LMS SOCIETY AND ANNUAL GENERAL MEETING 2022

Friday, 18 November 2022 at 3.00 pm at Goodenough College,
Mecklenburgh Square, Holborn, London WC1N 2AB and via videoconference

AGENDA

1. Minutes of General Meeting, 1 July 2022
To agree the minutes of the General Meeting held on 1 July 2022 (minutes attached).

2. Review of Society Activities 2021-22
A report will be given by a Vice-President, Professor Iain Gordon, on the Society's activities over the last year.

3. Report of the Treasurer
The Society's Treasurer, Professor Simon Salamon, will present his report on the past year and invite questions.

4. Resolutions to adopt the Trustees Report and to appoint the auditors:

5.1 Adoption of the Trustees' Report including the year-end accounts for 2021-22 (Trustees' Report attached)
5.2 Appointment of Auditors

The Society's President, Professor Ulrike Tillmann FRS, will invite questions on the resolutions and recommend the adoption of the Trustees' Report and the appointment of the Auditors.

5. Presentation of Certificates to the 2022 LMS Prize Winners
Certificates will be presented to the winners of the De Morgan Medal, Senior Berwick Prize, Shephard Prize, Fröhlich Prize, Anne Bennett Prize and Whitehead Prizes.

6. Elections to Membership
Presentation of applications for election to membership.

7. Supporting Lecture – Professor Josef Málek (Charles University, Prague)

Beyond the incompressible Navier-Stokes equations: mathematical foundations of models of non-Newtonian fluids

Abstract: A century ago theoretical physicists and mathematicians changed the viewpoint regarding the meaning of solving problems associated with partial differential equations in general, and the incompressible Navier-Stokes equations in particular. Instead of considering a solution to a partial differential equation as a complicated mapping between two sets of variables, they began to view a solution as a point in a suitable infinite-dimensional space. In a landmark paper published in 1934, by paying careful attention on connections between mathematical approaches and the physical underpinnings of the problem, Jean Leray, succeeded

in developing a robust mathematical framework for the analysis of solutions to the Navier-Stokes equations.

The Navier-Stokes equations cannot, however, describe the physical responses of fluids that are endowed with complex microstructure or the extreme behaviour that certain fluids exhibit.

The study of non-Newtonian fluids, i.e. fluids whose flows cannot be described by the Navier-Stokes equations, is an area of fluid mechanics involving a vast array of various models, covering different physical phenomena, used in different application areas, in different physical contexts, and developed on different, frequently rather ad hoc, intuitive bases. We provide a systematic classification of mathematical models of non-Newtonian fluids based on the phenomena they can exhibit, and identify three large classes of models. For two of them, namely implicitly-constituted viscous fluids and viscoelastic fluids with stress diffusion, we then report on recent work concerning the development of robust mathematical theories, in the spirit of Leray's work. These new theories precisely determine the mathematical objects that can be approximated by computational methods and have the potential to serve as correct analytical frameworks for the quantification of the error between exact and computed solutions in numerical approximations of these models. These developments build on several recent studies and have been finalized in recent joint papers with Michal Bathory, Miroslav Bulíček and Erika Maringová.

Tea/Coffee Break

8. Election Results

The election results for vacancies on Council and Nominating Committee will be declared by the Scrutineers.

9. Naylor Lecture 2022: Professor Endre Suli FRS (Oxford)

Hilbert's 19th problem and discrete De Giorgi--Nash--Moser theory: analysis and applications.

Abstract: Models of non-Newtonian fluids play an important role in science and engineering and their mathematical analysis and numerical approximation have been active fields of research over the past decade. This lecture is concerned with the mathematical analysis of a large class of numerical methods for the approximate solution of a system of nonlinear elliptic partial differential equations that arise in models of chemically-reacting viscous incompressible non-Newtonian fluids, such as the synovial fluid found in the cavities of synovial joints. The synovial fluid consists of an ultra-filtrate of blood plasma that contains hyaluronic acid, whose concentration influences the shear-thinning property and helps to maintain a high viscosity; its function is to reduce friction during movement. The shear-stress appearing in the model involves a power-law type nonlinearity, where, instead of being a fixed constant, the power-law exponent is a function of a spatially varying nonnegative concentration function, which, in turn, solves a nonlinear convection-diffusion equation. In order to prove the convergence of the sequence of numerical approximations to a solution of this coupled system of nonlinear partial differential equations one needs to derive a uniform Hölder norm bound on the sequence of approximations to the concentration in a setting where the diffusion coefficient in the convection-diffusion equation satisfied by the concentration is merely a bounded function with no additional regularity. This necessitates the development of a discrete counterpart of the De Giorgi--Nash--Moser theory, which is then used, via a combination of various weak compactness techniques, to deduce the convergence of the sequence of numerical approximations to a weak solution of the coupled system of nonlinear partial differential equations under consideration. The theoretical results are illustrated with numerical simulations.

10. Next General Meeting

The next General Meeting of the Society will take place on Friday 30 June 2023.

Simon Edwards, Executive Secretary
28 October 2022

Unconfirmed

LONDON MATHEMATICAL SOCIETY

MINUTES

Of the General Meeting of the Society held on 1 July 2022 at BMA House, London and via video conference

1.0 OPENING OF THE MEETING

1.1 Vice-President Professor Cathy Hobbs welcomed attendees to the meeting.

2.0 RESOLUTIONS

i) Minutes of the Annual General Meeting held on 12 November 2021

2.1 **The minutes of the Annual General Meeting held on 12 November 2021 were agreed as an accurate record.**

ii) Appointment of Scrutineers

2.2 Council had proposed that Professor Charles Goldie and Professor Chris Lance be appointed as Scrutineers for the 2022 LMS elections for Council and Nominating Committee.

2.3 **The proposal was carried unanimously.**

iii) Honorary Membership

Council had proposed two Honorary Members be elected in 2022: Professor Vladimir Drinfeld and Professor Jennifer Tour Chayes. The President read brief citations for each.

2.4 **It was unanimously agreed to elect Vladimir Drinfeld and Jennifer Tour Chayes to Honorary Membership of the Society.**

3.0 ANNOUNCEMENT OF THE LMS PRIZE WINNERS 2022

3.1 Vice-President Hobbs announced the winners of LMS Prizes in 2022. The 2022 prizes were:

De Morgan Medal:	Professor Sir John Ball
Senior Berwick Prize:	Professors John Greenlees and Brooke Shipley
Shephard Prize:	Professor Andrew Lobb
Fröhlich Prize:	Professor Richard Thomas
Anne Bennett Prize:	Dr Asma Hassannezhad
Whitehead Prizes:	Professor Jessica Fintzen
	Professor Ian Griffiths
	Dr Dawid Kielak
	Dr Chunyi Li
	Professor Tadahiro Oh
	Professor Euan Spence

3.2 Vice-President Hobbs offered congratulations to the prize winners on behalf of the Society.

4.0 ANNOUNCEMENT OF THE BACHELIER PRIZE 2022

4.1 Vice-President Hobbs reported that Professor Beatrice Acciaio of ETH Zűrich was awarded the Bachelier Prize in 2022 for her deep contributions to mathematical finance. The Bachelier Prize is jointly awarded by the LMS, the Natixis Foundation for Quantitative Research and the Société de Mathématiques Appliquées et Industrielles.

5.0 PRESIDENT-ELECT

5.1 Vice-President Hobbs informed the meeting that Professor Jens Marklof had been chosen as the Society's next President-Elect, taking office in November 2023.

6.0 NOMINATIONS TO MEMBERSHIP

6.1 The members **agreed to the election of 30 new members** of the Society.

7.0 PROSPECTIVE MEMBERS

7.1 Vice-President Hobbs invited any non-members in attendance who wished to join the Society to speak to the Membership & Grants Manager at the meeting break or to visit the Society's website for further details: www.lms.ac.uk.

8.0 RECORDS OF PROCEEDINGS OF PREVIOUS MEETINGS

8.1 Vice-President Hobbs reported that Records of the Proceedings of the following Society Meetings held in person in 2022 had been published in the LMS *Newsletter*:

1. LMS South & South Wales Region Meeting 2022, online, hosted by Swansea University, 4 January 2022.

2. LMS Midlands Regional Meeting, hosted at the University of Birmingham and online, 4 April 2022.

With the agreement of members, the Vice-President signed these as a correct record.

9.0 NEXT TWO MEETINGS

9.1 Vice-President Hobbs reported that the next two meetings of the Society would take place on:

1. **7 July 2022** at University of Copenhagen, as a satellite event of the virtual ICM. The LMS Lecturer would be Karen Vogtmann (University of Warwick) on the topic of *Spaces of graphs*.

2. **16 September 2022** at De Morgan House and online, as part of the Joint Meeting with the IMA and BSHM on the topic of *Women in Astronomy.*

All were welcome to these meetings and further details could be found on the Society's website.

10.0 LMS PUBLICATIONS

10.1 Vice-President Hobbs reported that the London Mathematical Society had published mathematical texts since its founding in 1865 and was now involved in the publication of 12 journals and 2 book series. Further details about these publications could be found on the LMS website.

11.0 DONATIONS TO THE SOCIETY

11.1 Vice-President Hobbs informed the meeting that, in the past, the Society had benefitted from donations from many individuals, notably Lord Rayleigh, G.H. Hardy and S. Verblunsky. Members and non-members could now donate to the Society via the button on the website. In particular, a new venture was launched in 2019: the De Morgan Donations for anyone able to make a donation of £1,865 or more to the Society and become one of the De Morgan Friends. Further details could be found on the Society's website.

12.0 UPCOMING SOCIETY ACTIVITIES

12.1 Vice-President Hobbs highlighted a number of upcoming Society activities:

- **8 July:** LMS hosted ICM Public Lecture (online via Zoom). Geordie Williamson (Sydney) on *Machine Learning as a tool for the mathematician*.
- **11 July:** LMS hosted ICM Public Lecture (online via Zoom). Elena Georgi (Colombia) on *Black Holes: A Mathematical Enlightenment*.
- **13 July:** LMS hosted ICM Public Lecture (online via Zoom). Tadashi Tokieda (Stanford) on *A world from a sheet of paper*.
- **18-22 July:** LMS Research School on *Unimod 2022* (Leeds). Speakers: Amador Martin-Pizarro (Albert Ludwig Universität in Freiburg), *Stability Theory*; Assaf Hasson (Ben Gurion University of the Negev), *NIP and o-minimality*; and Zoé Chatzidakis (École Normale Supérieure), *Simple and pseudofinite structures*.
- **18-22 July:** LMS Invited Lecture Series: *Equations in Groups and Complexity*, Newcastle. LMS Invited Lecturer: Olga Kharlampovish (CUNY Graduate Center and Hunter College).
- **18-22 July:** LMS Research School on Knowledge Exchange: *Rigidity, Flexibility and Applications* (Lancaster). Speakers: Idris Eckley (Lancaster), Rebecca Killick (Lancaster), David Leslie (Lancaster), Andrea Liu (Pennsylvania), John Owens (SIEMENS UK).
- **18-22 July:** LMS-INI-Bath Symposium on *K-Theory and Representation Theory,* Bath. Speakers: A. Afgoustidis (Metz), A-M Aubert (Paris), P. Hochs (Nijmegen), B. Mesland (Leiden), S. Nishikawa (Muenster), H. Schlichtkrull (Copenhagen), S. Shen (Paris), M. Solleveld (Nijmegen), S. Stevens (UEA), M. Vergne (Paris), H. Wang (Shanghai), N. Wright (Southampton).
- **18-29 July:** LMS-Bath Symposium & Summer School on *New Directions in Water Waves*, Bath. Speakers: Jon Chapman (Oxford), Darren Crowdy (Imperial), Erik Wahlén (Lund), Zhan Wang (CAS), Ricardo Barros

(Loughborough), Magda Carr (Newcastle), Monica Musso (Bath), Jean-Marc Vanden-Broeck (UCL), Tom Bridges (Surrey), Juan Davila (Bath), and others.

13.0 FIRST LECTURE: BECKY ARMSTRONG (UNIVERSITY OF MUENSTER)

14.1 Dr Becky Armstrong gave a lecture on *Groupoidology*.

15.0 AITKEN LECTURE 2022: LISA ORLOFF CLARK (VICTORIA UNIVERSITY OF WELLINGTON)

15.1 Professor Lisa Orloff Clark gave the Aitken Lecture for 2022 on *Equivalence relations, topology and C*-algebras*.

16.0 CLOSE OF MEETING

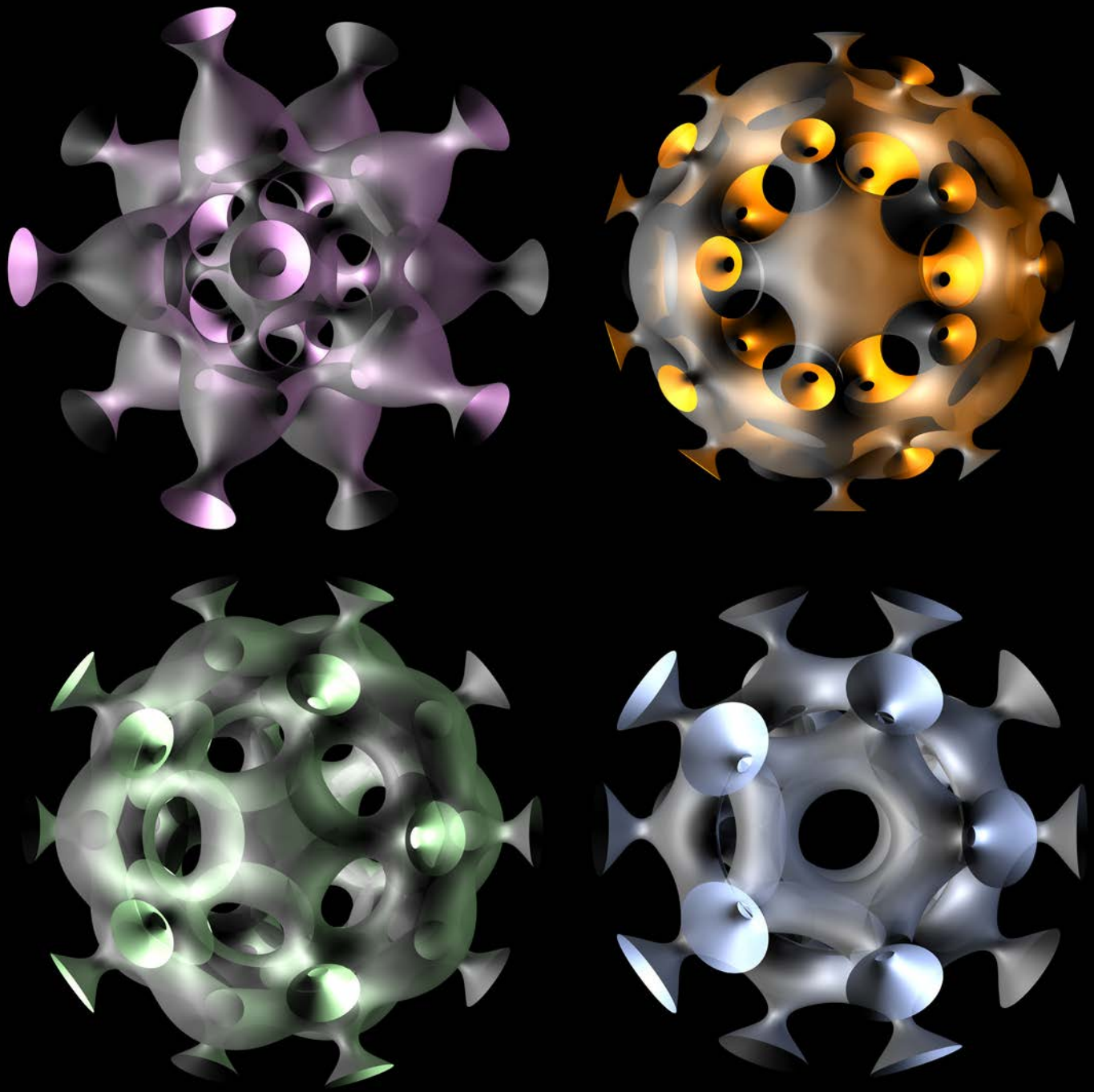
16.1 Vice-President Hobbs thanked the two speakers for their fascinating lectures. She invited those who were joining the wine reception that followed to be guided by the Executive Secretary, Caroline Wallace, to the Society's building, De Morgan House.

16.2 Vice-President Hobbs closed the meeting and thanked everyone for attending.

London Mathematical Society

Report of the Trustees for the period

1 August 2021 – 31 July 2022



LONDON
MATHEMATICAL
SOCIETY

INTRODUCTION

At its Annual General Meeting in November 2021, the Society welcomed Professor Ulrike Tillmann as President and said farewell to Professor Jon Keating who piloted the Society so successfully through the worst of the pandemic.

This year, the Society has been delighted to be able to re-establish many of its in-person activities. We have applied the lessons learnt during the pandemic about more effective ways of working while also launching entirely new areas of activity. We have sought to balance the tactical with the strategic, as we recover from the pandemic, deal with the challenges created by current events and plan carefully for the future.

We have returned to our programme of in-person Society meetings and events. We held our first ever 'hybrid' Annual General Meeting in November 2021 which was followed by a very successful Annual Dinner. Another highlight of our events calendar was our Society meeting focused on the life and work of Alan Turing — and how this is celebrated in the design of the UK's new £50 bank note. We held in-person regional meetings in Birmingham and Leeds, we welcomed the 2021 International Mathematical Olympiad team to De Morgan House and, together with the Institute of Mathematics and its Applications (IMA), we held the Crighton medal award event at the Royal Society to honour the achievements of Professor Ken Brown (winner of the 2019 medal) and Professor Caroline Series (winner of the 2021 medal). It was also a pleasure to be able in April to take part in the first in-person Heads of Departments of Mathematical Sciences (HoDoMS) conference for three years.

Work continued this year to ensure that the Society's finances are on a solid and sustainable footing for the future. Funds were allocated for 'Covid catch-up' activities, recognising that there would be costs this year for activities and grants that were postponed during the pandemic, in addition to the costs of the Society's normal programme of work. While the Society's conference room business is beginning to show promising signs of recovery, the Society's income from commercial lettings at De Morgan House has been lower than hoped as the market for central London office space remains difficult. Following key Council decisions last year, the Society also implemented a programme of budget reductions in its 2021-22 financial year. This has ensured that the balance between the Society's income and expenditure is maintained, particularly as the income from the Society's publishing activities reduces due to changes in academic publishing, including the move to open access. A Publications Retreat was held in June to develop the Society's strategic response to these significant changes in the publishing market.

We are very grateful for the support from our donors both small and large. Two of the Society's key projects to promote diversity in the mathematical community have benefited from the generosity of our benefactors. Dr Tony Hill, Simon Godwin and the Heilbronn Institute for Mathematical Research (HIMR) together have supported our work on the Levelling Up: Maths online tutorial scheme for A-level mathematics students from under-represented backgrounds. The Liber Foundation has continued to fund the Society's Emmy Noether Fellowships in 2022 for research mathematicians with caring responsibilities. HIMR has provided additional funding for the Society's summer schools, undergraduate research bursaries and Early Career Fellowships. XTX Markets continues to fund the Protect Pure Maths (PPM) campaign, founded by the Society to ensure that the mathematical sciences are understood, valued and properly funded and to prevent further cuts to pure mathematics in universities. The Isaac Newton Institute has provided funding for LMS activities that support early career researchers in mathematics and the Society has received a generous bequest from the estate of a Member of the Society towards its work of advancing the development of mathematical knowledge.

In response to the devastating Russian invasion of Ukraine, the Society launched several strands of work in its areas of activity. The Society introduced two grant schemes to support members of the mathematical community who have had to leave their homes and who are seeking refuge in the United Kingdom. These schemes have been made possible thanks to a donation from XTX Markets' 'Academic Sanctuaries Fund' which is supporting students and academics impacted by the war in Ukraine. While the Society reaffirmed its support for all individual mathematicians within the international community, irrespective of nationality, we were clear that collaborations with Russian government institutions or agencies were no longer acceptable or appropriate. The Society welcomed the decision of the International Mathematical Union (IMU) not to hold the 2022 International Congress

of Mathematicians (ICM) in St Petersburg in summer 2022, as had previously been planned. The Society also ceased its journal exchanges with Russian and Belarusian institutions and has suspended for the time being the publication of three mathematics journals translated from Russian which operate in partnership with Institute of Physics Publishing (IOPP) and the Russian Academy of Sciences.

Alongside re-establishing a fuller programme of activities following the pandemic and responding to in-year developments, the Society has continued to plan for the future. The Society adopted a sustainability policy last year and energy efficiency and waste management improvements have been made at De Morgan House. This year, the Society began to review its charitable activities with a view to changes that could be made to reduce their impact on the environment. This has included encouraging those in receipt of Society grants to take sustainability into consideration in their plans, and working towards lower carbon travel – and travel-free alternatives such as online participation - for the Society's events and lectureships.

