

International Study Group on the Relations Between the HISTORY and PEDAGOGY of MATHEMATICS An Affiliate of the International Commission on Mathematical Instruction

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This and earlier issues of the Newsletter can be downloaded from our website

http://www.clab.edc.uoc.gr/hpm/

These and other news of the HPM group are also available on the website

http://grouphpm.wordpress.com/

(the online and on time version of this newsletter).

# A MESSAGE FROM THE CHAIR OF HPM

Dear colleagues,

In this edition of the HPM Newsletter, I would like to provide an update on our forthcoming 2016 HPM Satellite Meeting of the International Congress on Mathematical Education (ICME).

The HPM Scientific Committee and the HPM Advisory Board have been working together with the Montpellier Local Committee to establish the scientific program of the 2016 ICME HPM Satellite Meeting. As announced in a previous HPM Newsletter, the 2016 ICME HPM Satellite Meeting will be held in Montpellier, France, from **July 18 to July 22, 2016.**  I am glad to report that the scientific program has been finalized. It includes plenary lectures, discussion groups, panels, workshops, research presentations, and posters. Below, you will find a summary.

### **Plenary Conferences**

Original sources in the classroom and their educational effects

Renaud Chorlay

ESPÉ de l'académie de Paris, France

## Mathematics in Mediterranean countries: The Andalusia and Maghreb connection

Ahmed Djebbar

Université de Lille, France

# The mathematical cultures of medieval Europe

Victor J. Katz

Professor Emeritus, University of the District of Columbia, Washington, DC, USA

# Formative years: Hans Freudenthal in prewar Amsterdam

Harm Jan Smid

Delft University of Technology, The Netherlands

Mathematics and physics: An innermost relationship

Some didactical implications for their interdisciplinary teaching and learning

Constantinos Tzanakis

University of Crete, Greece

## Integrating the history of mathematics into mathematics teaching: Some experience from China

Wang Xiaoqin

Shanghai, China

#### **Discussion Groups**

#### **Discussion Group 1: Geometry**

Coordinators: Evelyn Barbin (France) and Leo Rogers (UK)

# **Discussion Group 2: History of mathematics in teachers' education**

Coordinators: Kathy Clark (USA) and Sebastian Schorcht (Germany)

## Discussion Group 3: Original sources in the teaching and learning of mathematics

Coordinators: Tinne Hoff Kjeldsen (Denmark) and Janet Barnett (USA)

#### Panels

Panel 1: Theoretical and/or conceptual frameworks for integrating history in mathematics education

Michael Fried, Coordinator (Israel)

David Guillemette (Canada)

Niels Jahnke (Germany)

# Panel2:MathematicsinMediterranean countries

Marc Moyon, Coordinator (France)

Mahdi Abdeljaouad (Tunisia)

Eva Caianiello (France and Italy)

The scientific committee has received a considerable number of workshop, research presentation, and poster submissions.

The program promises a thrilling and interesting international conference. I would like to thank the members of the scientific committee, the advisory board, and the local committee for their dedicated work.

I hope to see you all in Montpellier next year.

*Luis Radford* HPM Chair Université Laurentienne, Canada Univ. Federal do Rio Grande do Norte, Brasil





# Mustafa Alpaslan (1988-2015)

Turkey mourns the death of Mustafa Alpaslan and his wife Zisan Güner Alpaslan (b.1986), two young academicians who tragically passed away in a traffic collision on 31 July 2015. Both of them were promising members of the Faculty of Education, Middle East Technical University (METU, Ankara). Mustafa Alpaslan became an active member of the Department of Elementary Education following his nomination as "Graduate Research and Teaching Assistant" in January 2010. Soon he started a MS thesis on the use of history of mathematics in elementary mathematics education. He also started to present, together with his colleagues, papers at the international congresses on Mathematics Education. especially at ICMEs and CERMEs. These were mostly based on topics he researched for his MS and PhD theses. Mustafa was also enthusiastic in and keeping international establishing contacts: He was the distributor of the History and Pedagogy of Mathematics *Newsletter* for (HPM) Turkey, since November 2012. In CERME-9 (Prague, 2015), he was elected Board Member of the European Society for Research in Mathematics Education (ERME). His research activities enabled him to receive scholarships and grants both from Turkish and international institutions (TUBITAK, ERME).

