ANNUAL REVIEW

2019–2020

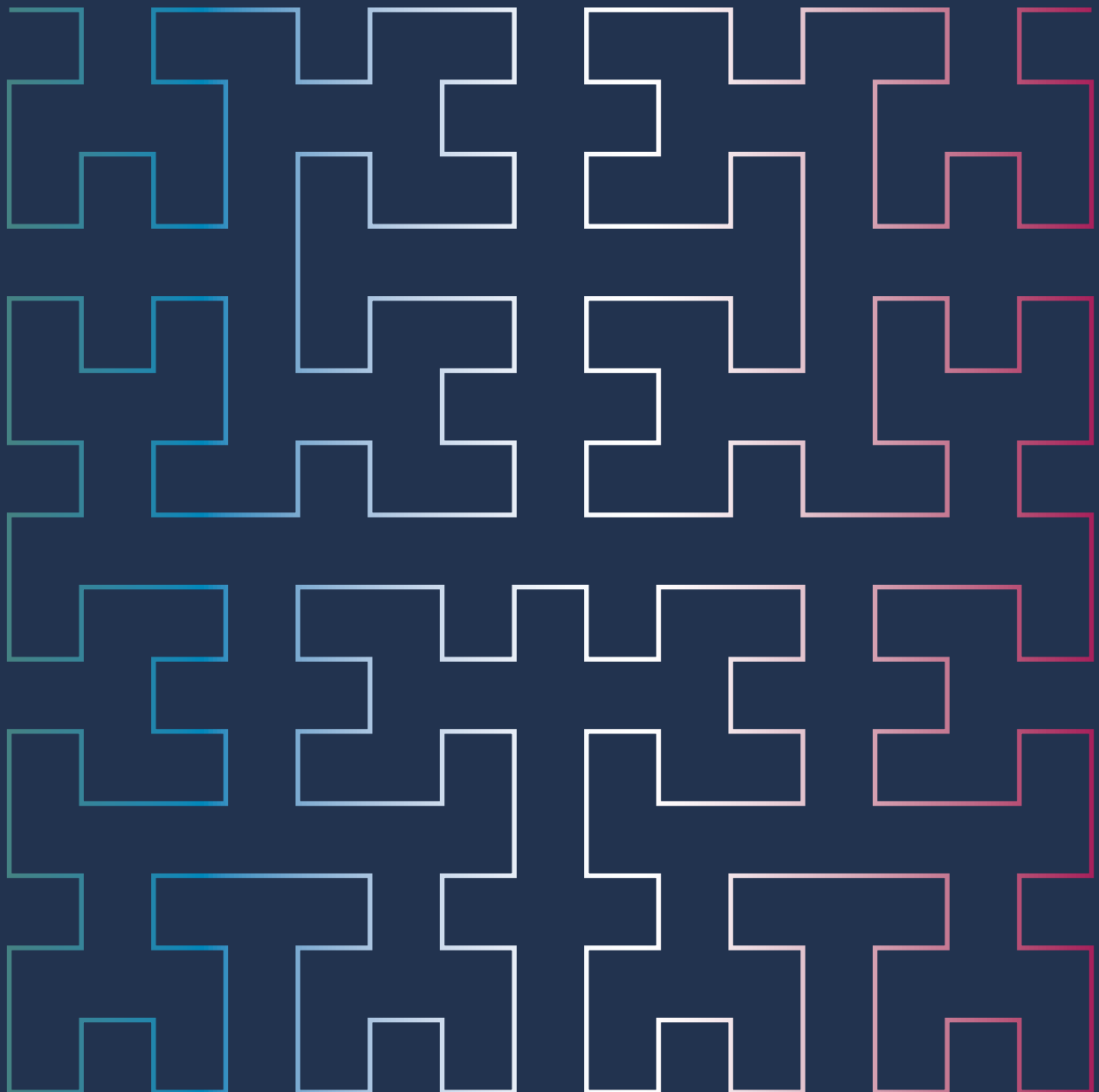LONDON
MATHEMATICAL
SOCIETY

EST. 1865

It is tempting to characterise the past year purely in terms of the unprecedented impact the COVID-19 pandemic has had on the Society's work and on the wider mathematics community. It has forced us to work from home, meant that mathematical events have been postponed or moved online, and it has led to profound changes in how we collaborate, the ways in which we teach mathematics, and in the opportunities available to early career mathematicians.

WELCOME FROM THE PRESIDENT

The Society can be proud of how it has risen to these challenges and used its resources to support the community. Our staff have done an outstanding job of maintaining the Society's operations and many of its mathematical activities, our Education Secretary played a leading role in developing the highly successful TALMO events, sharing best practice in relation to online teaching, we have provided additional funding to a significant number of early career mathematicians, and we have embraced the opportunities offered by videoconferencing, for example in having our first online General Meeting and Hardy Lecture in June.

I am sure we would all wish to be back to enjoying physical meetings, but the online General Meeting was a notable success, and it did mean that more Members could participate. The Hardy Lecture, delivered by Professor Peter Sarnak, was most interesting, and it was reassuring to see that our flagship mathematical events can continue to be held using the new technologies with which we have all become familiar.

