



All Photographs Courtesy of King's College

**Breaking News: The Conference will NOT be held this year, 2021, but is reserved for Aug 8-13, 2022, next year!**

**16<sup>th</sup> International Conference of The Mathematics Education for the Future Project**

***Building on the Past to Prepare for the Future***

**King's College, Cambridge University, UK, Aug 8-13, 2022.**

Website: <https://directorymathsed.net/kings-conference/> (Updates may go to *Downloads Folder*)

Project Home Page: <http://math.unipa.it/~grim/21project.htm> has ALL past conference proceedings.

**Organising Committee:** Alan Rogerson & Jasia Morska (with Project Advisory Body)

**Local Organising Committee:** Alan Rogerson, Douglas Butler and Toni Beardon

**In cooperation with:** Budapest Semesters in Mathematics Education, Hong Kong Institute of Education, MUED, DQME3, MAV, AWM, ATM, AAMT, Wholemovement, MACAS, Mathematics Education Centre, Institute for Mathematics, Faculty of Sciences, Eötvös Lóránd University, Budapest, International Symmetry Association, AIMSSEC and WTM-Verlag.

***Our Major Sponsor Autograph***

AUTOGRAPH is proud to sponsor this wonderful conference again. Widely admired the world over by secondary/college level teachers and students, AUTOGRAPH can be downloaded for free at [www.tsm-resources.com](http://www.tsm-resources.com). Contact Douglas Butler [debutler@argonet.co.uk](mailto:debutler@argonet.co.uk), for more news.

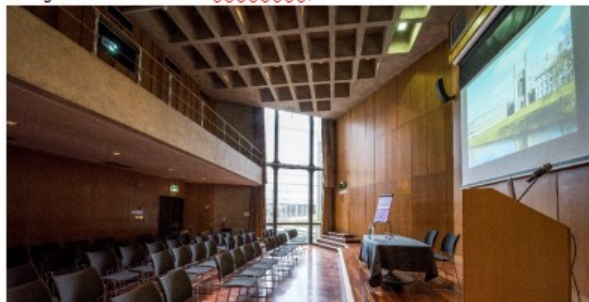


**Provisional Conference Programme**

Day	Time	Event
Mon, Aug 8	14.00 -17.00 17.00-20.00	Arrival Day. Conference Registration. NO work sessions Welcome Reception (drinks and canapés)
Tues, Aug 9	9.00 – 17.00	First working day. Opening Plenary, workshops/papers.
Wed, Aug 10	9.00 – 13.00 13.00	Second working morning (papers, workshops) Free Afternoon/evening to explore Cambridge.
Thur, Aug 11	9.00 – 17.00	Third working day (papers, workshops)
Fri, Aug 12	9.00 – 17.00 19.00-	Fourth working day (papers, workshops, Plenary) Gala Dinner
Sat, Aug 13		No working sessions, departure after breakfast.

All working sessions will be in the elegant and modern lecture rooms in King's College.

### Keynes Lecture Theatre



### Chetwynd Room



## Accommodation and Meals

**Accommodation:** Single/double en suite rooms, 5 nights Aug 8-12, in King's College or nearby  
**Breakfast:** King's Hall Aug 9-13 inclusive (5 breakfasts).  
**Lunch:** King's Hall on the FOUR days Aug 9-12.  
**Dinners:** NO DINNERS in King's except for the Gala Dinner on Aug 12.  
**Evening:** Free to explore & eat out in the many nearby restaurants & pubs.

### Single en suite

High Quality,  
Comfortable  
and Modern  
Rooms in or  
very near to  
the College



### Double en suite



King's Hall  
is the venue  
for lunches,  
breakfasts,  
the Welcome  
Reception &  
Gala Dinner



## CALL for ABSTRACTS of PAPERS and WORKSHOPS

Please send as soon as possible to [alan@cdnalma.poznan.pl](mailto:alan@cdnalma.poznan.pl) an abstract (max 12 lines) of your proposal to be presented at the conference. Once your abstract has been accepted see below for detailed guidelines to prepare your final paper/workshop summary (max 6 pages).