In December 2021, the Council for Mathematical Sciences (CMS) consulted on a proposal for a National Academy for Mathematical Sciences, which would focus on external advocacy and enhancing connections across the mathematical sciences community. Following the consultation, the CMS proceeded — with support from CMS members including the Society — to a set-up phase including the appointment of a CEO and President for a proto-Academy. A 'go/no go' decision for the Academy is to be taken within three years. In May 2022, the Society sought the views of its members on these proposals through a membership survey. The survey showed general support for an Academy although a range of specific concerns were raised. The anonymised results of the survey were published in September 2022 and have helped guide the Society's Council in its discussions of the Academy.

The Protect Pure Maths (PPM) campaign has grown in reach and impact this year. One of its key achievements was the confirmation by the Chancellor in his Spring Statement that tax relief for research and development will be expanded to include research into pure mathematics, something which had previously been explicitly excluded. In May, President Tillmann gave oral evidence to the House of Commons Science and Technology Select Committee on diversity in STEM. The Society is delighted to be working alongside the IMA on the Steering Group of this important campaign.

Lastly, the Society is looking forward to welcoming a new Executive Secretary, Simon Edwards, in November 2022, having said farewell and thank you to the outgoing Executive Secretary, Caroline Wallace, earlier in the year.

As always, it is only possible to mention a small selection of the Society's activities in this introduction. Please read on for a fuller description of the wide range of activities undertaken by the Society in support of the mathematical community.

MISSION

The London Mathematical Society has, since 1865, been the UK learned society for the dissemination and promotion of mathematical knowledge. Our mission is to advance mathematics through our members and the broader scientific community worldwide.

The Membership

Around 3,100 mathematicians and students of mathematics are members of the Society. Our members are at the heart of the Society as it supports mathematics and the mathematical community. Volunteers' contributions are vital to the Society in defining its priorities, running its activities and achieving its objectives. The Society at present has 25 committees with more than 200 volunteer committee roles and other individual roles, as well as 32 volunteer roles representing the Society on external committees.

The Society's diverse membership includes mathematicians from around the world and at a wide variety of different career stages. Following feedback from the Society's network of LMS Reps that tiered Ordinary memberships rates would be welcomed by the mathematical community Council agreed to offer three tiers of Ordinary membership rates from 1 November 2021 onwards. Members who pay the Ordinary membership rate can confirm which membership rate they wish to pay based on whether their annual professional income falls within the following ranges:

- Above £65,000 per annum: Ordinary (high) member rate.
- Between £35,000-£65,000 per annum: Ordinary (middle) member rate.
- Up to £35,000 per annum: Ordinary (low) member rate

The Society does not collect any data on members' actual professional income nor require proof of earnings. Instead, Ordinary members are asked to advise either via their online member record or the subscription form which tier of Ordinary membership subscription they will be paying.

In 2022, the Society was delighted to elect Professor Jennifer Tour Chayes (University of California, Berkeley, USA) and Professor Vladimir Drinfeld, (University of Chicago, Illinois, USA), as Honorary Members.

2022 Honorary Members Jennifer Tour Chayes and Vladimir Drinfeld

Communications and Engagement

The Society continues to work to the Communications Strategy and Operation Plan agreed in 2020-21, with Vice-President Cathy Hobbs as the Council member leading on communications matter. As part of the strategy, communications has become a standing item on the agendas of the Society's Council and key committees, to ensure that newsworthy developments are picked up and shared through the most appropriate communications channels.

Communication with its members and other audiences, including the wider mathematics and STEM communities, policy makers and the general public, is key in ensuring that the Society keeps abreast of the most interesting and exciting developments in mathematics and the mathematicians associated with this work. The Society acknowledges achievements in mathematics through prize-giving, Honorary Memberships and invitations to give lectures.

PROTECT <PURE> MATHS

Effective communication also ensures that the Society can identify the current concerns within the community and can work to help address them. This year, the Society has continued to work closely with the Protect Pure Maths (PPM) campaign to advance the mathematical sciences in the UK. The campaign has been particularly effective in engaging with media (leading to several letters and

articles by members of the mathematical community, including the LMS President, being published in the mainstream press) and government. The focus of the campaign's activities this year has been on asking the Government to both deliver and report on the £300m funding for mathematical sciences research announced in the January 2020 budget. The status of the additional funding was discussed at a Science and Technology (S&T) Select Committee hearing on 15 June. The campaign has also been instrumental in highlighting diversity in STEM to government; in May, the LMS President gave evidence to an S&T Select Committee on the chronic underrepresentation of women at every level of mathematics education. In addition, the campaign is working to secure a parliamentary inquiry on mathematics, ensuring PPM representatives are called to give input, and has taken steps towards its aim to strengthen the business community, particularly AI businesses, to become a stronger voice on the importance of mathematics and investing in mathematical research.

We are grateful for the assistance of the network of LMS Representatives across UK universities, who help us to identify issues of concern and to communicate with our members. Currently, there are 66 LMS Representatives with whom the Society communicates via monthly emails and, from 2022-23 onwards, a biennial LMS Reps Day at which the Society can engage with and obtain feedback from the Reps.

In addition to the LMS Representatives there is also a network of Good Practice Scheme (GPS) Representatives who provide contact points between GPS Supporter departments and the Society. The GPS is a Society initiative which encourages mathematics departments to embed equal opportunities for women within their working practices. There are currently 64 GPS Representatives at departments across the UK. The Society also engages with equality and diversity issues in mathematics more broadly and this work will continue over the coming year.

The regular mid-month LMS e-Update keeps members informed of upcoming events and grant deadlines as well as other Society news, reminders of how to "Maximise Your Membership" and links to recent articles from journals within the LMS Publications portfolio.

The LMS has an active Twitter account, @LondMathsoc, which is used to advertise Society events and activities, highlight awards and promote news of interest to the mathematical community, as well as share news relevant to its Publications latest updates, such as Issue releases. Since August 2021 the Society's Twitter account has gained over 3000 new followers, bringing its total number of followers to 23.4K. In order to bring further focus to the LMS library and increase its membership, the Book of the Month initiative was launched, where once a month the Publications Assistant posts photographs and information of a selected work that is part of the Philippa Fawcett collection and to which members have access. The Society continues to be active on YouTube and its account now regularly features recordings from online and hybrid meetings. Finally, the main LMS LinkedIn account was recently reviewed and updated and we are currently working on populating the account with Society news and updates. The UK Women in Mathematics LinkedIn Group has remained constant at around 130 followers.

The Society's Newsletter continues to function as a central resource for mathematical and Society news and events. In 2021-22, the Newsletter has included mathematical feature articles on a diverse range of topics such as Mathematical Jigsaws, Watson's Bessel Functions and Guesswork. In May, the Newsletter published its 500th issue, which featured mathematical articles from prominent UK and international mathematicians, as well as recollections from former Editors-in-Chief (from 1973 to the present day) from their time in the role. The Society has undertaken a number of successful collaborations in 2021-22, including with Plus Magazine during the 2022 ICM. Plus Magazine took over the LMS Twitter account on one of the days and live tweeted several of the Fields Medal Lectures. The Society has improved its engagement with other mathematics organisations and now liaises regularly with, for example, the International Centre for Mathematical Sciences (ICMS) and the Isaac Newton Institute for Mathematical Sciences (INI) to organise mutual promotion of activities.

2021–22 highlights

- Ongoing success of the Protect Pure Maths campaign
- Increased engagement on social media: over 23,000 followers on the LMS Twitter account and over 9,300 subscribers to the Society's YouTube channel.
- More recorded lectures made publicly available.
- Two new Honorary members elected: Professor Jennifer Tour Chayes and Professor Vladimir Drinfeld
- New tiered Ordinary membership rates introduced.
- Introduction of a new membership benefit: free online access to the journal *Mathematika*.

2022–23 plans

- The Society will enhance its efforts to support members and the mathematical community following the Covid-19 pandemic.
- Introduction of one year's complimentary membership for recipients of the LMS Solidarity Welcome Grants.
- Two Membership surveys to be carried out: on the LMS *Newsletter* and on the LMS Library at UCL.

SUPPORTING MATHEMATICS RESEARCH

Objective: to advance mathematical knowledge by enabling mathematicians to undertake research and collaboration, and by supporting them in their efforts.

As well as its publishing activities the Society supports mathematical research by making grants, awarding prizes, maintaining and making available the Society's Library and through its support for computer science initiatives.

Grants

The Society's grants schemes (listed in Annex 5) are at the centre of the Society's work to advance mathematical knowledge. Financial support for mathematicians includes grants to:

- facilitate research conferences;
- support education and teachers' continuing professional development;
- help with caring responsibilities and career breaks; and
- develop international mentoring opportunities.

The Society's smaller-scale grants fulfil a crucial role in the UK mathematical funding landscape. These grants can offer mathematicians the opportunity to organise much-needed specialist conferences, work collaboratively through short visits, and enable the development of research partnerships, all of which significantly contribute to career development and promote UK mathematical research at its roots.

Through its core research grant schemes the Society has continued to provide support to many mathematicians and their research. In 2021-22 the Society's Research Grants Committee awarded a total of £275,489 via 118 grants through its core grant schemes which represented a 95% success rate of the 124 applications received under these grant schemes. As part of the Society's ongoing response to the pandemic, the Research Grants Committee continued its support for those who found themselves without the time to engage in research during the Covid-19 pandemic, due to illness, caring responsibilities, increased teaching or administrative loads, or other factors, with the continuation of the Research Reboot Scheme. Three rounds of applications resulted in £4,785 being granted to support 8 researchers to reboot their research. The Research Grants Committee also incorporated the successful online lecture series grant scheme into Scheme 3.

The LMS-Bath Mathematical Symposia are being held at the University of Bath until 2025 to continue the established and recognised series of international research meetings, which was founded at Durham University in 1974 to provide an excellent opportunity to explore an area of research in depth, to learn of new developments, and to instigate links between different branches of research. The format is designed to allow substantial time for interaction and research. The meetings are by invitation only and will be held in August, usually lasting for two weeks, with up to 50 participants, roughly half of whom will come from the UK.

A novel element of the LMS-Bath Mathematical Symposia is that they will be complemented by a summer school, which takes place prior to the Symposium to prepare young researchers such as PhD students, or a "research incubator" after the Symposium, where problem(s) related to the topic of the conference are studied in groups. These events can take up to an additional week. Two LMS-Bath Mathematical Symposia online Summer Schools took place in 2021 and, due to the Covid-19 pandemic, the associated workshops were postponed to 2022:

- 18-22 July 2022: LMS-INI-Bath Symposium on *K-Theory and Representation Theory*, with funding from the Isaac Newton Institute (bit.ly/3qzvK1M).
- 1-5 August 2022: LMS-Bath Symposium on *Combinatorial Algebraic Geometry*, with funding from the International Centre for Mathematical Sciences (bit.ly/3xkPMAY).

A further LMS-Bath Mathematical Symposium, with funding from the Isaac Newton Institute, also took place in 2022:

- 18-29 July 2022: LMS-Bath Symposium on *New Directions in Water Waves* (bit.ly/3eSvlVH).

The 73rd British Mathematical Colloquium was held at Kings College London on 6-9 June 2022. This was the first time the event had been held in-person since before the Covid-19 pandemic, and it was a great success. The Society contributed a grant of £20,000 towards the organisation of the Colloquium, and held

its Society Meeting there on 7 June, where Isabelle Gallagher (École Normale Supérieure) gave a lecture on *The Dynamics of Dilute Gases*.

International schemes

The Society supports international mathematical activities through its partnerships with the American University in Beirut (AUB), the African Mathematical Millennium Science Initiative (AMMSI) and the International Mathematical Union (IMU). The Society is the UK's 'adhering organisation' to the IMU, through the International Affairs Committee and its secretariat. The Society also offers travel grants to support attendance of UK-based mathematicians at the European Congress of Mathematics (ECM) and the International Congress of Mathematicians (ICM).

Following discussions at the 2022 IMU General Assembly and subsequent agreement by the Society's Ukraine Working Group in light of the international situation in Ukraine, the Society agreed to help pay Ukraine's IMU subscription fees, with other countries including Germany and Georgia committing to help cover fees as required. The Society also agreed to an IMU request that the $20k given over the last four years by the Society to the IMU Special Development Fund for the promotion of mathematics in developing countries be used instead to cover the cost of running ICM 2022 online.

In 2021-22, the Society and the AUB ran a third round of the Atiyah UK-Lebanon Fellowships to provide support for either an established UK based mathematician to visit Lebanon for up to six months or for a mathematician from the Lebanon of any level to visit the UK to further their study or research for a period of up to 12 months. One Fellowship was awarded in 2022-23 to support visits by Dr Rémi Mokdad Mokdad (University of Burgundy, France) to the Queen Mary, University of London for several months in 2022-23. He also hopes to visit CAMS in Beirut during his tenure. Due to the Covid-19 pandemic, the planned visits by the two previous Atiyah Fellows were postponed from 2021: a visit by Mark Wildon (RHUL) to the AUB, which is planned to take place in Spring 2023, and a visit by Ahmad Sabra of the AUB to the University of Sussex, which took place from June-August 2022.

Through its Scheme with AMMSI, the Society normally supports postgraduate student attendance at mathematical conferences held in Africa. However, there were no applications to the scheme in 2021-22.

In 2021-22, the Society continued its administrative support for the IMU's Breakout Graduate Fellowships. Funded by the IMU through donations from prestigious mathematicians, the Fellowships offer financial support of up to US$10,000 per year to PhD students in developing countries for part or all of their PhD. Normally, three awards are made each year but, in 2021-22, the IMU Panel awarded seven Fellowships.

Four partnerships were awarded a 1-year extension on grants under the Mentoring African Research in Mathematics (MARM) programme in 2021-22, and the grant periods for these partnerships end in December 2022. MARM operates in collaboration with AMMSI, using LMS funding combined with funding from the International Mathematical Union Commission for Developing Countries (IMU CDC). Including the current partnerships, 25 awards have been made under the programme: in Cameroon, Congo, Ethiopia, Ghana, Côte d'Ivoire, Kenya, Malawi, Morocco, Nigeria, Rwanda, South Africa, Tanzania and Uganda. The programme continues to inspire a high application rate from both African institutions and potential European partners and the Society hopes that funding for the scheme will continue into the future, for the benefit of mathematics across the two continents.

Through its ICM Travel Grant schemes to support early career researchers and established researchers, the Society awarded 40 grants to support attendance by UK-based mathematicians at the ICM 2022, which was due to be held in St. Petersburg, Russia, in July 2022. The grants for Early Career Mathematicians were to include financial support from EPSRC. However, the ICM 2022 was held as a virtual event, due to the Russian invasion and ongoing war in Ukraine.

Prizes

The Society awarded a number of LMS Prizes this year, as well as working in partnership with the Institute of Mathematics and its Applications (IMA) to award the IMA-LMS Christopher Zeeman Medal. The De Morgan Medal, the Society's premier award, was awarded to Professor Sir John Ball FRS FRSE for his multi-faceted and deep contributions to mathematical research and the mathematical community over many years. The Zeeman Medal was awarded to Dr Simon Singh for his outstanding contributions to public outreach in mathematics. The Society also awarded the Louis Bachelier Prize to Professor Beatrice Acciaio, for her broad contributions to mathematical finance. The Louis Bachelier Prize is awarded jointly with the Natixis Foundation for Quantitative Research and the Société de Mathématiques Appliquées et Industrielles (SMAI). The Society extends warmest congratulations to all prize winners.

Library

The Society's Library is housed at University College London (UCL). The Library Committee meets annually with representatives from the Science Library at

UCL to review the Society's 85 international journal exchange agreements, and to review the services offered by the UCL Library to members of the Society. This year, the Society received a donation from Jane Vaucher, a descendant of Augustus De Morgan, of a portrait of De Morgan which will be displayed in the LMS Members' Room. Additionally, Sylvia Neumann gifted the Society several papers of her late husband, Dr Peter Neumann, and items that were relevant to his work within the LMS, over the long years of his contribution.

Computer Science

The 2021 Computer Science Colloquium was held on 17 November 2021 with the topic Mathematical Foundations for Machine Learning. The event was held online, via Zoom. Speakers were Benjamin Guedj (UCL and Inria), Alexandros Hollender (Oxford), Aretha Teckentrup (Edinburgh) and Peter Tino (Birmingham). The event, aimed at PhD students and post-docs, was very successful, with over 100 attendees.

The LMS/BCS-FACS (British Computer Society-Formal Aspects of Computing Science) Evening Seminar, held in collaboration with the FACS Specialist Group, was held on 18 November 2021 at De Morgan House as a hybrid event. The speaker was Professor Peter Sewell (Cambridge). The talk was filmed and later posted to the Society's YouTube channel.

The Computer Science Committee awarded two Scheme 7 grants to facilitate collaborations in research at the interface of mathematics and computer science, to a total of £1,410 (95% of its allocated budget).

2021–22 highlights

- **£635,255 awarded in grants to support mathematics (combined total of all grant schemes)**
- **Incorporated the successful online lecture series grant scheme into Scheme 3.**
- **First LMS Atiyah UK-Lebanon Fellowship visits took place.**
- **De Morgan Medal awarded to Professor Sir John Ball.**
- **Zeeman Medal awarded to Dr Simon Singh.**
- **An archival cabinet was purchased at the last quarter of the year, in order for several of the LMS artifacts (currently stored in the archive room) to be permanently displayed, and to feature special artifacts on relevant occasions (such as the *Urania Propitia* copy during the upcoming Women in Astronomy event).**

2022–23 plans

- **Updated grant applications forms to include questions about applicants' consideration for environmental sustainability for activities to be funded by the Society.**
- **Expansion of the funding criteria for Conference (Scheme 1) Grants, Joint Research Group (Scheme 3) Grants and Research Workshop (Scheme 6) Grants to include financial support for hybrid events.**
- **Reinstallment of the dual Library Committee Student Placement, with the aim of broadening the pool of candidates to include not only postgraduate students but also undergraduates, as well as the scope of their responsibilities.**

REPRESENTING AND PROMOTING MATHEMATICS

Objective: to promote widely mathematical sciences research and its broad benefits to decision makers, policy advisers, funders and users of mathematics.

Through its external and public relations the Society aims to ensure that the centrality of mathematics to so many aspects of society is represented to Government, other national policy-makers and influential organisations and individuals in order to inform debate and improve decision-making. The Society undertakes significant collaborative work advocating for mathematics both individually and through the Council for the Mathematical Sciences (CMS).

Public affairs

The Society has partnered with XTX Markets, who have generously agreed to fund a campaign to Protect Pure Maths. Working closely with Connect Public Affairs, the campaign focuses on the following: to ensure that maths funding properly reflects the value of maths to society, to ensure that maths is represented and understood in the UK's parliaments, to strengthen the voice of industry in maths policymaking, and to stop any further cuts to pure maths in universities. Over the last year the campaign has successfully targeted the media and parliamentarians with key messages regarding each of these aims.

The LMS Research Policy Committee has continued to seek robust evidence to inform its policy contributions. The Committee is working with the Women in Mathematics and Diversity Committee to request updated benchmarking data from JISC, which will include statistics relating to ethnicity as well as gender. The Committee continues to cultivate its relationship with the Engineering and Physical Sciences Research Council (EPSRC), working closely with EPSRC representatives to keep informed of the latest developments relating to mathematics research funding and to advocate on behalf of the community.

For the ninth year the mathematical sciences, through the CMS, were represented in the prestigious STEM for Britain poster competition, which brings together young researchers across all STEM (Science, Engineering, Technology and Mathematics) disciplines and Members of Parliament. It was a welcome return to an in-person event held at the House of Commons.

Within the mathematics research community the LMS President has represented the Society widely at various events, ensuring national and international recognition for the Society and for UK mathematics as a whole, and ensuring the Society's and the UK's input into international discussions. Amongst the many events which she has attended the President has represented the Society at a CMS Board meeting, the British Mathematical Colloquium, an EPSRC meeting on strategic priorities funding and joint meetings with the Institute of Mathematics and its Applications and the Royal Statistical Society, as well as the International Mathematical Union's General Assembly in Helsinki and the meeting of the European Mathematical Society's Council in Bled, Slovenia. During the year the President also gave evidence to a hearing of the House of Commons Science and Technology Select Committee, a video clip of which has received a wide viewership.

Council for the Mathematical Sciences

The Society is a founding member of the CMS which aims, through its member bodies, to draw together the mathematical community to speak with one voice on national issues of mutual concern. The CMS provides a forum for the consideration of matters of joint interest; it responds and makes representations to Government and others on relevant issues. The new CMS Chair, Professor Alison Etheridge FRS, was appointed in September 2021 for a three-year term.

The CMS represents the mathematical sciences to government, meets regularly with the EPSRC in full) and aims to have similar interaction with UK Research and Innovation (UKRI). The key focus of these meetings has continued to be the additional government funding committed to the mathematical sciences in 2020 and when this is likely to come into effect. The CMS is also a member of the Parliamentary Collaboration Steering Group for STEM learned societies.

The CMS has continued to support the Royal Society Advisory Committee on Mathematics Education (ACME), chaired by Sir Martin Taylor FRS and its oversight of the Mathematical Futures Programme, which aims to build

a new vision of mathematics education that anticipates and supports the role of mathematics for individuals, economies and society, strengthening diversity and reducing inequity.