However, focusing solely on the virus would ignore many other important developments within the Society this year.

Fiona Nixon retired as Executive Secretary and was replaced by Caroline Wallace, who brings a wealth of valuable experience and who is already making her mark.

The Society was fortunate to receive a significant donation from the Liber Stiftung, supporting fellowships for mathematicians with significant caring responsibilities. We also received a substantial gift from one of our Members, Dr Tony Hill, to fund a pilot scheme for providing additional tuition to A-level mathematics students from disadvantaged backgrounds and underrepresented groups.

It is particularly gratifying to see that a number of our Members have become De Morgan Friends of the Society by making a donation of £1,865 or more. These gifts have been tremendously important in enabling us to provide additional support to the community during the current pandemic. The Society has benefitted greatly from past Members' donations, and it is encouraging to see that the current Membership is equally generous and community spirited.

We are cooperating ever more closely with the other mathematical societies. To give one example, we are co-organising an online meeting to promote the work of black mathematicians with the British Society for the History of Mathematics, the Institute for Mathematics and its Applications, and the International Centre for Mathematical Research in Edinburgh.

On a personal note, I have greatly enjoyed working with the Society's excellent staff, its Officers, Trustees, and other Members who volunteer their time and expertise to help us with our work.

Caroline Series handed over a Society in robust health. We face serious challenges currently, and we anticipate more going forward, because changes in academic publishing are expected to have a significant impact on our income, and so on our ability to support the mathematics community through our charitable work. The fact that the Society has responded so robustly in the current situation gives us hope that we are well positioned to continue to thrive in an uncertain future.

Jon Keating

Professor Jonathan Keating FRS
President, London Mathematical Society

A MESSAGE FROM THE EXECUTIVE SECRETARY

I was delighted to join the London Mathematical Society in April. My thanks to the Trustees, the Member volunteers and the staff team for the very warm welcome I have received. The timing of my arrival was somewhat challenging, with staff having just started to work remotely. But it also presented wonderful opportunities to get to know the team rapidly and to launch straight into the work of the Society.

Caroline Wallace
Executive Secretary, London Mathematical Society

I have been struck by the many different ways in which the Society has a direct and positive impact on the lives of mathematicians. This impact is clear when reading the testimonials from the Emmy Noether Fellows about how the Fellowship has helped them continue with their research while balancing their caring responsibilities. It is clear when talking to the Society's representatives across the country about how the Society could help mathematicians cope with the changes and uncertainty arising from the pandemic, and then being able to follow this through by expanding the Society's grant schemes for early career researchers. It is clear in the level of interest in the Society's online events and lectures, in the number of other organisations with which the Society collaborates and in the enthusiasm of Members for their Society.
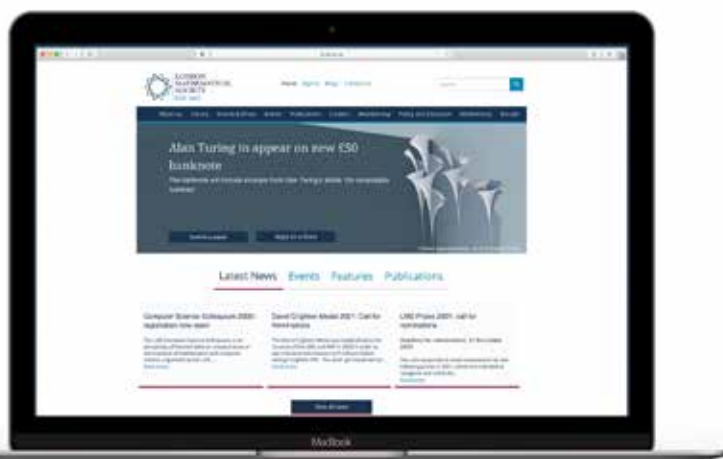
One of my aims for the coming year is to meet as many Members as possible, whether virtually or in person, to understand their interests and priorities. I also look forward to helping drive forward the new pilot scheme to provide enhanced tuition to A-level mathematics students from under-represented groups, to both raise aspirations and increase the ability to achieve them. I will also be leading the staff team as we assist the Society in considering its strategic response to the changing environment in which it finds itself, so that it can continue to support mathematics and mathematicians strongly and sustainably.

ABOUT THE LMS

The London Mathematical Society (LMS) is the UK's learned society for mathematics. Its purpose is the advancement, dissemination and promotion of mathematical knowledge, both nationally and internationally. The Society receives its resources through publishing, investments, membership fees and endowments. Providing funding in support of mathematics is the primary mechanism through which the Society achieves its charitable aims. Such activities are vital for the continued health of mathematics as a discipline, which is critical to the UK economy and which impacts on a wide range of societal activities. www.lms.ac.uk

The LMS website

ADAPTING TO MEET NEW CHALLENGES

This year has been an extraordinary year for the Society and has provided many unforeseen challenges, as it has for many organisations. Up until March 2020, the Society was working towards its charitable objectives through its established activities and channels, as well as developing and expanding its activities. The Society welcomed a new President in 2019, Professor Jon Keating FRS and said farewell and thank you to the outgoing President, Professor Caroline Series FRS.