I came to know Mustafa when he undertook his doctoral thesis in 2011. Professors Gert Schubring (Bielefeld University, Germany), and Ali Sinan Sertöz (Bilkent University, Turkey) had advised him to contact the Department of the History of Science, Istanbul University, because his research was related to the history of mathematics; more precisely to the use of history of mathematics in mathematics education. In his very kind and modest but inquiring e-mail dated 20 September 2011, he revealed his interest in the works of Islamic medieval and Ottoman mathematicians and his wish to integrate them into mathematics education. Mustafa's first visit to the Department of the History of Science, Istanbul, in early 2012 soon a fruitful collaboration. launched He established good contacts with the team of young researchers of the department and took two courses from the doctoral program in HS, namely "Science Journals in Turkey" and "Scientific Literature in Turkey". The former course introduced to him the first Turkish popular journal Mebahis-i ilmiyye (Scientific themes) published in 1867 by the Turkish mathematician Vidinli Tevfik Pasha. The journal which included articles on both medieval Islamic and 19<sup>th</sup> century European mathematics immediately attracted his interest. An analysis of the journal published by F. Günergun in 2007, encouraged him to find a way of using its articles in mathematics education. The joint paper by Alpaslan, Schubring and Günergun would be the last paper he presented in an international conference (CERME-9, Prague, 2015). Those who received e-mails from Mustafa Alpaslan would surely remember the excerpts from Henri Poincaré and Niels Henrik Abel's works, inserted at the bottom of his messages. Those reflected the importance of history of both science and mathematics in education and for the progress in sciences.

Mustafa and Zişan got married in 2013 and were looking forward to the birth of their son in a few months.



When I met them in December 2014 in Ankara, they were both radiating ideas of future projects and hoping to get funds to do research in the United States. These funds were granted shortly before the tragic accident. Mustafa was a quiet and optimistic person. He was genuinely courteous towards his colleagues and ready to provide assistance. I was often surprised to witness the serene expression of this young person, who considered death as a natural phenomenon. He had once said, "Such is life, one leaves when time is called." His "time" came too early, too untimely. As a promising young scholar he had conveyed high expectations to all who knew him for his contributions to mathematics education and the history of mathematics. Mustafa will be sadly missed by his friends, colleagues, and students.

> *Feza Günergun*, Department of the History of Science, Istanbul University





# Words for Mustafa

I was very sad to learn about the accident with Mustafa and Zisan. Indeed, a big loss.

- Ubi D'Ambrosio (Brazil)

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This was a very, very sad e-mail, and it is difficult to imagine never talk to Mustafa again at CERME, HPM and other meetings.

- Tinne Hoff Kjeldsen (Denmark)

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The only thing I can say is that at least the whole family is together, wherever that might be...

I met them for the first time in Prague and both were so welcoming to me, sweet and so friendly.

A huge loss for our community.

My condolences for the rest of the family.

- Caroline Kuhn (England)

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Very sad news indeed to all who knew them.

- Peter Ransom (England)

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This is very sad news and indeed a huge loss for the mathematics education community.

As some of you know, Mustafa had been elected as representative of the young researchers in the ERME Board during the

HPM Newsletter No. 90 November 2015 HPM webpage: <u>http://www.clab.edc.uoc.gr/hpm/</u> HPM Newsletter webpage: <u>http://grouphpm.wordpress.com/</u> last ERME general meeting in February, and was enthusiastic to bring a deep contribution to the ERME community.

Mustafa and Zisan were wonderful people.

Our thoughts are with their families and friends.

- Viviane Durand-Guerrier (France)

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Regina Moeller and I were deeply saddened to hear about the deaths of Mustafa and Zisan. We met Mustafa for the first time at the CERME conference 2013 in Antalya and recently in Prague. We have gotten to know him as a dedicated researcher and a very engaging and friendly man. This is a painful loss. We will honour his memory.

- Peter Collignon and Regina Moeller (Germany)

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This is horrible news.

I met Mustafa for the first time at the HPM conference in Korea in 2012. Uffe Jankvist, Victor Katz, Stuart Rowlands and I were editing a special issue on history of mathematics for Science and Education, and, at the conference, we were already looking for possible contributors. Uffe had heard about Mustafa and told me about him. Mustafa and I had a long conversation, and I was impressed. In one of the emails later, when we deliberated on which papers would be accepted, I had this to say:

[Another paper] I am inclined to support is Mustafa's--unless there is a call for rejection. ... Mustafa is young, enthusiastic (as Uffe and I could see when we met him in Korea last year), and relatively unknown: he is the sort of researcher we said, at one point, we wanted to support. So, I would like to give him as much a chance as we can.