The primary focus for the CMS in 2021-22 has been the establishment of a National Academy for Mathematical Sciences. Following the CMS consultation on the National Academy for Mathematical Sciences and Connected Centres Network in December 2021, the CMS Chair convened a Task and Finish Group to consider feedback and propose next steps for a proto academy. This envisages employing an Executive Director and setting up a focused Executive Committee, to be in place by Autumn 2022. A go/no-go decision for the Academy would be taken at the end of the period (two and a half years).

The CMS Societies have agreed that the Operational Research Society (ORS) will become a full member of CMS alongside the Royal Statistical Society (RSS), IMA and LMS, paying an equal annual contribution.

Collaborative working

The Society works actively and collaboratively through its membership of and funding for a number of mathematics and science organisations to ensure the interests of mathematics are represented in national policy and public debates and to ensure the Society is kept informed of external policy issues. The Society is a member of the UK Parliamentary and Scientific Committee, the British Science Association, the Joint Mathematical Council, the Campaign for Science and Engineering (CaSE) and the Foundation for Science and Technology. The Society also works in association with the UK Heads of Departments of Mathematical Sciences (HoDoMS) and is a member of the Parliamentary Affairs Committee (run by the Royal Society of Biology, on behalf of other STEM learned bodies). The Society maintains representation within a number of other organisations, including the Programme and Scientific Committees of the International Centre for Mathematical Sciences (ICMS) and the Isaac Newton Institute (INI). The Society had previously worked individually with both the Athena Forum (run by the Royal Society) and the STEMM Disability Advisory Committee. In July 2020, the Athena Forum agreed to merge with the STEMM Disability Advisory Committee (STEMM-DAC), with the merger taking effect in January 2021.

This year the Society provided funding for the Royal Society ACME Mathematics Futures Programme.

The Society and the IMA have continued their collaborations throughout the year, including a joint LMS-IMA meeting on *Maths in Human Society* (bit.ly/3qDzkYA) held online, hosted by ICMS in full), in September 2021 and the award of the LMS-IMA Zeeman Medal in 2022. A joint award ceremony for the winners of the 2019 and 2021 Crighton Medals (Ken Brown and Caroline Series, respectively) took place in May 2022. A joint award ceremony for the 2020 and 2022 Zeeman Medal winners (Matt Parker and Simon Singh, respectively) is currently being planned for spring 2023. The Society is also working in partnership with the IMA to extend the national Levelling Up: Maths Scheme.

The Society has worked with the ICMS to launch the new UK Undergraduate Mathematics Colloquia. The Society has also engaged with the ICMS and INI in preparing the Call for Institutions to host the LMS Mathematical Symposia from 2026 onwards.

Development Activities

In 2021-22, the Society received a number of notable donations. Dr Tony Hill continued with his generous donation enabling the expansion of the Levelling Up: Maths scheme which originally went live in March 2021. The Society is now acting as the hub for five participating universities, including the pilot universities, Durham and Leicester who have been joined by the University of East Anglia, the University of Greenwich and the University of Southampton. Dr Hill has now been joined by co-funder Simon Godwin in supporting this scheme. In addition the Heilbronn Institute for Mathematical Research (HIMR) contributed £10,000 towards this scheme as well as providing funding for Early Careers activities. The De Morgan Donation Scheme continues to thrive, with the number of members or supporters who have made a De Morgan Donation of £1,865 or more to the Society (1865 being the year of the Society's foundation by Augustus de Morgan of University College, London) growing to 15.

The Society is most grateful to all donors for their gifts, which help ensure that the financial foundation of the organisation is as secure as possible for future generations, as well as making sure that the importance of the mathematical sciences is understood as widely as possible in industry and beyond.

The Society implemented the option for US taxpayers to make tax-deductible donations in US dollars or by other means to the LMS via the British Schools and Universities Foundation of which the LMS is an approved partner institution, which was previously an issue for some potential donors.

The Society would once again like to thank XTS Markets for its very generous donations in funding the Protect Pure Maths campaign and also the LMS Solidarity Grants to support those academics fleeing from the war in Ukraine.

2021–22 highlights

- CMS townhall meeting and consultation and subsequent development of National Academy proto-type model which is now being established.
- ORS to become full CMS member organisation.
- The Society continued its support for The Royal Society Advisory Committee on Mathematics Education (ACME).
- Expansion of the successful Levelling Up: Maths scheme
- Generous donations to support the Society's grant giving and education work.

2022–23 plans

- Continue to gather, analyse and report on evidence with respect to UK mathematics.
- Continue to bring to the attention of decision-makers and policy advisers national data on mathematics and the UK mathematics landscape.
- Continue to represent mathematics research and education to Westminster, Whitehall and other national funding bodies and ensure that mathematics is explicitly considered during discussions regarding STEM subject areas.
- Work with benefactors to support the mathematical community.

DISSEMINATING MATHEMATICS

Objective: to disseminate mathematical knowledge and make it available worldwide.

Publications

Through its publications the Society aims to disseminate high-quality mathematical research and thinking worldwide. The Society's publications serve a dual purpose, in not only disseminating mathematical research but in providing the Society with an income which it utilises entirely in furtherance of its other charitable activities. The broad and developing portfolio of high-quality journals and books serve our authors through transparent, timely and professionally managed editorial and production processes, and serve our readers by providing content of wide interest and high quality. The Society seeks to maintain sustainable and ethical pricing for its publications, including the offer of free online access to LMS members and institutions in developing countries.

The Society currently publishes nine peer-reviewed journals, four of which are in collaboration with other learned societies and institutions, as well as two book series and individual book titles. From 1 July 2022 the Society and IOP Publishing have suspended for the time being the publication of three mathematics journals translated from Russian to English (*Sbornik: Mathematics, Izvestiya: Mathematics* and *Russian Mathematical Surveys*) which operate in partnership with the Russian Academy of Sciences.

The decision to suspend the publication of the three journals was taken jointly by the Society and the Institute of Physics, after financial sanctions on Russia had made it impossible to fulfil obligations under the contract, and was made in full recognition of the regrettable detrimental effects on the dissemination of mathematics and potential loss of income to the Society.

This year has seen significant work to secure renewed contracts for the publication of some of the Society's key journals.

A contract was signed with Wiley in September 2021 for the continued publication of the *Bulletin, Journal, Proceedings, Transactions,* the *Journal of Topology* and *Mathematika* for the period 2022-26. This followed a tendering process during which the Society invited bids from academic publishers and carefully reviewed its publishing requirements and ambitions. The terms of Wiley's winning bid reflect major changes to publishing. From 2022, the journals are no longer printed and are typeset in a new format and style In addition, the Society has seen a reduction in the income from its publications caused by the continuing move towards more content being published Open Access, which produces lower income per article, and greater access to free content. It is expected that the changing nature of publishing will reduce the Society's income from its publications in future years. The Society has taken steps to respond to these changes (see 'Managing the Society Effectively' below).

From August 2021, all Obituaries in the Bulletin have been made freely available online. Survey articles in the *Bulletin* are published open access using a legacy provided by Frank Gerrish to support publication charges where institutional funds are not available to the authors.

A Publications Strategic Retreat was held in June 2022 bringing together members of Publications Committee, Editors of the LMS journals, representatives of Wiley and other key stakeholders.

The Society is continuing work to ensure that there are compliant options available to authors whose funders have mandated that they publish with immediate Open Access. More than a quarter of all papers in the Society's hybrid journals were published open access in 2021.

The Society continues to develop strategies, identify risks and opportunities and to engage with wider developments that may affect its publishing programme.

Society Lectures and Meetings

Meetings

Society Meetings enable both members of the mathematical community and the wider public to meet, hear about and discuss current mathematical thinking and developments. In 2021-22, the Society was pleased to be able to host some of its meetings as hybrid events, with participation from attendees both remotely and in-person, while other Society Meetings were held online, with support from the host institutions and the ICMS. Meetings during 2021-22

were the Northern Regional Meeting 2021 (organised by University of Manchester and hosted online by the University of Bielefeld in September 2021, the Joint IMA/LMS Meeting (hosted in September 2021 online by the ICMS), the Black Heroes of Mathematics Conference (in conjunction with the IMA and the BSHM, and hosted in October 2021 online by the ICMS), the Annual General Meeting & Presidential Address (Goodenough College, London and online in November 2021), the South West and South Wales Regional Meeting 2022 (hosted online by the University of Swansea in January 2022), a Society Meeting to celebrate the work of Alan Turing (De Morgan House and online in March 2022), the LMS Midlands Regional Meeting 2022 (University of Birmingham in April 2022), the LMS Hirst Lecture and Society Meeting (De Morgan House and online in May 2022), the Northern Regional Meeting 2022 (University of Leeds and online in May 2022), the Society General Meeting & Aitken Lecture (BMA House, London and online in June 2022) and Society Meetings as part of the British Mathematical Colloquium (King's College London in June 2022) and the virtual International Congress of Mathematicians 2022 (University of Copenhagen in July 2022).

Executive Secretary Caroline Series and LMS President Jon Keating at the LMS AGM in November 2021

Attendees at the Hirst Lecture and Society Meeting sign the Members' Book

2021–22 highlights

- **Contract signed with Wiley for the continued publication of the Society's core journals.**
- **All Obituaries in the *Bulletin* have been made freely available online**
- **Publications Strategic Retreat held in June 2022.**
- **First hybrid Society Meeting held at De Morgan House since the pandemic to discover Diverse Perspectives on Alan Turing and mark the celebration of his work on the new £50 banknote.**
- **Two LMS Invited Lecture Series events and the LMS-NZMS Aitken Lecture Tour took place.**
- **Mary Cartwright Lecture able to go ahead online**

2022–23 plans

- **Develop strategies and targets for publishing high-quality mathematical research taking**

into account the evolving scholarly publishing landscape in light of discussions at the Publications Retreat.

- Improve processes, workflows and communication to authors.
- Maintain a competitive position within mathematics publishing and uphold the LMS reputation for publishing high-quality research and exposition.
- Host a joint Society meeting with the IMA and British Society for the History of Mathematics (BSHM) to celebrate the achievements of *Women in Astronomy*.
- Host the Hardy Lecture Tour by Eva Miranda (Universitat Politècnica de Catalunya).
- Support the LMS Invited Lecture Series 2023 by Professor Filippo Santambrogio (Université Lyon 1) on Optimal transport and its applications at Durham University.

SUSTAINING THE MATHEMATICAL COMMUNITY

Objective: to promote equality of opportunity and a culture of fairness across all career stages, ensuring the long-term sustainability of the mathematical research community.

Ensuring that as much mathematical talent as possible is discovered and developed regardless of background is critical both in the interests of fairness and in the interests of academia, industry and society as a whole. This objective guides the Society's work, particularly with respect to the transitions between the early career stages (undergraduate to postgraduate and postgraduate to postdoctoral) and with respect to women in mathematics and diversity more broadly.

The Society has recognised increasing concern among the mathematical community regarding career progression, particularly for Early Career Researchers at a time when some universities face an uncertain financial future in light of the Covid-19 pandemic. To address this immediate concern, the Society redistributed funding from undersubscribed grant schemes to enhance the funding of its Early Career Fellowships.

Early career progression

The Society operates a number of schemes which provide support for the early career progress of mathematicians at undergraduate, postgraduate and postdoctoral level as well as for women in mathematics. A brief summary of the key Society schemes is given below, with further details contained in Annex 5.

For undergraduates, there are Undergraduate Research Bursaries (now in their ninth year), Undergraduate Summer Schools, Prospects in Mathematics Meeting and the new International Centre for Mathematical Sciences and London Mathematical Society (ICMS-LMS) UK Undergraduate Mathematics Colloquia. In 2021-22:

- With support from HIMR (in full), the Society awarded over £46k in total funding to support 50 Undergraduate Research Bursaries from 79 applications.
- The 2022 Summer School will be held as an in-person event in Edinburgh, jointly hosted by Heriot-Watt University and the University of Edinburgh, with 50 students registered to attend lectures with Q&A sessions over two weeks.
- For final year undergraduates and Masters' Students considering a PhD in mathematics, the Society supports the Prospects in Mathematics Meeting which in 2021 was organised by UEA and hosted online by the ICMS, with over 200 students attending the event.
- The new ICMS–LMS UK Undergraduate Mathematics Colloquia series launched with two online events:
  * Simon Donaldson (Imperial and Stony Brook) Invitation to Geometric Analysis.
  * Barry Mazur (Harvard) Hilbert's Hotel and other encounters with infinity.

For postgraduates, there are LMS Research Schools, Cecil King Travel Scholarships to fund study or research abroad and Postgraduate Conference Grants. In 2021-22:

- Four LMS Research Schools took place:
  * Methods of Random Matrix Theory & Applications Reading, 16-20 May 2022 (postponed from 2020 due to the Covid-19 pandemic),
  * Point configurations: deformations and rigidity, UCL, 27 June – 01 July 2022 (postponed from 2020 due to the Covid-19 pandemic),
  * Bicategories, Categorification and Quantum Theory, Leeds, 11 - 15 July 2022 (postponed from 2021 due to the Covid-19 pandemic),
  * Unimod 2022, Leeds, 18 - 22 July 2022
- One LMS Research School in Knowledge Exchange took place: Rigidity, Flexibility and Applications, Lancaster, 18 - 22 July 2022 (postponed from 2021 due to the Covid-19 pandemic).
- Cecil King Travel Scholarships were awarded to Valentin Kunz (Manchester) and Prachi Sahjwani (Cardiff).
- The Society awarded £18,100 to support 8 postgraduate conferences.
- One online Graduate Student Meetings was held:
  * Nina Snaith (Bristol) gave a talk at the November meeting on Hollywood's hippest mathematics: random matrices and Riemann zeros.
  * Over 40 students attended the event and 9 students gave talks about their research to their peers.

For post-docs and those starting new lecturer positions, there are LMS Early Career Fellowship and Celebrating New Appointment Grants. In 2021-22:

- With support from HIMR/UKRI-EPSRC, the Society awarded over £76k in total funding to support 10 Early Career Fellowships from 19 applications.
- The Society awarded £3,825 to support 8 events that were Celebrating New Appointments.

For Early Career Researchers (ECR) at both postgraduate and post-doc level, there are the ECR Travel Grants and the new online ECR Professional Development Panel discussions session. In 2021-22:

- The Society awarded £24,820 to support 50 Early Career Research Travel Grants to enable these early career mathematicians to attend conferences and/or undertake collaborative research visits.
- Four online ECR Professional Development Panel discussions sessions were held:
  * Session 1: The academic job search, 27 October 2021
  * Session 2: Starting your first post-doc, 30 November 2021
  * Session 3: Writing and Publication, 24 February 2022
  * Session 4: Building your research community, 24 March 2022
  * On average, 60 early career researchers attended each event.

Women and Diversity in Mathematics

The Society continues to seek to improve the proportion of women in mathematics, including through activities led by its Committee for Women and Diversity in Mathematics. For example, the Society has championed the embedding of equal opportunities and broader issues around diversity within the working practices of UK university mathematics departments. The Committee continues to have as part of its membership representatives from all five constituent mathematical bodies of the CMS as well as from the Standing Committee of European Women in Mathematics, ensuring it speaks for the entire UK

and wider mathematical community. The Chair of the Committee for Women and Diversity in Mathematics represents the Society on the Athena Forum.

The Society recently amended its By-Laws to dedicate a place on Council specifically to women and diversity. The postholder of the LMS Council role of Member-at-Large (Women and Diversity) now chairs the Committee for Women and Diversity in Mathematics.

The Society operates the LMS Good Practice Scheme, which aims to help mathematics departments to take practical actions to improve the participation of women and to share examples of good practice with other departments. The Scheme offers support in applying for an Athena SWAN award for those departments seeking recognition for their work in this area. The Society continues to run Good Practice Scheme workshops that aim to cover a wide variety of Good Practice issues. In November 2021 the Society held an online workshop focusing on the Athena SWAN Charter.

2021–22 highlights

- **Further support for mathematical researchers with caring responsibilities through Emmy Noether Fellowships made possible by another generous donation from the Lieber Foundation.**
- **Supported an LGBT+STEMinar and a STEM, LGBTQ+ and You conference.**
- **Supported a Women in Mathematics Day and a Girls and non-binary students in Mathematics Day.**
- **Good Practice Scheme Workshop held, focusing on career progression in the current challenging times.**
- **First online Mary Cartwright Lecture given.**
- **Amendment to the Society's By-Laws to create the 'Member-at-Large (Women and Diversity)' role on the Society's Council.**
- **New ICMS–LMS UK Undergraduate Mathematics Colloquia series launched**
- **Five Research Schools run, including the first LMS Research School on Knowledge Exchange.**
- **Developed events and a careers webpage to support Early Career Researchers' Continuing Professional Development, including holding four online panel sessions.**

2022–23 plans

- **Mary Cartwright Lecture to be given in November 2022.**
- **LMS Undergraduate Summer School 2023 to be hosted at the University of Sheffield.**
- **LMS Research Schools in 2023 to be hosted at the University of Nottingham and the University of Birmingham.**
- **Hold the second Black Heroes of Mathematics conference, in conjunction with the IMA and BSHM**

ENGAGING WITH EDUCATION AND THE PUBLIC

Objective: to support mathematical education in schools, colleges and universities, and to encourage the public and young people to appreciate and engage with mathematics.

The Society wants the wider public and young people in particular to have the opportunity to engage with and appreciate mathematics and recognise its contributions to society. It operates a number of initiatives which aim to achieve this.

Education

The Education Committee works on a number of different activities and schemes, including grants for education, public lectures and responses to consultations.

Over the past year the Society continued to work on the Levelling Up: Maths Scheme, made possible by a generous donation from Dr Tony Hill. The Scheme seeks to widen participation of students from under-represented backgrounds in mathematics. Working together with the IMA, the scheme is now supporting eight English universities for the second cohort (a further university has committed to join the next tranche) which started in Spring 2022, with the LMS acting as the hub for five of these participating universities. The overall scheme aims to nurture A-level students from underrepresented groups in Maths, Physics and Chemistry who may be planning to study a STEM subject at university.

This year the Society awarded 2 grants under its 'Mathematics Education Conference Grants' scheme, totalling £4,000. The scheme provides support to organisers of regular mathematics education conferences and is intended to contribute to the travel/subsistence expenses of attendees of the event in question. The Society also awarded £997 under its 'Grants for Teaching and Learning in HE' scheme, which partially funds one-day workshops disseminating good practice in teaching undergraduate mathematics. In addition, 13 awards, totalling £6,300 (100% of the committee's allocated budget), were made under the Small Grants for Education scheme, in support of events or activities that stimulate interest and enable involvement in mathematics from primary school to undergraduate level and beyond.

The Committee continues to work closely with other groups and societies in the area of mathematics education, including the Advisory Committee on Mathematics Education (ACME), the Joint Mathematical Council of the UK (JMC), Heads of Departments of Mathematical Sciences (HoDoMS) and the Higher Education Academy (HEA).

The Education Committee continues to run the Holgate Session Leader Scheme. The Scheme provides session leaders who give talks or run workshops on a mathematical subject to groups of students or teachers. The sessions are specifically mathematical in content (rather than, say, career talks) and are intended to enrich and enhance mathematical education, looking both within and beyond the curriculum.

The Education Sub-Committee, 'Teaching Mathematics as a Career' (TeMaC), continues to work towards formulating and implementing the Society's response to the national shortage of suitably qualified mathematics teachers in the UK. At the start of the year, 36 mathematics departments across the UK signed up to the TeMaC code of practice and provided the name of a contact in their department to be a TeMaC representative. A networking day for TeMaC representatives was held at De Morgan House on 6 June. The event was an excellent opportunity for representatives to meet each other and discuss the aims of the TeMaC project in more depth. Participants were encouraged to give their ideas about how the project can be most effective. The key themes were summarised in a short document sent after the meeting, and an action plan for the future will be agreed by the TeMaC sub-committee in September 2023.

The Education Committee held the second Mathematics Communication Workshops in July 2022. Two workshops were held, at a beginners' and an advanced level, over two days. The workshops were limited to 20 attendees and received much positive feedback.

Popularisation

The Society was delighted to be able to hold the Joint LMS/Gresham College Lecture once again, which was presented by Professor Hugh Hunt (Cambridge).

2021–22 highlights

- **Levelling Up online tutorials for A-level maths students expanded in conjunction with the IMA to form a two-hub model, with the LMS supporting 5 universities**
- **17 Education Grants awarded, totalling £10,300**
- **Teaching Maths as a Career (TeMaC) Networking Day held**

2022–23 plans

- **Further expansion of the Levelling Up Scheme to involve more university partners.**
- **Agree and implement an action plan for the TeMaC project.**

MANAGING THE SOCIETY EFFECTIVELY

Objective: to manage the Society's affairs and resources effectively and efficiently, operating where appropriate to make a not-for-profit financial return on activities, and to seek a variety of funding sources to support the Society's work.

The Society aims to ensure that its resources are put to best possible use in achieving its mission and objectives. In all its operations it aims to ensure the longevity of the Society and plan for future circumstances, while also meeting the current needs of mathematics and its community.

