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## Editor's Note

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Finally, I present the Autumn Edition of the **sigma** Newsletter 2021. It is a little bit thin this time but understandable as we all work hard to adapt to the many changes that we have had and are all still facing. Perhaps one of the hardest parts of these recent global events has been the crippling lack of reliable planning possibilities, don't misunderstand Institutes are planning but more often or not confounding factor outside of one's control demands a response, and we have to react. The fortunate ones amongst us will have plans that can be adapted to the 'change' without significant disruption. Personally, I've seen family, friends and colleagues not forgetting me, go through one challenge after another; but I'm very grateful to belong to a supportive Network. Thus, although the Newsletter is thin I believe it will be a good read and enrich your practice.

Included is a summary of the AGM held this year at Coventry University at the CETL MSOR 2021 Conference. One of the results of the new ways of working is the work on and evaluation of these new approaches; this has been looked by Emma Howard, Claire Mullen and Anthony Cronin. The site is well worth an explore to utilise.

Martin Greenhow and Abdulrahman Kamavi highlight the **maths** e.g. resource which is freely available students to use independently and for Instructors to use as a teaching/revision tool.

This year we were able to have a couple of face-to-face with virtual access events; Mark Hodds has provided a write up of the CETL MSOR 2021 and Tony Mann on the Tutor Training event hosted by Greenwich University. Both attracted international participation!

Thanks to all authors for their contributions to this edition. The deadline for contributions for the next edition (Spring 2022) is **7<sup>th</sup> March 2022**. We welcome contributions on any topic that may be of interest to practitioners and academics supporting higher education students in their learning of mathematics and statistics. To submit an item, see <http://www.sigma-network.ac.uk/sigma-newsletters/>.

Finally, as usual: the views expressed do not necessarily constitute recommendations from the **sigma** Steering Group or any associated parties.

With warm regards

– Chetna Patel



## Annual General Meeting 2021

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### sigma Steering Group

To our delight this year we had face to face Annual General Meeting of the **sigma** Network at the CETL–MSOR 2021, details are summarised here. The AGM was well attended by face-to-face and online members participation.

The Chair's Reported on the operation with the new steering group within the current hybrid working. Membership continues to grow steadily, and members are encouraged to consider hosting events in due course. The Steering group say goodbye Nick Goddard as he moves on and thanked him for his work for the Network.

The Secretary's Report indicate a rise in Individual Membership of the **sigma** Network over the past year. And remind you that If have a professional interest in HE maths support, do please sign up as an Individual Member – it is free and brings no obligation, it evidences your commitment to mathematics and statistics support, and it will add weight to our community of practice. A simple application form is available here: <http://www.sigma-network.ac.uk/apply-for-individual-membership/>

The Treasurer's Report the **sigma** Network's finances have remained stable as the activities and events have taken place through the voluntary involvement with the support of their institutions. We are particularly grateful to Loughborough University for continuing to host our websites, and for the CETL–MSOR conference organisers to allow us to host our AGM at Coventry. We acknowledge the generosity of institutions and members for hosting the recent online meetings on behalf of the **sigma** Network.

We have not received any monies, and we have an expenditure that is set aside (see above). No formal audit was necessary.

Finally, new members are sought for the steering group; one earmarked for a new starter or early career member. Please contact a member of the steering group with expressions of interest or suggestions.

### Steering Group Membership 2020/21

Emma Cliffe (University of Bath)

Mark Hodds (Coventry University)

Mary Lorimer (Loughborough University)

Tony Mann (University of Greenwich)

Ellen Marshall (Sheffield Hallam University)

Alun Owen (Coventry University)

Chetna Patel (Independent: Hope and Grow)

Theresa Wege (Loughborough University)

Robert Wilson (Cardiff University)

Plus 4 co-opted members . . .

Representative of the IMA Duncan Lawson

Representative of the SMSN TBC Anne Savage

Representative of the IMLSN TBC Kirsten Pfeiffer

Membership database officer (Bath) Ed Southwood

## Improving service use through prediction modelling: A case study of a Mathematics Support Centre

Emma Howard

Postdoctoral researcher | University College Dublin

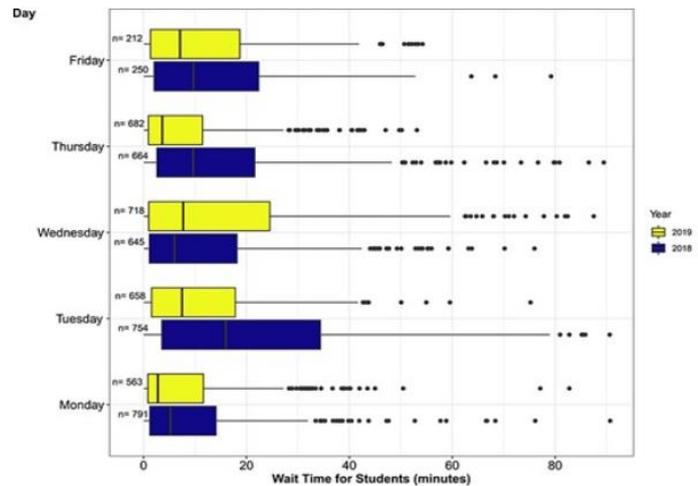
[Emma.howard@ucd.ie](mailto:Emma.howard@ucd.ie)

