

IMA National Celebration of Best Maths Projects 2025

The IMA held its online Celebration of Mathematics Projects on Friday 25 July 2025. This was the second such nationwide competition, the first being last year as part of the Institute's programme of events for its 60th anniversary. Every university in the UK was invited to submit the student who had been awarded the highest mark for their final-year undergraduate project.

In total this year, we had a fantastic 18 entrants: Hugo Allen (Cardiff), Francesca Dann (Bath), Stefanie D'Aprile Rodrigues (UWE), Augusta Djumic (Brunel), Rosie Dolan (Bristol), Ethan Eglite (Loughborough), Nadji Guemar (Sussex), Sidharth Hariharan AMIMA (Imperial College), Yufei Jin (Lancashire), Daniel Kelly (Oxford), James Kingswell (Southampton), Rebecca Maver (Manchester), Sai Nagaratnam (Warwick), Joshua O'Neill (Lancaster), Natasha Pullan (Leeds), Faye Rathmill (Salford), Grace Richardson (Plymouth) and Rebecca Sheppard (Liverpool). Academics from 16 of these institutions were also in attendance as panellists.

With so many students, the session was split into four Zoom breakout rooms with Thomas Hobson CMATH MIMA (Lincoln), Stephen Lynch FIMA (Loughborough), James Van Yperen AMIMA (Sussex) and myself acting as independent chairs. Drawing inspiration from the IMA's *Tomorrow's Mathematicians Today* conference series, presentations were scored against slightly different criteria from those last year. We were looking at slides, delivery, mathematics, ability to answer questions and a 'star quality' attribute reserved for speakers who did a particularly outstanding job. As before, the breakout rooms were arranged so that panel members did not have to score students from their own institutions.

All of the talks were very engaging and of an excellent standard, and it was notable that they spanned an extremely broad range of mathematics – from pure and applied topics to statistics and operational research.

Ultimately, it was Rebecca S. (see photo) who won first place for *Not Your Usual Circle: Geometry on the Integer Grid*. Rebecca M. was a close-run second with *Finite Difference Methods for Solving Convection–Diffusion Equations*. They will both deliver longer online talks about their projects on 10 December (for details, see ima.org.uk/events).

Third place went to Francesca for *A Mechanistic Model for the Transmission of Borrelia burgdorferi Between Co-feeding Ticks*. Finally, an honourable mention was given to Faye for an outstanding industry-based operational research project, *Understanding the Impact of Specialist Resource Availability on Task Workflow Using Markov Chains*, at Sellafield. The prizes were £500 for Rebecca S., £250 for Rebecca M. and £150 for Francesca.



... Ultimately, it was Rebecca S. who won first place for *Not Your Usual Circle* ...

Readers should keep an eye out in *Mathematics Today* for Rebecca S.'s upcoming article. Asked about her future, she said:

After graduating from the University of Liverpool with MMath Mathematics Class 1, I will be continuing my studies at the University of Manchester. Here, I will be studying a fully-funded PhD as a Martingale Scholar. My PhD will be supervised by Dr James Montaldi and I will also continue to work with my supervisors from Liverpool: Professor Anna Pratoussevitch and Dr Oleg Karpenkov. I will be continuing to study integer geometry, including work on integer circles as well as expanding into further areas. Moving forward beyond this, I intend to work in academia as a researcher.

Rebecca M. is also engaging with postgraduate studies. She said:

I am planning to pursue a PhD and go into applied mathematics research. My goal is to develop new mathematical methods and techniques to solve scientific problems. I am also passionate about higher education and would love to become a lecturer, hopefully encouraging others to pursue mathematics and push for more diversity in the field.

Francesca said:

I am looking forward to joining EY on their tax graduate scheme, where I will initially be studying towards the ATT/CTA qualifications. I am proud that my dissertation is set to be published hopefully next summer and I look forward to applying my analytical and problem-solving skills from my Mathematics degree to my future career.

Faye said:

I completed my bachelor's degree as part of an apprenticeship with Sellafield Ltd., culminating in a distinction and leading to my current role as a Data Analyst. In this position, I contribute to complex project work that drives safety improvements and accelerates mission delivery. Looking ahead, I plan to pursue a master's degree to deepen my expertise and enhance the impact of my work.

It is satisfying to see this competition gathering momentum and becoming a valued staple of the IMA's calendar of events. An additional seven universities put students forward this year compared to last. Did your institution nominate a student? If not,

contact branches@ima.org.uk to get involved. We're aiming to have even wider participation next year!

The IMA extends its thanks to all those involved in making the occasion such a success. Given its increasing scale, special acknowledgement must go to the tireless work of the organising committee: Stephen Lynch, James Van Yperen and Emma Emmerton (IMA). We congratulate all the participants on their mathematical accomplishments and wish them the very best for the future.

James M. Christian CMATH FIMA
University of Salford and North West Branch