**NEW DEADLINES are Aug 31 2021 (abstracts) and November 30 2021 (papers)**

We welcome papers and workshops that deal with all aspects of **innovation**, especially those helping to make our subject more "alive", "realistic" and "accessible" to students. In line with the conference theme, we also welcome papers that show how prior work in the teaching and learning of mathematics has laid the foundation for future directions and innovations. We have an open policy to accept in the programme not only peer-refereed papers, but also workshops and contributions from teachers discussing their innovative work in the classroom.

## Special Talks & Presentations on DQME, the Innovation Project and the Real Life Themes Project

In 2020 these three projects started offering to students, teachers and researchers world wide free use of a vast resource of innovative methods, ideas and materials, written and tested by teachers, and developed by innovative project teams over the past 50 years! Before, during and after the conference there will be more information on how to obtain and use these resources. The timing of the King's conference will be perfect to make a fitting tribute to all the innovative work done by so many colleagues working together over the past 50+ years.

For DQME see <https://directorymathsed.net/dqme/> and email [alan@cdnalma.poznan.pl](mailto:alan@cdnalma.poznan.pl) for current information on the other two projects.

### Registration Fee (per person) in GBP for Participants and Accompanying Persons

Cost <b>Per Person</b> in GBP	Early Bird	after Nov 1, 2021	after Mar 1, 2022
Single en suite	£905	£915	£925
Double en suite	£770	£780	£790

Fees are the same for participants & accompanying persons covering: Bed and breakfast for 5 nights, Lunches for 4 days, Welcome Reception & Gala Dinner, Conference Documents, Badges, Bags, Tea/Coffee breaks, etc. The fee does NOT cover transport to/from King's.

Please send the Registration Form below to [alan@cdnalma.poznan.pl](mailto:alan@cdnalma.poznan.pl) in electronic form ONLY, embedded in an email OR as a doc x attachment (**not PDF**)

First Name:

Family Name:

Male/Female:

Affiliation/Organisation/Institution:

Full postal address:

e-mail:

Phone:

Name(s) of ALL accompanying person(s) .....

I will present a paper..... OR workshop.... (enter X) with the title:.....

Arrival date..... departure date..... to/from King's College, Cambridge

Fill in all details below or DELETE YES or NO (do NOT highlight please)

1) I will attend the Welcome Reception Aug 8: YES/NO

2) I will attend the Gala Dinner Aug 12: YES/NO

3) I request a single en suite.....or double en suite room..... (put X)

**Please note ALL double rooms have one double bed, there are NO twin (2 single bed) rooms.**

4) My dietary restrictions are as follows.....

### Payment Details

We have separate accounts for payments in **Australia and the UK**, for all other countries make a bank transfer **in GBP only** to the account below. Make sure **all transfer fees are paid by you, the sender**, so that the **FULL fee in GBP** arrives in our account, otherwise please pay the deficit at the conference.

Send fees directly in GBP (NOT in your local currency NOR in Polish zloty) to:

Name of Account: Alan Rogerson

Address of Account holder: ul Listopadowa 1/45, 60-153 Poznań, Poland

Number of account: 25 2490 0005 0000 4000 8266 6774

Bank: Alior Bank Spółka Akcyjna ul. Łopuszańska 38 D, 02-232 Warszawa

Swift code: ALBPPLPW BIC code ALBPPLPWXXX

IBAN PL25 2490 0005 0000 4000 8266 6774

For legal and insurance reasons children under 18 cannot be accommodated in King's but of course participants are free to find other accommodation nearby and attend the conference. Cambridge is full of guest houses, hotels and B&Bs, but you should book as early as possible.

## Project and Conference Details

### How did our conferences start?

In the 1970s the annual conferences of the CIEAEM in Europe were distinguished by their friendly, and relaxed programme and were always held in beautiful places. Those early CIEAEM Conferences were the model for our Project Conferences which are highly appreciated by participants according to their feedback. We always meet in a beautiful place, so that the relaxing and supportive atmosphere will stimulate us to work together. King's College, Cambridge in 2022 will be just such a place!

### Our Invitation

Our conferences are renowned for their **friendly and productive working atmosphere** and are attended by innovative teachers and mathematics educators from all over the world – for example 44 countries were represented at our 2009 conference in Dresden, Germany.

