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

No. 86 **July 2014**

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).

7th EUROPEAN SUMMER UNIVERSITY ON THE HISTORY AND EPISTEMOLOGY IN MATHEMATICS EDUCATION

14-18 July 2014

Aarhus University,
Campus Emdrup, Copenhagen, Denmark

http://conferences.au.dk/ESU-7/

ESU-7
Plenaries-titles and abstracts

***Theme 1*: Evelyne Barbin, University of Nantes (France)**

The Implicit and Explicit Epistemologies of Mathematics in History and Education: thirty years after Hans Freudenthal

At the International Congress of Mathematicians of 1983, Hans Freudenthal chose to speak on "The Implicit Philosophy of Mathematics History and Education." His purpose was to convert the question "What we can learn from the history of old mathematics for the sake of teaching young people?" into that of "What can we learn from educating the youth for understanding the past of mankind?" With this question Freudenthal meant that, behind the reading of and trying to understand

the history of mathematics, there exist interpretations which are linked to implicit or sometimes explicit epistemologies which guide the reader. So, Freudenthal placed the history of mathematics in the field of hermeneutics.

In this talk, I will explain why we replace philosophy by epistemologies of mathematics. We will try to give a survey of epistemologies underlying our understandings of history and the history of mathematics in relation to education. I will use recent HPM literature to illustrate the talk.

***Themes* 2 & 3: Adriano Dematte, University of Genoa (Italy)**

History in the classroom: educational opportunities and open questions

Using the history of mathematics in everyday classroom activities is difficult because of various reasons, but it is an intriguing aim. This lecture will report examples of activities from my classes, in order to analyze resources and problems, achievements and failures.

With the aim of carrying out a critical analysis, theoretical considerations will be taken into account for discussing questions like the following: Can hermeneutics and genetic approach coexist? What kind of interdisciplinary competencies does the history of mathematics affect? What types of students can benefit from it or, on the contrary, what supplementary difficulties can the history of mathematics produce? Which restrictions in terms of classroom practice depend on the mathematics curricula?

The purpose of this talk is to introduce an ongoing discussion with regard to the complexity of everyday classroom activities. Ultimate answers to the above listed questions are not the main aims of my analysis.

***Theme* 4: Cécile de Hosson, University Paris Diderot (France)**

Promoting interdisciplinary teaching through the use of elements of early Greek and Chinese cosmologies

Most of the curricula, at an international level, encourage an interdisciplinary approach for the teaching of both mathematics and sciences. In this context, interdisciplinarity is often promoted as a fruitful way of making students aware of the actual links that exist between mathematics and the sciences.

As an example, the third pillar of the French *common base of the knowledge and skills* for primary and lower secondary school claims that "concrete and practical approaches to mathematics and sciences" should allow students to acquire "scientific culture needed to develop a coherent representation of the world and an understanding of their daily environment" and help them grasp that "complexity can be expressed in fundamental laws" (MEN 2006). Here, mathematics and experimental sciences are considered altogether in a global enhancement project of the scientific culture.

Nevertheless, nothing is easy about effectively integrating mathematics and science in the classroom since the disciplinary isolation of the two disciplines in the traditional teaching organizations has to be overcome. Indeed, in

most cases, the separation between science and mathematics is rigorously maintained and the boundaries are drawn even in the primary setting, where the teaching is undertaken by the same teacher. Moreover, mathematics and science education lacks teaching and learning that leans on interdisciplinary approaches. If and when they are performed they tend to show that even young students are able to acquire skills in the domains of mathematics, science, and scientific processes such as measuring, modeling, etc. The lack of teaching resources of the kind to support such practice may be puzzling if one considers the interrelations between science and mathematics in their historical developments. In this regard, history of science can be considered as an inspiring ground for the elaboration of teaching sequences where mathematical and scientific knowledge and skills are integrated.

In this lecture we will present an example of such integration through the use of two distinct historical episodes dealing with early Greek and Chinese cosmologies. From these cosmologies a teaching sequence (involving historical elements mixed with non-historical ones) was elaborated in order to provide students with elementary cosmological knowledge dealing with scientific and mathematical knowledge and skills (quasi-parallelism of Sunrays, shape and size of the Earth, Sun-Earth distance, measuring and computing, etc.). After presenting the results of the actual implementation of the sequence, this lecture will end with the statement of open questions of two kinds that could be discussed and illustrated in the workshop: 'To what extent the interdisciplinary approach promoted by the teaching sequence based on historical ground modifies the views that students usually have on the nature of the science enterprise?' and 'What is the specific gain of the historical approach for the acquisition of the knowledge involved?' Furthermore, we will discuss whether it is possible to define conditions of use of the historical material that promote an interdisciplinary mathematics-science approach.

