

The Joint Mathematical Council of the United Kingdom

A Charitable Incorporated Organisation

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Registered Office: De Morgan House, 57-58 Russell Square, London, WC1B 4HS

Minutes of the General Meeting of The Joint Mathematical Council of the United Kingdom held at the National Council for Voluntary Organisations at 11 a.m. on Tuesday 13 November 2018

Present

Officers

Chair	Paul Glaister
Secretary	Peter Thomas
Treasurer	Jennie Golding

Representatives of Participating Bodies

Adults Learning Mathematics	Beth Kelly (deputy)
Association of Mathematics Education Teachers	–
Association of Teachers of Mathematics	Julian Gilbey (deputy)
British Society for Research into Learning Mathematics	Sue Gifford
British Society for the History of Mathematics	June Barrow-Green
Edinburgh Mathematical Society	David Pritchard
Heads of Departments of Mathematical Sciences	Jan van den Heuvel
Institute of Mathematics and its Applications	Chris Chipperton
London Mathematical Society	Kevin Houston
The Mathematical Association	Tom Roper
Mathematics in Education and Industry	Charlie Stripp
National Association for Numeracy and Mathematics in Colleges	Sally Barton [morning]
National Association of Mathematics Advisors	Matt Lewis
National Numeracy	–
NRICH representing the Millennium Mathematics Project	Ems Lord
Operational Research Society	Sophie Parker
Royal Academy of Engineering	–
Royal Statistical Society	Carole Haynes
Scottish Mathematical Council (from item 3.2)	–
STEM Learning	–
United Kingdom Mathematics Trust	Steven O'Hagan (deputy)
Wales Institute of Mathematical and Computational Sciences	–

Co-opted Members

Former Chair of the BCME Committee	David Martin
UK Representative to the International Commission on Mathematical Instruction	–

Representatives of Observing Bodies

Advance HE	–
Department for Education [England]	Alex Smith [afternoon]
Department of Education [Northern Ireland]	Julie Harris
Education Scotland	Stuart Cathro
National Centre for Excellence in the Teaching of Mathematics	Jane Imrie
National College for Teaching and Leadership	–
Office for Standards in Education	–
The Office of Qualifications and Examinations Regulation	Alison Tonkin (deputy) [morning]
The Royal Society	Rebecca Veitch
The Royal Society Advisory Committee on Mathematics Education	Jeremy Hodgen [morning]
Scottish Qualifications Authority	Sue Pope
Welsh Government Education Department (from item 4.1)	John Mason

Visitors

Royal Statistical Society	Amber-Leigh Furnell
Welsh Government Education Department (until item 3.2)	John Mason

Chair Elect
Deputy Chair Elect

Andy Noyes
Alice Rogers

and for the afternoon discussion also

Rob Eastaway	Maths Inspiration
Trisha Eaton	Director of Teaching and Learning, Stranmillis University College <i>speaking on Maths Week Ireland</i>
Mareli Grady	University of Oxford
Tony Mann	University of Greenwich
Laura Ross	Policy Lead for Numeracy and Mathematics in the Learning Directorate of the Scottish Government <i>speaking on Maths Week Scotland</i>
Colin Wright	Solipsys Ltd

1 Introduction

- 1.1 **Welcome** The Chair welcomed those present.
- 1.2 **Practical Arrangements** The Secretary made known the procedure for emergency evacuation.
The Chair enquired whether anyone objected to Sophie Parker taking photographs of the meeting to tweet on the JMC Twitter account. No objections were expressed.
- 1.3 **Apologies for absence** Apologies for absence were received from Chris Budd (UKMT and UK Representative to ICMI) Heather Davis (ATM), Jeff Evans (ALM), Helen Farmery (AMET), Janet Holloway (Ofqual), Sofya Lyakhova, Rhys Morgan (RAEng), Stephen Lyon (STEM Learning), Chris Pritchard (SMC), Neil Redmond-King (Ofsted) and, for the afternoon discussion, Noel-Ann Bradshaw.