The conference in Cambridge follows on from our fifteen previous Project Conferences held in the following places: next to the pyramids in Cairo in 1999, in the historic Holy Land in Jordan in 2000, a country retreat in Poland in 2001, where the Great Barrier Reef meets the rain forest in Australia in 2001, on the beautiful coast of Sicily in 2002, in Brno, the historic capital of Moravia, Czech Republic in 2003, in Ciechocinek, a historic spa town in Poland in 2004, in Malaysia overlooking the Straits of Johor in 2005, in the scenic surroundings of Charlotte, North Carolina, USA in the New World in 2007, in the splendour of Dresden in 2009, amidst the natural beauty of South Africa in 2011, on the spectacular Balkan coast of Montenegro in 2014, in the historic island of Sicily in Catania in 2015, on the shores of Lake Balaton in Hungary in 2017 and in the charming university town of Maynooth in the Irish countryside in 2019.

The Conference is organised by the Mathematics Education for the Future Project – an independent international educational initiative coordinated by Dr. Alan Rogerson (Poland/UK). Since its inception in 1986, our Project has received support and funding from many educational bodies and institutions throughout the world including ICMI, ICME, The British Council & UNESCO. In 1992 UNESCO published our Project Handbook "Moving Into the 21st Century" as Volume 8 in the UNESCO series *Studies In Mathematics Education*.

The Mathematics Education for the Future Project is dedicated to the improvement of mathematics education worldwide through the dissemination of innovative ideas and materials. Many prominent mathematics educators have supported our project, including the late Tatsuro Miwa, Hans Freudental, Andrejs Dunkels and Hilary Shuard, as well as Bruce Meserve and Marilyn Suydam, Alan Osborne and Margaret Kasten, Mogens Niss, Tibor Nemetz, Ubi D'Ambrosio, Brian Wilson, Henry Pollak, Werner Blum, Roberto Baldino, Waclaw Zawadowski, and many others throughout the world.

### International Program Committee

**Coordinator** Dr. Alan Rogerson (UK/Poland).  
Prof. Khaled Abuloum, University of Jordan (Jordan).  
Prof. Miriam Amit, Ben-Gurion University of the Negev (Israel)  
Prof. Roberto Baldino, UNESP (Brazil).  
Dr. Andy Begg, Auckland University of Technology (New Zealand).  
Dr. Donna F. Berlin, The Ohio State University (USA).  
Prof. Ubiratan D'Ambrosio, Campinas/UNICAMP (Brazil).  
Prof. Bruno D'Amore, University of Bologna (Italy) and Columbia.  
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Prof. Dr. Günter Graumann, University of Bielefeld (Germany)  
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Mgr. Janina Morska, Szkoła Podstawowa nr 7, Gizycko (Poland)  
Dr. Catherine Paolucci, State University of New York at New Paltz (USA)  
Prof. Angela Pesci, University of Pavia (Italy).  
Prof. Dr. David Pugalee, University of North Carolina at Charlotte (USA).  
Prof. Dr. Eugeny Smirnov, Yaroslavl State Pedagogical University (Russia).  
Dr. Arthur L. White, The Ohio State University (USA).  
Prof. Noor Azlan Ahmad Zanzali, Universiti Teknologi Malaysia (Malaysia).  
Prof. Wacek Zawadowski, Siedlce University (Poland).



## Mathematics Education for the Future Project National Representatives

Prof. Gail Burrill USA, Prof. Maria Flavia Mammana Italy, Prof. Dr. Ivan Meznik Czech Republic, Dr. Hanan Innabi Jordan/Sweden, Prof. Wacek Zawadowski Poland, Prof. Miriam Amit Israel, Prof. Noor Azlan Ahmad Zanzali Malaysia, Prof. Dr. Gunter Graumann Germany, Dr. Marjorie Henningsen Lebanon, Prof. Dr. Franco Favilli Italy, Prof. Gunnar Gjone Norway, Prof. George Malaty Finland, Prof. Willy Mwakapenda South Africa, Dr. Maria Luisa Oliveras Spain, Lionel Pereira-Mendoza Canada, Dr. Fatimah Saleh Malaysia, Dr. Maher Y. Shawer USA, Prof. Anthony Sofo Australia, Prof. Teresa Vergani Portugal, Prof. Derrick Young South Africa, Prof. Angel Balderas Mexico, Dr. René Berthelot France, Dr. Cinzia Bonotto Italy, Dr. Jean Michel Hanna, Egypt, Dr. Reda Abu-Elwan, Oman, Assistant Prof. Othman Alsawaie UAE, Prof. Indira Chacko India.