During her tenure as LMS President, Professor Series was a tireless advocate for the LMS, promoting the Society's events and activities and acting as a spokesperson for the Society's interests. She was instrumental in taking forward changes that will ensure the robust governance of the Society and put structures in place to help safeguard the Society's long-term financial stability. Professor Series oversaw the conclusion of the review and update of the LMS Standing Orders (Charter, Statutes and By Laws), which will ensure the Society's governance structure is robust and fit for purpose.

This year also saw the retirement of Executive Secretary Fiona Nixon. Fiona was with the Society for almost 10 years and played a major role in enabling the Society to carry out its aims. During her time as Executive Secretary she oversaw considerable development and increase in the work of the LMS and she was an energetic presence in taking forward the wishes of Council and Members.

With the onset of the COVID-19 pandemic, the Society had to rethink how it works, how it supports the mathematics community and how it delivers against its charitable objectives. The pandemic meant that some of the Society's activities had to stop temporarily. Instead of cancelling events the Society, where possible, postponed its lectures and meetings.

One of the most significant changes has been the closure of De Morgan House. This has been a difficult time as the building is not only the administrative centre for the Society, but it also provides conference and meeting facilities to Society Members and other organisations. It is a major benefit to Members who come to use the facilities, including the Member's Room, and to meet colleagues from across the mathematics community. As the pandemic continues De Morgan House will remain closed but we hope to be able to welcome our Members back in the not too distant future.

Many of the Society's activities have continued. Both staff and committees adapted to remote working, with the Society's core business continuing, including publication of its journals. Meetings have been hosted on-line, including the Hardy Lecture, a Society General Meeting and a meeting of the Society's Representatives. These new ways of working have had benefits with attendance at virtual events much higher than expected, with greater geographic inclusion. Even closer working links have also been forged with other mathematical bodies as expertise in video conferencing has been shared, most notably with the International Centre for Mathematical Sciences (ICMS).

In addition, the Society has launched new initiatives in response to the pandemic. The Society set up a Working Group on COVID 19 and the Group consulted with the Membership to understand how the Society could best help the mathematics community, and successfully proposed the expansion of several of its grant schemes to support the community through the pandemic.

Of particular concern were the effects on young researchers and the mathematics people pipeline, the ability to continue conducting research, the setting up of online courses, and the effects on those with caring responsibilities. The Society created an Emergency COVID Reserve Fund to alleviate some of the most damaging effects of the pandemic and ensure that something positive should emerge from this crisis.

Together with the Institute of Mathematics and its Applications (IMA) and the Royal Statistical Society (RSS), the Society also supported the TALMO initiative (Teaching And Learning Mathematics Online), talmo.uk. This initiative was designed to help people learn how to exploit modern technology to deliver online courses and tutorials.

The Society will keep its response to the pandemic under review as the pandemic will continue to have a knock on effect across the mathematics community and broader scientific community, including in terms of equality, diversity and inclusion. It is clear that the impact of the pandemic is being felt unevenly across the mathematics community.

LMS Headquarters at De Morgan House

DISSEMINATING HIGH QUALITY MATHEMATICAL KNOWLEDGE

Through its publications the Society aims to disseminate high-quality mathematical research and thinking worldwide.

The Society currently publishes 12 peer reviewed journals, seven of which are in collaboration with other learned societies and institutions, as well as two book series and individual book titles. Through these journals and books the Society continues to share and endorse high quality research and exposition, made available worldwide and from an internationally diverse authorship.
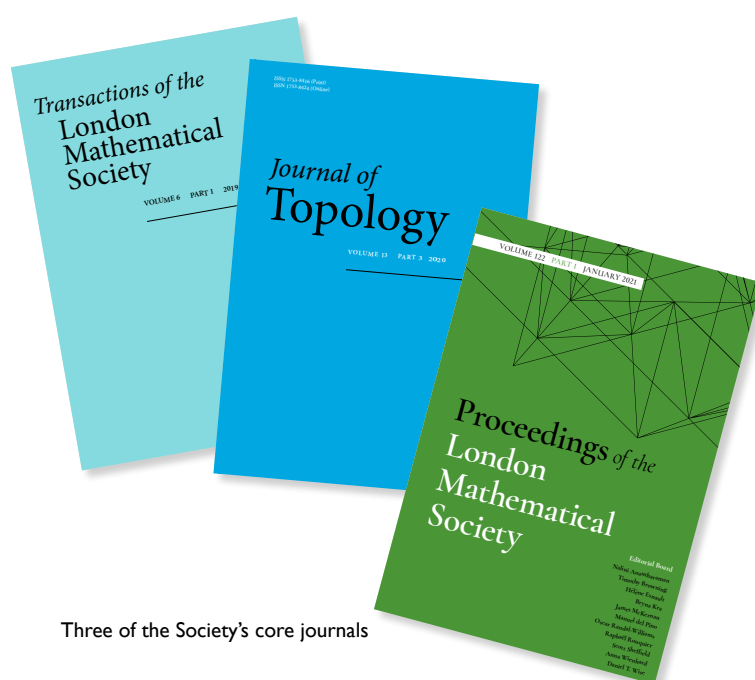
During 2019-20 the five LMS-owned journals published 327 articles online, an increase on 2018-19. There was also growth in open access content with 50 published articles made freely available under an open access licence.

