

INTRODUCTION

The history (and present-day state) of mathematics is a complex piece of theatre with many characters, each interacting with their contemporaries and their predecessors. Mathematics, as it is traditionally taught, involves recounting major events of this play, restricting the cast to a narrow list of figures. This project's goal is to introduce some mathematicians, past and present, who, despite their contributions to the field, are often left out of everyday mathematical discourse due to systemic and historic prejudices, discrimination and oppression.



The biographies in this project were collected to give students (and teachers) of the School of Mathematical Sciences a more representative picture of the diversity of the field, and by increasing the visibility of under-represented groups, we hope to inspire a better sense of belonging in the School to students who don't feel much of a sense of kinship with the story that's been told too many times: that of a 'genius' man from a privileged background who singlehandedly advanced a field (ignoring the efforts of all who had helped create the environment required for the advancement).

It's time for more stories.

SIAN LEWIS

She is a data scientist, machine learning engineer and analytics manager. She has been the data manager for dozens of political campaigns across the US.

Lewis was born in the UK and grew up in Trinidad and Tobago. She is also a prolific mentor and activist, being a data science instructor, providing new resources and recruitment channels for women in data science. She has also founded and contributed to many groups dedicated to mentoring and supporting women, LGBTQ+ and people of colour in business and STEM.

MOTIVATION

Mathematics has historically been taught as an exercise in memorisation and repetitive application of formulae, where the few times the history behind a topic is discussed, it is in a brief tangent about some genius white man who revolutionised a field of research. Very few people can relate to the 'geniuses' who are represented, which contributes to the stigma that studying mathematics is too difficult for them.

We can fight this stigma but increased awareness of diverse representation; not just with people of diverse backgrounds but also people applying their skills in diverse ways in academia and industry. This presents aspiring students with inspiring examples of mathematicians who they can one day see themselves becoming. QMUL has an incredibly diverse cohort of staff and students, so we believed this to be a fantastic opportunity to further educate students and make them more interested in what they are studying. We as a group all feel very passionate about this, and so we went about consolidating many great examples of mathematicians to promote, from historical figures like Omar Khayyam or Mary Somerville, to modern day role models such as Nalini Joshi or Sian Lewis.

As a result, we now have an accessible resource for academic staff to pass on to students in their modules.



IMPACT AND FUTURE WORK

Very often, the role models that we have influence and shape our decisions and future. Particularly, in mathematics those roles models can appear when learning from relevant mathematicians in our area. Historically, many important names belonging to minorities have been forgotten or neglected and depending your background, this can affect you more than others. Regarding minorities, QMUL is the most inclusive university in the Russell Group (2021), with students from over 170 countries, where 75% of the undergraduate students are BAME and 49% are the first generation in their family attending the university.

Through this project, short biographies of mathematicians from minorities in many subjects are given; consequently, the students can find a role model that they can feel more identified and related with. This will have a very positive impact in current and future generations, as most of the material was target to provide biographies for the first year and second year modules, but also some advanced modules were covered too. This material can be easily included in the lecture notes, mentioned during the lectures or included in material for the students in the QM+ page.

A good number of underrepresented groups are featured, still there are many other meaningful biographies and important subcategories that are missing, but hopefully this project will continue in the future to cover them. The goal is to provide a wide variety of biographies to choose in every module taught at QMUL. For us, giving visibility through this project to so many people has been enlightening and inspiring and we hope everyone who reads this material gets inspired too.

STRATEGY 2030

As part of the Queen Mary's 2030 strategy, we want to push for a truly inclusive environment where students and staff celebrate their diversity and are proud to be part of this community. We hope that by exhibiting examples of diverse representation, our students will feel a greater sense of belonging, and become more ambitious to pursue their studies and their career.

CONCLUSION

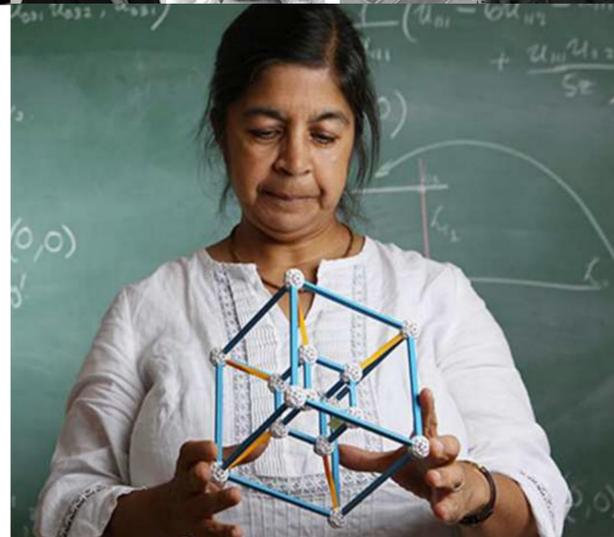
With this first rendition of the diversification of the mathematics curriculum we have only scratched the surface. We hope to continue advancing the discourse in the School of Mathematical Sciences and beyond, by continuing with outreach projects throughout the academic year and building on our work next summer. We are grateful to the Department of Chemistry, whose similar project inspired our own; we also hope that other disciplines will join the movement to diversify their curricula.

AKNOWLEDGEMENTS

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Contact



NALINI JOSHI

She is a Burmese-Australian mathematician renowned for her work on non-linear differential equations and integrable systems.

Nalini was born in Myanmar and at the age of 12 moved to Australia. She is very vocal about challenging the various problems encountered as a woman of colour in STEM; she co-founded the Science in Australia Gender Equity initiative.

Joshi was formerly head of the Australian Mathematical Society, and the first female chair of applied mathematics at the University of Sydney.