His paper was accepted unanimously, and we were not sorry.

We met again in Copenhagen just last year, where Mustafa gave a very interesting workshop. He had grown as a historian and educator, and I was looking forward to following his career – I had no doubt it would be very successful.

He and I were also in touch all the time via Facebook. I came to think of him not only as a colleague but as a friend--a true friend, not just a FB "friend." I could sense his good heart and humanity in all his postings and our communications and came to like him immensely. I never met Zisan, but the two of them seemed so happy together, and I was happy for them. I was very much looking forward to seeing Mustafa again and finally meeting Zisan in Hamburg next summer. That will not be.

- Michael Fried (Israel)

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This is terrible news. I first met Mustafa at my (and his) first CERME in Rzeszow, Poland. Zişan was also there. I did not get to Antalya, but met him in Seoul, Copenhagen and, most recently, in Prague. His historical paper on mathematics in early journals of the Ottoman Empire (c. 1870) was particularly nice and well researched, complementing his core research interests in the use of history in the formation of mathematics teachers in Turkey. I was looking forward to welcoming him in Dublin, and hoped that Zişan would be with us too. You are right; their deaths are a huge loss to the ERME community and to HPM, in particular.

It is sad news for us all and especially for their families and those dear to them.

- Maurice O'Reilly (Ireland)

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At every conference we shake hands with lots of people, and it may take a while to sort out whom you will have stimulating and long-term conversations with. Mustafa was different – from the very first time I met him (in Daejon), we had good discussions, and of course he struck me as a very friendly and interesting colleague. I was happy to meet him again in Copenhagen, where it felt like meeting an old-time colleague. I imagined that we would meet again for these biannual meetings for decades and that we would have many opportunities for collaborations.

That will not be. His absence from future meetings of the HPM group will be painful to us all. I can't imagine the pain of his and Zisan's families and close ones.

- Bjørn Smestad (Norway)

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I am very shocked about this news (that I learned about the day after the accident).

I totally agree with Michael [Fried]'s thoughts and his evaluation for Mustafa, both as a personality and as a new enthusiastic scholar. I have met him several times, we were keeping in contact and I met him for the last time, last year in Copenhagen where I attended his very interesting workshop. What was very impressive – among so many other qualities Mustafa had – was his modesty and eagerness to learn.

I cannot feel anything else except that this is a big loss at levels.

- Costas Tzanakis (Greece)

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I have academic and personal memories about Mustafa Alpaslan. I first met him when reading his papers. I appreciated his deep preparation in our field of research, his ideas and his commitment in linking mathematics education history and of Afterwards mathematics. Ι met him personally in conferences and again I have appreciated his presence in our community. As a young researcher he was a promise for the future of the HPM Study Group.

Mustafa was also a nice and very friendly person. When he sent me the photos of his marriage to Zisan I was very touched by this evidence of friendship. The photos made me happy since I felt that their love project was a real project for life. Unfortunately their life was too short and we'll miss them.

As my Roman ancestors used to say for the loved friends who passed away "Sit tibi terra levis" (be the soil light to you).

- Fulvia Furinghetti (Italy)

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It is very sad news indeed. They were such a nice, lively couple, enjoying life. I met Mustafa and his wife for the first time in Rzeszow, then Antalya and Prague. He was very much involved, enthusiastic and thorough in his research. A bright light. I feel very sorry for both their parents and other family.

- Jenneke Krüger (the Netherlands)

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Life is unfair and nonsense.

I met Mustafa last February in Prague, I will always remember the Turkish Delights he brought to the working group and how this gesture showed the kind of person he was.

Rest in peace. - Antonio Oller (Spain)

\*\*\*\*\*

I first met Mustafa Alpaslan at the CERME conference in Antalya, Turkey, where all of the participants of the Working Group on History in Mathematics Education had a very good time thanks to the friendly atmosphere created by Uffe. Mustafa was there and from the very first time he spoke I was attracted to the passion he showed for his work, and for sharing it with the other members of the group. And, I liked the way he opened his eyes wide to listen to anyone, as if to absorb everything he heard. It was a pleasure for me to meet him anew at ESU in Copenhagen. I'll miss him.

- Luis Puig (Spain)

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I am sorry to hear of this loss! - Bob Stein (USA)

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...This is terrible news. Though I never met Mustafa, we (the editors of the special issue [of Science & Education]) all agreed that he had great potential as a researcher. I was hoping to be able to meet him next summer. It is a terrible loss not only to his family but also to our community.