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Following interest at the CETL–MSOR 2019 conference in Dublin, we would like to draw the community’s attention to our recently published open–access Maths Support Centre article in the IMA Journal of Management Mathematics. The article is entitled “Improving service use through prediction modelling: A case study of a mathematics support centre” and is freely available at:



Open in new tab

Download slide

Waiting times for Weeks 1–12 of the 2018/2019 and 2019/2020 Semester 1 by the day of the week.

<https://academic.oup.com/imaman/advance-article/doi/10.1093/imaman/dpab035/6377514?login=true>

```
ehoward1 / Math-Support-Centre - Public
<> Code Issues Pull requests Actions Projects Wiki Security Ins
master - Math-Support-Centre- / Diagrams_for_waiting_times.R
ehoward1 Update Diagrams_for_waiting_times.R
1 contributor
214 lines (178 sloc) | 9.89 KB
1 # Recommended to run this code as the third file
2 # First format the original data with "Reformatting_unedited_MSC_file.R" and
3 # "Reformatting_term_week_and_the_number_of_tutors.R"
4
5 rm(list=ls()) #Clear space
6
7 # Set working directory
8
9 install.packages("dplyr")
10 install.packages("magrittr")
11 install.packages("ggplot2")
12 install.packages("readr")
```

The code and data referenced in the article are also freely available at:

<https://github.com/ehoward1/Math-Support-Centre->

## Mathematics is different: student and tutor perspectives from Ireland and Australia on the rapid move to online support

Claire Mullen

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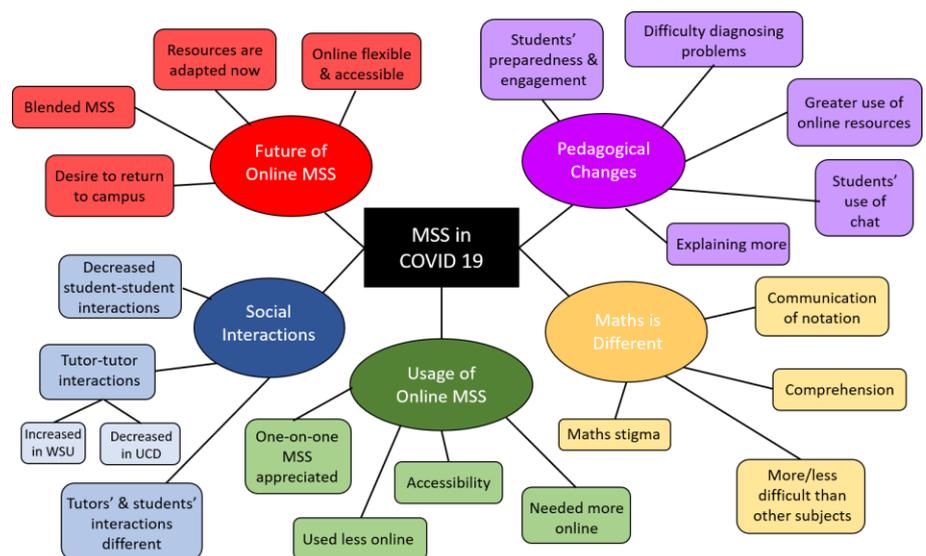
Anthony Cronin

UCD Maths Support Centre Manager | University College Dublin

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We would like to draw the community's attention to our two recently published open-access articles about Mathematics and Statistics Support in the International Journal of Mathematical Education in Science and Technology and Teaching Mathematics and its Applications: An International Journal of the IMA, written with our Western Sydney University Colleagues Jim Pettigrew, Leanne Rylands and Don Shearman.

The articles entitled "The rapid move to online support: changes in pedagogy and social interaction" and "Mathematics is different: student and tutor perspectives from Ireland and Australia on online support in COVID-19" are freely available at the links below:



[Changes in Pedagogy and Social Interaction](#)

[Mathematics is Different](#)

The papers present the five key themes that were central to the shared experiences and perspectives of tutors and students around the rapid move to online support caused by the pandemic and future implications for mathematics and statistics support. Mathematics and statistics support tutors and student users from both University College Dublin, Ireland and Western Sydney University, Australia were interviewed in late 2020 and the 23 resulting transcripts were analysed using thematic analysis.