In doing so the Society ensures it follows best governance practices by operating in accordance with its Charter, Statutes and By-Laws and by referring to guidance from the Charity Commission and, where appropriate, professional advisors (Annex 1).

The Society is governed by a Council of Member Trustees, elected by the membership from the mathematical community (Annex 1). Day-to-day operations are undertaken by a full-time equivalent (FTE) staff of 12.6 at the time of writing (Annex 4). Council has chosen to delegate decision making on a number of matters to 18 standing committees and has also set up a number of temporary ad-hoc committees to deal with specific items of business (Annex 2). Council also maintains and reviews annually a Risk Register with respect to all activities undertaken by the Society.

The Society runs its financial operations in accordance with best accounting practices and ensures that all its plans and activities are underpinned by a sound financial structure. The Society's financial and governance affairs are externally audited on an annual basis.

The Society continues to update its Data Protection Policy, Privacy Notice and Procedures as new legislation is released. When the UK left the European Union, the Society faced some new obligations in relation to the data of EU citizens that it holds and processes. The Society is very grateful to the European Mathematical Society, which has agreed to act as the Society's EU GDPR Representative, to help the Society comply with these obligations.

More detailed information on how the Society operates is available in the sub-sections that follow:

- Governance and Public Benefit
- Financial Review
- De Morgan House
- Statement of Trustees' Responsibilities

Governance and the Public Benefit

Governance

The Society's governing body is its Council, members of which are also the Trustees of the charity. The Council consists of 20 members of the Society of whom 8 are Officers (including the President) and 12 are Members-at-Large, including one 'Member-at-Large (Women and Diversity)'.

The Officers of the Society, together with the Executive Secretary, comprise the Finance and General Purposes Committee (F&GPC), which is responsible for providing advice to Council on a number of ad-hoc matters, implementing Council's decisions and ongoing financial management.

All candidates for election to Council are provided with information on the roles and responsibilities of Trustees. Those elected attend an induction normally in advance of their first Council meeting, which includes information on the work of Council, its strategies and plans, the operation of the financial systems, the administration of the Society and the responsibilities of a Trustee. All Council members are required to return a Declaration of Interests, a Declaration as a Fit and Proper Person, and to sign up to the Society's Anti-Bribery policy; these declarations must be renewed by all Trustees on an annual basis. Staff in management positions also sign an annual Declaration of Interests.

Council met five times in 2021-22: in October and November 2021 and in February, April and July 2022. The Finance & General Purposes Committee met four times: in September 2021 and in January, March and June 2022. The Society holds an Annual General Meeting and a mid-year General Meeting each year; in 2021-22 these were held in November 2021 and July 2022 respectively.

Council has established several standing committees which advise Council and to which it has delegated some decision making. A list of all committees and committee membership is given in Annex 2.

As Trustees, Council members receive reimbursement only for expenses actually incurred in attending meetings or representing the Society. However, if a Trustee carries out work for the Society over and above normal Trustee's duties, the Society may pay an honorarium for that service if there is a written agreement produced in advance between the Society and the Trustee outlining the work to be undertaken and stating the exact or maximum amount.

The Society depends heavily on the unpaid voluntary work of many of its members and others across the mathematical community. This includes those who referee papers submitted to the Society's publications, those who edit those publications or serve on the Society's Editorial Advisory Boards, those who serve on the Society's committees and those who represent the Society on other bodies, together with the members of the Council themselves, many of whom take on significant responsibilities for the Society. The Society appoints representatives on external bodies and committees; these are listed in Annex 3.

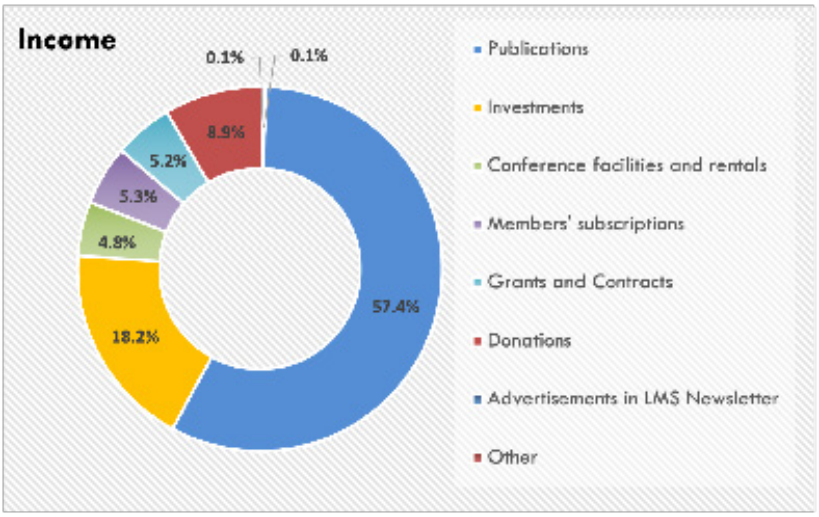
Public benefit

In shaping objectives for the year and planning activities, Council has considered the Charity Commission's guidelines on Public Benefit, including the guidance, 'Public benefit: running a charity' (PB2).

Council holds that the development and extension of mathematical knowledge, expanding humanity's ability to determine and affect the natural, artificial and social worlds, leads overwhelmingly to public benefit, providing for improved health and wealth for nations and individuals and providing tools to understand and sustain the world in which we live. The Society's activities directly correlate with its mission and its objectives, and are focused on: supporting mathematicians in their endeavours through grants for research collaboration; sharing of knowledge through conferences and publications; improving the quality of mathematics education for people of all ages; promoting mathematics and its impact on everyday life to the general public; and encouraging policies that will benefit mathematics.

Members of the general public are able to participate without charge in all Society activities of a suitable level. Charges for events aimed at professional mathematicians, whether or not members of the Society, are kept low, a policy that is maintained when deciding on criteria for grant awards. Publications are sold at prices that keep them competitive in the academic publishing world.

Financial Review



During the year, the value of the Society's total assets rose from £19.6m to £19.7m, despite an unrealised loss of £300k in the value of its investments.

In the period 2021-22 income (excluding gains on investment assets) exceeded expenditure by £643k, against an expected budget forecast of £183k deficit. This was mainly due to cost savings and underspends in activities which were largely down to the Coronavirus pandemic. Some meetings and events being moved to a virtual platform has also led to significant cost savings. While fewer in-person activities have meant less expenditure for the Society, the Society deeply regrets that this is because it has provided less support to the mathematics community than it had planned.

Despite the surplus, the Society's conference and venue-hire business in De Morgan House has been one of the hardest hit by the impact of the pandemic.

The Society has carefully monitored the performance of its investments in what has been a turbulent time for financial markets and is hopeful that its investment strategy, and its long-term investment horizon, will together mitigate the worst effects of both the pandemic and current and future changes to the publications landscape on the Society's income. The Society also continues to work on developing new sources of funding.

The Society relies largely on subscription income from its journals publishing programme to run its charitable objectives. However, the Society is facing enormous challenges as the academic journals publishing landscape becomes more complex and established revenues are threatened. Ongoing shifts in publishing business models and the transition to open access pose potential risks to the publications programme. The Society's Publications Committee keeps the scholarly publications landscape under review and looks to propose strategies to minimise losses in income. The Society signed a new agreement with Wiley for the publication of Bulletin, Journal, Proceedings, Transactions, the Journal of Topology and Mathematika. This contract runs from January 2022 to December 2026 and its terms are less financially advantageous to the Society than previous agreements. The Society has taken steps to manage the impact of these changes to its finances.

The Society remains in a strong position financially and has significant reserves readily available to fund future activities, although the current emergency with inflation is clearly a bigger concern in increasing costs. Given the continuing volatility in the economic climate, the Society will keep under review where resources might best be used to further the Society's aims.

The sources of income (see Figure 1, above) were:

Publications: 57.4%
Investments: 18.2%
Conference facilities and rentals: 4.8%
Members' subscriptions: 5.3%
Grants and Contracts: 5.2%
Advertisements in LMS Newsletter: 0.1%
Donations: 8.9%
Other: 0.1%

Figure 2 (p.23) shows expenditure (including governance and support costs) broken down by objective. These were:

Advancing mathematics (e.g. membership, links with the mathematics community, library, prizes): 12.6%
Enabling mathematics (e.g. grants, and training courses): 23.2%
Disseminating mathematics (e.g. publishing, meetings and lectures): 29.7%
Promoting mathematics (e.g. decision/policy makers, education, public, media): 22.6%
Other (e.g. conference facilities costs, managing residential properties, Investment management fees): 11.9%.

Budgets are set by Council on the recommendation of F&GPC, based on bids from budget holders, in line with the strategic objectives of the Society. Expenditure is monitored quarterly by F&GPC, which is responsible for recommending any variation in the budgets set by Council.

The full audited accounts of the Society, including the accounting policies, are annexed to this report.

Risk management

Council and F&GPC annually review the Society's Risk Register with the aim of ensuring that it identifies and quantifies potential risks to the Society and its plans and objectives, and that it lays out systems and strategies for mitigating those risks. Risks are addressed under the following headings: Governance and Management, Law and Regulation, Reputation, External and Environment, Financial, and Operational. In certain cases Council has established Designated Funds to set against potential risks (see Reserves below); the risks or commitments that are covered by each fund are reviewed and revised annually.

The Covid-19 pandemic has had an impact on many areas of the Society's activities and has increased the probability of a number of existing risks in the risk register materialising. Indeed, some of these risks (for example, the loss of access to De Morgan House) did materialise, although it was rightly anticipated that this was temporary. The impact of the virus has been reflected in changed risk ratings and commentaries against relevant risks. All Covid-19 adjustments to the risk register have reviewed and removed where appropriate.

The current emergency with inflation is a concern such that the Society's costs rise excessively.

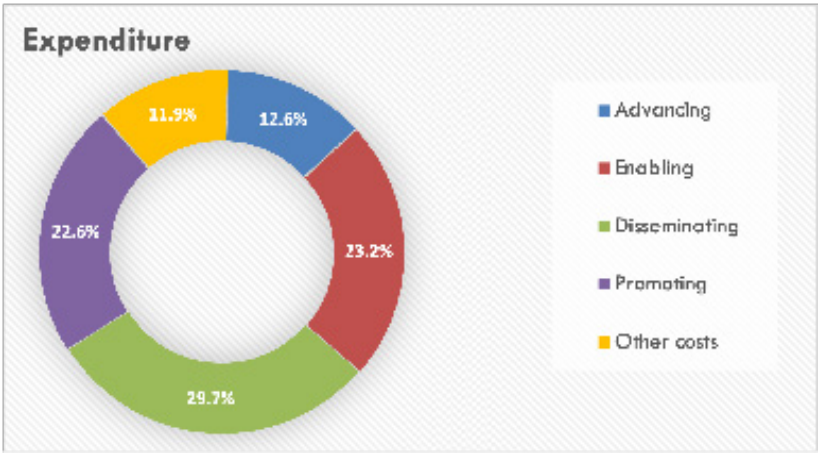
The Risk Register includes the potential threat to Publications income, which as noted earlier will have a significant adverse effect on the income which the Society derives from its learned journals. As noted elsewhere in this report, in September 2021 the Society signed a new agreement with Wiley for the publication of Bulletin, Journal, Proceedings, Transactions, the Journal of Topology and Mathematika. This contract runs from January 2022 to December 2026 and its terms are less financially advantageous to the Society than previous agreements. As also noted elsewhere in this report, the Society has taken steps to manage the impact of these changes to its finances. Renewed agreements for the publication of Compositio Mathematica also came into force from January 2022.

Ongoing shifts in publishing business models and the transition to open access pose potential risks to the publications programme. The Society's Publications Committee keeps the scholarly publications landscape under review and looks to propose strategies to minimise losses in income.

Reserves

Council reviews its policy on reserves on an annual basis. The unrestricted reserves comprise a General Fund and other Designated Funds. In addition, there are several Restricted Funds. Council has several specific Designated Funds to meet the potential costs of activities, to set against risks relating to the building and to publishing (see above) and to meet grant awards made for projects or activities which span a number of years – these are given at Annex 6. The Society has a broad-ranging programme of activities in support of its strategic objectives as described in this report. While some activities are supported from Restricted Funds, all need continuity of funding. Due to the scale and future risks to academic publishing (a key part of the Society's income), Council continues to operate from the basis that it is prudent to hold a General Fund from which income can be drawn to maintain and extend its charitable activities. The General Fund acts both to provide income for activities not funded from Designated or Restricted Funds, and also as a 'free reserve', providing adequate working capital for the Society to operate effectively and efficiently, and for the pursuit of the Society's objectives as Council may from time to time determine.

The Society holds several Restricted Funds, as described in the audited accounts. These originate from various donations and bequests and are invested and accounted for on an aggregated 'total return' basis.



Grant Awards and Commitments

Where the Society has contractual or constructive obligations to make grant payments these amounts are accrued in the accounts in accordance with the requirements of the Statement of Recommended Practice (SORP). Resources expended on grants shown in the Statement of Financial Activity (SoFA), therefore, recognise (within the year the grant is awarded) both liabilities and provisions for grant commitments. Normally grant commitments will be claimed by the end of the financial year, although the claim

period may be extended by a further year where the start or end date of the grant so requires.

The Society also awards some grants with conditions for payment (such as delivery of a specific level of service or other specific output). Such commitments are reserved in the Designated Funds, and the grants are only recognised in the SoFA when the recipient of the grant has provided evidence of the specific service or output.

Investments

The Society decided to invest up to 30% of its relevant assets in residential property, as valued at the time of purchase, with the remainder given over to the Society's investment managers. Investment in such residential property would be directly managed by the Society rather than the investment managers. The percentage calculation excludes the value of De Morgan House, though this could be reviewed at any point. Also excluded are any investments made by the investment managers in the property area of asset classes.

Quoted investments

The Society believes that in investing its funds, regard must be made to environmental, social and governance (ESG) issues. In line with its general investment strategic direction, the Society believes that its investments should mirror its own desire to be sustainable, and currently one-third of its quoted investment is allocated in Responsible/Sustainable funding.

The investment strategy for the portfolio, which is managed by Cazenove Capital (part of the Schroders group), is modelled to achieve CPI + 4% per annum nominal return over rolling 10-year periods. However, Council recognise that current levels of inflation will likely make it impossible to achieve this goal in the short to medium term.

Due to the change in the investment climate Council agreed to accept a lower than 4% return in order to reduce risks. The drawdown each year, as agreed by Council, follows the 'Yale model' and consists of 50% of the previous year's drawdown together with 3.5% of 50% of the current value of the portfolio. Thus, the drawdown is determined by a formula and so may be less or greater than the dividends and interest received: it is shown in the SoFA as Investment Income. The growth in the value of the Society's investments (capital plus income) is the sum of this drawdown and the figure shown in the SoFA for Gains on investment assets. The scale of the Society's activities is designed to match this level of return through the annual budgeting process.

It is Society policy to review on a regular basis the performance of those professional bodies it employs. Close attention is paid to our investment policy and to the performance of Schroders, with whom we have regular meetings. Accordingly, Council has an Investment Sub-Committee, which includes up to six external financial experts, to provide professional advice on the Society's investments and on Schroders' performance. Council has confirmed an investment mandate with discretionary powers with Schroders, based on a 'total return' basis, designed to maximise investment income while maintaining the real value of the investments.

The investment managers have discretion in both the mix and selection of investments in order to meet the growth targets for the portfolio, without exposing to undue risk the Society's reserves, both Restricted and Unrestricted Funds, on which its future capacity to maintain its activities depends. The portfolio has exposure to a range of equity, cash, fixed-interest investments and alternative asset classes in both UK and overseas markets, accessed via two Schroders common investment funds: Schroder Charity Multi-Asset Fund and Schroders Responsible Multi-Asset Fund. A summary of the main categories of investments and the geographical split is provided in the notes to the financial statements in accordance with the Charities' SORP. The Cazenove/Schroders Charity Multi-Asset Fund (and Responsible Multi-Asset Fund) is a common investment fund designed for charities seeking to maintain the real value of their capital over the medium to long term whilst generating a sustainable and reliable distribution level (from income and capital). The portfolio which aims to deliver returns similar to equity markets but with a lower level of volatility, is well diversified across asset classes. This approach is considered by the trustees to give optimum total return without exposing the Society's investments to undue risk; it is consistent with the principles set out in the Charity Commission guidelines Investment of Charitable Funds, Basic Principles (CC14) and conforms with the Trustee Act 2000.

Residential property investments

As a safeguard against fluctuating performance of the stock exchange, the Society expanded its investments portfolio to include residential property and now owns seven long lease residential properties (four in Central London and three in the Birmingham area), all of which are rented out. The rental derived is shown on the SOFA under 'Investment Income'. The growth in the value of the Society's residential property investment will be shown in the SOFA as Gains on investment assets. The primary long-term target of the Society's residential property is to produce a yield of 4% pa and to increase in capital value by at least the rate of inflation.

De Morgan House

Staff management

The Society currently employs a team of full and part time staff. These staff are predominantly based in normal circumstances within De Morgan House. As a result of the Covid-19 pandemic, staff largely worked from home from March 2020 until July 2021. Since July 2021, the lifting of government restrictions has allowed a return to more in-person working at De Morgan House. At the time of writing, staff are working three days a week at De Morgan House and two days a week from home. A list of staff in post during the period is at Annex 4.

The Executive Secretary is responsible for staff-related issues with strategic overview provided by the Society's Personnel Committee.

The remuneration of all staff within the Society is considered in detail by Personnel Committee and set against the salary scales of the University of London. Any recommendations from the Personnel Committee regarding remuneration are then formally approved by the Trustees (the governing Council). The pay ranges for key management personnel (Senior Management Team) are determined and set by Trustees following analysis of roles and performance by the Personnel Committee. The Personnel Committee will also, as appropriate, compare the Society's pay ranges with those of similar roles in other similar organisations.

De Morgan House

The Society holds a long lease (to 2109) from Bedford Estates on De Morgan House, 57-58 Russell Square, London, WC1. It uses these premises: (a) to house its administrative headquarters; (b) to hold its meetings and conferences in the promotion of mathematics; (c) to let out offices on the upper floors to other organisations on a commercial basis; and (d) for function rooms which it lets to other organisations for their own purposes. This last category includes other mathematical and charitable organisations, where there is both a mathematical and financial benefit; discounts are available and some rooms are offered at either reduced rates or at no charge as part of the Society's charitable giving.

The Conference Centre full reopened in 2021-22 following Covid-19 restrictions. Due to space reconfiguration at De Morgan House, more office space is available for commercial tenancies. Room 11 was let in 2021-22, with other spaces being advertised with the Society's commercial estate agent.

LMS Website

The Society's website is a key part of its data management infrastructure. Using a Drupal Content Management System, which is underpinned by a CiviCRM database, the website is not only a channel for communicating the Society's activities but is also a key interface between the Society, its members and the mathematical community more broadly. It enables prospective members and grant holders to submit applications, it allows current members to manage and pay for their membership online and it allows audiences to register for Society events. Use of the website for these key business processes requires careful management and innovative design to ensure that the functionality benefits the Society and its stakeholders while protecting their data. In 2021-22, the Society undertook two development projects to expand the operational functionality of the website. In particular, streamlining the processes for assessing grant applications received via the LMS website, thereby saving time for both staff and volunteers, and producing online nomination forms for the LMS Prizes, which will be available to use in 2022-23. There have also been changes to grant application forms to include questions for applicants to consider how they would ensure their activities are environmentally sustainable and, from 2022-23, there will be new questions on the application forms for Conference Grants (Scheme 1) and Joint Research Group grants (Scheme 3) so that applicants can outline how they would manage the hybrid formats of their events (if applicable) and request funding to support these formats.

Statement of Trustees' Responsibilities

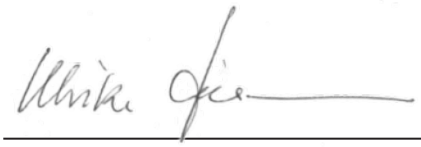
The trustees are responsible for preparing the Trustees' Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

The law applicable to charities in England and Wales requires the trustees to prepare financial statements for each financial year which give a true and fair view of the state of the affairs of the charity and of the incoming resources and application of resources of the charity for that period. In preparing these financial statements, the trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities' Statement of Recommended Practice (SORP);
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charity will continue in business.

The trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charity and enable them to ensure that the financial statements comply with the Charities Act 2011, the Charity (Accounts and Reports) Regulations 2008 and the provisions of the Royal Charter. They are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

For and on behalf of the Council of the London Mathematical Society:



Professor Ulrike Tillmann
(President)

21/10/2022

Date

ANNEX 1: COUNCIL, EXECUTIVE TEAM AND PROFESSIONAL ADVISERS

Membership of Council during the period 1 August 2021 to 31 July 2022

President:	Jon Keating (until November 2021)
	Ulrike Tillmann (from November 2021)
Vice-Presidents:	Iain Gordon
	Cathy Hobbs
Treasurer:	Simon Salamon
General Secretary:	Robb McDonald
Programme Secretary:	Chris Parker
Publications Secretary:	John Hunton (until November 2021)
	Niall MacKay (from November 2021)
Education Secretary:	Kevin Houston
Members-at-Large:	Mark McCartney (Librarian) (until November 2021)
	Sara Lombardo (Women and Diversity) (from November 2021)
	Peter Ashwin
	Elaine Crooks
	Andrew Dancer
	Anne-Christine Davis
	Jessica Enright (from November 2021)
	Tony Gardiner (until November 2021)
	Minhyong Kim
	Niall MacKay (until November 2021)
	Frank Neumann
	Brita Nucinkis
	Rachel Newton (from November 2021)
	Anne Taormina
	Amanda Turner
In attendance:	Eugenie Hunsicker (Chair, Committee for Women and Diversity in Mathematics)

Executive Management Team during the period 1 August 2021 to 31 July 2022

Executive Secretary:	Caroline Wallace
Head of Finance and Accounting:	Ephrem Abate
Head of Society Business:	Lindsay Walsh
Head of Conferences and Buildings:	Andrew Dorward

External advisors

Auditor:	Moore Kingston Smith LLP, 9 Appold Street, London, EC2A 2AP
Investment Advisers:	Cazenove Capital (part of the Schroders group), 12 Moorgate, London, EC2R 6DA
Bankers:	National Westminster Bank plc, 208 Piccadilly, London, W1A 2DG
Solicitors:	Bates Wells, 2-6 Cannon Street, London, EC4M 6YH

Registered address

London Mathematical Society, De Morgan House, 57-58 Russell Square, London, WC1B 4HS
https://www.lms.ac.uk

Charity registration number

252660

ANNEX 2: COMMITTEE MEMBERSHIP (as at July 2022)

Membership of Committees as at 31 July 2022

Computer Science Committee: P. Wong (Chair), P. Ashwin, A. Beckmann, M. Cryan, O. Dardha, J. Davenport (Institute of Mathematics and its Applications (IMA)), A. Popescu (British Computer Society-Formal Aspects of Computing Science (BCS-FACS)), C. Kestner, B. Martin, S. Zivny.

Development Committee: President (Chair), Treasurer, General Secretary, Executive Secretary, Past President, President-Elect, G. Dales, A. Dancer. J. Rodrigo, C. Roney-Dougal.

Early Career Research Committee: C. Parker (Chair), S. Beheshti, E. Crooks, J. Grbic, H. Johnston, A. Lecuona (ECR-CDWM Liaison) R. Newton (Deputy Chair), M. Ptashnyk, S. Roy, I. Short (Climate Working Group Rep), and EPSRC Observer.

Education Committee: Education Secretary (Chair), T. Crawford, J. Enright, P. Glaister, Vice-President C. Hobbs, J. Parker (Heads of Departments of Mathematical Sciences (HoDoMS)), J-A Lees, M. McCartney, T. Roper, C. Saker.

Finance and General Purposes Committee: President (Chair), Vice-Presidents, General Secretary, Treasurer, Programme Secretary, Publications Secretary, Education Secretary, Executive Secretary.

International Affairs Committee: President (Chair), Publications Secretary, P. Glaister (IMA), D. Evans, J. Fraser (Edinburgh Mathematical Society (EdMS)), R. Norman (EdMS President), M. Mathieu, B. Nucinkis, J. Parker, S. Schroll.

Investment Sub-Committee: Investment Sub-Committee: Treasurer (Chair), all other Members of Finance and General Purposes Committee, R. Bogni, J. Dodd, A. Harrington, J. Horn-Phathanothai, G. Keniston-Cooper.

IT Resources Committee: President (Chair), Vice-President Hobbs, Executive Secretary, F. Clarke, J. Cremona, K. Gillow, I. Stewart.

Library Committee: Librarian (Chair), LMS Archivist, I. Falconer, Publications Secretary, S. Hart, A. Rice.

Newsletter Editorial Board: A. Vdovina (Editor-in-Chief), J. Barrow-Green, D. Chillingworth, J. Enright, J. Fraser, C. Hollings, S. Huggett, A. Johansen, Vice-President C. Hobbs, N. MacKay, S. Oakes, M. Whittaker, A. Wilson, General Secretary.

Nominating Committee: T. Brendle (Chair), I. D. Abrahams, C. Budd, N. Chamberlain, P. Maini, F. Neumann (Council), B. Pelloni, M. Rees, G. Stallard.

Personnel Committee: Vice-President C. Hobbs (Chair), Publications Secretary, Executive Secretary, A. Belton, A. Taormina, P. Ashwin.

Prizes Committee: President (Chair), J. Bennett, T. Bridgeland, P. Cameron, A. Caraiani, J. Marklof, A. Teckentrup, D. Vella, M. Wemyss, B. Wingate.

Publications Committee: Publications Secretary (Chair), Vice-President C. Hobbs, Treasurer, M. Brown, E. Crooks, H. Harrington, R. Kessar, A. Lazarev, I. Leary, N. O'Connor, C. Parker, O. Randal-Williams, A. Turner.

Research Grants Committee: A. Dancer (Chair), J. Brodski, H. Bui, I. Kyza, A. Lazarev, F. Neumann, B. Nucinkis, N. Peyerimhoff, M. Ptashnyk, A. Turner, P. Milewski (Bath Symposia Representative).

Research Policy Committee: Vice-President I. Gordon (Chair), P. Ashwin, K. Brown, A. Caraiani, S. Gutierrez, J. van den Heuvel (HoDoMS), O. Jensen, T. Liverpool, H. Krieger, D. Smith.

Society Lectures and Meetings Committee: B. Nucinkis (Chair), G. Evans, M. Kambites, K. Leschke, N. Petrovskaya, M. Todd, V. Styles.

Committee for Women and Diversity in Mathematics: S Lombardo (Chair), L. Bandara, A. Davis, C. Garetto, Vice-President I. Gordon, L. Hakim, H. Herrera (ORS), T. Kelly, S. Lawrence (IMA), A. Lecuona (EdMS), A. Madzvamuse, S. Pumpluen, K. Severn (RSS), C. Smith, M. Sommacal.

Sub-Groups, Ad-hoc Committees and LMS appointments as at 31 July 2022

Publications Nominating Group: Publications Secretary (Chair), G. Brown, , M Hairer, J. Maynard (Managing Editor, Journal of the LMS), A. Lazarev (Managing Editor, Bulletin of the LMS, , J. L. Rodrigo (Managing Editor, Transactions of the LMS), R. Sharp, C. Tretter.

Education sub-Committee (Teaching Mathematics as a Career): J. White (Chair), Education Secretary, K. Golden, T. Roper, C. Saker, N. Steele (IMA).

Atiyah Fellowship Panel: Caroline Series (Chair), Minhyong Kim, Edriss Titi (Cambridge), Jihad Touma (Director, Centre for Advanced Mathematical Sciences (CAMS), American University of Beirut), Fida El Chami (Lebanese University), Bassam Shayya (American University of Beirut).

Good Practice Scheme Steering Group: A. Davis (Chair), S. Lombardo (Chair, Committee for Women and Diversity in Mathematics), C. Marr, N. Mazza, C. Smith, J. van den Heuvel (HoDoMS).

LMS-IMA Joint Working Group (LMS members): President (Chair), Vice-President I. Gordon, Executive Secretary.

LMS–IMA Zeeman Medal Committee 2022 (LMS Members): President, H. Fry, C. Roney-Dougal.

Mentoring African Research in Mathematics (MARM) Board: F. Neumann, A-S Kalaghiros, T. Liverpool, A. Madzvamuse, M. Roberts, B. Szendroi.

Undergraduate Summer School Scientific Committee: A. Hone, F. Kirwan, A. Veselov.

Council Diarist: various Council members.

Council Webmaster: R. McDonald.

LMS/EMS Newsletter Correspondent: D. Chillingworth.

Election Scrutineers: C. Goldie and C. Lance.

ANNEX 3: EXTERNAL REPRESENTATIVES (as at July 2022)

Representatives on external committees and boards as at 31 July 2022

Athena Forum: A. Davis.

British Science Association Mathematics Section: Education Secretary.

British Mathematical Colloquium Scientific Committee: M. Devisscher, S. Rees, C. Roitzheim.

Council for the Mathematical Sciences Board: President, Vice-President C. Hobbs, Vice-President I. Gordon, Executive Secretary (any 3 of).

Council for the Mathematical Sciences-Engineering and Physical Sciences Research Council (CMS-EPSRC) Liaison Sub-Group: Vice-President C. Hobbs, Vice-President I. Gordon, Executive Secretary (any 2 of).

European Mathematical Society (EMS) Council: President, F. Neumann, A. Turner, A.Vdovina.

Heads of Departments of Mathematical Sciences Committee: John Parker.

International Centre for Mathematical Sciences (ICMS) Board: S. Rees.

International Centre for Mathematical Sciences (ICMS) Programme Committee: C. Drutu, J. Gog.

International Commission on Mathematical Instruction (ICMI) UK representative: P. Glaister.

Isaac Newton Institute (INI) Scientific Steering Committee: M. Harris, V. Isham.

Isaac Newton Institute (INI) Correspondent: N. MacKay.

Joint Mathematical Council (JMC): Education Secretary.

Parliamentary and Scientific Committee: President, Vice-President I. Gordon, Vice-President C. Hobbs, Executive Secretary.

STEMM Disability Advisory Committee: Chair, Committee for Women and Diversity in Mathematics.

Teaching Training Scholarships Management Group: Education Secretary.

ANNEX 4: STAFF

Staff in post in the period 1 August 2021 to 31 July 2022

Executive Secretary's Office

Executive Secretary:	Caroline Wallace
PA to the Executive Secretary:	Clare Ralphs
Head of Finance and Accounting:	Ephrem Abate
Accounts Assistant:	Valeriya Kolesnykova
Administrative Editor, LMS Newsletter:	Susan Oakes

Publications

Publications Development Manager:	Suzanne Abbott
Editorial Manager:	Ola Törnkvist
Publications Assistant:	Georgina Gale (until September 2021) Anna Agathopoulou (from January 2022)

Society Business

Head of Society Business:	Lindsay Walsh
Membership and Grants Manager:	Elizabeth Fisher
Society Communications Officer:	John Johnston (until December 2021)
Society Governance Officer:	James Taylor
Society Business, Research & Communications Officer:	Katherine Wright
Grants and Membership Administrator:	Lucy Covington

Conferences and Building Group

Head of Conferences and Buildings:	Andrew Dorward

ANNEX 5: GRANT SCHEMES

General policy on grant-making

The grant schemes are funded from the Society's resources received from its endowments, investments and publishing activities and are one of the primary mechanisms through which the Society achieves its central purpose, namely to 'promote and extend mathematical knowledge'. The principles governing its grant-giving are:

- As a charity the Society is able, and wishes, to take advantage of different opportunities and to work within a different regulatory framework from other funding bodies, such as the Engineering and Physical Sciences Research Council (EPSRC). Its grant schemes are focused accordingly.
- The Society's funds are under pressure, and it is not able to make awards as often or as fully as it would like.
- The Society does not normally meet the full cost of an activity. Rather it will aim to give added value to an event largely funded by other means, or to bridge the gap between cost and the resources that might reasonably be made available by a university department.
- The Society does not pay Full Economic Costs.
- The Society does not make grants to cover departmental overheads, secretarial costs, etc., which could be seen as part of normal departmental provision.
- The Society does not normally make grants to cover room hire, although consideration will be given to cover room hire charges at De Morgan House.
- Applicants are expected to make economical travel arrangements where possible.
- The Society expects that organisers of conferences and activities who are seeking grants from the Society will invite both male and female speakers (or explain why this is not appropriate or possible) and give consideration to the provision of mechanisms to enable participation by people with children or family responsibilities, in line with the Society's policy on Women in Mathematics.
- The Society will not allow its limits for individual grant schemes to be exceeded by artificially sub-dividing an application into a number of separate requests under different headings.
- The Society considers it to be the responsibility of the institution to which the grant is paid to check receipts in accordance with its normal financial procedures.

The Society's committees that assess applications for grants are made up of mathematicians with a wide spread of research interests. Under most schemes, proposals are judged by the committees themselves, although they may seek advice. Each committee judges each application on its merits.

Any mathematician working in the UK is eligible to apply for a grant but for some schemes if they are not a member of the Society, then the application must be countersigned by a member who is prepared to support the application.

Summary of main grants and training schemes

Conference Grants (Scheme 1)
Grants are made to the organisers of conferences to be held in the UK. Priority is given to the support of meetings where an LMS grant can be expected to make a significant contribution to the viability and success of the meeting. Support of larger meetings of high quality is not ruled out, but for such meetings an LMS grant will normally cover only a modest part of the total cost.

Visitors to the UK (Scheme 2)
The aim of the Scheme is to provide grants to mathematicians based within the UK to partially support visitors to the UK; the visitors are expected to give lectures in at least three separate institutions.

Support of Joint Research Groups (Scheme 3)
The Scheme is to provide support for groups of mathematicians, working in at least three different locations (of which at least two must be in the UK), who have a common research interest and who wish to engage in collaborative activities. The grant award covers two years, and is expected that a maximum of four meetings (or an equivalent level of activity) will be held per academic year.

Online Lecture Series (Scheme 3)
The Scheme is to provide support to mathematicians, or groups of mathematicians, delivering online lecture series in mathematics.

Research in Pairs (Scheme 4)
The Scheme is to provide small grants to UK-based mathematicians to help support short visits of intensive collaborative research with colleagues in other institutions, both in the UK and abroad.

Research Reboot (Scheme 4)
This scheme is to help restart research activity. It offers funding for the applicant to leave their usual environment to focus entirely on research for a period from two days to a week, in order to restart their research activity, if they have been prevented from doing so by the adverse conditions of the Covid-19 crisis.

Collaborations with Developing Countries (Scheme 5)
The Scheme is to provide grants to mathematicians within the UK to support visits for collaborative research, or academic activities that will benefit the country concerned. Countries considered to be eligible for Scheme 5 funding are those contained within (but not exclusively limited to) the International Mathematical Union Commission for Developing Countries (IMU CDC) Definition for Developing Countries: https://www.mathunion.org/cdc/about-cdc/definition-developing-countries

Workshop Grants (Scheme 6)
The Society supports research workshops, which may be held anywhere in the UK and are an opportunity for a small group of active researchers to work together for a concentrated period on a specialised topic. Applications to support the development of research in an area not ready for a larger-scale application are welcomed; applications for partial support for larger events will only exceptionally be supported.

Computer Science Small Grants (Scheme 7)
The aim of the Scheme is to provide small grants to researchers based within the UK to help support visits for collaborative research at the interface of Mathematics and Computer Science.

British Colloquium for Theoretical Computer Science
The Society supports the annual meeting which provides a forum in which researchers in theoretical computer science can meet, present research findings, and discuss developments in the field. Specifically, the Society funds the costs of a speaker who is ordinarily from overseas and who is introduced as the 'LMS Keynote Lecturer in Discrete Mathematics'.

Caring Supplementary Grants
The Society recognises that parents and carers are sometimes prevented from attending conferences and meetings and making research visits because there is no provision for the extra costs incurred in caring for dependants. It is the LMS' view that institutions should make provision for caring costs but, while this is not largely the case, the Society is willing to make a supplementary grant as a contribution to the costs.

Grace Chisholm Young Fellowship
These fellowships aim to provide some support when a mathematical career is interrupted by family responsibilities, relocation of partner, or other similar circumstance, making possible some continuous mathematical activity and so enabling the fellow to be in a position to apply for posts when circumstances allow. Each holder will be based in a specific Mathematics Department in a University or Research Institute in the UK; the host is expected to provide an email address, use of library and IT facilities and access to research literature. The normal duration of a fellowship is one year.

Emmy Noether Fellowships
These Fellowships are designed to enhance the mathematical sciences research, broadly construed, of holders, either re-establishing their research programme after returning from a major break associated with caring responsibilities or those requiring support to maintain their research programme while dealing with significant ongoing caring responsibilities.

Small Education Grants
These grants support such activities as popular lectures, exhibitions, masterclasses, mathematical competitions, etc., that help to encourage joint mathematical ventures between higher education institutions and schools, or the development of projects that would improve the public image of mathematics.

Mathematics Education Conference Grants
This scheme offers funding to organisers of regular mathematics education conferences and is intended to contribute to the travel/subsistence expenses of attendees of the event in question.

Grants for Teaching and Learning in HE
This scheme offers partial funding of one-day workshops disseminating good practice in teaching undergraduate mathematics.

Mentoring African Research in Mathematics (MARM)
The aim of the programme is to enable all mathematicians in Africa to pursue academic careers of the highest standard. The Society believes that enhancing and developing academic research and research institutions in Africa will help ensure that pursuing world-class mathematical careers within Africa will be both achievable and a more attractive option than moving permanently to the developed world. Over time, the strengthening of the mathematical community within Africa will benefit not only the African community but mathematics as a whole. Grants are awarded for two-year academic partnerships between European and African institutions for activities including exchange visits, lectures and workshops, conferences, PhD supervision and mentoring support.

Support for Mathematics in Africa
The Society awards grants to contribute to the travel costs of postgraduates attending conferences in Africa, organised or supported by the African Mathematics Millennium Science Initiative (AMMSI).

Atiyah UK–Lebanon Fellowships
This scheme was set up in memory of Sir Michael Atiyah (1929–2019) and operated in partnership with the Centre for Advanced Mathematical Sciences at the American University of Beirut. It provides for 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 AUB, to visit the UK to further their study or research for a period of up to 12 months.

Summary of grants and training schemes supporting Young Mathematicians and Early Career Researchers

Undergraduate Research Bursaries in Mathematics
The Scheme aims to give training in research to undergraduates with research potential to encourage them to consider a career in scientific research. Grants are awarded for a six-to-eight week summer research project undertaken with the guidance of a research supervisor.

Undergraduate Summer Schools
The goal of the Summer Schools is to introduce exceptional pre-final year undergraduates to research mathematics and, in particular, to make them think seriously about an academic career at this stage. The Summer Schools are a combination of short lecture courses with problem-solving sessions and colloquium style talks. Talks are given by lecturers mostly (though not exclusively) from the UK, including high-profile speakers. The Schools are for around 50 students and involve 10 lecturers. The event is hosted by a UK university for a period of 10 days in summer.

LMS Prospects in Mathematics
The Society provides support for this annual event, primarily for final year undergraduates and Masters' Students who are considering applying for a PhD after they have completed their studies to discuss current research and potential career opportunities.

LMS Research Schools Programme
The purpose of the Research Schools is to provide training for young researchers in a core area of mathematics. Students and post-docs can meet a number of leading experts in the topic as well as other young researchers working in related areas. The series aims at the highest international standing of these research schools, allowing for support of both international lecturers and participants. The main criteria for funding are the topicality and the mathematical significance of the course material, the general alignment with the mission of the LMS) and the likely demand for places nationally and internationally, and the standing of the proposed lecturers in the international mathematical community.

Cecil King Travel Scholarship
The London Mathematical Society administers two £6,000 travel awards funded by the Cecil King Memorial Foundation for early career mathematicians, to support a period of study or research abroad, typically for a period of three months. One Scholarship will be awarded to a mathematician in any area of mathematics and one to a mathematician whose research is applied in a discipline other than mathematics.

Postgraduate Research Conferences (Scheme 8)
The aim of this Scheme is to support postgraduate research conferences, organised by and for postgraduate research students, to be held in the UK.

Young Researchers in Mathematics Conference
The Society provides a grant for the Young Researchers in Mathematics Committee to help support the Young Researchers in Mathematics Conference, a mathematics conference specifically targeting early career researchers.

LMS Early Career Fellowships
To support early career mathematicians in the transition between PhD and a postdoctoral position, the London Mathematical Society offers up to 8 Fellowships of between 3 and 6 months to mathematicians who have recently or will shortly receive their PhD. The award will be calculated at £1,200 per month plus a travel allowance. The fellowships may be held at one or more institutions but not normally at the institution where the fellow received their PhD.

LMS Early Career Fellowships (Covid-19 Response)
Recognising that one impact of the Covid-19 pandemic on Early Career Researchers is the unexpected turbulence in the job market, to support early career mathematicians in the transition between positions, the London Mathematical Society offers a number of Early Career Fellowships of between 3 and 6 months to mathematicians who have recently or will shortly receive their PhD. The award will be calculated at £1,000 per month and offers no travel allowance. An additional scholarship of approximately £1,000 (dependent on uptake) is also available and funded by the HIMR.

Celebrating New Appointments (Scheme 9)
Grants are made to provide partial support for meetings held in the UK to celebrate the appointment of a new lecturer in mathematics at a UK institution. The aim of the grant award is to embed the new lecturer in their home institution and the local mathematical community, and to allow the new appointment to create useful and lasting relationships with the local mathematical community. It is expected that the new appointment themselves will present a lecture at the meeting.

Travel Grants for Early Career Researchers
The Travel Grant Scheme provides partial support for UK-based early career researchers to attend conferences or undertake research visits either in the UK or overseas. Grant holders are early career researchers in mathematics, based in the UK, defined as a Masters student, PhD/research student or anyone who has completed their PhD in the last five years (excluding academic career breaks). The scheme is open to both members and non-members of the LMS.