***Theme* 5: Kristín Bjarnadóttir, University of Iceland (Iceland)**

Calendars and currency – Embedded in culture, nature, society and language

Ethnomathematics has become a prosperous and fruitful field of research. It has contributed to the greater objective of prioritizing humanity and its dignity as a cultural entity by recognizing and respecting individuals' roots. All over the planet people have been trying to learn about and cope with their environment, developing their ways of knowing. Throughout history, individuals and peoples have created and developed instruments for reflection and observation in order to explain, understand, come to know, and learn what to do in response to the needs for survival (d'Ambrosio, 2001). Many instruments have survived in the culture of their societies, embedded in customs and languages. In this presentation, I will present examples of calendars as well as currencies in different societies, and demonstrate how their nature and societal structure in the cultures and languages in which they are embedded is reflected. Examples will be chosen to promote teaching ideas about mathematical topics in the participants' respective cultural environments.

***Theme* 6: Gert Schubring, University of Bielfeld (RFA) and UFRJ (Brasil)**

New approaches and results in the history of teaching and learning mathematics

Studies on the history of teaching and learning mathematics did not begin in recent times; rather, there were already a number of books and various types of papers published during the 19th century. The work of IMUK since 1908, the forerunner of ICMI, meant a considerable impact for historical investigations. First doctoral theses on the history of mathematics teaching date from the early 20th century. After World War II, pertinent studies were undertaken in ever more countries. Yet, practically all these studies were undertaken within the history of some nation or culture. They were thus bound to the respective traditions, methodologies and approaches of national educational history.

Since the establishment of a Topic Study Group dedicated to this research area, at ICME 2004 in Copenhagen, and since the foundation of the first international journal for this area, IJHME, in 2006, the focus has changed to address comparative and international issues in the history of mathematics education. At stake since then is to unravel what are general features in the national/cultural developments and what are specific issues and what is the significance of such particular patterns.

Particularly revealing are two issues of the comparative international research:
- the processes leading to the decisive change of mathematics from a marginal teaching subject to a major discipline, first in secondary schooling;
- and, related to these developments, the emergence of *Mathematics for All* as a program and as a major shift in socio-politics of education;
- the role of mathematics in the modernization of various states, in particular during the 19th century, and thus showing the social relevance of mathematics.

This lecture will present methodological reflections, illustrative historical examples, and perspective for further research.

***Theme 7*: Bjarne Toft, University of Sothern Denmark (Denmark)**

Julius Petersen and James Joseph Sylvester - the emergence of graph theory

Mathematics in Denmark was for centuries a rather sad story. Denmark does not have famous people in its history of mathematics, unlike its physics and astronomy: Tycho Brahe, Ole Rømer, H.C. Ørsted, and Niels Bohr, are the most famous to mention. We would however like to think that things have changed and that mathematics in Denmark now does rather well. This being so, when did it change? It is of course difficult to point to a single year, but if we have to, then a good suggestion would be 1871.

That year saw the appointment of two young friends at Copenhagen University and the Polytecnical School, Hjeronymus Georg Zeuthen and Julius Petersen. In their days Zeuthen was the clear number one, but today Petersen is probably the better known of the two. Petersen's claim to fame rests on his development of and the contributions he made to two fields: elementary plane geometry and the theory of graphs.

The story of how the theory of graphs emerged is an interesting piece of history of mathematics, involving James Joseph Sylvester, who visited Sweden and Denmark in 1889. This led to Sylvester's collaboration with Petersen and to Petersen's famous paper "Die Theorie der regulären graphs" in Acta Mathematica in 1891. Petersen used the English word "graph" in his otherwise German language paper, because "graph" is an English word that he learned from its inventor Sylvester (who by the way is also responsible for mathematical words like matrix, discriminant, and many more). The story of Petersen and Sylvester, put into a broad framework, will be the topic of this lecture.