- Victor Katz (USA)

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My favorite memory of Mustafa and Zisan was spending time with them at CERME-8 in Antalya, Turkey. We met several times in the evening to discuss their academic plans, and Mustafa asked me to help him with some of his work in English, and I was happy to do so. We shared many cups of tea and juice, and talked until late in the evening while in Antalya. During the conference's Gala dinner, Mustafa and Zisan saved a table for many of us so that we could meal, enjoy the lovely wine. and entertainment together. It was a memorable evening, and I remember commenting on how beautiful they looked together and how much they clearly loved each other. Mustafa and Zisan Wherever went. whomever they spent time with - they brought such joy, they made such a positive impression, and they were so respectful and appreciative of all that they had. Mustafa had built such a reputation for himself - even before completing his Ph.D. – and so many knew he was destined for much success, and they respected his trustworthiness, his enthusiasm, and his intellect. Losing them to such a tragic accident will be felt by many for a very long time.

- Kathy Clark (USA)





Hermeneutics in Mathematics Education: History of Mathematics to Imagine the Future and Understand the Perspective of Others. REPORT

September 29-30, 2015, Tsukuba, Japan.

The meeting was the opening event for the exhibition, "Wisdom of Mathematics: Exploration and Development," at the Central Library of the University of Tsukuba, Japan. The exhibition featured two 15<sup>th</sup> century books: Suanxue Qimeng and Yang Hui Suanfa. These books are the oldest copies of the originally lost 13<sup>th</sup> century. The exhibition also featured 22 rare books from the 16<sup>th</sup> - 18<sup>th</sup> centuries, which have been collected by M. Isoda, with the help of HPM members such as former HPM presidents, J. van Mannen, and J. Fauvel. The exhibition shows the influence of Greek and Arabic mathematics in Europe, the mathematics that existed and developed in East Asia, and its integration into school mathematics. The exhibition showed how mathematics, since Ancient Greece, has been taught as the necessary literacy for the basic culture that can be shared and developed only through school education. The exhibition also showed how the recent Japanese secondary school textbook in 1943, as an influence of Felix Klein, has some similarities with the book by Euclid (1537 edition) and the book by van Schooten (1646).

During the meeting, the following people contributed to the theme: Luis Radford, Gert Schubring, Kenji Ueno, Yuriko Yamamoto Baldin, Wann-Sheng Horng, Shigeru Jochi, Márcia Maria Fusaro Pinto, and Masami Isoda. The lectures and discussions were very informative and fruitful according to their specialties. Firstly, L. Radford, President of HPM, introduced HPM and presented his view for Hermeneutics and significance of the collection. Then, M. Isoda explained his perspective on the mathematics education (2015)as meeting host. G. Schubring, presented his view for Hermeneutics as for research methodology on history with examples of various revisions of textbooks. K. Ueno, W. Horng, and S. Jochi explained the historical value of the books Suanxue Qimeng and Yang Hui Suanfa for the Innovation of Japanese Mathematics (Wasan). M. Pinto presented the history of mathematics education as a discipline and Y. Buldin necessary perspectives presented for integration of several presentations. The speakers also discussed the further meeting for the book project on Hermeneutics, and the future HPM meeting in 2020 in relation to ICME-14.

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# ENHEM 5 - Fifth National School of History and Mathematics Education REPORT

November 4-6, 2015, Bogotá, Colombia.

The Fifth National School of History and Mathematics Education (Quinta Escuela Nacional de Historia y Educación Matemática, or, ENHEM 5) took place on the campus of Universidad Externado de Colombia in Bogotá, on 4-6 November 2015.



The conference themes were:

- History and Philosophy of Mathematics;
- History of Mathematics in Latin American countries;
- The history of mathematics teaching;
- History of Mathematics in cultural contexts;
- History of Mathematics in teacher training;
- History of Mathematics in the teaching and learning of mathematics; and
- History in mathematics education research.

There were several activities of ENHEM5, including conference plenaries and short courses given by international guests (Gert Schubring, Alejandro Garcíadiego, Sergio Nobre, Kathleen Clark, Analia Bergé, and Carlos Augusto Di Prisco), some 30 lectures by Latin American specialists, 50 short oral communications, and a panel session.