2 Annual Business

- 2.1 **Reception of the Annual Report** Two corrections were made to the annual report. In the last line of section 6 (Incorporation) '2018' was changed to '2017'. In the second line of the second paragraph of section 8 (British Congress of Mathematics Education) '2019' was changed to '2018' [this second error was corrected in the second circulation of the agenda]. The annual report was then approved unopposed.
- 2.2 **Reception of the Annual Accounts** Sue Pope asked where the cost of membership of the National Council for Voluntary Organisations would appear in the accounts. The Treasurer responded that, as the reason for joining NCVO was to obtain cheaper room rates for meetings, the cost of membership will be included in the budget for meetings. The annual accounts were approved unopposed.
- 2.3 **Approval of the Budget** The Treasurer said that the subscription shown as outstanding in the proposed budget has since been paid. Proposed by Sally Barton and seconded by David Pritchard, the budget for the coming year was approved unopposed.
- 2.4 **Approval of the Subscription Rates** Jan van den Heuvel asked how the subscription category of a Participating Body was determined when the two criteria (number of members and turnover) clashed. The Treasurer responded that when the criteria clashed the body was considered to be in the category paying the higher subscription. Julian Gilbey suggested that in that case 'or' should be changed to 'and' in the descriptions of the categories. The Treasurer said that the criteria for the categories had not been reconsidered for some time and she would review them. Proposed by the Chair and seconded by David Pritchard, the subscription rates for the coming year were approved.
- 2.5 **Announcement of the Election of the Chair** The Chair announced the election of Andy Noyes to serve as Chair of the JMC for three years from the close of the meeting.
- 2.6 **Announcement of the Election of the Deputy Chair** The Chair announced the election of Alice Rogers to serve as Deputy Chair of the JMC for three years from the close of the meeting.
- 2.7 **Election of Elected Trustees** Following a secret ballot of voting members, Heather Davis was elected as an Elected Trustee. The Secretary was instructed to inform her of the outcome of the election (Heather Davis was not present at the meeting).
- 2.8 **Co-option of Co-opted Trustees** Proposed by the Chair and seconded by Sophie Parker, Chris Chipperton was co-opted as a Co-opted Trustee to serve from the end of this meeting until the end of the Annual General Meeting in November 2019 (Chris Chipperton withdrew from the meeting whilst his co-option was being considered). Proposed by the Chair and seconded by the Treasurer, David Pritchard was co-opted as a Co-opted Trustee to serve from the end of this meeting until the end of the Annual General Meeting in November 2019 (David Pritchard withdrew from the meeting whilst his co-option was being considered).

- 2.9 **Co-option of Co-opted Members** Proposed by the Secretary and seconded by the Treasurer, Chris Budd (as UK Representative to the International Commission on Mathematical Instruction) was co-opted as a Co-opted Member to serve from the end of this meeting until the end of the Annual General Meeting in November 2019 (Chris Budd was not present at the meeting). Proposed by the Secretary and seconded by Jan van den Heuvel, Paul Glaister (as Immediate Past Chair) was co-opted as a Co-opted Member to serve from the end of this meeting until the end of the Annual General Meeting in November 2019 (Paul Glaister withdrew from the meeting whilst his co-option was being considered).

3 Elections

- 3.1 **Election of the Scottish Mathematical Council as a Participating Body** The Chair invited comments on the application. The application was approved unopposed. (David Pritchard withdrew whilst the application was being considered as he is a trustee of the SMC.)
- 3.2 **Election of the Welsh Government Education Directorate as an Observing Body** The Chair invited comments on the application. The application was approved unopposed. (John Mason withdrew whilst the application was being considered.)

4 Minutes of the meeting held on Wednesday 6 June 2018

- 4.1 **Approval** The minutes of the meeting held on Wednesday 6 June 2018 were approved following the correction of '218' to '2018' in the first line of section 10.
- 4.2 **Matters arising not elsewhere on the agenda** None.

5 Reports from Officers

- 5.1 **Chair** The Chair said he had nothing to report from his activities but that he would like to make some remarks as his term of office was coming to an end. He said it had been an immense pleasure to have been the Chair of the JMC and to have worked with so many wonderful people. He was very grateful for the friendship, support and collegiality that he had experienced. He said the JMC was in extremely good hands for the future and he could think of no safer pair of hands than those of the incoming Chair. He drew to the Council's attention that the Secretary would be retiring in a year's time. The Chair then drew attention to the Early Career Framework for Teachers in England about which much was still undecided and to the Chartered College of Teaching (he had twice met the Chief Executive, Dame Alison Peacock) to which the government looks for advice and with which the JMC could engage better.

Sophie Parker asked whether the Chartered College of Teaching had been invited to be an Observing Body. The Chair responded that it might not be appropriate and that a prerequisite would be greater engagement with the JMC by the Chartered College of Teaching.

The Chair concluded by encouraging all to work collegially.

- 5.2 **Secretary** The Secretary said he had no matters to report as all such matters were dealt with elsewhere on the agenda.
- 5.3 **Treasurer** The Treasurer said that there was a large balance in the BCME Restricted Fund and the Trustees were looking as a priority for a suitable home for it while it lay unused. She said that the balance was made up of about £25000 which was the start-up funding for BCME9 and about £20000 which was the JMC's share of the surplus on BCME9; there was also a tiny amount still to be distributed once the last bills for BCME9 had been paid.

The Treasurer said that following the meeting she would be sending out subscription requests to representatives and she asked that, where necessary, representatives forwarded them to the appropriate persons in their organisations.

Julian Gilbey said that the income section of the summary of the JMC current account was blank but the difference in the opening and closing balances showed that there had been income. The Treasurer said that the income section contained an entry for subscriptions of £350. (Some others present also had the entry missing but most had it appearing; no explanation was found for the phenomenon.)

