. The meeting used a mix of pre-recorded video presentations, live question and answer discussions with the speakers, and a live panel debate. Meredith Houlton gave a presentation on 'William Sanders and his *Elementa Geometriae*'.

- David Rees Jones and Jean Reinaud participated in the *33rd Scottish Fluid Mechanics Meeting* on 28th May hosted virtually by Heriot-Watt. David gave a talk on 'Subglacial plumes: dynamics, supercooling and frazil-ice formation'

- Cornelia Oedekoven gave a plenary talk via Teams at the *Young Researchers using Statistics Symposium* (*YRS2020*) on 27th May where she talked about new ways of implementing mark-recapture distance sampling studies for counting whales and dolphins in the high seas using new technologies and software, involving drones, acoustic sensors, image analysis and localisation techniques.

- Peter Jupp examined a PhD thesis for the Université Libre de Bruxelles. The private defence (in English) and the public defence (in French) were by video link. Because the celebrations afterwards necessarily involved supplying one's own drink, Peter had bought some Tripel Karmeliet (as mentioned by the candidate in her acknowledgments). Incautious opening of the bottle led to a fountain of beer but there was enough left for toasting the successful candidate – Laptop and thesis remained dry.

Other News

- The world-renowned [MacTutor History of Mathematics Archive](#) was launched on a modern platform on 27th May with a new look interface. The migration from the old software was funded by a £9,900 EPSRC grant. Thanks are due to Isobel Falconer, David Ferguson, Tricia Heggie and Ben Soares for their work on this, but above all to John O'Connor and Edmund Robertson who have built up the site over many years and who continue to update and add to the 3000 biographies of mathematicians and 2000+ pages of supporting material in the Archive.

- Rosemary Bailey received a certificate from Wiley for a 'Top Downloaded Paper 2018-19' for her paper, with Peter Cameron, Alexander Gavrilyuk and Sergey Goryainov, in the *Journal of Combinatorial Designs*. Shortly afterwards she received a message from Springer saying that another of her papers with Peter Cameron in *Statistical Papers* had been downloaded 742 times between publication (mid-2019) and February 2020. The virtues of Open Access?

- Jon Fraser has been appointed a member of the *Scottish Mathematical Council* (*SMC*) which aims to foster and improve mathematical education at all levels and to encourage the advancement and application of mathematics throughout Scotland. SMC's activities include putting on a major annual conference with 400+ participants and organising *Scottish Mathematical Challenge*. Jon has also become an Associate Editor of *Royal Society Open Science*. Most importantly, Jon finally made it back to Scotland at the end of May after a rather longer than planned sojourn in New York!

- Lars Feuerbach from Deutsches Krebsforschungszentrum, the German Cancer Research Centre, has been awarded a University of St Andrews *Global Fellowship* to visit Andy Lynch some time next academic year – originally it was to be August 2020 but is now scheduled for 'the future'.

Future Events

- Isobel Falconer is organising an online conference *Mathematics in Times of Crisis* for the British Society for the History of Mathematics on 6th July. For the programme and (free) registration see http://www.bshm.ac.uk/events/mathematics-times-crisis-online-conference

Caption Competition

- Andy Wright sent this photograph with the caption:

  'Tom shares his screen via the shortest Zoom meeting allowed by social distancing in Andy's new office.'

  Send your suggestions for alternative captions to schoolnews@mcs.st-andrews.ac.uk – the best will be included in the next issue of the Newsletter.

Next Issue

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