The five themes, Usage of online support, Mathematics is different, Pedagogical changes, Social interaction, and Future of online support, and their subthemes are shown in the accompanying image. The papers discuss these themes in relation to the new normal of providing mathematics and statistics support with the intention of supporting senior management, and practitioners, researchers and students of mathematics and statistics support going forward.

## Maths e.g. – a learning and assessment resource for students and teachers at the school/university interface



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**Abdulrahman Kamavi**

Since 2000 we have been developing the maths e.g. e-assessment system at:

<http://www.mathcentre.ac.uk:8081/mathseg/index.jsp>

for casual use (no sign up required) and a teachers' interface at:

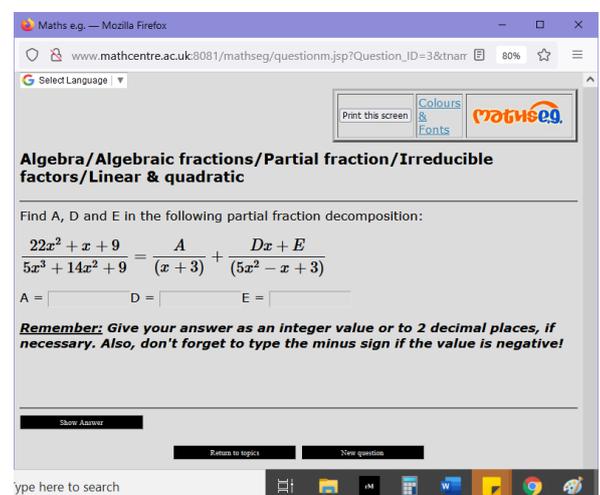
<http://www.mathcentre.ac.uk:8081/mathsegteacher/teacher.jsp>

where tests may be composed by teachers from the 5000 or so question spaces, in a manner similar to shopping on Amazon (but entirely free). This generates a unique test URL to give to your students and which allows you to monitor your students' progress. Instructions are given on the entry page.

The system uses question spaces that encode the algebraic and pedagogic structure of each question and this is then realised at runtime by choosing randomised parameters (numbers, words, scenarios). Thus each question space generates thousands or millions of questions seen by students, thereby allowing virtually unlimited practice. If a student goes wrong, very full and intelligent feedback (based on common errors i.e. so-called mal-rules) is given with the question's choice of parameters carried through into all features of the feedback (wording, equations using MathML and diagrams using SVG). This represents a rich learning environment and, being a standard web page, works on all browsers, PC, Mac or smart phone.

The interface is based around a tree structure comprising 29 main topics and numerous subtopics spanning GCSE, A level and year 1 undergraduate mathematics and some mathematically-oriented topics from Economics, Biosciences, Chemistry and Nursing. The difficulty for students can be knowing where they should look and expend effort so teachers will need to direct them. To facilitate this, it is possible to add links to individual questions or whole topics into any of your learning resources that supports web links (Word, Power Point, pdfs, other web pages etc). For an individual question, just run any question and add the link to the url at the top of the screen to your resource. For a topic or subtopic, note the displayed pid number and edit the following link: <http://www.mathcentre.ac.uk:8081/mathseg/topic.jsp?pid=114>

(the 114 at the end links to Differentiation\Chain rule\Natural logarithms). It's as easy as that.