- 5.4 **Bye Laws** Julian Gilbey said that in Bye Law 4.2.1 'authorised signatories' should be preceded by 'the'. The Treasurer said that this was not the case as some accounts might also have other authorised signatories. The Bye Laws were approved unopposed.
- 5.5 **Policies** David Martin asked whether the wording of Policy 2.1.5 made clear the ongoing nature of the BCME Committee; it was agreed it did. The Policies were approved unopposed.

6 Reports from Committees

- 6.1 **BCME Committee** The Chair introduced the report of the BCME review group, saying their work was still in progress and the tentative proposals before the meeting were just one possible way forward. He asked representatives and their organisations to send feedback on the proposals to Sally Barton (as chair of the working group) before the next meeting. He said that the intention is there will be a discussion of the tentative proposals at the meeting in February 2019 and that firm proposals would be brought to the meeting in June 2019.

The Treasurer said the working group recognised that the age groups given in the proposal were not a totally satisfactory division as many issues occur across age groups and the working group would appreciate suggestions of better alternatives.

Jeremy Hodgen said that when BCME started there was a connection with ICME and he asked whether that had been lost. Sally Barton said that the link with ICME had been asked about and the predominant view was that people wanted to keep the research connection but did not see the need for a formal link with ICME. The Treasurer added that she felt the link with ICME was more appropriately undertaken by BSRLM. Sally Barton added that if people felt there were good reasons to include a link to ICME they should let the working group know.

Beth Kelly noted that a three-day structure was suggested and asked whether there were any alternative suggestions. She added that at one point ALM was thinking of tying up its conference with BCME to gain a larger attendance. Sally Barton said that the model used for BCME9 made the job of organising BCME a very big one; in the model suggested each day could have a different lead group (along with some means by which issues across phases could be addressed).

Sally Barton continued it was hoped that professional organisations would contribute to any future BCME as well as research and teaching organisations. The desire was to ensure that BCME would provide engagement with research and good professional development.

- 6.2 **GCSE Working Group** The Chair said there had been no recent activity but the Trustees had decided to take steps to revive the working group.
- 6.3 **ICME Bursaries Committee** David Pritchard said that steps to solicit contributions to the bursaries fund had already been taken and further action was in prospect.
- 6.4 **MMSA Special Interest Group** The report was noted.

7 Reports from Participating Bodies

- 7.02 **Association of Mathematics Education Teachers** Tom Roper said that Helen Farmery when giving her apologies for absence had asked about progress with the statement on the Early Career Framework for the professional development of teachers in England. The Chair responded that the Trustees had commented on the draft and the Treasurer would be making some additions. The Treasurer said she thought it important for the letter to have a rigorous evidence base. The Chair added that when the letter is finalised it will be sent to the DfE.
- 7.03 **Association of Teachers of Mathematics** Julian Gilbey said that Sam Walters had been appointed to succeed Kerry Hamilton and that she was already working alongside her before Kerry Hamilton leaves ATM in December 2018. Julian Gilbey corrected the report to say that Kerry Hamilton was going to work for the Royal Air Force Association not the Royal Air Force.
- 7.04 **British Society for Research into Learning Mathematics** Sue Gifford said that the publication of the review of BCME Conference Proceedings will be published in January 2019. She also spoke about the BSRLM termly conference that had been held in Swansea in June 2018 saying the level of participation by teachers had been particularly encouraging. The Treasurer added that the termly conference in London earlier in November 2018 had been a very good day. She added that the reviewed proceedings from BCME9 were now published on the BSRLM website.
- 7.08 **Institute of Mathematics and its Applications** Chris Chipperton said that the IMA had been awarded the contract to administer the Mathematics Teacher Training Scholarships for the next three years; a review of the assessment tasks for the MTTTS selection process is taking place. He noted that the phasing of the bursary seems to be having some impact on those who are applying. He went on to add applications were open for this year and observed that earlier applicants tended to be of a better quality and more committed to mathematics teaching.

The Treasurer asked about whether there was any evidence about the retention of scholars. Chris Chipperton said the IMA had no way of tracking scholars and the question was one for the DfE.

The Chair said that he had met recently with a DfE national stakeholder group and that they were now looking at undergraduate routes into mathematics teaching; he also observed that the DfE did not consider there were too many routes into mathematics teaching. He added that he had encouraged

the DfE to be represented at the JMC discussion session on mathematics teacher supply at its meeting on 19 February 2019. [[Lorna Howarth (Deputy Director, Teacher Recruitment ; ITT operations and markets) and Lydia Watson (Head of Strategic Recruitment Projects) of the DfE have accepted invitations to attend.]]

