

INSTITUTE OF MATHEMATICS AND ITS APPLICATIONS

INFORMATION FROM CANDIDATES FOR ELECTION TO COUNCIL (2024)

(Candidates are listed in alphabetical order)



Professor Alexander Belton

I am a Fellow of the IMA and have been an academic mathematician for nearly twenty-five years. I joined the School of Engineering, Computing and Mathematics at the University of Plymouth in September 2022 as Professor of Mathematics and Head of School. Prior to this, I was a member of the Department of Mathematics and Statistics at Lancaster University and its Head from 2017 to 2022. While at Lancaster, I was a member of the IMA North West branch committee.

I am a strong supporter of all facets of the mathematical sciences and value greatly the interactions between them and their reach beyond academia. I helped create the Lancaster University School of Mathematics, which recruits the brightest and most talented 16-19 year old maths pupils from across Lancashire. I am a governor of the school, now in its second year, and chair the Schools & Governors group of U-Maths, the UK Maths Schools network.

Communicating the importance of mathematics, its relevance and its impact has never been more important, and the IMA has a vital role to play in doing so. I wish to play my part in this endeavour through active membership of IMA Council.



Dr Keith Briggs

I have had approximately 20 years' experience as an applied mathematician in academia, followed by another 25 in the telecommunications industry, working on improving the performance of WiFi, 4G, and 5G systems, and most recently on trying to find new ways to operate networks using less energy. During the whole of my industry experience, I have worked with several universities in the joint supervision of MSc and PhD students.

If elected to the Council I would hope to use this experience in two ways. Firstly, I think there is a need to promote the more intelligent use of modern mathematics in the high-tech industries. I find that powerful tools such as convex or combinatorial optimization methods are poorly understood by many engineers, who too often fall back on the black-box application of machine-learning software. Secondly, I would want strongly support the new IMA Exponential mentorship program, and could use my industry contacts to find new mentors.



Dr Sophie Carr

I have thoroughly enjoyed my term on the IMA council, witnessing firsthand the incredible potential our community has in shaping the future of mathematics. As a business owner I understand the challenges and perspectives which industrial mathematicians bring to council. I believe that by bringing together a diverse group of mathematicians on council we can create a more collaborative and innovative environment for all IMA members.

One of my core interests is to advocate for the development of accessible and engaging learning opportunities, for those who come to see the importance, beauty and utility of mathematics once they have left formal education. Achieving this will not only enrich individual lives but also strengthen our society's foundation by highlighting the critical role of mathematics in solving real-world problems.

Another core interest is to highlight the fundamental role of mathematics within data science, machine learning and artificial intelligence. This will make sure that no-one is left behind with the advances it can bring in society and research. This needs mathematicians to reach out and explain how their work removes bias, why ethics is important and how maths shapes and helps society.



Dr Howard Haughton

I am professionally engaged in quantitative financial risk management, leadership development and EDI modelling and a senior visiting research fellow at King's College London. Currently, I am a co-opted member of Council and a member of the Professional Affairs Committee and was recently appointed the IMA's EDI champion. As an industrial mathematician and EDI/leadership specialist my focus has been to drive excellence in research and the application of mathematical sciences which is supportive of diversity, equity, and inclusion for all. If elected, I will use my experience to help the IMA achieve its strategic objectives including expanding access to mathematical education and careers and enhancing the support network for mathematicians at all stages of their professional journey irrespective of their background, social or other circumstances. My view is that inclusivity will pave the way to increase the appeal of mathematics to those who view the subject as not being for them. In turn, this will help to broaden the impact of mathematics in solving inter-disciplinary and global challenges but also inspire the next generation of mathematicians.



Mr Mike Holmes

I am a Data & Analytics leader in Financial Services, specialising in predictive modelling and

credit risk management. The 2020 remote-working revolution opened the door to me working for several exciting FinTechs whilst keeping roots with my young family in Yorkshire. This allowed me to realise a career passion for revolutionising money for people through the power of data and mathematics. Throughout my career, I have deployed 100+ Machine Learning Models that have managed over £80bn of assets, whilst building several "industry-first" products.

Since receiving my Mathematics BSc from Sheffield Hallam, the IMA has been a great place to stay connected to the subject and mathematics community. It's exciting to learn from the many applications of mathematics across different industries, and how sharing ideas can lead to cross-industry innovation.