ESU-7
2-hour Workshops: Titles and Abstracts

http://conferences.au.dk/fileadmin/conferences/ESU-7/Abstracts_for_2_hour_workshops_ESU7.pdf

ESU-7
3-hour Workshops: Titles and Abstracts

http://conferences.au.dk/fileadmin/conferences/ESU-7/Abstracts_for_3_hour_workshops_ESU7.pdf

Schedule ESU-7

	Monday 14	Tuesday 15	Wednesday 16	Thursday 17	Friday 18
9:00-10:00	9:00-9:10 Welcome 9:10-10:10 PL theme 2&3 Room: Ceremonial Hall A 220	PL theme 1 Room: Ceremonial Hall A 220	PL theme 4 Room: Ceremonial Hall A 220	PL theme 5 Room: Ceremonial Hall A 220	PL theme 7 Room: Ceremonial Hall A 220
10:00-10:30	10:10-10:30 BREAK	BREAK	BREAK	BREAK 10:00-10:15 PL theme 6 A220	BREAK
10:30-12:30	WS-2 Theme 3 6 WS For room/location see programme	WS-2 theme 2 6 WS For room/location see programme	Panel 1 Room: Ceremonial Hall A 220 10:30-11:50	PL theme 6 A220 10:15-11:15 BREAK 11.15-11:45 Panel 2 A220 11:45-13:15	WS-2 Theme 1&6 6 WS For room/location see programme
12:30-13:30	LUNCH In the AULA	LUNCH In the AULA	LUNCH, EXCURSION AND DINNER Go to busses at the main entrance	LUNCH In the AULA 13:15-14:30	LUNCH In the AULA
13:30-16:30	WS-3 theme3 5 WS For room/location see programme	WS-3 Theme 1&7 4 WS For room/location see programme		WS-3 Theme 1, 4&6 6 WS 14:30-17:30	WS-2 Themes 4&5 5 WS 13:30-15:30 CLOSURE A220 15:45-16:45
16:30-17:30	OP Theme 2&3 6X2 OP For room/location see programme	OP Theme 1 6X2 For room/location see programme		OP Theme 1,5,6&7 7X2 OP 18:00-19:00 For room/location see programme	
17:30-19:00	POSTERS AND WINE RECEPTION In the AULA	OP Theme 1 6X1 17:30-18:00 For room/location see programme HAPPY HOUR		HAPPY HOUR In the AULA 19:00-20:00	

http://conferences.au.dk/fileadmin/conferences/ESU-7/Schedule_ESU-7.pdf

ESU-7
PROGRAMME

http://conferences.au.dk/fileadmin/conferences/ESU-7/ESU7_programme_1.pdf

Have you read these?

- Stefan Deschauer: *Die große Arithmetik aus dem Codex Vind. phil. gr. 65. Eine anonyme Algorismusschrift aus der Endzeit des Byzantinischen Reiches*.
Wien: Verlag der Österreichischen Akademie der Wissenschaften, 2014

ISBN 9 783700 175339

An edition of a Byzantine arithmetic manuscript, dating from the last period of the Byzantine Empire

- Alexander Karp & Gert Schubring (eds.): *Handbook on the History of Mathematics Education*. New York: Springer, 2014.

ISBN 978-1-4614-9154-5

The volume presents in 37 chapters, written by 47 authors, the history of the teaching and learning of mathematics from Antiquity to modern times. The Handbook presents thus for the first time a comprehensive and systematic resource for researchers around the world.

- Tobies, Renate; Vogt, Annette B. (eds.): *Women in Industrial Research*, edited by Renate Tobies and Annette B. Vogt with the Assistance of Valentine Pakis (Wissenschaftskultur um 1900, Vol. 8). Franz Steiner Verlag: Stuttgart 2014.

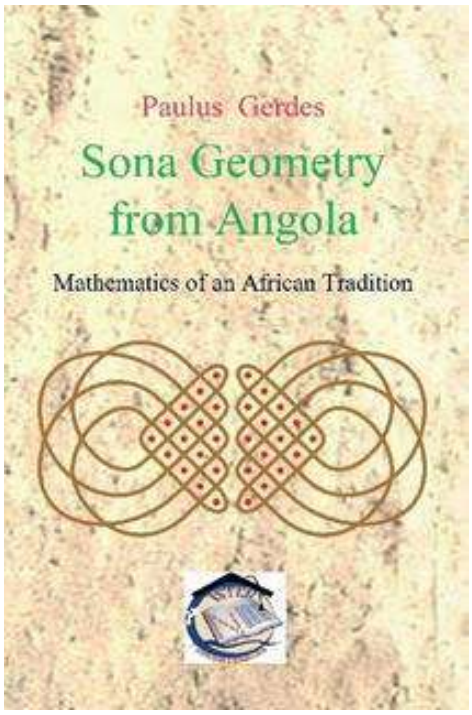
ISBN 978-3-515-10670-2

This book presents new research results concerning women who conducted scientific work in industrial corporations during the first six or seven decades of the twentieth century. One of the goals was to discuss the conditions under which women were able to become successful industrial researchers, and with this in mind the authors investigated the positions of women in the chemical, cosmetic, nuclear, electrical engineering, communications, and optical industries. Attention has been paid to female researchers in the steel, aviation, and computer industries as well. Furthermore, the aim was to compare the opportunities of women in several academic disciplines, at various institutions, and in different countries. With a comparative and contextual approach, the authors examined the research process in non-university settings from the perspective of gender.