In late 2019 the *Proceedings of the London Mathematical Society* began to publish, on EarlyView, the first articles handled by its separate Editorial Board and judged against revised criteria put in place to strengthen its position as the Society's flagship title. Events to mark this re-launch will be held at the virtual Joint Mathematics Meeting in January 2021, and at the postponed 8ECM in June 2021. A formal tendering process was initiated for a publishing partnership for the *Bulletin, Journal, Proceedings, Transactions, the Journal of Topology* and *Mathematika* from January 2022 and a decision is expected in the autumn of 2020

Building relationships with mathematicians around the world is incredibly important to the Society. In November 2019 the President (then Designate) led a delegation to Mainland China and Hong Kong for this purpose and to explore new opportunities for joint publications. The delegation met with the leadership of the Chinese and Hong Kong Mathematical Societies, and several other key mathematical institutes.

Significant shifts are taking place within scholarly publishing. The Society continues to work with its partners to ensure that publishing opportunities remain available to all researchers, irrespective of the requirements imposed on them or the funding they have available. We also aim to maintain the financial support that our journals and books make it possible for us to give to mathematicians and mathematics research.

The Society engaged with a number of consultations and discussions on funder policies which support an expedited transition to full open access. In May 2020 it provided a response to a UKRI consultation on a proposed open access policy. The Society also represented the views of mathematicians in industry discussions through its membership of the Society Publishers' Coalition (SocPC). This is a group of likeminded, not-for-profit learned societies, community publishers and charities who publish as part of their charitable objectives and who re-invest the surplus from their publishing into the disciplinary communities they serve. www.lms.ac.uk/publications

Three of the Society's core journals

LMS MEMBERSHIP

THE ROOTS OF SUCCESS

Our Members are at the heart of the Society as it supports mathematics and the mathematical community. The Society currently has around 3,100 Members from over 60 countries across a wide range of different career stages. The contributions of our Members are essential to the Society's work – they help to shape its future strategy, they participate in its committee work, and they assist it in running its activities and achieving its objectives.

The Society will continue to thrive by bringing people together to share knowledge and ideas. A broad and diverse membership is vital in building a sustainable Society and it is essential to attract new younger Members to provide a stimulus for the future. In 2019-20, the Society introduced the Associate (Undergraduate) membership rate so that students can enjoy membership at a reduced cost, thus aiming to attract those who will shape the Society's future success.

HONORARY MEMBERS 2020

The Society was delighted to elect Professor Maryna Viazovska (Ecole Polytechnique Federale de Lausanne) and Professor Lauren K. Williams (Harvard University and the Radcliffe Institute) as Honorary Members in 2020.

Professor Viazovska has produced ground-breaking work on sphere-packing problems in eight and twenty-four dimensions, based on innovative use of modular and quasimodular forms, and has made major contributions to spherical designs and Fourier interpolation. Professor Williams is an algebraic combinatorialist whose outstanding research includes influential contributions across many fields, including cluster algebras, mirror symmetry, tropical geometry, matroid theory, and integrable systems.

The network of LMS Representatives continues to provide a bridge between the Society and mathematics departments around the UK. There are currently 61 representatives providing vital communication channels through monthly email updates and an annual LMS Reps Day where Reps can engage with each other and the Society to exchange ideas and suggest topics for future events and activities. In 2020 the Society held a very successful online Reps Day. Attended by over 40 Reps, the meeting focussed on discussions of the Society's immediate plans to support the mathematical community in dealing with the impact of COVID-19 and the Reps' insight into the community's longer-term needs.

As well as regular monthly Reps e-updates the Society has continued to communicate with the Membership through monthly updates, keeping Members informed of upcoming events, activities and grant deadlines. It is important that LMS Members can engage dynamically with other Members and with the broader mathematical and scientific community and this opportunity for dialogue is provided by a number of blogs hosted by the Society, for example on education and the issue of Covid-19 support.

Professor Maryna Viazovska and Professor Lauren K. Williams

LMS NEWSLETTER

Since its redesign in 2017 the LMS Newsletter has gone from strength to strength and is now one of the key membership benefits for LMS Members. It provides a comprehensive channel of communication to LMS Members with a combination of news items, reports on Society business and mathematical features, overseen by the Editorial Board and Editor-in Chief, Dr Eleanor Lingham. In a year of unprecedented upheaval the LMS Newsletter has continued to provide a unique and vital contact point with the Society, especially for those Members who may not have access to other Society communications.

