

School of Mathematics and Statistics

Newsletter

March 2022

Congratulations ...

- to Mohammed Aljohani, who passed his PhD viva on 16th February for a thesis ‘Synchronizing and separating permutation groups through graphs’.
- to Chiara Villa for the successful defence of her PhD thesis entitled ‘Partial differential equation modelling in cancer and development’ on 22nd February.
- to Feyisayo (Shayo) Olukoya on his award of Fellowship of the Higher Education Academy (FHEA) in recognition of his contributions to teaching and learning. To achieve this, Shayo took two internal teaching modules, and submitted lengthy documentation describing his work.

Comings and Goings

- Lauren Gatherum, Undergraduate Administrator in the Teaching Admin Team, will leave us for a period of maternity leave (after some annual leave) this Friday 18th March. We wish Lauren all the best with the birth and look forward to hearing news of the new arrival. Shahieda Erkamp will join the Teaching Admin Team on 1st April, to cover Lauren's maternity leave.

Former Staff

- Freda Kemp, Honorary Senior Lecturer in Statistics for many years, died on 6th March, shortly before her 92nd birthday. On retiring from the University of Bradford in 1983, Freda and her husband, David, moved to St Andrews, where they held honorary positions, and worked very productively on discrete probability distributions. Freda's other interests were biometry and special functions and she was perhaps best known as an author of the definitive book *Univariate Discrete Distributions*. For many years they were joint Book Reviews Editors for *Biometrics* and they presented one of the first courses on LaTeX in the School.



Visits and Talks

- On 7th March Duncan Mackay gave a joint online seminar with Maria Madjarska (Max Plank Institute) at the *Physikalisch-Meteorologisches Observatorium Davos (PMOD/WRC)*. The seminar, titled ‘What do the spectral and imaging views by IRIS and SDO/AIA/HMI together with data-driven modelling tell us about quiet-Sun's ubiquitous mini-eruptions and microflares?’ was based on a recent collaborative project.
- Peter Cameron and Louis Theran attended (virtually) the *53rd Southeastern International Conference on Combinatorics, Graph Theory and Computing* in Boca Raton, Florida, from 7-11th March. Peter gave two plenary talks, on ‘The geometry of diagonal groups’ and ‘Graphs defined on groups’, while Louis talked on ‘General position stresses’ in the special session on Matroids and Rigidity Theory. Michael Kagan, A recent visitor to St Andrews, attended in person and talked on ‘Applications of resistance distance in the context of association schemes’, his joint work with Rosemary Bailey and Peter.



DCLDE Conference attendees live (masked) and online (unmasked)

- In March, Len Thomas attended two live conferences in the USA. He gave an invited talk at *DCLDE 2022 (Detection, Classification, Localization and Density Estimation of marine mammals from passive acoustics)* on Oahu, Hawaii, on ‘Overview of methods for estimating animal density from passive acoustic data’. With Danielle Harris he also gave a one-day mixed-format (live and online) workshop on passive acoustic density estimation. At *ESOMM (Effect of Sound on Marine Mammals)* at Beaufort, North Carolina, Len contributed a talk on ‘Estimating behavioural response to Navy sonar using continuous-time models of horizontal and vertical movement’, reporting on work led by Théo Michelot and Richard Glennie. CREEM was well-represented at both conferences, with other attendees at DCLDE including Popi Gkikopoulou and at ESOMM including Catriona Harris, Enrico Pirotta and Saana Isojunno. Despite some continued COVID restrictions, it felt good to be able to reconnect with colleagues in person and restart detailed research discussions.
- Nik Ruskuc visited Victoria Gould in York from 21st-25th March to continue their work on semigroups, actions and congruences, supported by a joint EPSRC grant. Their recent exchanges have resulted in a joint paper with Craig Miller on pseudofinite monoids which is about to be submitted, with another paper in preparation.
- Andy Wright and Rachel Davies attended the *Royal Astronomical Society Specialist Discussion Meeting* on ‘Planetary ultra-low frequency waves – Theory, modelling and observations’. The meeting was held via Zoom, and Andy gave a talk on the evolution of highly asymmetric waves in a dipole equilibrium.
- On 26th February, Kate Hindle and Deborah Kent attended the *British Society for the History of Mathematics* ‘Research in Progress’ meeting at The Queen's College, Oxford. Kate gave a presentation entitled, ‘On the thirteen semi-regular solids of Archimedes: Investigating D’Arcy Wentworth Thompson’s mathematics’. Her cardboard reconstruction and demonstration of Thompson’s method of creating the solids was particularly well received.