Women in Mathematics Events
These events are aimed at academic mathematicians (from at least postgraduate level and up and may include undergraduates). The events are intended to help early career women mathematicians when considering the next stages in their careers and typically have included mathematical talks combined with panel discussions, social opportunities and networking. Individuals or groups are able to express interest in organising and hosting an event.

Girls in Mathematics Events
Events are aimed at schoolgirls, up to and including A-levels or equivalent, with mathematics as a main focus. Individuals or groups are able to express interest in organising and hosting an event.

Diversity in Mathematics Events
Diversity in Mathematics Days support aspects of diversity beyond gender. Two such days will be supported each year. The events are expected to focus on some aspect of diversity in the Mathematical Sciences. One of the events is expected to feature both the work of people in the Mathematical Sciences, whether in industry or academia, who come from that diversity group, and also offer opportunities for mathematicians from that diversity group to receive mentoring and networking opportunities. For the first time the London Mathematical Society will also support a Diversity in Mathematics Day in schools. One such day will be supported each year that encourages racially diverse students to become more involved in mathematics. The event will be aimed at school students up to and including A-level or equivalent. Individuals or groups are able to express interest in organising and hosting these events.

ANNEX 6: GENERAL AND RESERVE FUNDS

For the purposes of financial planning the Society has chosen to define Relevant Funds to consist of Quoted Investments + Residential Properties + Cash at bank. The Society is in the process of rebuilding the investment portfolio and guaranteeing a real return, hence the aim of CPI + 4% as the primary long-term target. In order to maintain its value in real terms, Council considers that the present level of the Relevant Funds should (if possible) be increased to at least £20m by 2025. Despite current economic uncertainty, the Society is on target to achieve that. At present Residential Properties are making a return of 4% through rent.

General Fund

The General Fund is to provide for the general operation of the Society including its charitable activities not funded from Designated or Restricted Funds. Within the Society's reserves, the General Fund is deemed an expendable reserve to be used in pursuit of the Society's objectives as Council may from time to time determine. At present the fund exists to assure the availability of resources for the Society's grant schemes and other continuing charitable activities in future years. This manages the risk to the Society's ability to generate income to provide for such activities and offers a contingency against threats such as open access.

The Society normally maintains £600k free reserve (operating reserve) as cash at bank to ensure that there is enough working capital to stabilise the Society's finances. It provides contingency against unexpected events, as well as allowing the Society to deal with losses in income and large unbudgeted expenses. The latter includes the potential requirement by future donors that the Society is able to equally match donated funds to be used for specific initiatives and unexpected projects.

The actual level of free reserves consists of the unrestricted net current assets less the liabilities shown in note 22 to the financial statements which amounted to £865,399 at 31 July 2022. This is not significantly in excess of the minimum level of free reserves according to the policy. The trustees will continue to keep the level of unrestricted net current assets under review.

General Fund	**£15,639,501**

Building and Development Reserve Fund

This reserve, originally built up for the Society to purchase or rent its own property was utilised in part in the purchase of a leasehold property. This reserve fund exists to maintain the property in a state of good repair as required by the Lease holder, including in the case of disaster recovery should any major incident affect the physical aspects of the Society's offices. The agreed purposes and recommended levels as from the next financial year would be:

Rehousing and re-establishing the administration for one year should De Morgan House (DMH) to be lost through fire etc	£195,000
Costs of venue hire for all LMS meetings held in DMH	£15,000
Costs of re-establishing our work	£13,000
Dilapidations, were the Society to leave DMH	£23,000
External and Internal redecoration	£79,000
Major modifications and developments, unexpected repairs/replacement	£275,000
	£600,000

Publication Reserve Fund

This fund is to provide a reserve to meet the costs of producing and publishing the Society's LMS journals, including where the Society's income from these journals is unable to cover such commitments. It is intended that the reserve will be reviewed as circumstances arise each year. The agreed purposes and recommended levels are:

Repaying subscriptions income if we ceased to trade, and other commitments	£1,725,000
Buffer against over/under shooting the budget	£175,000
New ventures. Based on the costs of launching and producing a new journal	£750,000
Special strategic and commercial initiatives	£75,000
Insurance against breach of copyright and libel (including legal fees)	£275,000
	£3,000,000

Grants Payable Reserve Fund

This fund is set aside for grant awards to mathematical projects or activities which span a number of years. Such grants are reviewed annually and are paid once the recipient of the grant has provided a progress report with satisfactory performance of the project.

Grants awarded and approved by Council to be paid in future accounting periods	**£14,000**

Restricted Funds

Prizes Fund (for Berwick/De Morgan/Lord Rayleigh's/Fröhlich/Shephard prizes)	£208,190
A.J. Cunningham Research Fund (for publication of work on the factorisation of large numbers	£102,903
Zeeman Fund (for Undergraduate Research Bursaries named in honour of Prof. Sir Christopher Zeeman	£221
Frank Gerrish Fund (for promotion of expository articles and surveys within the Society's publications	£23,836
Emmy Noether Fellowship Fund (for those re-establishing their research after a break or ongoing caring responsibilities	£25,000
Levelling Up Scheme Fund (for tutorial of A-level maths students from under-represented backgrounds)	£49,664
Campaign for Pure Mathematics Fund (for campaigning to protect and promote pure mathematics)	£30,689
Solidarity Grant Fund (for mathematicians who are fleeing their countries)	£9,500
	£450,003

ANNEX 7: AUDITOR'S REPORT

Opinion

We have audited the financial statements of The London Mathematical Society for the year ended 31 July 2022 which comprise the Statement of Financial Activities, the Balance Sheet, the Cash Flow Statement and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including FRS 102 'The Financial Reporting Standard Applicable in the UK and Republic of Ireland' (United Kingdom Generally Accepted Accounting Practice).

In our opinion the financial statements:

- give a true and fair view of the state of the charity's affairs as at 31 July 2022, and of its incoming resources and application of resources, for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Charities Act 2011.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs(UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the audit of the financial statements section of our report. We are independent of the charity in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

In auditing the financial statements, we have concluded that the trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the charity's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the trustees with respect to going concern are described in the relevant sections of this report.

Other information

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The trustees are responsible for the other information. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters where the Charities Act 2011 requires us to report to you if, in our opinion:

- the information given in the Trustees' Annual Report is inconsistent in any material respect with the financial statements; or
- the charity has not kept adequate accounting records; or
- the financial statements are not in agreement with the accounting records and returns; or
- we have not received all the information and explanations we required for our audit.

Responsibilities of trustees

As explained more fully in the trustees' responsibilities statement set out on page 27, the trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the trustees are responsible for assessing the charity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the trustees either intend to liquidate the charity or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

We have been appointed as auditor under section 144 of the Charities Act 2011 and report in accordance with regulations made under section 154 of that Act.

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud

The objectives of our audit in respect of fraud, are; to identify and assess the risks of material misstatement of the financial statements due to fraud; to obtain sufficient appropriate audit evidence regarding the assessed risks of material misstatement due to fraud, through designing and implementing appropriate responses to those assessed risks; and to respond appropriately to instances of fraud or suspected fraud identified during the audit. However, the primary responsibility for the prevention and detection of fraud rests with both management and those charged with governance of the charity.

Our approach was as follows:

- We obtained an understanding of the legal and regulatory requirements applicable to the charity and considered that the most significant are the Charities Act 2011, the Charity SORP, and UK financial reporting standards as issued by the Financial Reporting Council.
- We obtained an understanding of how the charity complies with these requirements by discussions with management and those charged with governance.
- We assessed the risk of material misstatement of the financial statements, including the risk of material misstatement due to fraud and how it might occur, by holding discussions with management and those charged with governance.

- We inquired of management and those charged with governance as to any known instances of non-compliance or suspected non-compliance with laws and regulations.
- Based on this understanding, we designed specific appropriate audit procedures to identify instances of non-compliance with laws and regulations. This included making enquiries of management and those charged with governance and obtaining additional corroborative evidence as required.

As part of an audit in accordance with ISAs (UK) we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purposes of expressing an opinion on the effectiveness of the charity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the trustees.
- Conclude on the appropriateness of the trustees' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the charity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the charity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Use of our report

This report is made solely to the charity's trustees, as a body, in accordance with Chapter 3 of Part 8 of the Charities Act 2011. Our audit work has been undertaken so that we might state to the charity's trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to any party other than the charity and charity's trustees as a body, for our audit work, for this report, or for the opinion we have formed.

James Cross
Statutory auditor, Moore Kingston Smith LLP

9 Appold Street
London
EC2A 2AP

Date .....

Moore Kingston Smith LLP is eligible to act as auditor in terms of Section 1212 of the Companies Act 2006.

ANNEX 8: STATEMENT OF FINANCIAL ACTIVITIES

STATEMENT OF FINANCIAL ACTIVITIES
For the year ended 31st July 2022

	Notes	Unrestricted General Funds £	Unrestricted Designated Funds £	Restricted Funds £	2022 Total Funds £	2021 Total Funds £
Income and endowments:						
Donations and legacies		**17,432**	**-**	**243,000**	**260,432**	**144,236**
Income from charitable activities:						
Membership subscriptions		155,158	-	-	155,158	146,062
Publications – LMS Periodicals	7a	1,075,985	-	3,200	1,079,185	1,424,264
Publications – Ventures and Royalties	7c,d	313,837	285,865	-	599,702	649,088
Grants and contracts	23	89,919	-	60,763	150,682	133,449
Total income from charitable activities		**1,634,899**	**285,865**	**63,963**	**1,984,727**	**2,352,863**
Income from other trading activities	3	142,861	-	-	142,861	124,417
Income from Investments	2	523,209	-	8,510	531,719	502,606
Other income		3,782	-	-	3,782	24,969
Total Income		**2,322,183**	**285,865**	**315,473**	**2,923,521**	**3,149,091**
Expenditure:						
Costs of raising funds	4	270,512	-	-	270,512	275,867
Expenditure on charitable activities:						
Advancing the interests of mathematics	5	277,721	-	9,031	286,752	346,071
Enabling mathematicians to undertake research and collaboration	6	438,276	9,333	81,500	529,109	682,184
Disseminating mathematical knowledge:						
- Costs of publications	7b,c,d	327,745	185,683	9,200	522,628	602,193
- Conferences and meeting programmes	8	154,949	-	-	154,949	103,744
Promoting mathematical research and its benefits	9	330,570	-	185,723	516,293	354,218
Total expenditure on charitable activities		**1,529,261**	**195,016**	**285,454**	**2,009,731**	**2,088,410**
Total expenditure		**1,799,773**	**195,016**	**285,454**	**2,280,243**	**2,364,277**
Net income before gains and losses on investment		**522,410**	**90,849**	**30,019**	**643,278**	**784,814**
Net (losses)/ gains on investment assets	16	(291,813)	-	(8,133)	(299,946)	1,421,884
Net Income for the year		**230,597**	**90,849**	**21,886**	**343,332**	**2,206,698**
Transfers between funds	20,21	113,362	(125,100)	11,738	-	-
Actuarial loss on defined benefit pension schemes	14,19	(227,987)	-	-	(227,987)	(38,952)
Net movement in funds for the year		**115,972**	**(34,251)**	**33,624**	**115,345**	**2,167,746**
Reconciliation of funds:						
Total funds brought forward		15,523,529	3,648,251	416,379	19,588,159	17,420,413
Fund balances carried forward		**15,639,501**	**3,614,000**	**450,003**	**19,703,504**	**19,588,159**

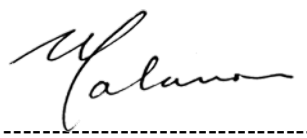
The comparative figures for each fund are shown in the notes to the accounts, (see note 25).

BALANCE SHEET
as at 31st July 2022

	Notes	2022 £	2022 £	2021 £	2021 £
Fixed Assets					
Fixed Asset Investments					
Quoted Investment	15a	13,766,170		12,153,444	
Residential Property	15b	3,713,950		3,688,950	
			17,480,120		15,842,394
Tangible Fixed Assets					
Leasehold Property	17	1,120,435		1,165,252	
Fixtures, Fittings and Equipment	17	37,014		37,632	
			1,157,449		1,202,884
			18,637,569		17,045,278
Current Assets					
Medals in stock		-		1,531	
Debtors	18	241,375		312,447	
Cash at bank and in hand		2,113,763		3,508,017	
		2,355,138		3,821,995	
Liabilities:					
Creditors: Amounts falling due within one year					
Creditors	19	803,647		962,083	
Deferred Income	19	47,887		107,349	
		851,534		1,069,432	
Net current assets			1,503,604		2,752,563
Creditors: Amounts falling due after more than one year					
Provision of Pension Liability	19		(437,669)		(209,682)
Total Net Assets			**19,703,504**		**19,588,159**
Represented by:					
General Funds	21	15,639,501		15,523,529	
Designated Funds	21	3,614,000		3,648,251	
Restricted Funds	20	450,003		416,379	
			19,703,504		**19,588,159**

The notes on pages 47 to 65 form part of these financial statements.

Approved by the trustees on 21 October 2022 and signed on their behalf by:



Professor Simon Salamon
(Treasurer)

Cash Flow Statement
For the year ended 31 July 2022

	2022		2021	
	£	£	£	£
Cash flow from operating activities				
Net movements in funds	115,345		2,167,746	
Add / (Deduct) gains/(losses) on investments (note 16)	299,946		(1,421,884)	
Add back re-invested gains (note 2)	97,110		89,612	
Add back investment management fees (note 4)	59,870		53,063	
Add back VAT on investment management fees	2,458		2,231	
Deduct investment income (note 2)	(531,719)		(502,606)	
Add back depreciation charge (note 17)	62,939		60,783	
Decrease / (Increase) in debtors (note 18)	71,072		(168,314)	
Decrease / (Increase) in medals in stock	1,531		-	
(Decrease)/increase in creditors (note 19)	10,089		87,723	
Net cash provided by operating activities		**188,641**		**368,354**
Cash flow from Investing activities				
Purchase of tangible fixed assets (note 17)	(17,504)		(25,623)	
Purchase of fixed asset investments (note 15)	(2,096,909)		(89,612)	
Investment income (note 2)	531,719		502,606	
Net cash provided by investing activities		**(1,582,694)**		**387,371**
Change in cash and cash equivalent in the year		**(1,394,053)**		**755,725**
Cash and cash equivalent at the beginning of the year				
Cash in bank and deposit		3,508,017		2,752,292
Cash held in investments		100		100
		3,508,117		**2,752,392**
Cash and cash equivalent at the end of the year				
Cash in bank and deposit		2,113,763		3,508,017
Cash held in investments		301		100
		2,114,064		**3,508,117**

NOTES TO THE FINANCIAL STATEMENTS
For the year ended 31st July 2022

1. Accounting Policies

The accounting policies adopted by the Society are as detailed below:

a) Basis of accounting

The financial statements have been prepared in accordance with Accounting and Reporting by Charities: Statement of Recommended Practice (SORP) applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2015) and the Charities Act 2011.

The London Mathematical Society meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy note(s).

The trustees have assessed whether the use of going concern basis is appropriate and have considered possible events or conditions that might cast significant doubt on the ability of the Society to continue as a going concern. The trustees have made this assessment for a period of at least one year from the date of approval of the financial statements. In particular, the trustees have considered the impact of COVID-19 pandemic and the forthcoming reduction in the Society's income from its publications activities.

In relation to the pandemic, the conference income from De Morgan House continues to be affected. This is partly mitigated by anticipated cost savings due to changes in levels of activity in some areas. For example, it is likely that there will continue to be fewer applications than usual for certain grant schemes and some events will continue to take place online rather than face-to-face.

As noted earlier in this report, the Society is set to lose a significant part of its income from its publications activities. Council is actively exploring other sources of income. Pending the development of additional income streams, Council has reviewed all the Society's activities in order to identify savings and decided on reductions in its budget for this financial year accordingly.

On this basis, and the level of reserves held, the trustees consider that the Society has adequate resources to continue in operational existence for the foreseeable future. The Society therefore continues to adopt the going concern basis in preparing its financial statements.

The financial statements are prepared in sterling, which is the functional currency of the company. Monetary amounts in these financial statements are rounded to the nearest pound.

b) Judgements and key sources of estimation uncertainty

In the application of the Society's accounting policies, the trustees are required to make judgement, estimates and assumptions about the carrying amount of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from the estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised where the revision affects only that period, or in the period of the revision and future periods where the revision affects both current and future periods.

The most significant estimates and assumptions which affect the carrying amount of assets and liabilities in the accounts relate to:

- Useful Economic Lives- The annual depreciation charge for property, fixture, fittings and equipment is sensitive to change in the estimated useful economic lives and residual value of assets. These are reassessed annually and amended where necessary to reflect current circumstances.

- Defined benefit scheme pension liability can be estimated based on recommended modeller provided by USS. For more details, see note 14. FRS 102 makes the distinction between a group plan and a multi-employer scheme. A group plan consists of a collection of entities under common control typically with a sponsoring employer. A multi-employer scheme is a scheme for entities not under common control and represents (typically) an industry-wide scheme such as Universities Superannuation Scheme. The accounting for a multi-employer scheme where the employer has entered into an agreement with the scheme that determines how the employer will fund a deficit result in the recognition of a liability for the contributions payable that arise from the agreement (to the extent that they relate to the deficit) with the resulting expense charged through the profit or loss account in accordance with section 28 of FRS 102. The directors are satisfied that Universities Superannuation Scheme meets the definition of a multi-employer scheme and has therefore recognised the discounted fair value of the contractual contributions under the recovery plan in existence at the date of approving these financial statements.

- Fair value of residential properties is reassessed annually based on local agents estimates.

c) Financial Instruments

The Society has elected to apply the provision of Section 11 'Basic Financial Instrument's and Section 12 'Other Financial Instruments Issues' of FRS 102 to all of its financial instruments. Financial Instruments are recognised in the Society's balance sheet when the Society becomes party to the contractual provisions of the instrument. Financial assets and liabilities are offset, with the net amounts presented in the financial statements, when there is a legally enforceable right to set off the recognised amounts and there is an intention to settle on a net basis or to realise the asset and settle the liability simultaneously.

With the exceptions of prepayments and deferred income all other debtor and creditor balances are considered to be basic financial instruments under FRS 102. (See notes 18 and 19 for details)

d) Members' Subscriptions

Subscription income from members is recognised in the year to which it relates. During the year new members are allowed to pay pro-rata subscription fees depending on when they are elected during the membership year.

e) Donations

Cash donations are credited to the General Fund in the year of receipt but donations in kind are not recognised in these financial statements.

f) Investments

- **Quoted investments**

All quoted investments are valued at their market value at the balance sheet date, giving rise to unrealised gains and losses which are included in the Statement of Financial Activities. The market value is determined as follows:

i) Listed securities are valued at mid-market value ruling at the balance sheet date;

ii) Unit trust and managed fund investments are stated at the mid-point of the latest prices quoted by the investment managers immediately prior to the balance sheet date;

iii) Investments held in foreign currencies have been valued on the relevant basis and translated into sterling at the rate ruling at the balance sheet date.

The Society in its total returns policy treats all cash withdrawals from the investment portfolio as investment income. This is analysed in the notes to the financial statements as investment income split between the various categories of investment based on information provided by the investment managers and the proportion of total return drawn down relating to gains. The balance of unrealised gains and losses on revaluation of investments, and realised gains and losses arising on disposal of investments are separately identified in the notes to the Financial Statements and on the SoFA.

- **Residential property investment**

The rental derived is shown on the SoFA under 'Investment Income'. The growth in the value of the Society's residential property investment will be shown in the SoFA as Gains on investment assets. The residential property investment is valued at balance sheet date using the local estate agent's guidance on the current housing market within the area where the properties are located.

g) Fixed Assets

Depreciation is provided on all tangible fixed assets at rates calculated to write off, on a straight-line basis, the cost less estimated residual value over their expected useful lives as follows:

Leasehold Property	Over 50 years
Fixtures, Fittings and Office Equipment	20%
Computer equipment	33.33%

The Society operates a policy of capitalising assets whose unit cost exceeds £1,000, with expenditure below this level written off as incurred.

h) Publications

i) Publications income from LMS journals is recorded based on an estimated accrued basis; other publications income is treated on a cash basis which is considered to be the most appropriate and prudent approach given the information available.

ii) Income from the Society's contracts with publishers for the production, distribution and sales of its journals is determined as the best estimate for that proportion of the income (i.e. subscriptions less costs of production, distribution, sales and commission) relating to the number of issues published before the Balance Sheet date.

iii) No account has been taken of costs incurred or sales proceeds received in respect of publication after the Balance Sheet date.

1. Accounting Policies (continued)

iv) No valuation for accounting purposes is taken of any stocks of publications unsold at the Balance Sheet date.

v) The cost of publishing rights and subscribers' lists are written off in the year of acquisition.

vi) Royalties are taken into the Statement of Financial Activities as declared due by the relevant publishers.

i) Joint Ventures
The results of joint ventures are included in the accounts up to the year- end indicated.

j) Grants and Contracts
The Society has been awarded contracts and grants for some of its activities. These comprise: a contribution from IMU to support mentoring activities for mathematicians in Africa; shared costs of some activities with sister societies. The income and expenditure relating these are handled through this Fund.

k) Recognition of grant liabilities
Where the Society has contractual or constructive obligations to make grant payments these amounts are accrued in the accounts in accordance with the requirements of the SORP. The liability will be recognised within the year the grant is awarded. The unpaid grant commitments should normally be claimed by the end of the following financial year. However, the claim period may need to be extended for a further year (award year + 2) if the grant cannot be claimed by the end of the year following the award due to constraints on the start or end date of a grant, or due to other circumstances outside the control of the Society.