I have previously served on the Communications (2015-17) and Early Career Mathematicians committees (2014-2018). As a Councillor, I want to apply my experiences from both management and IMA governance to promote topics such as fostering the link between industry and academia, membership engagement with industry mathematicians and creating relationships between mathematicians with specialist interests.



Dr Zuzan Hucki

I have excelled at my first degree at University of Novi Sad. Receiving UK scholarship to do a PhD in Financial Mathematics, I arrived in 2001 to Nottingham Trent University. Post PhD, I became a lecturer only to learn that I was the only woman in the Maths Department. This came as a shock to me, as in my previous education I have never experienced a lack of female students or mathematicians. Since then I am trying to solve this puzzle: Why there are so few female mathematicians in UK?

Since 2017 as a member the IMA East Midlands Committee branch I have been active in promoting IMA, its events and benefits.

In my role as Athena Swan Champion for the Department, I am leading on embedding diversity, equity and inclusion in departmental culture, decision-making and work with industrial partners.

I love spreading the joy of mathematics wherever I go, whether it's at school pick-ups, volunteer events, or displaying child-friendly maths during pandemic on my windows. If elected, I will tirelessly advocate the importance of EDI, promoting mathematics and mathematical literacy to young and old, and work towards improving attitudes towards mathematics in society.



Miss Karrie Liu

As a candidate, I bring a diverse background in mathematics and community engagement. With over a decade of experience in the healthcare industry, I have demonstrated a strong commitment to making a difference in the world through my work

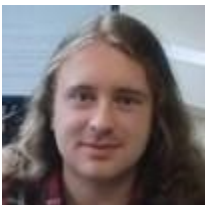
and volunteering.

Growing up in two distinct family cultures, I understand the challenges faced by individuals, especially women, in pursuing their dreams. This experience has fueled my passion for being a role model, particularly for ladies from Asian backgrounds, encouraging them to pursue careers in STEM.

My journey has been marked by achievements such as being recognised as one of the Top 100 Women in Tech, receiving national recognition for promoting mathematics. I have actively contributed to driving business through data-driven insights and have led impactful projects in the public and private sectors.

I have dedicated myself to various charitable endeavours, including volunteering with organizations focused on maths for good. My commitment to giving back to the community extends to serving as a trustee for several charity.

My unique blend of expertise, and dedication to making a positive impact qualify me to serve on the Council. I am committed to leveraging my skills and passion to contribute meaningfully to the Council.



Dr Maciej Matuszewski

I have been a proud member of the IMA since my time as a PhD student in Mathematical Physics at Durham University. I have had particular involvement in the IMA's Early Career Mathematicians Group, having served as Events Lead and Chair; and I am coming to the end of my current term as a co-opted member of the IMA Council.

In my professional life, I have remained at Durham, moving into a technical, teaching, and pedagogical research role. I particularly focus on developing and researching automated e-assessment in mathematics, serving on the Advisory Board for the STACK e-assessment software. I am currently on the Advisory Board of the proposed Academy for the Mathematical Sciences, and am also involved with the Institute of Physics, having served on Branch and Group committees, and as a member of the Council Member's Reference Group.

My experiences have shown me how mathematics education at all levels is crucial. I want to continue the IMA's work at this difficult time in supporting teachers, lecturers and students – making sure that everyone, regardless of their background, can feel comfortable with mathematics.

I also want to continue developing regional IMA events, and build our collaborations with other learned societies.



Dr Francisco Perez-Reche

Since childhood, I have been captivated by the potential of using mathematics to unravel natural phenomena. As a Reader at the University of Aberdeen with nearly two decades of experience in applied mathematics, I specialise in mathematical modelling and data science across diverse fields such as infectious diseases, social contagion, and complex material behaviour. My teaching spans mechanics, modern physics, statistics, and machine learning. Additionally, I am passionate about communicating mathematical science to society. This commitment has led me to engage in activities including writing popular science articles, delivering public talks, or organising the unveiling of an Institute of Physics Blue Plaque honouring James Clerk Maxwell in Aberdeen. Serving as an elected member of the Institute of Physics Committee in Scotland, I coordinated numerous public engagement activities.