Other News

- The first ever CIRCA (Centre for Interdisciplinary Research in Computational Algebra) walk took place on 25th February. Apart from Finn Smith, who had to leave early, the participants took refreshments in Craigtoun Park.
- Colva has alerted us to a recent (idiosyncratic! - Ed.) ranking of *Top Mathematics Scientists* based on h-index, citations and publications, in which two colleagues appear: Peter Cameron, at 17th in the UK and 330th worldwide, and Kenneth Falconer, at 81st in the UK and 1300th worldwide. Congratulations to both of them! See <https://research.com/scientists-rankings/mathematics> for the full ranking.



CIRCA at Craigtoun Park

- Nicolò Margaritella recently won a LMS grant under the Research in Pairs scheme, which supports a collaborative research visit to another institution. He will visit a colleague at the School of Econometrics and Management of Lund University (Sweden) this spring/summer to work on a project on modelling environmental time series with Bayesian functional data models.
- In 2020 Richard Cormack was invited to contribute to the Oxford Dictionary of National Biography an entry for David Finney, Professor of Statistics at the University of Edinburgh from 1966 until 1984. Richard had worked with David for 16 years before coming to St Andrews. Rosemary Bailey, who also worked for a short time in David's Department, helped Richard with some details. The 84th update to the Dictionary, with 243 biographies of individuals who died in 2018, was published last Friday. The ODNB 'now offers biographies of 64,4431 men and women who have shaped the British past'. Free access is available through the University Library.

Wellbeing

- A reminder that we have Wellbeing Officers for the School for both Staff and Students. If you, a student, or a colleague, require assistance to find internal or external support available through periods of challenges, please direct them to the Wellbeing Officers as follows:

For Students: Tom Coleman ([tdhc@](mailto:tdhc@st-andrews.ac.uk)), and Ashley Clayton ([ac323@](mailto:ac323@st-andrews.ac.uk)) as Deputy

For Staff: Rachel Smith ([rs55@](mailto:rs55@st-andrews.ac.uk))

The University Wellbeing webpages for [Staff](#), and for [Students](#), offer links and resources to support available within and outwith the University.

Pi Day Doggerel

- The piece below was commissioned by our undergraduate mathematics society SUMS for a toast at their Pi Day Ball at midnight on 14th March (3/14).

A Toast to Pi

The distance round a circle,
Whose diameter is d ,
Is quickly found by multiplying
By not much more than three.

Well-known by the Egyptians,
Four thousand years ago;
Indeed, the Rhind Papyrus
Gives three point one six oh.

Along came Archimedes,
Who, not to be outdone,
With polygons and rigour,
Got three point one four one.

Then in the sixteen sixties,
James Gregory came to town,
And for the inverse tan of x ,
A series he wrote down.

It rapidly converges,
If x is not too big,
And taking x as root one third
We get far more sig figs.

This number didn't have a name
Till seventeen oh six,
When Jones, a Welshman, came along,
This oversight to fix.

He soon rejected nu and mu
And omicron and xi,
Then musing on his apple tart,
Cried "Ah - Let's call it pie!"

But now we use computers,
To save us time and space.
Last year one took four months to get
The sixty-trillionth place.

We rightly toast this number,
So lift your glasses high,
As on this day we celebrate,
The ratio known as pi.

KJF

Next Issue

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