- 7.09 **London Mathematical Society** David Pritchard asked where the updated LMS Statement on requirements for facilities and resources for teaching mathematics in HE could be found. Kevin Houston responded that it had been agreed by the LMS Council and would soon be on the LMS website. [[It has since been made available at <https://www.lms.ac.uk/sites/lms.ac.uk/files/files/LMS%20Statement%20on%20Teaching%20Facilities.pdf>.]]
- 7.10 **The Mathematical Association** The report was noted.
- 7.11 **Mathematics in Education and Industry** The report was noted.
- 7.15 **NRICH representing the Millennium Mathematics Project** Ems Lord said that a new person had been appointed and the Roadshow will soon be on the road again.
- 7.16 **Operational Research Society** Sophie Parker spoke about the OR Society's participation in New Scientist Live and commented that people were asking for resources but there were few teaching organisations present (the UKMT was present last year). There is an open invitation for organisations to take part but there was a cost, although discussions about funding were taking place and some funding was available. Tom Roper asked for details to be circulated and Sophie Parker agreed to do this. [[Information can be found at <https://live.newscientist.com/about-us>.]]
- 7.18 **Royal Statistical Society** Carole Haynes said that she had nothing to add to her written report. David Pritchard asked to what jurisdictions the reference to 'the mathematics education system' referred as each of the four UK jurisdictions has its own system. Amber-Leigh Furnell said that ACME has a UK remit and 'system' would be changed to 'systems'.

8 Reports from Observing Bodies

- 8.06 **National Centre for Excellence in the Teaching of Mathematics** Jane Imrie said that she had nothing to add to her written report.
- 8.10 **The Royal Society Advisory Committee on Mathematics Education** Rebecca Veitch said that she had nothing to add to her written report.

Jeremy Hodgen said that he and Mary McAlinden would complete their terms on ACME on 31 December 2018; they would be succeeded by Helen Drury and Anthony Tomei.

Kevin Houston asked about progress with the 11–16 Contact Group. He reminded those present that at the previous meeting Frank Kelly had said that The Royal Society would look to the JMC for names. Jeremy Hodgen replied that such committees are appointed by The Royal Society; he added that there were discussions in progress on a potential chair for the group and external funding is being sought (so far the IMA, LMS and RSS have contributed to the funding of the Contact Groups); Frank Kelly is working to raise further money but none has been secured as yet.

The Chair said that there are four Contact Groups and that funding was not an issue for the establishment of the 11–16 Contact Group. Jeremy Hodgen responded that whilst there is money for the groups to meet, there is not money for them to do their work.

Charlie Stripp asked about the scope of the Post-16 Contact Group and whether its remit included Core Maths, T Levels or GCSE re-sits. Andy Noyes replied that the group would in January be looking at Core Maths and it was also looking at GCSE re-sits; there was a huge programme of work that needed doing but neither the time nor the funding to do it.

The Chair said that the remits of ACME and its Contact Groups should be publicly available. Jeremy Hodgen said that ACME has been wrestling with how it should relate to Northern Ireland, Scotland and Wales, and it would welcome comments on how to do this without stepping on the toes of others. David Pritchard said he would welcome clear badging of which nations were being considered when issues are addressed. Jeremy Hodgen replied that one should look at the [teacher supply snapshot](#) to see how Scotland was being addressed. He added that ACME would like to be working with the three other nations [than England], although all the Contact Groups are really focussed on England.

Sue Pope asked about The Royal Society's CPD event on data science. She said that people from Scotland were not invited despite there being developments in Scotland, including a new qualification in data science, on which it could have drawn. She asked if The Royal Society could promote its Schools and Colleges Network in Scotland. Rebecca Veitch said that she would take that back to The Royal Society. Sue Pope concluded by saying that language needed not to be excluding. Jeremy Hodgen said that The Royal Society had to avoid treading on the toes of other bodies as there are

parallel bodies in Scotland to The Royal Society. The Chair added that such matters can be sorted out through dialogue.

[[On 14 November 2018, the day following the meeting, Rebecca Veitch asked that the following be noted in the minutes concerning The Royal Society's CPD event on data science:

The event was clearly marked as available to all and someone from Edinburgh attended.

The event is being repeated in Newcastle on 21 February 2019.

The Royal Society encourages JMC members to advertise the Newcastle event to their members:

<https://www.eventbrite.co.uk/e/royal-society-schools-network-cpd-using-big-data-in-the-classroom-newcastle-registration-52050656916>.]]

- 8.11 **Scottish Qualifications Authority** Sue Pope added to her written report that there was a real passion in Scotland to increase engagement with STEM.

The Treasurer asked whether overviews of provision in Northern Ireland and Wales might be forthcoming. Steven O'Hagan asked that this might be provided for England as well.

9 Reports from meetings

- 9.01 **Cambridge Mathematics UK Advisory Group: 14 September 2018** The report was noted.

10 Discussion of Reports

None.

11 Any other business not elsewhere on the agenda

None.

11 Discussion: Maths Weeks

The Chair introduced the afternoon discussion and the speakers who were: on Maths Week Ireland: Patricia Eaton (Director of Teaching and Learning, Stranmillis University College) and on Maths Week Scotland: Laura Ross (Policy Lead for Numeracy and Mathematics in the Learning Directorate of the Scottish Government). The speakers' PowerPoint slides can be found at

http://www.jmc.org.uk/documents/JMC_GM_20181113_12_Maths_Week_Ireland.pptx and http://www.jmc.org.uk/documents/JMC_GM_20181113_12_Maths_Week_Scotland.pptx.