### CETL-MSOR 2021 - “Celebrating our Past, Embracing our Future”.

**Mark Hodds**

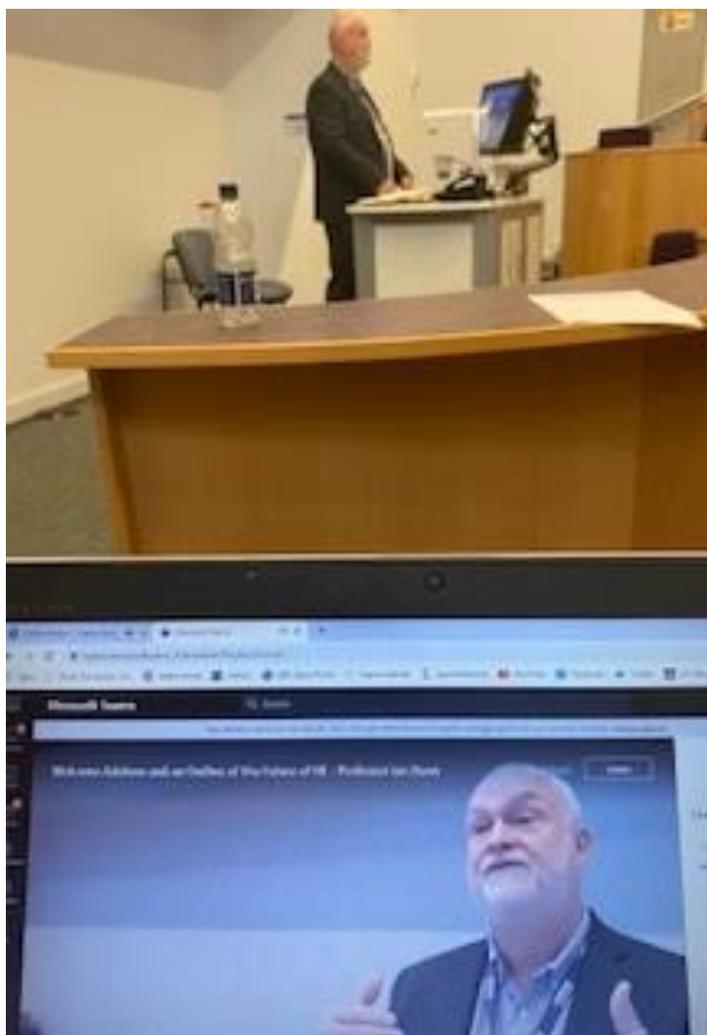
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The 2021 CETL-MSOR conference took place at Coventry University on 2nd and 3rd September and was the first ever hybrid version of the conference. The theme of the conference was “Celebrating our past, embracing our future” to coincide with 30 years of maths and stats support at Coventry and looking at how people are working in the “new normal”. Delegates from around the world attended, including people who called in from Australia, Norway, Germany, and Kuwait to name just a few, utilising the online delivery of the conference through Microsoft Teams.

Many of the talks focused on the methods used during the pandemic to support students and what we can do going forward. It appears hybrid teaching and learning is here to stay so many discussions involved how best to do this. Despite some initial technical glitches, the conference seemed to run smoothly with delegates feeding back that the experience was a positive one. 93% of delegates who provided feedback either strongly agreed or agreed that CETL-MSOR 2021 was a successful event. One key positive reported was that delegates were able to access recordings of each session after the conference whereas at previous conferences they could only attend one of four talks in each parallel session. An improvement that needs to be thought about however is that there was limited interaction

between in-person and online delegates, and indeed between online delegates themselves. One suggestion would be to have a dedicated session for interaction between all delegates at future versions of the conference. A report on how the conference was ran behind the scenes will be provided in the upcoming special issue of MSOR-Connections. A reminder to those who presented at the conference that if you wish to publish your work in this special issue, the deadline is October 31st.

The conference also saw the presentation of two new awards. The UK and Ireland Maths and Stats Support Networks Awards has been created to celebrate the work of maths and stats support practitioners across the



Professor Ian Dunn provides the opening address in-person and through the online stream

different networks each year. There were five winners this year: Morgianne Richard, University of Aberdeen; Peter Mulligan, Maynooth University; Anthony Brown, The Open University; Rachel O'Neil, Maynooth University; and Ed Southwood, University of Bath. The second award, the Lawson–Croft Award for Outstanding Achievement in Mathematics and Statistics Support, is designed to celebrate the work of practitioners in our community for outstanding achievement and excellence across a sustained period. The judging panel decided that the award should be shared this year, fitting given that the award is named after



Professors Tony Croft and Duncan Lawson with the award named after them

two of sigma's founding members. The joint winners were Kate Durkacz and Clare Trott. Thank you to everyone involved with the awards, especially the judging panels for their time and effort in deciding the award winners. We hope that these awards provide our community with an opportunity to showcase excellence and support career progression. Nominations for the 2022 awards will open in spring 2022.

We were delighted to host the 2021 CETL–MSOR conference, particularly after a year's absence due to Covid and hope that delegates and presenters alike found it enjoyable and useful. We have shown that a hybrid conference is possible but improvements can be made. As chair of the internal organising committee, I would be very happy to help and advise future conference organisers on how to run a hybrid conference. Thanks to all involved, particularly Coventry University sigma staff and student proctors for all of their help before and during the event, and we look forward to seeing everyone in Dundee for CETL–MSOR 2022.

### Tutor training – Greenwich University

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#### Tony Mann

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#### Dick Quibell

Mathematics tutor | Greenwich University

On Tuesday 14 September the Greenwich Maths Centre hosted an online training session for mathematics support tutors. The purpose was to train four new postgraduate tutors who will be working for Greenwich MASH (Maths and Stats Help) in the new academic year, but we were happy to be joined by three practitioners from other universities, with one person participating from Australia despite the time difference. The session was delivered by Tony Mann and Dick Quibell, and



was based on the excellent **sigma** resources (freely available at

<https://www.sigma-network.ac.uk/resources/tutor-training-resources/>).

In addition, Dick shared his experience of conducting MASH sessions online over the last year. Feedback was positive from both internal and external participants and the new Greenwich MASH tutors are already in action!