The conference was expertly organized by the committee consisting of:

Luis Recalde, Guillermo Ortiz, Luis Carlos Arboleda, Luz Victoria De la Pava, Ligia Torres, Maribel Anacona, Fernando Gálvez (Universidad de Valle);

Fabio Ortiz (Universidad Externado de Colombia);

Clara Helena Sánchez (Universidad Nacional de Colombia);

Edgar Alberto Guacaneme, Johana Andrea Torres (Universidad Pedagógica Nacional);

Gabriela Arbeláez, Martha Bobadilla (Universidad del Cauca); and

Armando Aroca (Red Latinoamericana de Etnomatemáticas).

The National School of History and Mathematics (ENHEM) takes place every two years; the next takes place in 2017.

> *Kathy Clark* Florida State University, USA



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MAA Convergence is both an online journal on the history of mathematics and its use in teaching and an ever-expanding collection of online resources to help its readers teach mathematics using its history. Founded in 2004 by well-known mathematics historians and educators Victor Katz and Frank Swetz, Convergence brings you a variety of interesting articles and teaching tools. We highlight here some of our newest articles and resources for use in your classroom.

As a web-based publication, *Convergence* aims to take advantage of new technologies in order to present, explore, and better understand what are often very old ideas. The articles and resources featured here all exemplify this combination of old and new.

(1) "Euclid21: Euclid's *Elements* for the 21<sup>st</sup> Century" introduces a dynamic, interactive version of Euclid's classic *circa* 300 BCE geometry text organized via its logical structure.



**Figure 1.** Euclid's first three uses of his Parallel Postulate, as illustrated in Euclid21 (Image from Euclid21 computer application created by Eugene Boman and his student team) (2) "Oliver Byrne: The Matisse of Mathematics" offers both the most complete biography of Byrne to date and ideas for using Byrne's colorful *Euclid's Elements* (1847) in the classroom.



**Figure 2.** Byrne's illustration of Euclid's "windmill" proof of the Pythagorean Theorem. Byrne's color-coded *Euclid* was a marvel of Victorian printing and of Pestalozzian pedagogy. (Photo by author Sid Kolpas of his own copy of the book)

(3) "Bridging the Gap Between Theory and Practice: Astronomical Instruments" shows how your students can design and build armillary spheres, astrolabes, quadrants, sextants, and sundials using such modern technology as 3D printers.



**Figure 3.** Student-built sundial from Toke Knudsen's Ancient Mathematical Astronomy course at SUNY Oneonta (photo by T. Knudsen). See "Bridging the Gap Between Theory and Practice: Astronomical Instruments." (4) "Problems for *Journey Through Genius: The Great Theorems of Mathematics*" celebrates the popular book's 25th year in print with downloadable problem sets for each chapter by author William Dunham himself.



**Figure 4.** Students can explain how Archimedes wrote the area of an ellipse in terms of the area of a circumscribing circle. (Image created by Janine Stilt)

(5) In "Pantas' Cabinet of Mathematical Wonders: Images and the History of Mathematics," *Convergence*'s chief treasurehunter Frank Swetz showcases *Convergence*'s "Mathematical Treasures," an ever-growing collection of hundreds of images of historical texts, manuscripts, and objects for classroom use. Search or browse "A Collection of Mathematical Treasures – Index."



**Figure 5a.** A simple but compelling application of the Pythagorean Theorem from Robert Recorde's *Pathway to Knowledge* (1551)



**Figure 5b.** Caption: Book VI of Euclid's *Elements* (originally composed *circa* 300 BCE) begins with a definition of similar rectilinear figures. This copy of Euclid's *Elements* was handwritten on vellum around 1294 CE. (Image courtesy of Columbia University Libraries)

(6) "Online Museum Collections in the Mathematics Classroom" introduces 27 mathematical object collections from the Smithsonian Institution's National Museum of American History and offers suggestions for using them with students of all ages.



**Figure 6.** Grunow's *circa* 1860 spherometer (Photo courtesy of Smithsonian Institution)

(7) "Jan Hudde's Second Letter: On Maxima and Minima" contains a translation of the letter and explanation of Hudde's precalculus optimization methods, including an early quotient rule.



**Figure 7.** Diagram added by Frans van Schooten when he published Hudde's "second letter" in 1659. (Image courtesy of ETH-Bibliothek, Zürich, Switzerland) (8) "Alan Turing in America" focuses on the important projects in logic and computing Turing worked on during two visits to the U.S.



**Figure 8.** This photo of a young Alan Turing is believed to be from 1936-38 when he was at Princeton University. (*Photo from Convergence* Portrait Gallery)

See all of these articles and more at *MAA Convergence:* 

http://www.maa.org/publications/periodi cals/convergence

Join us at the *Convergence* of mathematics, history, and teaching!