Trisha Eaton spoke first, entitling her talk 'Maths Week Ireland: An Enthusiast's View'. She began by introducing herself, a topology PhD who had taught in schools and then in teacher education, an enthusiast who had brought Maths Week Ireland to Northern Ireland.

Maths Week Ireland was begun in 2005 at the Centre for the Advancement of Learning of Maths, Science and Technology (CALMAST), Waterford Institute of Technology by Eoin Gill and Sheila Donegan. (The idea was born after Rob Eastaway spoke in Waterford at the initiative of Eoin Gill and Sheila Donegan.) The first week was just in the Republic of Ireland from 16 to 20 October 2006; it ran at more than a dozen centres, its aim was to promote understanding, awareness and appreciation of mathematics. Trisha Eaton became aware of the initial week and contacted Eoin Gill with a view to making it an all-Ireland event, and Stranmillis University College held its own event in conjunction with Maths Week Ireland in that first year. Speakers were invited for the week and presented at venues across Ireland. The week built on existing events, for example the Royal Irish Academy in Dublin had a lecture that week.

Universities were the first to get on board, many using existing staff and seminar series. Using existing processes and activities helped build a programme and connect with other organisations outside academia, such as Met Éireann. The emphasis was on talks by well-known speakers but there were attempts to engage children and families right from the start.

The early challenges were: funding, media and buy in, government support, moving from for/by university to wider engagement especially with schools.

- The biggest of the early challenges was funding. Many of the early speakers were self-funded, except for expenses, but the 2006 Maths Week Ireland did attract funding from British Council Ireland, Discover Science & Engineering (DSE) [an initiative of the government of the Republic of Ireland], Irish Business and Employers Confederation (IBEC) [the equivalent in the Republic of Ireland of the CBI in the UK], Intel Education and Microsoft. It was a case of starting small on low funding and using those activities to build momentum. (Trisha Eaton suggested in passing that university outreach funds might be used support events.) By 2018, the Department of Education and Skills [Republic of Ireland] and the Department for the Economy [Northern Ireland] had come

on board and become the mainstays of funding along with MATRIX (the Northern Ireland Science Industry Panel), Science Foundation Ireland, Smart Futures, XILINX and ESB.

- Initially it was a challenge to get media coverage but Maths Week Ireland now gets national and local coverage.
- The governments came on board about six years ago as they see the week's importance for building the STEM economy.
- Initially Maths Week Ireland was something done for and by universities but it has aimed all along to achieve wider engagement, especially at second level – something which has become easier as technology has developed, and the week is now reaching into primary and it has become a staple in most schools' calendars. Activities on the Maths Week Ireland website allow those schools that cannot get to events to participate. The partners in organising events now include, as well as universities, libraries, the national aquarium and W5 (the Belfast Science Centre).

Trisha Eaton then showed a video on Maths Week Ireland <http://www.mathsweek.ie/2018/about/>. The core message of Maths Week Ireland is that mathematics is for all and the video gave a flavour of the range of activities that take place, including fun activities designed to reduce mathematics anxiety.

And why 16 October? That was the day in 1843 when William Rowan Hamilton conceived of quaternions, and each year, since 1990, a walk (see <http://archive.maths.nuim.ie/hamiltonwalk/>) has been held from Dunsink Observatory, where Hamilton worked and lived, to Broom Bridge where he inscribed his idea; the walk is now part of Maths Week Ireland.

There has been no academic evaluation of Maths Week Ireland but a report is published each year.

Laura Ross then spoke on *Maths Week Scotland*. She said that the origins of the week were in the National Profile-Raising Group for Mathematics that was convened in 2015 and reported in September 2016. Its report (<https://www.gov.scot/publications/transforming-scotland-maths-positive-nation-final-report-making-maths-count/>) said, 'Scotland has a maths problem. Too many of us are happy to label ourselves as "no good with numbers". This attitude is deep-rooted and is holding our country back educationally and economically.' Laura Ross said that her role was to work with the STEM Strategy and implement the recommendations of the report with the goal of transforming public attitudes to mathematics. Recommendation 2 was 'The Scottish Government should work with partners to develop jointly and fund a Maths Week Scotland which brings together events across the country with online and hands-on experience for young people, their parents and carers and the wider public.'

The first year of Maths Week Scotland was 2017; there was no money budgeted but significant expectations. Some key and vital features for the first year were identified.