The Society also awards some grants with conditions for payment being a specific level of service or specific output to be delivered. Such grant awards (commitments) will be reserved in the Designated funds, and the grants are only recognised in the SoFA once the recipient of the grant has provided evidence of the specific service or output. Such grants are therefore reviewed annually and the grant payments subject to the condition of a progress report with satisfactory performance. If the project spans a number of years and satisfactory progress reports are received after year one, the first stage of the grant will be released from the Designated fund and that part of the grant expenditure will be recognised in the SoFA at that point.

Grants unclaimed by the end of award year +2 will be released back to the Society's general funds.

l) Grants payable
Grants payable out of existing revenues are provided for in full in the accounts. Those payable out of future resources are held in the Grant payable Reserve Fund (see also note '1i')

m) Taxation
The Society is a registered charity and no liability to taxation arises on the results of its business activities in support of its charitable purposes.

The Society has partial exempt status in respect of VAT, based on the split of its business and non-business activities. The proportion of VAT that cannot be recovered because of partial or fully exempt status of the activity is redistributed to the activities. The basis on which irrecoverable VAT have been allocated to the activities are set out in note 12.

n) Foreign currencies
Monetary assets and liabilities denominated in foreign currencies are translated at the rate of exchange ruling at the Balance Sheet date. Transactions in foreign currencies are recorded at the rate ruling at the date of the transaction. All differences are taken to the Statement of Financial Activities.

o) Medals in stock
The medal stock for the prize is stated at the lower of cost and net realisable value.

p) General Fund
The Unrestricted reserves are analysed between the General Fund and other Designated Funds. The General Fund, detailed in note 21 to the financial statements, is to provide for the general operation of the Society including its charitable activities not funded from Designated or Restricted Funds. Within the Society's reserves the General Fund is deemed an expendable reserve to be used in pursuit of the Society's objectives as Council may from time to time determine. At present it is managed to provide the income to be used to ensure the availability of resources for its grant schemes and other charitable activities in future years.

q) Designated Funds
The Unrestricted reserves are analysed between general and designated funds. The Trustees have created the following designated funds:

(i) **Building & Development Reserve Fund**
This reserve is to meet the costs of (a) consequences of the temporary loss of De Morgan House, (b) periodic internal and external decoration and maintenance, (c) major modifications or repairs.

1. Accounting Policies (continued)

(ii) **Publication Reserve Fund**
This reserve is to meet the costs of (a) breaches of copyright or libel actions against the Society, (b) special strategic and commercial initiatives (c) exploration and start-up costs of new ventures (d) consequential costs should the Society to cease publishing, (e) unpredictable annual fluctuations in the surplus.

(iii) **Grants Payable Reserve Fund**
This fund has been established to cover grants awarded and approved by Council to be paid in future accounting periods, subject to available finance and satisfactory report.

(iv) **COVID-19 Emergency Fund**
This fund is set aside to help mitigate the impact of the COVID-19 pandemic on mathematical research, including the 'people pipeline' of early career researchers.

(v) **Compositio Fund**
This fund holds the transaction relating to, and any year-end excess of income over expenditure, relating to the Society's joint venture with the Foundation Compositio to produce the journal Compositio.

r) Restricted Funds
The income of these restricted funds is to be used for the following purposes:

i) **The Berwick Prize Fund** - To support the Annual prize for mathematical work published by the Society

(ii) **De Morgan Medal Fund augmented by the Sir Joseph Larmor Prize Fund** - To support the award of the De Morgan Medal and the Larmor Prize, awarded every three years.

(iii) **Lord Rayleigh's Fund** - To support the general activities of the Society.

(iv) **J. H. C. Whitehead Prize Fund** - To support the cost of the Annual prizes awarded for lecturing and mathematical work.

(v) **Fröhlich Fund** - To support the cost of the Annual prizes awarded for lecturing and mathematical work.

(vi) **Shephards Prize Fund** - To support mathematics with a strong intuitive component which can be explained to those who have little or no knowledge of university mathematics.

(vii) **A. J. Cunningham Research Fund** - To support the cost of publication of work on the factorisation of large numbers.

(viii) **Zeeman Fund** - To support the cost of Undergraduate Research Bursaries named in honour of Professor Sir Christopher Zeeman.

(ix) **Frank Gerrish Fund** - To support the cost of promotion of expository articles and surveys within the Society's publications.

(ix) **Emmy Noether Fellowships Fund** - To support those re-establishing their research after a break or ongoing caring responsibilities.

(xi) **Campaign for Pure Mathematics Fund** - To support the cost of a public campaign to protect and promote pure mathematics.

(xii) **Levelling Up Scheme** - To help cover the costs of the Society's work on a pilot online tutorial scheme for A-level maths students from under-represented backgrounds.

(xiii) **Heilbronn Institute for Mathematical Research (HIMR) Fund** - To contribute to the costs of various Society grant giving activities including in support of undergraduates & early career researchers.

(xiv) **Solidarity Fund** - support for mathematicians who are fleeing their countries

(xv) **MARM Grant** – to support partnerships between African and UK/European mathematicians

(xvi) **Cecil King Grant** – to support travel scholarship for early career mathematicians to study or research abroad, typically for a period of three months.

s) Support and governance costs
Support costs are those functions that assist the work of the charity but do not directly undertake charitable activities. Support costs include back-office costs, finance, personnel, payroll and governance costs which support the Society's Mathematical Sciences programmes and activities. The Governance costs include external audit, legal advice and the costs of trustee and committee meetings, as well as costs associated with constitutional and statutory requirements. Support and governance costs have been allocated between the costs of raising funds and charitable activities. The bases on which support and governance costs have been allocated to activities are set out in note 12.

t) Employee benefits
Termination benefits are recognised immediately as an expense when the Society is demonstrably committed to terminate the employment of an employee through, for example, redundancy, or to provide termination benefits.

u) Heritage assets
The Society holds an archive of historical material, known as the LMS Archive. The purpose of the Society's Archive is to provide a permanent historical record of the activities of the London Mathematical Society. The Society's Archive also provides protection for other significant material relating to mathematics in the UK that might otherwise be lost or destroyed, for the purposes of bibliographic reference and further study by historians of mathematics. No value is attributed to the Archive in the financial statements. From time to time, items may be added to the Archive and again no value is attributed to these items in the financial statements. The cost of regular valuations of items in the archive would not be justified.

2. Investment Income

2022	Unrestricted	Designated	Restricted	Total 2022
	£	£	£	£
a) Investment income receivable:				
Total returns/ Unit Trust Distribution				
(Bond interest, Equities dividends, etc.)	477,115	-	8,371	485,486
Re-invested total returns	(97,110)	-	-	(97,110)
Net investment income receivable	**380,005**	**-**	**8,371**	**388,376**
b) Residential property rental income	**142,240**	**-**	**-**	**142,240**
c) Interest receivable (Treasury Reserve and Bank deposits)	**964**	**-**	**139**	**1,103**
Total investment income 2022	**523,209**	**-**	**8,510**	**531,719**

2021	Unrestricted	Designated	Restricted	Total 2021
	£	£	£	£
a) Investment income receivable:				
Total returns/ Unit Trust Distribution				
(Bond interest, Equities dividends, etc.)	446,638	-	8,094	454,732
Re-invested total returns	(89,612)	-	-	(89,612)
Net investment income receivable	**357,026**	**-**	**8,094**	**365,120**
b) Residential property rental income	**135,976**	**-**	**-**	**135,976**
c) Interest receivable (Treasury Reserve and Bank deposits)	**1,367**	**-**	**143**	**1,510**
Total investment income 2021	**494,369**	**-**	**8,237**	**502,606**

3. Income from other trading activities

	2022	2021
	£	£
a) DMH Conference facilities	53,520	7,288
b) DMH Rental income	86,071	112,484
c) Advertising in Newsletter	3,270	4,645
Total	**142,861**	**124,417**

4. Costs of raising funds

	2022		2021	
	£	£	£	£
a) Conference facilities				
General expenditure	15,812		11,030	
Apportioned support and governance costs	63,825		83,845	
		79,637		94,875
b) Service for tenants		85,590		69,831
c) Investment Management fees		59,870		53,063
d) Residential Investment Property costs		45,415		58,098
Total		**270,512**		**275,867**

5. Charitable activities: Advancing the interests of Mathematics

	2022		2021	
	£	£	£	£
Members' services:				
LMS Newsletter	24,579		23,978	
Other costs	3,773		3,222	
Unrecoverable subscriptions	5,219		4,599	
		33,571		31,799
Activities to support Women in Mathematics		-		150
Activities to support Maths -Computer Sciences		464		-
Library, binding and archives		5,042		6,450
EMS, IMU, ICIAM subscriptions & ICM costs		23,928		13,935
Prizes		10,381		18,122
Apportioned support and governance costs (note 12)		213,366		275,615
Total		**286,752**		**346,071**

6. Charitable activities: Enabling Mathematicians to undertake research and collaboration

	2022		2021	
Grant Schemes	£	£	£	£
Research Grants (Schemes 1 – 6)	275,489		112,512	
Early Career Support (Schemes 8 and 9/ECR travel grants)	44,275		9,951	
Research School Grants **(incl. £16k HIMR Fund)**	30,000		45,000	
Prospects in Mathematics Grants	-		3,500	
Early Career Fellowship Grants **(incl. £15k HIMR Fund)**	76,900		123,800	
Undergraduate Bursaries	44,308		48,107	
Undergraduate Summer School	32,612		-	
Computer Science Grants	1,410		4,930	
Small Education grants (incl. Teachers CPD)	10,130		25,342	
Women in Mathematics Grants (Event/Childcare/Diversity)	2,009		10,732	
Atiyah UK-Lebanon Fellowships	8,000		3,000	
Isaac Newton Institute (INI) Grants	30,000		-	
ECM/ICM travel Grants	-		4,829	
		555,133		391,703
Covid response Fund **(Designated)**		2,333		112,583
Mentoring African Research in Mathematics (MARM) **(Restricted)**		16,000		-
Cecil King Grants **(Restricted)**		24,000		6,000
Emmy Noether Fellowship **(Restricted)**		-		22,855
ACME Grants **(Designated)**		7,000		7,000
Solidarity Grants **(Restricted)**		10,500		-
Ad hoc Grants to Mathematical Bodies (UK & International)		20,289		12,133
Total Grants before cancellation/refunds and Support costs		**635,255**		**552,274**
Less: Grants cancellation and refunds		(280,613)		(65,623)
Charitable giving of LMS rooms		7,737		-
Apportioned support and governance costs (note 12)		166,730		195,533
Total Grants after cancellation/refunds and Support costs		**529,109**		**682,184**

ANALYSIS OF GRANT AWARDS	**2022** **£**	**2021** **£**
a) Grants: contractual commitments		
Royal Society (ACME grant)	7,000	7,000
b) Other grant awards to institutions *	488,610	297,620
c) Other grant awards to individuals	139,645	247,654
Total grant awards	**635,255**	**552,274**

* ***Grant awards to each institution can be up to a maximum of £35k***

GRANT REFUNDS AND CANCELLATION	**2022** **£**	**2021** **£**
Grant refunds	(28,059)	(10,288)
Grants not taken up ('out of date')	(252,554)	(55,335)
Total grant refunds and cancellation	**(280,613**	**(65,623)**

MOVEMENT IN OBLIGATION GRANT COMMITMENTS	**2022** **£**	**2021** **£**
Grant recognised at the start of the year	540,934	473,406
New grants charged to the SoFA in year	635,255	552,274
Grants paid during the year	(582,246)	(429,411)
Grants not taken up ('out of date')	(252,554)	(55,335)
Amount of grant recognised at the end of the year	**341,389**	**540,934**

7. Charitable activities: Disseminating Mathematical Knowledge - Publications

	2022		2021	
	£	£	£	£
a) Net Income from LMS journals		**1,079,185**		**1,424,264**
b) Direct costs of Publications				
Journal of Computation and Mathematics	(500)		(500)	
Costs of Expository Surveys project	(9,200)		(6,000)	
Other Operational Costs	(14,361)		(20,639)	
		(24,061)		**(27,139)**
Net LMS periodicals surplus before Support and governance costs		**1,055,124**		**1,397,125**
Apportioned support and governance costs (note 12)		(312,874)		(358,966)
Net LMS periodicals surplus after Support and governance costs		**742,250**		**1,038,159**
c) Ventures & Royalties (net income)				
Nonlinearity	178,560		179,764	
Russian journals (Turpion/RAS/LMS joint venture)	56,359		83,409	
TMMS (AMS/LMS joint venture)	10,700		16,527	
LMS Books and Royalties	16,753		10,726	
		262,372		**290,426**
Compositio				
Profit share & Management fee (see 7d)	100,182		112,920	
Costs of *Compositio* (LMS - only)	(10)		(10)	
		100,172		**112,910**
Mathematika		**51,465**		**29,664**
NET PUBLICATIONS SURPLUS		**1,156,259**		**1,471,159**

The Society was involved in the following publishing ventures in the year:

(I) ***Nonlinearity* –** the journal co-owned with the IOP Publishing Ltd and is produced at the IOP Publishing Ltd, Temple Circus, Temple Way, Bristol BS1 6HG

(II) The three translation journals ***Russian Mathematical Surveys, Sbornik: Mathematics* and *Izvestiya: Mathematics*** are owned and managed jointly by the Department of Mathematics Russian Academy of Sciences, Turpion Ltd and the LMS. The main business address is Turpion Ltd, c/o IOP Publishing Ltd, Temple Circus, Temple Way, Bristol BS1 6HG.

(III) The journal ***Transactions of the Moscow Mathematical Society (TMMS)*** is managed on a day-to-day basis at the American Mathematical Society, 201 Charles Street, Providence, RI 02904 - 2294, USA.

(IV) ***Compositio Mathematica* –** the journal is wholly owned by Foundation Compositio Mathematica & managed by the LMS.

(V) **Mathematika –** the journal is wholly owned by UCL and managed by the LMS.

d) *Compositio* management account

	2022	2021
	£	£
Income	**285,865**	**328,998**
Expenditure		
Direct costs	(42,926)	(43,596)
Profit share to *Compositio* Foundation	(142,757)	(172,482)
	(185,683)	**(216,078)**
Net *Compositio* surplus before LMS fees and Profit share	**100,182**	**112,920**
Management fee to LMS	(39,000)	(39,000)
Profit share to LMS	(61,182)	(73,920)
Balance C/fwd on *Compositio* Fund	**-**	**-**

8. Charitable activities: Disseminating Mathematical Knowledge – Conference and meeting programmes

	2022		2021	
	£	£	£	£
Society meetings and regional workshops	28,407		4,130	
Aitken/Forder Lectures	5,768		-	
Invited Lectures	14,500		-	
Caring costs for Lecturers visiting UK	2,807		-	
		51,482		4,130
Apportioned support and governance costs (note 12)		103,467		99,614
Total		**154,949**		**103,744**

9. Charitable activities: Promoting Mathematical Research & its benefits

	2022		2021	
	£	£	£	£
Policy				
CMS	25,763		15,257	
Communication and External Relations	6,394		8,479	
Research Policy Activities	7,000		-	
Annual dinner	8,313		-	
Subscriptions to UK organisations	1,770		2,136	
		49,240		25,872
Education and young people, public engagement				
Holgate Lecturers	2,250		1,800	
Popular Lectures	-		905	
Other educational activities	5,708		4,000	
		7,958		6,705
Levelling Up Scheme		29,652		23,684
Campaign for Pure Mathematics		127,852		13,240
Apportioned support and governance costs (note 12)		301,508		284,717
Total		**516,210**		**354,218**

10. Governance and other committees' costs

	2022		2021	
	£	£	£	£
Professional services				
Solicitors fees	6,805		2,504	
Audit and accountancy fees	14,000		13,550	
Audit and accountancy fee over accrual	950		774	
Other professional fees	35		35	
		21,790		16,863
Costs of meetings *(Catering/Accommodation/Travel/Subsistence)*				
Governance (Council/F&GPC/Nomination, etc.)	5,903		94	
Other Committees	2,519		31	
		8,422		125
Election of Trustees		3,723		3,677
General office and staff costs (*apportioned)* (note 11)		210,496		236,373
Total		**244,431**		**257,038**

11. Analysis of general support and governance costs

2022	**Governance and Committee related**	**Other general support**	**Total 2022**
	£	£	£
Staff costs	169,881	818,545	988,426
Office and Premises costs	10,587	42,055	52,642
IT costs	11,918	58,100	70,018
Depreciation	13,811	49,128	62,939
Irrecoverable VAT	4,299	41,971	46,270
Professional services	21,790	-	21,790
Costs of meetings	8,422	-	8,422
Elections of Trustees	3,723	-	3,723
Total 2022	**244,431**	**1,009,799**	**1,254,230**

2021	**Governance and Committee related**	**Other general support**	**Total 2021**
	£	£	£
Staff costs	178,303	872,901	1,051,204
Office and Premises costs	27,740	121,559	149,299
IT costs	14,292	74,969	89,261
Depreciation	12,834	47,949	60,783
Irrecoverable VAT	3,204	11,459	14,663
Professional services	16,863	-	16,863
Costs of meetings	125	-	125
Elections of Trustees	3,677	-	3,677
Total 2021	**257,038**	**1,128,837**	**1,385,875**

12. Allocation of support and governance costs by activity

2022	Direct Staff	General Office	General Management and Finance	Governance and Committee	Total 2022
	£	£	£	£	£
Raising funds					
Conference facilities (DMH)	25,779	34,444	3,195	407	**63,825**
Services for tenants (DMH)	8,593	72,044	655	407	**81,699**
Managing Residential Property	8,593	1,149	612	407	**10,761**
Total support costs for raising funds	**42,965**	**107,637**	**4,462**	**1,221**	**156,285**
Charitable activities					
• Advancing the interest of Mathematics	97,076	39,247	28,401	48,642	**213,366**
• Enabling Mathematicians to undertake research and collaboration	80,822	21,146	16,120	48,642	**166,730**
• Disseminating Mathematical Knowledge – Publications	187,335	46,306	30,591	48,642	**312,874**
• Disseminating Mathematical Knowledge – Conference and meeting programmes	33,346	10,222	11,257	48,642	**103,467**
• Promoting Mathematics research and its benefits	166,020	62,559	24,287	48,642	**301,508**
Total support costs for Charitable activities	**564,599**	**179,480**	**110,656**	**243,210**	**1,097,945**
Total 2022	**607,564**	**287,117**	**115,118**	**244,431**	**1,254,230**

2021	Direct Staff	General Office	General Management and Finance	Governance and Committee	Total 2021
	£	£	£	£	£
Raising funds					
Conference facilities (DMH)	25,140	47,030	11,214	461	**83,845**
Services for tenants (DMH)	24,770	39,003	1,834	461	**66,068**
Managing Residential Property	16,227	3,293	1,536	461	**21,517**
Total support costs for raising funds	**66,137**	**89,326**	**14,584**	**1,383**	**171,430**
Charitable activities					
• Advancing the interest of Mathematics	113,716	57,436	53,332	51,131	**275,615**
• Enabling Mathematicians to undertake research and collaboration	76,832	28,139	39,431	51,131	**195,533**
• Disseminating Mathematical Knowledge – Publications	197,509	53,833	56,493	51,131	**358,966**
• Disseminating Mathematical Knowledge – Conference and meeting programmes	23,565	5,830	19,088	51,131	**99,614**
• Promoting Mathematics research and its benefits	155,261	38,926	39,399	51,131	**284,717**
Total support costs for Charitable activities	**566,883**	**184,164**	**207,743**	**255,655**	**1,214,445**
Total 2021	**633,020**	**273,490**	**222,327**	**257,038**	**1,385,875**

Basis of apportionment
Support costs include **(a) Staff costs** (salaries, benefits, training, H&S, recruitment, etc. of staff directly attributable to each of the above Society's activities); **(b) General Office Costs** (rent, rates, services, cleaning, equipment, maintenance, telephones, postage, equipment, stationery, etc., depreciation and Irrecoverable VAT, and IT costs such as computer hardware and software, network, internet access, websites, software development, etc.), **(c) General management and finance** (cost of services that cannot be directly attributed to an activity, i.e. general accounting and financial controls, HR and Executive Secretary's general management, etc.) **(d) Governance costs** (costs of meetings, trustees' expenses, and costs associated with constitutional and statutory requirements).

The costs of these are attributed across all the activities of the Society in proportion to (a) salary or f.t.e., (b) space occupied in De Morgan House, and (c) f.t.e. respectively, based on a time analysis undertaken by all staff.