Janet Beery (USA) Editor, MAA Convergence University of Redlands





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## Announcements of events

## Forthcoming BSHM meetings

(The British Society for the History of Mathematics)

http://www.dcs.warwick.ac.uk/bshm/events. html#forthcoming

### 1. BSHM Christmas Meeting

Saturday, 5 December 2015 Birmingham and Midland Institute, Birmingham

http://www.bshm.ac.uk/events/bshmchristmas-meeting

### 2. Research in Progress 2016

Saturday, 27 February 2016 Shulman Auditorium, The Queen's College, Oxford

# **3.** From Fibonacci to da Vinci: the Italian commercial revolution

Wednesday, 23 March 2016 University of Derby

## 4. Mathematics emerging: A tribute to Jackie Stedall and her influence on the history of mathematics

Saturday, 9 April 2016 to Sunday, 10 April 2016

The Queen's College, Oxford

#### 5. Number Theory and its history

Saturday, 21 May 2016 Birkbeck College, London Rewley House meeting

### 6. Mathematics in the Enlightenment

Saturday, 25 June 2016 Rewley House 1 Wellington Square Oxford OX1 2JA

## 7. History of Mathematics in Education: An Anglo-Danish collaboration

Sunday, 21 August 2016 to Wednesday, 24 August 2016 Bath Spa University

## 8. 'Mathematical Biography: A Celebration of MacTutor'

Friday, 23 September 2016 to Saturday, 24 September 2016 St. Andrews



# HPM 2016 Mathematics in the Mediterranean

## **First Announcement**

2016 Satellite Meeting of ICME 13

July 18 to 22, 2016 Montpellier, France

### 1. Aim and focus

HPM 2016 is the ninth quadrennial meeting of the International Study Group on the Relations Between the History and Pedagogy of Mathematics—the HPM Group.

These quadrennial meetings are a major activity of HPM to bring together individuals with a keen interest in the relationship between the history of mathematics and mathematics education. They include:

- Researchers in mathematics education who are interested in the history of mathematics and mathematical thinking,
- Mathematics teachers at all levels who are eager to gain insights into how the history of mathematics can be integrated into teaching and how they can help students to learn mathematics,
- Historians of mathematics who wish to talk about their research,
- Mathematicians who want to learn about new possibilities to teach their discipline, and
- All those with an interest in the history of mathematics and pedagogy.

## 2. Main theme and topics

The theme of HPM 2016 is "Mathematics in the Mediterranean." The program and activities are structured around the following topics:

- 1. Theoretical and/or conceptual frameworks for integrating history in mathematics education.
- 2. History and epistemology in students and teachers mathematics education: Classroom experiments and teaching materials.
- 3. Original sources in the classroom and their educational effects.
- 4. Mathematics and its relation to science, technology, and the arts: Historical issues and interdisciplinary teaching and learning.
- 5. Cultures and mathematics.
- 6. Topics in the history of mathematics education.
- 7. Mathematics in Mediterranean countries.

# 3. Activities during the 2016 HPM Conference

The HPM Conference is a place where mathematicians, educators, historians, researchers, and students can make presentations and participate in discussions.

The program includes:

- 1. plenary lectures,
- 2. panels,
- 3. discussion groups,
- 4. workshops,
- 5. parallel sessions where participants present research reports,
- 6. poster exhibitions, and
- 7. exhibitions of books and other didactical material.

Plenary sessions, discussion groups, and panels deal with the main topics of the

conference. Plenary speakers, panelists, and coordinators of discussion groups are invited by the scientific committee.

We encourage you to make submissions for the following activities: workshops, research reports, poster exhibitions, and exhibitions of books and other didactical material.

Research reports are intended to communicate new research results. They take place in parallel sessions of 25-minute oral presentations followed by 5-minute discussions.

Workshops focus on the exchange of ideas and discussion among the participants around some historical or didactical material prepared beforehand by the workshop organizer. The material usually includes original historical texts, didactical material, students' worksheets, etc. Workshops can be one hour or two hours in duration.

Posters present summaries of ongoing or completed research, new ideas, etc.

### 4. Time and place

The 2016 HPM Conference will be held from **July 18 to July 22, 2016** in **Montpellier, France**. Montpellier is a beautiful town, very famous for its culture and history.