- Leadership – sector and political: the chair of the group was the Convenor for Education of Glasgow City Council who was also the convenor of the group of all local authority education convenors in Scotland and was well connected with Scottish Government ministers; the Deputy First Minister was a ministerial advocate for the project.
- Resources, inspiration, contacts, core messages: there was a need to fix a date and infrastructure; resources were needed for teachers, youth group leaders and other practitioners: use was made of existing resources and support was provided by Education Scotland.
- Social media: with there being a lack of a budget and merchandise, use was made of social media to raise a sense of anticipation.
- Central co-ordinating point: this was Laura Ross's role: the event was Scottish-Government-supported rather than Scottish-Government-run.
- National features – competitions and challenges, website, talks and lectures, sharing and oversight: Sumdog, a primary digital maths game, held a competition; Chris Smith (Scottish Teacher of the Year 2018) of the Scottish Mathematical Council devised a Scottish version of maths competition Mathématiques sans Frontières called "Maths wi nae Borders" for sharing across schools, which was hosted on the Maths Week Scotland website.
- Local features – competitions, parents, community, local business, visits, games, assemblies: there is a pent-up appetite to get involved with mathematics which has been a poor relation to science for public engagement. Laura Ross had found university outreach teams keen to be involved and also became aware of local competitions (such as one in Glasgow for the most innovative mathematics department) and activities (such as inviting parents into schools to give talks about the mathematics in their jobs and lives. Science centres also got involved.

Laura Ross worked with the Scottish Mathematical Council to have a supply of puzzles, which the Deputy First Minister could tweet each day of the week, these created huge social media interest. The

week got parents and carers involved and served as a vehicle for getting them into schools. The speaker then gave examples (to be found on the slides) of the various activities that formed part of Maths Week Scotland.

Laura Ross then considered what had been achieved under the following headings.

- Participation, engagement, energy, enthusiasm
- Coverage
- Interest
- Reactions
- Monitoring and evaluation
- Unintended consequences:
- Tensions

Maths Week Scotland has now become an annual event with funding as part of the Scottish Government's STEM Strategy. An enthusiasm developed around the event and some of the partnerships fostered have extended beyond just the week. There is a real appetite for mathematics problems and mathematics holiday challenges now go out to Primary 6 pupils at the end of each term. A partnership has been developed with the National Museums of Scotland (with a specific post created), although they are not mathematics-focussed, they have key skills in the area of public engagement. There were tensions, for example over the participation of commercial partners and the promotion of products such as Sumdog.

Laura Ross then went on to talk about Maths Week Scotland 2018. There has been a consolidation of existing partnerships and the establishment of new ones, and structures introduced to support sustainability (such as the involvement of the National Museums of Scotland). Funding has been budgeted and a small grants fund (managed by the Edinburgh Mathematical Society and the Glasgow Mathematical Journal) has been established to support local initiatives. Geographic reach has been addressed, making use of some activities from Maths Week Ireland and sending speakers to remote areas. There has been engagement from a high-profile politician, the Deputy First Minister, and positive media coverage.

Amidst all the enthusiasm and positivity, there are still ambitions and challenges for the future. There is a need to ensure that the engagement is meaningful and with the right people, and that it is genuinely affecting attainment, subject choice and career considerations. Indeed, what are the measures of success? Nevertheless, Maths Week Scotland has been felt to be hugely positive and politicians have found it a valuable way to engage with others.

There was then a discussion.

Trisha Eaton said that in the early days of Maths Week Ireland some funding had come from the IMA's small grants scheme.

Kevin Houston said that he was interested in supporting a Maths Week and, as Chair of the LMS Education Committee, he was trying to give funding to festival-type events; he was keen to see more money go to this type of activity.

Ems Lord said that NRICH was set up following the Royal Institution Christmas lectures one year as there was a need for follow-up; she asked what happens after Maths Week for the rest of the year. She said that there was a need for evaluation, which things have positive and which negative effects, and for sustainability. She added that NRICH were the go-to people for problems.

Rob Eastaway said that so many people around the table were already doing things, what happens in England already is massive when one looks at the existing events spread over the year. He added that Maths Inspiration has no government input and full control over its content and evaluation (he circulated some copies of a recent annual report, <http://www.mathsinspiration.com/annual-reports>).

John Mason said activity needs to take place twelve months a year and that the Welsh Government funding was to Techniquet and the Further Mathematics Support Programme Wales, and it would rely on them to run any events.

Charlie Stripp asked how big a hit one week is compared with the existing activity through the year and how much a week could disrupt existing activity.

Sophie Parker said that Stemettes (<https://stemettes.org/>) ran events throughout the country to bring girls into STEM, with an emphasis on fun and food. The OR Society has participated to raise the profile of mathematics.

The Chair asked what success looked like.

Trisha Eaton said that Maths Week Ireland gives an opportunity to get buy-in from families and the media.

Mareli Grady said that a maths week could provide a central focus and help people to navigate what is available, signposting people to other things during the year, but it should not ask others to fit into its week.

Tom Roper said that was a much better idea.

Jane Imrie said that there is a potential to hit those people who don't go to events but there was a need for evaluation.

Mareli Grady said that this year the Oxford Maths Festival was held at the Mathematical Institute in north Oxford, following the evaluation, next year's festival will be held in the part of Oxford that did not come and they would be going into schools beforehand.