The Society encourages Members to contribute to the Newsletter and more information on how to submit material to the Newsletter is available at https://tinyurl.com/y5sy3h2t

LMS GRANTS

FUNDING FOR THE FUTURE

The Society plays a key role in supporting mathematics in the UK through its grant schemes. These schemes are crucial in providing support for mathematicians at different stages in their careers. The funding allows UK mathematicians to undertake research in pairs, organise conferences and workshops and invite collaborators to the UK, and there are also grants that support education and teachers' continuing professional development, help with caring responsibilities and career breaks, and develop international mentoring opportunities.

In 2019-20, £791,157 was awarded across the entire grant portfolio, including around £400,000 on the Society's core grant schemes through the Research Grants Committee. Of the 221 applications received for the core grant schemes, 204 (92%) were funded. The smaller scale funding provided by the Society's grants has a unique part to play in funding mathematical research. It not only provides opportunities to exchange ideas but also supports research and career progression

It has been an exceptional year, with ongoing uncertainty across academia and the research landscape as a result of the pandemic. In response, the Society enhanced its support for early career researchers by reopening its Early Career Fellowships so that mathematicians who are between completing their PhD and moving to a postdoc position can be supported during these uncertain times. An additional 22 Fellowships were awarded, trebling the number for this year. The Society also took the opportunity to support and extend the activities of its existing Scheme 3 Joint Research Groups. Scheme 3 grants were extended to September 2021 without the need to re-apply, unless changes were made to their institution or the grant holder. Ten groups received top-up grants to help run meetings next year. A total of 23 awards were also made to support the Scheme 3 Online Lecture Series. These lectures will appear on the LMS YouTube Channel https://tinyurl.com/n849jv4

www.lms.ac.uk/grants

UK-LEBANON ATIYAH FELLOWSHIPS

The LMS UK–Lebanon Atiyah Fellowship scheme was set up in memory of Sir Michael Atiyah OM (1929–2019). The Fellowships allow an established UK based mathematician to visit the Lebanon as an Atiyah Fellow for a period of between one week up to 6 months, or alternatively for a mathematician from the Lebanon of any level, in particular promising advanced level students from the American University of Beirut (AUB), to visit the UK to further their study or research for a period of up to 12 months.

The LMS was delighted to announce the award of the inaugural Fellowships to Professor Mark Wildon (Royal Holloway, University of London) and Professor Ahmad Sabra (AUB, Lebanon). Professor Wildon's main research area is the representation theory of the symmetric and general linear groups. Professor Sabra is interested in inverse problems involving surfaces which achieve prescribed optical tasks. He has studied the existence and uniqueness of such surfaces as well as their regularity properties and the stability of such optical systems.

Professor Ahmad Sabra and Professor Mark Wildon

AN INFLUENTIAL VOICE

SUPPORTING THE INTERESTS OF MATHEMATICS

The LMS continues to have a far reaching and pivotal role in the Mathematical Sciences community, seeking opportunities to bring the value and central importance of mathematics to the attention of decision makers, policy advisers and funders. The LMS individually and as part of the Council for the Mathematical Sciences (CMS) contributes to public debate on mathematics research, funding and education through responses to government consultations and direct liaison with organisations such as UK Research and Innovation (UKRI), Engineering and Physical Sciences Research Council (EPSRC), the Royal Society Advisory Committee on Mathematics Education (ACME), the Department for Business, Energy and Industry and other government departments.

The Society also collaborates with other STEM organisations to actively represent the views of Society Members and the mathematical community. Working with other organisations allows the Society to amplify its influence in making policy statements and contributing to the general discourse around major developments in science research and funding. In a significant boost for the Mathematical Sciences it was announced early in 2020 that government has committed up to £300 million of additional funding that will more than double the current funding for the Mathematical Sciences delivered by the Engineering and Physical Sciences Research Council (EPSRC), part of UK Research and Innovation (UKRI).

The advice and input from the Society to consultations and inquiries is evidence based and the LMS Research Policy Committee has continued to seek robust evidence to inform its contributions. In 2019-20 the LMS set up an 'Evidence Bank'. The aim of this project was to collate the data gathered by the Society over the years in one place, on its website, providing a great benefit to the mathematical community. A mission statement for the project will be written and the webpages will be made publicly available later in 2020.

Details of all policy and consultation submissions by the Society can be found at www.lms.ac.uk/policy/policy-consultations

THE BIG MATHEMATICS INITIATIVE

The Big Mathematics Initiative (BMI), established by the CMS to take forward the recommendations stemming from the 2018 Bond Review, continued with its work. In June 2020, before coming to a close in July, the BMI held a virtual event on *An Academy for Mathematical Sciences*, which focused on one of the key recommendations from the Bond Review – the establishment of an Academy for the Mathematical Sciences to facilitate links between academia, government and industry. This virtual event brought together over 250 members of the mathematical community to discuss the role and mission of an Academy and to think about possible next steps. https://tinyurl.com/y8wjw3ke

STEM FOR BRITAIN

For the seventh year the Mathematical Sciences, through the CMS, were represented in the prestigious STEM for Britain poster competition at the House of Commons, which brings together young researchers across all STEM (Science, Engineering, Technology and Mathematics) disciplines with Members of Parliament. The competition is an opportunity for early career researchers from around the UK to showcase their research to an influential national audience and to highlight the central role of the Mathematical Sciences in UK society and the economy.

