

In2scienceUK's Virtual Programme for Students

IMA members rose to the challenge when In2scienceUK asked for digital maths resources, so that their summer programme could continue, despite the outbreak of COVID-19.

In2scienceUK (in2scienceuk.org) is a charity supporting young people (16–17) from disadvantaged backgrounds to achieve their potential and progress to careers in STEM. Due to the outbreak of COVID-19, they were unable to continue their summer programme which normally provides STEM work placements and face-to-face sessions delivered by STEM professionals. In record time, In2scienceUK digitally transformed their programme online and the IMA were delighted to help provide resources for maths.

There were 567 students on this summer's programme, who took part in 39 different STEM workshops, 43 research modules of expertly designed material and 246 small group mentoring sessions. The students gained insight into cutting-edge research and received advice from STEM professionals.

The modules provided by IMA members or their contacts were:

- *Can Your Legs Tell the Time? Using maths to model biology and circadian control of collagen* – Ben Calverley AMIMA, University of Manchester
- *Text Mining and Sentiment Analysis* – Zahra Rezaei Lalami, University of Leicester
- *Artificial Intelligence is but an Imitation and Illusion of Human Intelligence* – Eliyas Woldegeorgis, University of Leicester.

Zahra Rezaei Lalami commented that

Nothing feels more joyful for a teacher than to see enthusiasm in her students, particularly when it comes to maths. I could see the students' willingness to learn and engage with the topic.

When describing The University of Leicester's involvement, Professor Jeremy Levesley FIMA added

I am proud to know that Eliyas and Zahra have been able to communicate their love of their subject.

Shamia Sanjania, Undergraduate STEM lead at The University of Leicester, commented that

Getting the opportunity to take part in such initiatives, allows students like me to learn from influential individuals, listening to their journeys and achievements we become inspired to explore the applications of mathematics further. It's like a chain, pulling each other up to grow and develop further, and that support and encouragement is what students now need the most.

The IMA were delighted that In2scienceUK also requested a careers webinar to inspire their students. The webinar and Q&A involved an overview based on IMA and MathsCareers website (www.mathscareers.org.uk) resources and then case studies from: Dr Nira Chamberlain CMath CSci FIMA, Zahraa Kadri CMath MIMA, Ben Calverley AMIMA, Dr Marina Logares FIMA, Dr Ken O'Neill MIMA and Dr Howard Haughton CMath FIMA.

Ben Calverley demonstrated that you don't need to have a 30-year career planned – you can follow your passion. Ben commented

Seeing how engaged the students were with the careers webinar was amazing – it was clear some of them will go on to be brilliant mathematicians in many walks of life.

Zahraa Kadri, senior analyst at Akins, explained

My typical day involves making decisions at the highest level in the transportation sector. ... I would recommend an industrial placement to see how mathematics can be applied to real life projects!

Howard Haughton conveyed the breadth and variety of areas in which mathematical analysis can be applied with his message that

It is difficult for me to say what I do as it depends on the day of the week.

This was echoed as Ken O'Neill described supporting government minister requests for data during the COVID-19 crisis.

Variety was also a key message in Marina Logares' talk, where she explained that

Doing maths, as a lecturer at university, has no limits. One can do research, teach maths, collaborate with business companies and more.

Nira Chamberlain's talk emphasised his mantra that

You don't need anyone's permission to be a great mathematician.



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Zahra's module described sentiment analysis

Saffron Hill, from In2scienceUK, was delighted with the help she received from the IMA and commented

I thought the session from the IMA was fantastic. It was great to hear from such a diverse group of mathematicians and a diverse group of people. The students clearly gained a lot of insight and it was fantastic to see their interaction with those from a STEM background.

Reflecting on the challenges this summer has brought and the incredible success of the virtual programme, Saffron added

Our commitment to supporting under-represented communities is making a difference to the lives of young people with few opportunities and contributing to greater diversity, social mobility and inclusion within the wider STEM sector. With your support, we have extended this life changing experience to more young people in need of our help at what has been a very difficult period for them.

The IMA looks forward to helping In2scienceUK in the future. If you would like to help then contact gemma.reeves@ima.org.uk.

Jenny Macey CMath CSci FIMA