## Guidelines for Papers and Workshop-summaries

**ALL papers/workshop summaries will be published in the Printed Proceedings and so all of them must have the same formatting below for consistency!**

**Deadlines: Aug 31, 2021 (abstracts - 12 lines max) & Nov 30, 2021 (papers - 6 pages max)**

Send all papers/workshop summaries to [alan@cdnalma.poznan.pl](mailto:alan@cdnalma.poznan.pl) as doc x ONLY (not PDF) with a maximum of 6 pages including all acknowledgements, references, appendices, etc.

Please follow this format help-sheet in the order below. Click on FORMAT in Word menu and check Document/Page/Paragraph/Text settings carefully to implement these rules:

1. Check *Paper size* is A4 and not (eg) Letter.
2. Check ALL upper/lower/left/right *borders/margins* are set to 2.5 cm exactly.
3. Check that *paragraph default* is set to 0 (zero) space above and below each paragraph.
4. Check that *text default* is single spacing and justified.
5. Set *text default* to Arial pt13 not bold THEN manually change *Title* to pt16 (centred and bold), centre *author and affiliations* (pt 13 not bold) and change all *headings* below to bold.
6. All spaces between paragraphs will now be pt 13, manually *change each space to pt 4*.
7. Set references to *justified and indented* separately from main text.
8. Set all footnotes to Arial pt 12 (NOT 13)

Please then check all other requirements below and compare with the Template.

PLEASE DO NOT send text which visually does not satisfy the format requirements, it will simply be returned for correction.

If you are having difficulties PLEASE consult a computer expert/guru who should be able to follow all these clear and simple format rules quite easily (that is why he/she is an expert!)

## Follow/check below these more detailed Guidelines

1. Single spaced text on A4 page size (NOT eg US Letter size- please check the Page and Printer defaults before sending.)
  - **Main Text and references** in Arial 13 pt and justified (all lines of the text have same width). All references should also be indented (see below)
  - **Title** centred in Arial 16 pt BOLD, author/affiliation pt 13 centred and not bold. NO spaces between title and author and affiliation. Multiple authors must be below each other and NOT adjacent.
  - **Section headings** in Arial 13 pt and bold. NO spaces after headings.
  - **Spacing** between paragraphs 4 pt only (check carefully!)
2. **All page margins:** top, bottom, left & right 2.5 cm precisely (not inches).

3. **All pictures, diagrams, tables etc** MUST be black/white or greyscale (grey shades only, NO colours). Authors must have copyright clearance for all photographs and visual material. All Text in figures/pictures MUST be minimum 13pt in size.
4. NO headers, NO Footers and NO page numbers please.
5. ALL non-text items in the paper (diagrams, graphs, etc) must be clearly labelled and included in the body of the text in the appropriate places.
- 6, **All footnotes should be in Arial pt 12 (not pt 13)**
7. NO MACROS, editing nor correcting programs should still be active.

**Template for the first page & references, please follow the format precisely: Title (Arial 16 pt) & BOLD, section headings (Arial 13 pt) bold & NO indent, etc**

## **Building Concepts: Expressions and Equations and Beginning Algebra**

Gail Burrill  
Michigan State University  
burrill@msu.edu

### **Abstract (NO spaces below all headings)**

Technology can make a difference in teaching and learning mathematics when it serves as a vehicle for learning mathematics and not just as a tool to “do” mathematics. ....

**(all spaces like this must be Arial 4 pt NOT 13)**

### **Introduction**

The learning and teaching of algebra has been a focus of international solving equations with variables on both sides .....

.....

### **References (justified and indented)**

- Alibali, M., Knuth, E., Hattikudur, S., McNeil, N., & Stephens, A. (2007). A longitudinal examination of middle school students' understanding of the equal sign and equivalent equations. *Mathematical Thinking and Learning*, 9, 221–247. doi:10.1080/10986060701360902
- Artigue, M. (2002). Learning mathematics in a CAS environment: The genesis of a reflection about instrumentation and the dialectics between technical and conceptual work. *International Journal of Computers for Mathematical Learning*, 7, 245-274.

**Set all footnotes to Arial pt 12 (NOT 13)**