Colin Wright said that schools can feel they have not got time to go off curriculum and activities are not reaching those teachers, students and parents who need them most. He then asked how they can be reached.

The Chair drew attention to the priority areas in England.

Jane Imrie said that Maths Year 2000 got local businesses to display linking materials, for example Morrisons displayed materials on their supermarket shelves.

Chris Chipperton said that the pressure on schools is vast; one of the bonuses of a Maths Week would be to say it is ok to do this sort of thing.

Julie Harris said that was what happened to her with Maths Week Ireland; it meant (when she was still teaching) she could get permission to take pupils out of lessons and an opportunity to have children visit universities and thereby raise aspirations, then the schools could grow that type of activity within their communities.

David Pritchard said that in Glasgow, Maths Week Scotland had provided an opportunity for Strathclyde University to get into schools in areas such as the East End of Glasgow and Govan, and engage with groups that have not traditionally had much engagement.

Trisha Eaton said that at Stranmillis University College the outreach money used was targeted at schools that were not normally engaged. On 'Why a week?': she said it gives licence to schools to get involved, and a maths week can act as a feeder to other events.

Rob Eastaway asked what were the budgets for Maths Week Ireland and Maths Week Scotland.

Trisha Eaton replied that the budget for Maths Week Ireland was in the tens of thousands of pounds rather than the hundreds of thousands.

The Chair reminded those present that in England every university had access funds that might provide support.

Colin Wright commented that some schools will not take up free places even when they are offered directly to them.

Concluding the discussion, the Chair thanked the speakers.

12 Conclusion

The Chair thanked everyone present for their contributions; he then closed the meeting at 3.35 p.m., thereby demitting office.

13 Dates of future meetings

Tuesday 19 February 2019 at The National Council for Voluntary Organisations, Regents Wharf, 8 All Saints Street, London N1 9RL (deadline for papers: Tuesday 5 February 2019)

Tuesday 4 June 2019 at The London Mathematical Society, De Morgan House, 57-58 Russell Square, Bloomsbury, London WC1B 4HS (deadline for papers: Tuesday 21 May 2019)

Tuesday 12 November 2019 at The National Council for Voluntary Organisations, Regents Wharf, 8 All Saints Street, London N1 9RL (deadline for papers: Tuesday 29 October 2019)

These meetings will begin at 11 a.m.

Summary Minutes of the Meeting of the Trustees of The Joint Mathematical Council of the United Kingdom held at the Royal Statistical Society at 9 a.m. on Tuesday 13 November 2018

Present Paul Glaister (Chair), Peter Thomas (Secretary), Jennie Golding (Treasurer), Sally Barton, Matt Lewis, David Pritchard; **Visitors:** Andy Noyes (Chair Elect), Alice Rogers (Deputy Chair Elect).

1 Introduction

- 1.1 **Welcome** The Chair welcomed those present.
- 1.2 **Practical Arrangements** The Secretary made known the procedure for emergency evacuation.
- 1.3 **Apologies for Absence** None.
- 1.4 **Declarations of Conflicts of Interest** The register of trustees was circulated for trustees to update their declarations of conflicts of interest.

2 Previous Business

- 2.1 **Approval of the minutes of the meeting held on Wednesday 6 June 2018** The minutes of the previous meeting were approved.
 - 2.2 **Decisions since the meeting held on Wednesday 6 June 2018** The following decisions since the meeting held on Wednesday 6 June 2018 were noted.
 - 2.2.1 **Venues** The JMC Trustees resolved, that given the likely noise levels at the Royal Statistical Society, to seek alternative venues for the meetings on 13 November 2018 and 19 February 2019. (*Decision confirmed by the Secretary on 7 June 2018.*)
 - 2.2.2 **Co-option to JMC of the Immediate Past Chair** The JMC Trustees resolved to propose to the Council the co-option as a Co-opted Member of the JMC of Paul Glaister as Immediate Past Chair for the year 2018–19. (*Decision confirmed by the Secretary on 12 June 2018.*)
 - 2.2.3 **Scottish Mathematical Council** The JMC Trustees resolved to recommend to the Council that the Scottish Mathematical Council be elected as a Participating Body of The Joint Mathematical Council of the United Kingdom. (*Decision confirmed by the Chair on 26 August 2018.*)
 - 2.2.4 **Welsh Government Education Directorate** The JMC Trustees resolved to recommend to the Council that the Welsh Government Education Directorate be elected as an Observing Body of The Joint Mathematical Council of the United Kingdom. (*Decision confirmed by the Chair on 26 August 2018.*)
 - 2.2.5 **JMC-enabled, community-approved TSST secondary mathematics accreditation panel** The Trustees (apart from Paul Glaister who did not take part in the decision) have agreed that, to ensure continuity, Paul Glaister (who has been deeply involved in establishing and carrying out the accreditation process) shall chair any panels on behalf of the JMC for a 2019/20 cycle of the accreditation process should that cycle occur. (*Decision confirmed by the Secretary on 23 October 2018.*)
 - 2.2.6 **Annual Report** The JMC Trustees resolved to approve the Annual Report. (*Decision confirmed by the Chair on 24 October 2018.*)
 - 2.2.7 **Annual Accounts** The JMC Trustees resolved to approve the Annual Accounts. (*Decision confirmed by the Chair on 24 October 2018.*)
 - 2.2.8 **Co-option of Co-opted Trustees** The Trustees (apart from Matt Lewis and David Pritchard, the Co-opted Trustees in 2017/18, who did not take part in the decision) have agreed to propose to the Council that Chris Chipperton and David Pritchard be co-opted as Co-opted Trustees for 2018/19. (*Decision confirmed by the Chair on 8 November 2018.*)
 - 2.3 **Actions** The action points from the previous meeting were reviewed.
 - 2.4 **Matters arising not elsewhere on the agenda** None.
- ### 3 Officers
- 3.1 **Chair** The Chair had nothing to report.
 - 3.2 **Secretary** The Secretary drew attention to the report from Sophie Parker on the JMC's Twitter account. The Trustees agreed that any trustee could send Sophie Parker content for tweeting. It was also agreed that Sophie Parker should manage the JMC Twitter account until 31 December 2019.

