



**QUEEN'S  
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## **Letter of recommendation for Miriam Ní Chobhthaigh**

To whom it may concern

This is a letter of support for Ms Miriam Ní Chobhthaigh's application to the PhD programme at the University of Bristol.

I have known Ms Ní Chobhthaigh since September 2017, when she enrolled on the MSci pathway in the School of Mathematics and Physics which is our more prestigious and demanding 4-year programme. Over the first three years, I followed her development with interest since she was among our brightest students. In the first year, I taught her the modules "Mathematical Reasoning" as well as "Mathematical Modelling" in both of which she excelled. In the second-year course "Complex Analysis", which seemed to be one of her favourite topics, she achieved 82/100 which was the fourth highest mark (out of 140 students, the highest mark was 85/100).

During all of her undergraduate studies, Ms Ní Chobhthaigh stood out as one of those (few) with a true hunger for learning and understanding a subject at university level and an urge to go beyond the normal curriculum. At Level 2 she already took the Level 3 module "Set Theory", at Level 3, she again chose two Level 4 modules, "Topology" and "Integration Theory". In a project in which students were asked to explore alternative proofs of Tychonoff's theorem she resurrected Tychonoff's original proof from 1929 which requires some cardinal arithmetic.

I believe that it was my course on Galois Theory which sent her on her way to pursue research Mathematics as she really enjoyed the interplay between algebraic and geometric ideas. Shortly after that, she decided not to complete the full four years at Queen's University but rather finish with a BSc and continue her studies elsewhere with a Master's degree. She finished with a very good first class BSc honours degree in 2020.

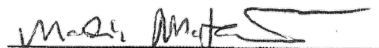
In September 2020, Ms Ní Chobhthaigh started the prestigious ALGANT Masters programme at the University of Leiden. For the next two years, she studied a wide variety of topics which, in particular, enhanced her background in Geometry and Number Theory. She adapted well to the new environment though it must have been hard during the time of the Covid pandemic.

The ALGANT consortium consists of nine universities in six different countries, and it is expected of the students to pursue their studies in more than one of these universities. In the academic year 2022/23, Ms Ní Chobhthaigh thus moved to Regensburg in Germany, once again entering a new educational environment. There she engaged in a large number of courses and seminars which eventually fuelled her interest in Arithmetic Geometry. As she couldn't find a suitable supervisor on this topic in Regensburg, she meanwhile moved on to Duisburg–Essen (another ALGANT university) where she is presently working on a Masters thesis with Prof. Massimo Bertolini.

I am still in regular contact with Ms Ní Chobhthaigh and we talk about her mathematical development and her career expectations. She appears to be keen to do her PhD in an English-speaking environment, having been on the European continent for almost four years by now. She found this time very stimulating, engaged in numerous mathematical discussions with very different people, also took part in several workshops, for instance in France, and had been awarded a Kovalevskaya Grant for Young Researchers to attend the ICM in St. Petersburg on selection by the Irish Mathematical Society. (Obviously the ICM was cancelled.) She seems to develop particularly well in a communal environment and, I therefore believe that the setting at the University of Bristol is ideal for her next steps into research Mathematics.

I can recommend Ms Ní Chobhthaigh wholeheartedly.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'Martin Mathieu', written over a horizontal line.

Professor Martin Mathieu, MRIA