L to R Dr Nira Chamberlain (President, IMA), Dr Adrien Lefauve (University of Cambridge) Dr Luiza Mihaela Paun (University of Glasgow) Dr Stephen Benn, Royal Society of Biology, Professor Martin Bridson (President. Clay Mathematics Institute), Dr Damien Galante (King's College London), Professor Jon Keating (President, LMS), Stephen Metcalfe MP (Chair, Parliamentary and Scientific Committee)

Luiza Mihaela Paun (University of Glasgow) received the Gold award for her research on *parameter inference and uncertainty quantification in pulmonary circulation*, the Silver was awarded to Adrien Lefauve (University of Cambridge), for his research *finding structures in the chaos of stratified turbulent flows* and the Bronze award went to Damien Galante (King's College London) for his research on *quantum emergence of expanding spacetimes*. The Gold and Silver awards (including prizes of £2,000 and £1,250 respectively) were sponsored by the Clay Mathematics Institute (CMI), and the Bronze award (£750 prize) was sponsored by the Heilbronn Institute of Mathematical Research (HIMR). https://tinyurl.com/y59p8so5

PARLIAMENTARY LINKS DAY

In July 2020 MPs, scientists and sector leaders came together to discuss the public trust in science as part of the first ever virtual Parliamentary Links Day. Links Day is one of the largest and longest running events in the Parliamentary calendar and this year's topic was dominated by the high-profile research and scientific advice that has been central to the UK's pandemic response.

Keynote speakers included Sir Patrick Vallance, Chief Scientific Adviser; Amanda Solloway MP, Minister for Science, Research and Innovation; Greg Clark MP, Chair, House of Commons Science and Technology Committee and Chi Onwurah MP, Shadow Minister for Business energy and Industrial Strategy. A guest panel, that included Dame Anne, Glover (Royal Society of Edinburgh), Venki Ramakrishnan (Royal Society), Dame Nancy Rothwell (Council for Science and Technology) and Sir David Spiegelhalter (University of Cambridge) also discussed the issues of public trust in science. The presentations and panel discussion are available online at https://tinyurl.com/y653ncdz

WOMEN AND DIVERSITY IN MATHEMATICS

SUPPORTING EQUALITY, DIVERSITY AND INCLUSION

Since its inception in 1999 the Society's Women in Mathematics Committee has been committed to improving the proportion of women in mathematics and helping to ensure that equal opportunities and consideration of broader issues of diversity are are embedded within working practices across the UK mathematics community.

To underline its commitment to broader diversity issues the LMS Council agreed in 2020 to change the name of the Women in Mathematics Committee to the Committee for Women and Diversity in Mathematics, which represents a significant step in broadening the committee's remit. This will allow the committee to consider a wider variety of issues around the under-representation of certain groups in mathematics and increase its range of activities and the funding it oversees.

During 2019-20 the Society supported an inaugural Diversity in Mathematics Day at University College London, which looked at *Black Role Models in STEM,* and agreed to support one Diversity in Mathematics event for schools each year aimed in particular at funding events that encourage racially diverse students to become more involved in mathematics. Also for the first time, the Society supported the LGBT+STEMinar held at the University of Birmingham and intends to continue supporting future events under its broader diversity remit. https://tinyurl.com/ygdzflw2

EMMY NOETHER FELLOWSHIPS

In 2019-20 the Society received a generous donation from the Liber Stiftung (Liber Foundation),to fund several Emmy Noether Fellowships. The Fellowships are designed to enhance the research of mathematical scientists who are either re-establishing their research programme after returning from a major break associated with caring responsibilities, or who require support to maintain their research programme while dealing with significant ongoing caring responsibilities.

The Society was delighted to award four inaugural Fellowships to Dr Milena Hering (University of Edinburgh), Dr Anne-Sophie Kaloghiros (Brunel University), Dr Irene Kyza (University of Dundee) and Dr Cristina Manolache (University of Sheffield). https://tinyurl.com/rrtfgj9

Dr Milena Hering, Dr Anne-Sophie Kaloghiros, Dr Irene Kyza (photograph by Kallum Corke) and Dr Cristina Manolache

INTERNATIONAL LECTURERS

The Society's funding for international lecturers helps enable UK-based mathematicians to engage in dialogue with current mathematical thinking from across the world. This year provided unforeseen challenges in adapting to the restrictions on global travel. Rather than postpone events, the Society embraced the technology available to provide platforms for mathematicians in the UK and around the world to come together and network in new ways.