I am motivated to stand for Council membership for several reasons. Firstly, I aim to strengthen the relationship between IMA and applied mathematics in Scotland. Secondly, I wish to contribute my expertise to advancing the goals of the IMA strategy, which closely align with my own ambitions of promoting and ensuring a sustainable future for mathematics and its applications. I shall draw from my experience in other committees to maximise my impact.



Dr Richard Pinch

We are in an exciting and challenging time for mathematics in the UK, with new initiatives such as the Academy and KE Hub changing the landscape for the mathematical sciences.

I want to use my experience to help the IMA to play its part in delivering the benefit of these developments for the benefit of mathematics and mathematicians as it works more closely and more actively with a wider range of partners. I propose to use my experience in mathematical research and in managing the engagement between academic mathematicians and customers, and have held advisory and trustee positions – I believe this puts me in a good position to provide constructive advice and challenge.

I am a retired civil servant, whose career has been divided between academic research in pure mathematics (number theory and algebraic combinatorics) at Cambridge and Glasgow, and its application to cybersecurity in Government. I was the founding head of research at the Heilbronn Institute, and have served on advisory boards for EPSRC, NGM, INI, ICMS and on the REF. I served on the IMA Council and as Vice-President (Professional Affairs and Industry).

I remain active in mathematical research as a consultant.



Dr Jack Reid

In 2016, I graduated from the University of St Andrews with a BSc in Mathematics, and then in 2020 with a PhD in Applied Mathematics, focusing on solar physics. Now, I am a post-doctoral researcher, using magnetohydrodynamics to study the evolution of the Sun's global magnetic field, and how it brings about plasma eruptions that exert geomagnetic effects on Earth. As well as being in the IMA, I am a Fellow of the Royal Astronomical Society, where I am the chair of the Early Career Network (ECN) committee, and a member of the Edinburgh Mathematical Society.

For the past two years, I have been part of the Early-Career Mathematicians group in the IMA. With that experience, I should like to use a role on the Council to promote early-career researchers, by creating more opportunities for them to network and to share their work, such as through regular seminars. Since my research crosses different fields, I know how porous are the boundaries between maths and other disciplines. For this reason, I should like to work with other professional bodies, within and outside mathematics, to help mathematicians make new connections and share their work in interdisciplinary environments.



Dr Rehan Shah

My name is Dr. Rehan Shah and I am an Assistant Professor in Mathematics and Engineering Education at Queen Mary University of London with research interests in applied mathematics and mathematics education pedagogy. In addition to being the School Lead for Inclusive Scholarship in Science and Engineering and Research Integrity Champion for my university, I also serve as the Co-Chair of the Ethics Ambassador Community for the Engineering Professors Council, in addition to being a member of other mathematics organisations such as the LMS, BSRLM and SIAM.

I will make meaningful contributions to the Council committee by actively promoting the IMA's mission from my experiences and insights of being an HE academic lecturer and secondary education teacher in mathematics. For instance, I currently lead various initiatives that focus on making mathematics curricula more inclusive, embedding ethics and sustainability within mathematics teaching, involving early year undergraduates in mathematical research and facilitating the mathematical transition of students from school to university, which can enhance and complement the Institute's mission in research, education and public engagement. Finally, by attending all meetings regularly as a dedicated Council member, I will painstakingly contribute to the strategy and governance of the IMA.



Professor Ahmer Wadee

I have been Professor of Nonlinear Mechanics in the Department of Civil and Environmental Engineering at Imperial College London since 2015, having been an academic there since 1999. I began my research career at the interdisciplinary Centre for Nonlinear Mechanics at the University of Bath. My scientific work straddles the boundary

between applied mathematics and structural engineering practice, and has coincided with a long-standing association with the IMA; I was elected as Member in 2002 and Fellow in 2011. Currently, I serve on the Editorial Board of Mathematics Today (since 2009), on the Research Committee (since 2015), as the London Branch Chair (since 2016), and was Co-Editor of "50 Visions of Mathematics", the commemorative volume compiled for the IMA's 50th anniversary. In 2014, The Science Council listed me as one of the UK's 100 leading practising scientists following the IMA's nomination. I have directed my Department's doctoral programme for 10 years and have received awards for excellence in research supervision and outstanding contributions to education from Imperial. I am a passionate advocate of applying mathematics to real-world problems and widening participation within STEM subjects; as an IMA Council member, I would focus on promoting important issues within those key areas.