- 3.3 **Treasurer** The Treasurer said that it had been necessary for JMC to have an independent examination of its accounts this year because of the turnover of BCME and the independent examiner had been happy with the accounts. The £15000 in the JMC's reserves was needed as a buffer as at the end of the calendar year funds get very low after all expenses have been paid but before subscriptions for the new year have come in. She also noted the issue of the £45000 balance on the BCME restricted fund which had been discussed earlier.

With the impending change of officers, it was necessary to change the signatories on the JMC's bank accounts. The wording of the motion required by The Co-operative Bank was circulated for trustees to read. Having read the motion, the Trustees agreed that (in accordance with Bye Law 4.2.1) the incoming Chair (Andy Noyes), the Secretary (Peter Thomas) and the Treasurer (Jennie Golding) should be signatories for the JMC's current account, deposit account and BCME current account for the coming year and it was further resolved and declared (with regard to The Co-operative Bank's change of signatories form) ... [here follow the form of words required by The Co-operative Bank].

There was a discussion of the interaction of the two criteria for subscription rate category, whether membership or turnover, took precedence. The Treasurer agreed the criteria were unclear and said it was apparent that they needed revisiting.

- 3.4 **Co-option of Co-opted Trustees** It was noted that Chris Chipperton and David Pritchard had accepted invitations to serve as Co-opted Trustees and their co-option would be proposed to today's General Meeting. The Chair thanked Matt Lewis for his service as a Co-opted Trustee.

4 **Committees**

- 4.1 **BCME Committee** The Chair thanked the review team, their report having discussed as part of 2.3.

- 4.2 **GCSE Working Group** It was agreed that the Treasurer [group convenor and link trustee] would refresh the membership of the GCSE Working Group. It was agreed also to explore with The Royal Society how the working group might interact fruitfully with the ACME 11–16 Contact Group.

- 4.3 **ICME Bursaries Committee** The Secretary said that Chris Budd had reported that he and Peter Ransom were 'putting together a draft proposal for there to be a 'national presentation' at ICME representing the best of UK Maths Education.' Chris Budd also reported 'David Pritchard and I are actively on the case for the ICME bursaries and I am confident that we will have them sorted out soon.' David Pritchard [link trustee] said that, as a first step, the four contributors last time had been approached and responses so far had been positive.

- 4.4 **MMSA SIG** It was agreed that the link trustee would be Jennie Golding [the link trustee had previously been Matt Lewis].

5 **Representation**

- 5.1 **National Maths Hubs Forum** It was agreed that the most fruitful way for JMC to engage with the Maths Hubs at national level should be explored further with NCETM. [This was particularly timely as the position of JMC representative to the National Maths Hubs Forum was at present vacant following the resignation of Tony Cotton.]

- 5.2 **National Numeracy Forum** It was agreed that National Numeracy would be contacted to see whether it would be helpful to appoint a representative after Sally Barton's term expires on 31 December 2018.

6 **Future Business**

- 6.1 **Business of the General Meeting** None.

- 6.2 **Dates of Future Meetings** That meetings are to be held on 19 February 2019 and 4 June 2019 was noted. It was agreed that the date of the meeting in November 2019 would be arranged by the Secretary subject to the availability of the Chair Elect and a venue.

- 6.3 **Discussion Sessions at General Meetings** It was noted that the afternoon discussion on 19 February 2019 would be on the Supply of Mathematics Teachers in the UK.

7 **Any other business not elsewhere on the agenda**

The Chair looked back on his time as Chair and thanked those who had worked with him. The Secretary thanked the Chair for his dedication to the role and the great steps forward the JMC had taken under his leadership. Those present expressed their agreement in applause.