INVITED LECTURE SERIES
Professor Yulia Mishura (Kiev) delivered the 2020 Invited Lecture Series on the subject of *Fractional Calculus and Fractional Stochastic Calculus*, including Rough-Paths, hosted virtually by Brunel University. https://tinyurl.com/y2gyehr4

HARDY LECTURESHIP
The LMS Hardy Lectureship is normally awarded every two year to an eminent mathematician to give a series of lectures around the UK culminating in the Hardy Lecture, presented at the Society Meeting in June/July. The Hardy Lecturer for 2020 was Professor Peter Sarnak (Princeton). During this unusual year Professor Sarnak was unable to tour the UK and

presented the Hardy Lecture at the Society General Meeting on 26 June via videoconferencing. Professor Sarnak presented his lecture on *Graph Sets for the Spectra of Cubic Graphs* to over 130 participants. The lecture was well received and highlighted some of the advantages in presenting via video conferencing. https://tinyurl.com/y4tj7ep6

Professor Sarnak's lecture on *Graph Sets for the Spectra of Cubic Graphs*
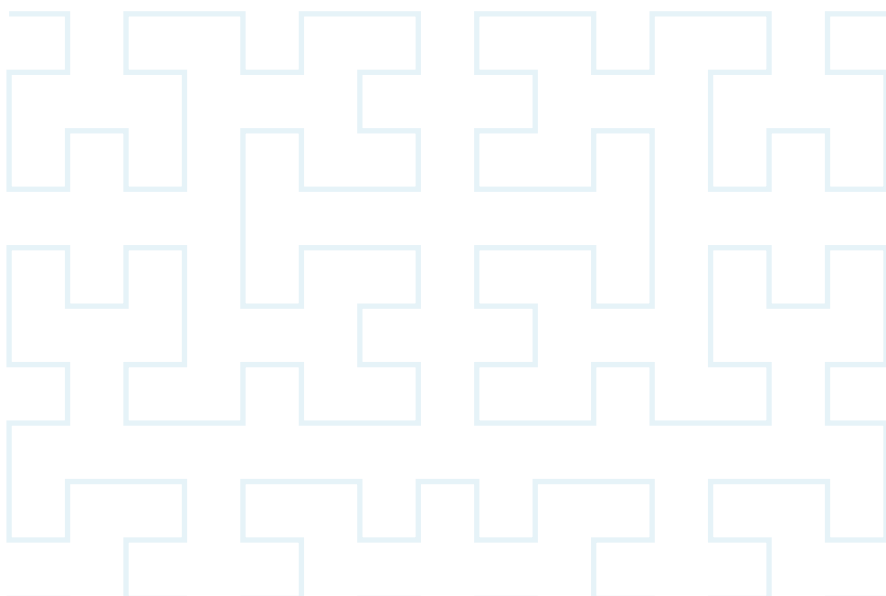
FORDER LECTURESHIP

The 2020 LMS-NZMS Forder Lecture was Dr Julia Wolf (University of Cambridge). The Forder Lecturer undertakes a tour of academic institutions in New Zealand and this year's lecture tour took place from 8-20 March 2020 with visits to six of the eight departments in New Zealand. The lectures that did take place were very well received. Two of the scheduled lectures were unfortunately cancelled due to the COVID-19 outbreak.
https://tinyurl.com/yyedckcx

Dr Julia Wolf

LMS PRIZES

CELEBRATING ACHIEVMENT

LMS Prizes celebrate outstanding achievements by mathematicians. The winners of the 2020 LMS Prizes were announced at the Society meeting on Friday 26 June. The Society extends its congratulations to the prize winners. www.lms.ac.uk/prizes

PÓLYA PRIZE
Professor Martin Liebeck
(Imperial College London)

SENIOR ANNE BENNETT PRIZE
Professor Peter Clarkson
(University of Kent)

SENIOR BERWICK PRIZE
Professor Thomas Hales
(University of Pittsburgh)

SHEPHARD PRIZE
Regius Professor Kenneth Falconer FRSE
(University of St Andrews)

SHEPHARD PRIZE
Professor Des Higham FRSE
(University of Edinburgh)

FRÖHLICH PRIZE
Professor Françoise Tisseur
(University of Manchester)

WHITEHEAD PRIZE
Dr Maria Bruna
(University of Cambridge)

WHITEHEAD PRIZE
Dr Ben Davison
(University of Edinburgh)

WHITEHEAD PRIZE
Dr Adam Harper
(University of Warwick)

WHITEHEAD PRIZE
Dr Holly Krieger
(University of Cambridge)

WHITEHEAD PRIZE
Professor Andrea Mondino
(University of Oxford)

WHITEHEAD PRIZE
Dr Henry Wilton
(University of Cambridge)