12. Allocation of support and governance costs by activity (continued)

Support and governance costs have been allocated between the costs of raising funds and charitable activities as:

- ***Direct staff costs*** = staff time directly attributable to each of the above Society's activities in proportion to the salary or pro rata to staff f.t.e. on a time analysis undertaken by all staff.
- ***General Office costs*** = (a) apportioned Building, Office and IT costs of staff who are directly attributable to (deal with) each of the above Society's activities as per staff time analysis and in proportion of the office space occupied, and (b) indirect costs, which are re-apportioned staff costs for those dealing with Building, Office and IT management.
- ***General management and finance*** = the costs of services that cannot be directly attributed to an activity (i.e. general accounting and financial controls, HR and Executive Secretary's general management, etc.) are attributed to each area of activity on the same basis as the original elements (i.e. staff time and space occupied, IT and office use etc.) , which includes re-apportioned costs of the office space occupied, the IT costs and other general office costs in dealing with HR, finance and general management.
- ***Governance and committee costs*** = apportionment made on the basis of (a) salary or pro rata to staff F.T.E. on a time analysis undertaken by all staff (b) meetings and staff office space occupied in De Morgan House in relation to governance and committee functions, and (c) Invoices and claims for catering, accommodation, travel and subsistence regarding governance and committee meetings, as well as costs of professional services (i.e. external audit, legal advice, etc.).

The Society has partial exempt status in respect of VAT, based on the split of its business and non-business activities. The proportion of VAT that cannot be recovered because of partial or fully exempt status of the activity is redistributed to the activities on the same basis as the original elements (i.e. staff time and space occupied, IT and office use etc.), under General Office costs.

Support costs for each area of the above activities can be higher or lower than last year due to staff time allocation. This changes from year to year and will have an effect on direct staff costs, general office costs, general management costs and governance costs.

13. Employment Costs

	2022	2021
	£	£
Total employment costs of all staff including taxable benefits for the year comprise:		
Salaries and Wages	711,962	782,856
Redundancy	18,360	20,827
Employer's National Insurance Contributions	82,595	87,819
Less HMRC employment allowance	(4,000)	-
Employer's Pension Contributions	142,724	152,379
Total	**951,641**	**1,043,881**

The total employment costs (Salaries/NIC /Pension) for the Executive Management Team amounted to £399,502 (2021: £393,595). This team is considered to be Key Management Personnel and consists of the Executive Secretary, Head of Finance, Head of Society Business, and the Head of Conference and Building.

The number of employees earning £60,000 per annum or more was:

	2022	2021
	No.	No.
£60,000 - £70,000	2	2
£70,000 - £80,000	1	1
£90,000 - £100,000	-	1
£100,000 - £110,000	1	-

The pension payments for the above members of staff amounted to £63,958 (2021: £61,611). These contributions were paid into a defined benefits pension scheme.

The average number of employees over the year (and full time equivalent) was:

	2021/2022		2020/2021	
	Total	FTE	Total	FTE
Management and administration	12.8	10.5	14.8	12.4
Publishing and editorial	2.8	2.8	3.0	3.0
Total	**15.6**	**13.3**	**17.8**	**15.4**

14. Pension costs

The Society participates in Universities Superannuation Scheme (USS). The assets of the scheme are held in a separate trustee-administered fund. Because of the mutual nature of the scheme, the assets are not attributed to individual institutions and a scheme-wide contribution rate is set. The Society is therefore exposed to actuarial risks associated with other institutions' employees and is unable to identify its share of the underlying assets and liabilities of the scheme on a consistent and reasonable basis. As required by Section 28 of FRS 102 "Employee benefits", the Society therefore accounts for the scheme as if it were a defined contribution scheme. As a result, the amount charged to the profit and loss account represents the contributions payable to the scheme. Since the Society has entered into an agreement (the Recovery Plan) that determines how each employer within the scheme will fund the overall deficit, the Society recognises a liability for the contributions payable that arise from the agreement (to the extent that they relate to the deficit) with related expenses being recognised through the profit and loss account.

The total movement to the profit & loss account is a loss of £227,987 (2021: loss of £38,952) as shown in note19.

The latest available complete actuarial valuation of the Retirement Income Builder is as at 31 March 2020 (the valuation date), and was carried out using the projected unit method.

Since the institution cannot identify its share of USS Retirement Income Builder (defined benefit) assets and liabilities, the following disclosures reflect those relevant for those assets and liabilities as a whole.

The 2020 valuation was the sixth valuation for the scheme under the scheme-specific funding regime introduced by the Pensions Act 2004, which requires schemes to have sufficient and appropriate assets to cover their technical provisions. At the valuation date, the value of the assets of the scheme was £66.5 billion and the value of the scheme's technical provisions was £80.6 billion indicating a shortfall of £14.1 billion and a funding ratio of 83%.

The key financial assumptions used in the 2020 valuation are described below. More detail is set out in the Statement of Funding Principles.

CPI	**Term dependent rates in line with the difference between the Fixed Interest and Index Linked yield curves, less: 1.1% p.a. to 2030, reducing linearly by 0.1% p.a. to a long-term difference of 0.1% p.a. from 2040**
Pension increases (subject to a floor of 0%)	**CPI assumption plus 0.05%**
Discount rate (f/wd rates)	**Fixed interest gilt yield curve plus: Pre-retirement: 2.75% p.a. Post retirement: 1.00% p.a.**

The main demographic assumption used relates to the mortality assumptions. These assumptions are based on analysis of the scheme's experience carried out as part of the 2020 actuarial valuation. The mortality assumptions used in these figures are as follows:

	2020 valuation
Mortality base table	**101% of S2PMA "light" for males and 95% of S3PFA for**
Future improvements to mortality	**CMI 2019 with a smoothing parameter of 7.5 an initial addition of 0.5% p.a. and a long-term improvement rate of 1.8% pa for males and 1.6% pa for females**

The current life expectancies on retirement at age 65 are:

	2022	**2021**
Males currently aged 65 (years)	**23.9**	**24.6**
Females currently aged 65 (years)	**25.5**	**26.1**
Males currently aged 45 (years)	**25.9**	**26.6**
Females currently aged 45 (years)	**27.3**	**27.9**

A new deficit recovery plan was put in place as part of the 2018 valuation, which requires payment of 2% of salaries over the period 1 October 2019 to 30 September 2021 at which point the rate will increase to 6%. The 2021 deficit recovery liability reflects this plan. The liability figures have been produced using the following assumptions:

	2022	**2021**
Discount rate	**2.59%**	**2.59%**
Pensionable salary growth	**1%**	**1%**

15. Fixed Asset Investments

a) Quoted investments	**2022**			**2021**
	£	**£**	**£**	**£**
	Investment Assets in the UK	*Investment Assets outside the UK*	*Total*	*Total*
Total Market value at 31st July 2022	**1,535,619**	**12,230,551**	**13,766,170**	**12,153,444**

In the prior year, £2,309,154 of investment assets were in the UK with the remaining £9,844,290 being outside the UK.

Reconciliation of opening & closing market values:	**£**	**£**
Market value at 1st August 2021	12,153,444	10,878,904
Additions at cost	2,096,909	89,612
Unrealised (losses)/gains (note 16a)	(324,946)	1,329,834
Movement in cash	(159,237)	(144,906)
Total Market value at 31st July 2021	**13,766,170**	**12,153,444**
***Analysis by Fund*:**		
Restricted Funds	249,467	255,230
Unrestricted Funds	13,516,703	11,898,214

The investments are entirely invested in the Schroder/Cazenove [68% in ordinary Charities Multi-Asset Fund (CMAF) and 32% in Responsible Multi-Asset Fund (RMAF)] [Prior year: 100% in CMAF)

b) Residential Property investments	**2022**	**2021**
	£	**£**
Market value at 31st July 2022	**3,713,950**	**3,688,950**
Reconciliation of opening and closing market values:		
Market value at 1st August 2021	3,688,950	3,596,900
Unrealised gains (note 16b)	25,000	92,050
Total Market value at 31st July 2022	**3,713,950**	**3,688,950**

Represents purchase of property for residential letting purposes to diversify the Society's investment portfolio. The rental derived is shown on the SoFA under 'Investment Income'.

16. Gains and losses on investment assets

2022	**Unrestricted funds**	**Restricted funds**	**Total**
	£	**£**	**£**
a. Unrealised losses in market value of ***Quoted investments***	(316,813)	(8,133)	(324,946)
b. Unrealised gains in market value of ***Residential Properties***	25,000	**-**	25,000
Total gains	**(291,813)**	**(8,133)**	**(299,946)**

2021	**Unrestricted funds**	**Restricted funds**	**Total**
	£	**£**	**£**
a. Unrealised gains in market value of ***Quoted investments***	1,303,759	26,075	1,329,834
b. Unrealised gains in market value of ***Residential Properties***	92,050	**-**	92,050
Total gains	**1,395,809**	**26,075**	**1,421,884**

17. Tangible Fixed Assets

	Leasehold Property	Fixtures Fittings and Equipment	Total
	£	£	£
Cost			
Brought forward at 1st August 2021	2,175,353	191,560	2,366,913
Additions	-	17,504	17,504
Disposal Adjustment	-	(40,069)	(40,069)
Carried forward at 31st July 2022	2,175,353	168,995	2,344,348
Depreciation			
Brought forward at 1st August 2021	1,010,101	153,928	1,164,029
Charge for the year	44,817	18,122	62,939
Disposal Adjustment	-	(40,069)	(40,069)
Carried forward at 31st July 2022	1,054,918	131,981	1,186,899
Net book value			
At 31st July 2022	**1,120,435**	**37,014**	**1,157,449**
At 31st July 2021	**1,165,252**	**37,632**	**1,202,884**

- ***Part of the leasehold property is let out and the rental derived is shown on the SOFA under 'Activities for Generating Funds'.***

18. Debtors

	2022	2021
	£	£
Publications	135,535	219,165
Conference facilities	10,356	980
Other debtors	55,918	54,989
Gift-aid receivable	-	500
Prepayments and accrued interest	39,566	36,813
	241,375	**312,447**

19. Creditors and Deferred Income

	2022	2021
	£	£
Creditors: amounts falling due within one year		
Accruals	38,650	37,861
Grant creditors	341,389	540,934
Taxation and other Social Security creditors	66,118	82,305
Other creditors	357,490	300,983
	803,647	**962,083**
Deferred income:		
Unexpired publications' subscriptions:		
Balance brought forward	107,349	138,382
Amount released in year	(107,349)	(138,382)
Income deferred to future years	47,887	107,349
Balance carried forward	**47,887**	**107,349**
Creditors: amounts falling due after more than one year		
Brought Forward Pension Provision	209,682	170,730
Movement	227,987	38,952
Carried Forward Pension Provision	**437,669**	**209,682**

20. Restricted Funds

2022	Balance at 1.08.21	Other & Investment Income	Expenditure	Investment loss	Transfers	Balance at 31.07.22
	£	£	£	£	£	£
Prize (Capital) funds						
Berwick Fund	32,456	49	-	-	-	32,505
De Morgan Medal & Larmor Fund	30,605	46	(1,531)	-	-	29,120
Prize (Income) funds						
Berwick Fund	20,090	659	(1,500)	(640)	-	18,609
De Morgan Medal & Larmor Fund	53,663	1,760	(1,500)	(1,710)	-	52,213
Lord Rayleigh's Fund	21,308	699	-	(679)	-	21,328
J.H.C. Whitehead Fund	-	-	(1,500)	-	1,500	-
Fröhlich Fund	15,959	523	(1,500)	(509)	-	14,473
Shephards Fund	41,403	1,358	(1,500)	(1,319)	-	39,942
Other funds						
A.J. Cunningham Research Fund	102,807	3,372	-	(3,276)	-	102,903
Zeeman Fund	221	-	-	-	-	221
Frank Gerrish Fund	29,791	3,245	(9,200)	-	-	23,836
MARM Grant	-	5,762	(16,000)	-	10,238	-
Cecil King Grant	-	24,000	(24,000)	-	-	-
Emmy Noether Fellowship Fund	-	25,000	-	-		25,000
Levelling Up Scheme	41,316	38,000	(29,652)	-	-	49,664
Campaign for Pure Maths Fund	26,760	160,000	(156,071)	-	-	30,689
Solidarity Grant Fund	-	20,000	(10,500)	-	-	9,500
HIMR Fund	-	31,000	(31,000)	-	-	-
Total Funds	**416,379**	**315,473**	**(285,454)**	**(8,133)**	**11,738**	**450,003**

- **The transfer of £1,500 from the General Fund to Restricted Funds is to cover a shortfall in income for the Whitehead prizes.**
- **The transfer of £10,238 from General Fund to Grants and Contracts represent LMS's contribution for MARM grant.**

2021	Balance at 1.08.20	Other & Investment Income	Expenditure	Investment gain	Transfers	Balance at 31.07.21
	£	£	£	£	£	£
Prize (Capital) funds						
Berwick Fund	32,407	49	-	-	-	32,456
De Morgan Medal & Larmor Fund	30,559	46	-	-	-	30,605
Prize (Income) funds						
Berwick Fund	18,716	681	(1,500)	2,193	-	20,090
De Morgan Medal & Larmor Fund	46,521	1,692	-	5,450	-	53,663
Lord Rayleigh's Fund	18,472	672	-	2,164	-	21,308
J.H.C. Whitehead Fund	-	-	(10,500)	-	10,500	-
Fröhlich Fund	13,835	503	-	1,621	-	15,959
Shephards Fund	35,893	1,305	-	4,205	-	41,403
Other funds						
A.J. Cunningham Research Fund	89,124	3,241	-	10,442	-	102,807
Zeeman Fund	221	-	-	-	-	221
Frank Gerrish Fund	32,542	3,249	(6,000)	-	-	29,791
MARM Grant	-	-	-	-	-	-
Cecil King Grant	-	6,000	(6,000)	-	-	-
Emmy Noether Fellowship Fund	-	25,000	(22,855)	-	(2,145)	-
Levelling Up Scheme	-	65,000	(23,684)	-	-	41,316
Campaign for Pure Maths Fund	-	40,000	(13,240)	-	-	26,760
HIMR Fund	-	74,834	(74,834)	-	-	-
Total Funds	**318,290**	**222,272**	**(158,613)**	**26,075**	**8,355**	**416,379**

- **The transfer of £10,500 from the General Fund to Restricted Funds is to cover a shortfall in income for the Whitehead prizes.**
- **The transfer of £2,145 from Restricted fund to General fund represent that the fund is allocated for other unrestricted Women in mathematics activities**

21. Unrestricted Funds

2022	Balance at 01.08.21	Income	Expenditure	Loss/(gain) on investments	Actuarial gains (losses) on pension scheme	Transfer	Balance at 31.07.22
	£	£	£	£	£	£	£
General Fund: (see note1(p))	15,523,529	2,322,183	(1,799,773)	(291,813)	(227,987)	115,972	15,639,501
Designated Funds:							
a) Building & Development Reserve Fund	600,000	-	-	-	-	-	600,000
b) Publication Reserve Fund	3,000,000	-	-	-	-	-	3,000,000
c) Grants Payable Reserve Fund	21,000	-	(7,000)	-	-	-	14,000
d) Compositio Fund	-	285,865	(185,683)	-	-	(100,182)	-
e) COVID-19 Emergency Fund	27,251	-	(2,333)	-	-	(24,918)	-
	3,648,251	285,865	(195,016)	-	-	(125,100)	3,614,000
	19,171,780	**2,608,048**	**(1,994,789)**	**(291,813)**	**(227,987)**	**(11,738)**	**19,253,501**

d. The transfer of £100,182 from the Compositio Fund to General Fund represents the management fee and the LMS's profit share relating to the journal.
e. The transfer of £24,918 from COVID-19 Emergency Fund to General Fund represents the closure of COVID-19 Emergency Fund

2021	Balance at 01.08.20	Income	Expenditure	Gain/(loss) on investments	Actuarial gains (losses) on pension scheme	Transfer	Balance at 31.07.21
	£	£	£	£	£	£	£
General Fund: (see note1(p))	13,156,123	2,597,821	(1,889,837)	1,395,809	(38,952)	302,565	15,523,529
Designated Funds:							
a) Building & Development Reserve Fund	600,000	-	-	-	-	-	600,000
b) Publication Reserve Fund	3,000,000	-	-	-	-	-	3,000,000
c) Grants Payable Reserve Fund	226,000	-	(7,000)	-	-	(198,000)	21,000
d) Compositio Fund	-	328,998	(216,078)	-	-	(112,920)	-
e) COVID-19 Emergency Fund	120,000	-	(92,749)	-	-	-	27,251
	3,946,000	328,998	(315,827)	-	-	(310,920)	3,648,251
	17,102,123	**2,926,819**	**(2,205,664)**	**1,395,809**	**(38,952)**	**(8,355)**	**19,171,780**

c) The transfer of £198,000 from Grant Payable Fund to General Fund represent that LMS is no longer providing grant for INI/ICMS reflecting that INI/ICMS are receiving other source of funding available for them. The Society and INI/ICMS will continue collaborate an activity for Mathematics community.

d) The transfer of £112,920 from the Compositio Fund to General Fund represents the management fee and the LMS's profit share relating to the journal.

22. Analysis of net assets between funds

2022	Unrestricted funds General £	Unrestricted funds Designated £	Restricted Funds £	Total Funds £
Fund balances are represented by				
Tangible fixed assets	1,157,449	-	-	1,157,449
Investments	13,616,653	3,614,000	249,467	17,480,120
Current assets	2,154,602	-	200,536	2,355,138
Current liabilities	(851,534)	-	-	(851,534)
Long-term liabilities	(437,669)	-	-	(437,669)
Total net assets	**15,639,501**	**3,614,000**	**450,003**	**19,703,504**

2021	Unrestricted funds General £	Unrestricted funds Designated £	Restricted Funds £	Total Funds £
Fund balances are represented by				
Tangible fixed assets	1,202,884	-	-	1,202,884
Investments	11,966,164	3,621,000	255,230	15,842,394
Current assets	3,633,595	27,251	161,149	3,821,995
Current liabilities	(1,069,432)	-	-	(1,069,432)
Long-term liabilities	(209,682)	-	-	(209,682)
Total net assets	**15,523,529**	**3,648,251**	**416,379**	**19,588,159**

23. Grants and Contracts Management account

	2022 £	2022 £	2021 £	2021 £
CMS				
Income (IMA/RSS/EdMS/ORS contributions)	54,419		47,415	
Expenditure (including support costs)	(87,874)		(83,001)	
LMS's Contribution to the CMS		**(33,455)**		**(35,586)**
MARM				
Income from IMU	5,762		-	
Expenditure	(16,000)		-	
LMS's Contribution to the MARM		**(10,238)**		**-**

24. Transactions with Trustees and connected persons

Trustees receive reimbursement only for expenses actually incurred in attending meetings. No remuneration is paid to trustees except as disclosed below. The gross amount that has been reimbursed in respect of attendance of meetings in the period amounted to £4,800 for 12 Trustees (2021: £7 for 1 Trustee).

As disclosed in the Trustees' Report, where grants are awarded to Trustees the payment is always made to the relevant institution.

25. Comparison figures of each fund (2020/21 financial statements)

	Notes	Unrestricted General Funds £	Unrestricted Designated Funds £	Restricted Funds £	2021 Total Funds £
Income and endowments:					
Donations and legacies		**14,236**	**-**	**130,000**	**144,236**
Income from charitable activities:					
Membership subscriptions		146,062	-	-	146,062
Publications – LMS Periodicals	7a	1,421,064	-	3,200	1,424,264
Publications – Ventures and Royalties	7c,d	320,090	328,998	-	649,088
Grants and contracts	22	52,615	-	80,834	133,449
Total income from charitable activities		**1,939,831**	**328,998**	**84,034**	**2,352,863**
Income from other trading activities	3	124,417	-	-	124,417
Income from Investments	2	494,368	-	8,238	502,606
Other income		24,969	-	-	24,969
Total Income		**2,597,821**	**328,998**	**222,272**	**3,149,091**
Expenditure:					
Costs of raising funds	4	275,867	-	-	275,867
Expenditure on charitable activities:					
Advancing the interests of mathematics	5	334,071	-	12,000	346,071
Enabling mathematicians to undertake research and collaboration	6	478,746	99,749	103,689	682,184
Disseminating mathematical knowledge:					
- Costs of publications	7b,c,d	380,115	216,078	6,000	602,193
- Conferences and meeting programmes	8	103,744	-	-	103,744
Promoting mathematical research and its benefits	9	317,294	-	36,924	354,218
Total expenditure on charitable activities		**1,613,970**	**315,827**	**158,613**	**2,088,410**
Total expenditure		**1,889,837**	**315,827**	**158,613**	**2,364,277**
Net income before gains and losses on investment		**707,984**	**13,171**	**63,659**	**784,814**
Net gains on investment assets	16	1,395,809	-	26,075	1,421,884
Net Income for the year		**2,103,793**	**13,171**	**89,734**	**2,206,698**
Transfers between funds	20,21	302,565	(310,920)	8,355	-
Actuarial loss on defined benefit pension schemes	14,19	(38,952)	-	-	(38,952)
Net movement in funds for the year		**2,367,406**	**(297,749)**	**98,089**	**2,167,746**
Reconciliation of funds:					
Total funds brought forward		13,156,123	3,946,000	318,290	17,420,413
Fund balances carried forward		**15,523,529**	**3,648,251**	**416,379**	**19,588,159**