The University of Montpellier, the host of the 2016 HPM Conference, is one of the oldest universities in the world, where Joseph D. Gergonne published in the early 19<sup>th</sup> century one of the oldest mathematical journals. Gergonne's portrait appears in the logo and the website banner of the Conference.

## 5. Official languages

The official languages of the conference are English and French.

### 6. Submission of proposals

To submit a proposal for a research report, a workshops, and/or a poster, the following procedure has to be followed:

Using the HPM 2016-Activity Application Form, for each proposal, individuals submit an abstract of no more than 500 words no later than October 31, 2015. To download the HPM 2016-Activity Application Form, please go to the site of the conference. [Editors' Note: This deadline has now passed.]



If the Scientific Committee accepts the abstract, the abstract will appear in the *Conference Program*, and its author will present during the conference the activity described in the abstract.

The authors of accepted abstracts who wish to submit a **full paper** should do so no later than January 31, 2016. The paper undergoes a process of peer review using the usual international standards. Accepted papers will appear in the *Online Proceedings of the 2016 HPM Conference* to be available at the beginning of the Conference.

In all other cases, the abstract that has been accepted will also be included in these Proceedings.

More details on the size of the texts and the format guidelines will appear in the 2nd Announcement and in the HPM 2016 and HPM websites:

### http://hpm2016.sciencesconf.org

http://www.clab.edc.uoc.gr/hpm/

### Summary of deadlines:

Submission of Abstracts: October 31, 2015

Notification of acceptance or not of the submitted abstracts: **30 November 2015** 

Submission of full texts: January 31, 2016.

Notification of acceptance or not of the submitted texts: **30 March 2016** 

The members of the 2016 HPM Scientific Committee (ScC) will coordinate the peer-review process.

### 7. Registration fee

- *Early registration* (before April 15, 2016): 250 € (student or young researcher 150 €)
- Regular registration (between April 15 and June 15, 2016): 300 € (student or young researcher 200 €)
- Registration after June 15, 2016, or at the conference: 350 €

The conference fee includes: 5 lunches, 9 coffee breaks, as well as the gala dinner on the seaside and an excursion.

# 8. The International Scientific Committee (ScC)

Evelyne Barbin, France Renaud Chorlay, France Viviane Durand-Guerrier, France Abdellah El Idrissi, Morocco Gail FitzSimons, Australia Fulvia Furinghetti, Italy Thomas Hausberger, France Masami Isoda, Japan Luis Puig, Spain Anjing Qu, China Luis Radford, Canada (Chair) Man Keung Siu, Hong Kong SAR, China Bjørn Smestad, Norway Constantinos Tzanakis, Greece

9. The Local Organizing Committee (LOC)

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### 10. Website

Follow us at: <u>http://hpm2016.sciencesconf.org</u>

### 11. Contact

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HPM is affiliated with ICMI (International Commission on Mathematical Instruction). HPM 2016 is a satellite meeting of the 2016 International Congress on Mathematical Education and is scheduled close to ICME.

Please note that the 13th International Congress on Mathematical Education (ICME-13) will take place right after HPM 2016, from July 24 to July 31, 2016 in Hamburg, Germany (see http://www.icme13.org/).



HPM webpage: <u>http://www.clab.edc.uoc.gr/hpm/</u> HPM Newsletter webpage: <u>http://grouphpm.wordpress.com/</u>

# *ICME-13 International Congress on Mathematical Education*

## **24 – 31 July 2016** Hamburg, Germany



Topic Study Groups at ICME-13

A Topic Study Group (TSG) is designed to gather a group of congress participants who are interested in a particular topic in mathematics education. A TSG will serve as mini-conference and will display the progress of the discussion in the intervening years since ICME-12. Topic Study Groups will therefore promote the discussion of a variety of perspectives on the theme of the Group. The TSG will consist of highstandard discussions enabling the newcomer to get a broad overview on the state-of-theart and allowing the experts to lead discussions at a high level. The team will provide the audience of their TSG not with a nationally framed insight into the strands of the discussion of the theme, but will give an overall overview on the international discussion as broadly as possible and allowing for insight into less well-known strands of the discussion from underrepresented countries. For ICME-13, the TSG is the major arena for participation. Participants are expected to associate themselves with one TSG and to stay in that group for all sessions.