CHRISTOPHER ZEEMAN MEDAL

The 2020 joint LMS/IMA Christopher Zeeman Medal was awarded to Matt Parker. Matt is a former mathematics teacher and previous Public Engagement with Mathematics Fellow at Queen Mary, University of London. Matt's *Stand-up Maths* YouTube channel has half a million subscribers and his videos across YouTube have over 100 million views. In 2011 Matt helped found the Numberphile YouTube channel, which is now one of the most successful YouTube channels with over 3 million subscribers
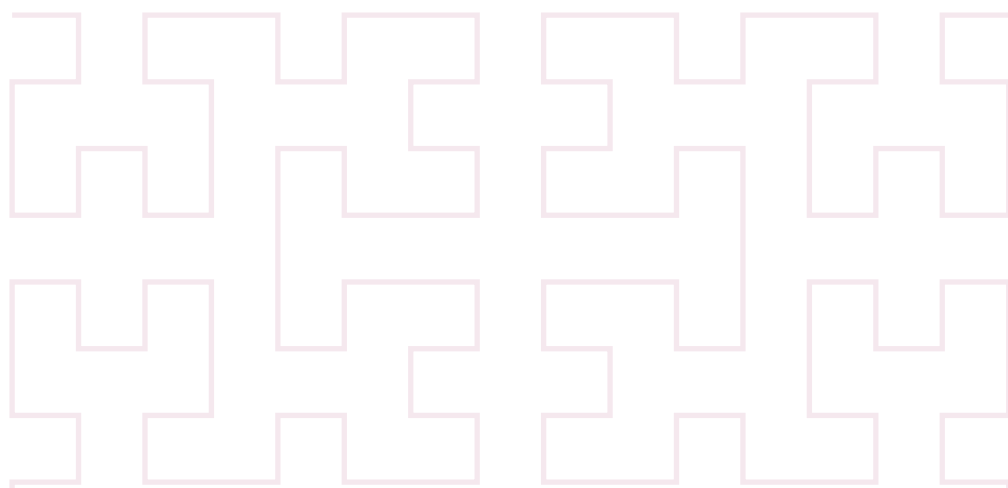

Matt Parker

LOUIS BACHELIER PRIZE

The 2020 Louis Bachelier Prize was awarded to Professor Mathieu Rosenbaum (École Polytechnique, Paris). The Louis Bachelier Prize is awarded jointly with the Société de Mathématiques Appliquées et Industrielles (SMAI) and in association with the Natixis Foundation for Quantitative Research.

Professor Mathieu Rosenbaum

ENGAGING WITH EDUCATION AND THE PUBLIC

THE VALUE OF MATHEMATICS

An important area of the Society's work involves engaging with the wider public and young people in particular to understand the value of mathematics in its own right and its value to society.

Thanks to a generous donation from Dr Tony Hill, the Society has started work on a new venture – *Levelling Up Scheme* – to support the provision of online tutoring for A-level Mathematics students who come from backgrounds that are under-represented in the mathematics community.
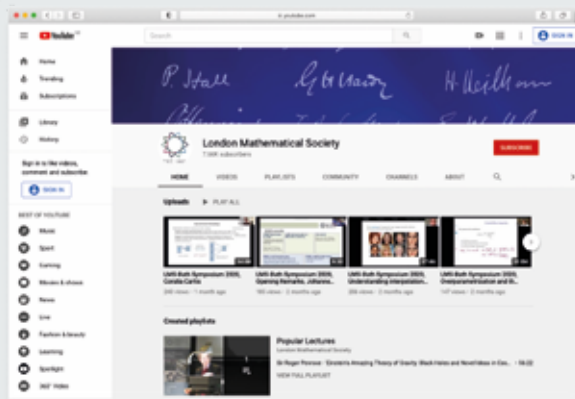
Working with three or four universities initially, the pilot aims to bring together undergraduate student tutors with A-level mathematics students who wish to improve their grades to enable them to read a degree with a significant mathematical content. Each university will identify nearby schools with significant percentages of students from under-represented backgrounds and enlist the help of undergraduate students to tutor and engage with their A-level tutees.

Through enhancing the A-level students' engagement with mathematics, the Levelling Up Scheme aims to increase the diversity of students pursuing STEM degrees and, eventually, careers. Through providing mentoring to the tutors from experienced teachers, the scheme also aims to enrich the tutors' teaching skills and knowledge, and improve the foundation on which they build the next step in their careers.

The Scheme will be rolled out to Year 12 students in early spring 2021.

OTHER ENGAGEMENT CHANNELS

The Society normally offers a series of Popular Lectures but for the first time since their inception the Lectures in London and Birmingham were postponed due to the COVID-19 crisis. Following the postponement of these lectures the Society supported a very successful virtual Popular Lecture in collaboration with the University of Glasgow during Maths Week Scotland. Dr Diana Davis from Philips Exeter Academy talked about the beautiful patterns created by billiard balls in her lecture entitled *Billiards on Regular Polygons*.

The Society was also unable to collaborate with the Royal Society on the successful *Maths Inside* project but it hopes that these will once again be part of the Society's outreach activities in 2021.

The LMS has three active Twitter accounts: @LondMathsoc, @womeninmaths and @DeMorganHouse. The combined number of followers for the past year has increased to over 28,500. The Society's YouTube Channel subscriptions have risen to over 7,000 and the channel has benefited from increased online activities during 2019-20, with the opportunity to record lectures and to provide a more varied content stream. https://tinyurl.com/n849jv4

LONDON
MATHEMATICAL
SOCIETY
EST. 1865

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