TARGET GROUPS FOR MATHEMATICS TEACHING, AS REFLECTED IN EDUCATIONAL LEVELS AND SPECIAL CATEGORIES OF STUDENTS

- 1. Early childhood mathematics education (up to age 7)
- 2. Mathematics education at tertiary level
- 3. Mathematics education in and for work
- 4. Activities for, and research on, mathematically gifted students
- 5. Activities for, and research on, students with special needs
- 6. Adult learning of mathematics lifelong learning
- 7. Popularization of mathematics

MATTERS AND ISSUES PERTAINING TO CONTENT-RELATED ASPECTS OF MATHEMATICS CURRICULA, ACROSS EDUCATIONAL LEVELS, AND TO TEACHING AND LEARNING IN RELATION TO THESE ASPECTS

- 8. Teaching and learning of arithmetic and number systems (focus on primary education)
- 9. Teaching and learning of measurement (focus on primary education)
- 10. Teaching and learning of early algebra
- 11. Teaching and learning of algebra
- 12. Teaching and learning of geometry (primary level)
- 13. Teaching and learning of geometry secondary level
- 14. Teaching and learning of probability

- 15. Teaching and learning of statistics
- 16. Teaching and learning of calculus
- 17. Teaching and learning of discrete mathematics (including logic, game theory and algorithms)
- 18. Reasoning and proof in mathematics education
- 19. Problem solving in mathematics education
- 20. Visualisation in the teaching and learning of mathematics
- 21. Mathematical applications and modelling in the teaching and learning of mathematics
- 22. Interdisciplinary mathematics education
- 23. Mathematical literacy

THE OVERARCHING PERSPECTIVES AND FACETS OF MATHEMATICS EDUCATION THAT ARE PRESENT ACROSS DIFFERENT EDUCATIONAL LEVELS AND DIFFERENT CURRICULA

- 24. History of the teaching and learning of mathematics
- 25. The Role of History of Mathematics in Mathematics Education
- 26. Research on teaching and classroom practice
- 27. Learning and cognition in mathematics
- 28. Affect, beliefs and identity in mathematics education
- 29. Mathematics and creativity
- 30. Mathematical competitions
- 31. Language and communication in mathematics education
- 32. Mathematics education in a multilingual and multicultural environment
- Equity in mathematics education (including gender)

- 34. Social and political dimensions of mathematics education
- 35. Role of ethnomathematics in mathematics education
- 36. Task design, analysis and learning environments
- 37. Mathematics curriculum development
- 38. Research on resources (textbooks, learning materials etc.)
- 39. Large scale assessment and testing in mathematics education
- 40. Classroom assessment for mathematics learning
- 41. Uses of technology in primary mathematics education (up to age 10)
- 42. Uses of technology in lower secondary mathematics education (age 10 to 14)
- 43. Uses of technology in upper secondary mathematics education (age 14 to 19)
- 44. Distance learning, e-learning, blended learning

### TEACHER KNOWLEDGE AND EDUCATION

- 45. Knowledge in/for teaching mathematics at primary level
- 46. Knowledge in/for teaching mathematics at secondary level
- 47. Pre-service mathematics education of primary teachers
- 48. Pre-service mathematics education of secondary teachers
- 49. In-service education and professional development of primary mathematics teachers
- 50. In-service education, and professional development of secondary mathematics teachers

#### META-ISSUES CONCERNING MATHEMATICS EDUCATION ITSELF, AS A FIELD OF PRACTICE, AND AS A DISCIPLINE OF RESEARCH

- 51. Diversity of theories in mathematics education
- 52. Empirical methods and methodologies
- 53. Philosophy of mathematics education
- 54. Semiotics in mathematics education

### **TSG 24**

# History of the teaching and learning of mathematics

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Fulvia Furinghetti (Italy) furinghetti@dima.unige.it Alexander Karp (USA) apk16@columbia.edu **Team members:** Henrike Allmendinger (Germany) Harm Jan Smid (Netherlands) Johan Prytz (Sweden) **IPC Liaison person:** Alain Kuzniak (France)

### **TSG 25**

# The Role of History of Mathematics in Mathematics Education

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(the online and on time version of this newsletter).

Items for the Newsletter should be sent to the editors, preferably by email (see addresses below).

The Newsletter appears three times a year with the following deadlines for next year.

No.	Deadline for material	Sent to distributors
91	12 February 2016	March 2016
92	12 June 2016	July 2016
93	12 October 2016	November 2016

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### A note from the Editors

The Newsletter of HPM is primarily a tool for passing along information about forthcoming events, recent activities and publications, and current work and research in the broad field of history and pedagogy of mathematics. The Newsletter also publishes brief articles which they think may be of interest. Contributions from readers are welcome on the understanding that they may be shortened and edited to suit the compass of this publication.