Gert Schubring

Dear colleagues and friends,
I have the honor to announce the English language edition in color of my book "**Sona Geometry from Angola: Mathematics of an African Tradition**," ISTEG, Boane, 2014, 248 pp.
Translation and Preface: Professor Artur B. Powell, Rutgers University, Newark, USA; over 500 illustrations in color.

To obtain the paperback edition in colour:
http://www.lulu.com/content/paperback-book/sona-geometry-from-angola-mathematics-of-an-african-tradition-%28color-edition%29/14484109
(Preview available on this webpage)



The black-and-white edition, published in 2006 by Polimetrica International Scientific Publisher (Monza, Italy) is still available too: http://www.polimetrica.com/wp/negozio/sona-geometry-from-angola-mathematics-of-an-african-tradition-paulus-gerdes/

I hope the book may be of interest to you, your colleagues, and students. Acquisition may be considered for your personal or institutional library.

Paulus Gerdes

(June 2014)

Avigad, J., & Morris, R. (2014). The concept of "character" in Dirichlet's theorem on primes in an arithmetic progression. *Archive for History of Exact Sciences, 68*(3), 265-326.

Bascelli, T. (2014). Galileo's *quanti*: understanding infinitesimal magnitudes. *Archive for History of Exact Sciences, 68*(2), 121-136.

Beke, E. (2014). Classical Papers in Mathematics Education: Results obtained in the introduction of differential and integral calculus in upper grades of secondary institutions. *International Journal for the History of Mathematics Education*, *9*(1).

Bellhouse, D. R. (2014). The deification of Newton in 1711. *BSHM Bulletin: Journal of the British Society for the History of Mathematics, 29(*2), 98-110.

Brazil, M., Graham, R. L., Thomas, D. A., & Zachariasen, M. (2014). On the history of the Euclidean Steiner tree problem. *Archive for History of Exact Sciences, 68*(3), 327-354.

Bruno, G., Genovese, A., & Improta, G. (2014). A historical perspective on location problems. *BSHM Bulletin: Journal of the British Society for the History of Mathematics, 29*(2), 83-97.

Chevalarias, N. (2014). Changes in the teaching of similarity in France: From similar triangles to transformations (1845-1910). *International Journal for the History of Mathematics Education*, *9*(1).

Coutinho, S. C. (2014). Whittaker's analytical dynamics: a biography. *Archive for History of Exact Sciences, 68*(3), 355-407.

Cretney, R. (2014). The origins of Euler's early work on continued fractions. *Historia Mathematica, 41*(2), 139-156.

Fisher, M., & Pinto, N. (2014). The second Latin American congress of history of mathematics education. *International Journal for the History of Mathematics Education, 9* (1).

Goulding, R. (2014). Thomas Harriot's optics, between experiment and imagination: the case of Mr Bulkeley's glass. *Archive for History of Exact Sciences*, Vol. 68 (2), 137-178.

Hollings, C. (2014). Investigating a claim for Russian priority in the abstract definition of a ring. *BSHM Bulletin: Journal of the British Society for the History of Mathematics*, Vol. 29 (2), 111-119.

Jankvist, U. T. (2014). A historical teaching module on 'the unreasonable effectiveness of mathematics': Boolean algebra and Shannon circuits. *BSHM Bulletin: Journal of the British Society for the History of Mathematics*, Vol. 29 (2), 120-133.

Karp, A. (2014). Interview with Fou-Lai Lin. *International Journal for the History of Mathematics Education*, Vol. 9 (1).

Nauenberg, M. (2014). Orbital motion and force in Newton's Principia: the equivalence of the descriptions in Propositions 1 and 6. *Archive for History of Exact Sciences, 68*(2), 179-205.

Patton, L. (2014). Hilbert's objectivity. *Historia Mathematica, 41(*2), 188-203.

Raynaud, D. (2014). Building the stemma codicum from geometric diagrams. *Archive for History of Exact Sciences, 68*(2), 207-239.

Rittaud, B., & Heeffer, A. (2014). The Pigeonhole Principle, two centuries before Dirichlet. The Mathematical Intelligencer *36*(2), 27-29.

Schubring, G. (ed. and comm., 2014). The original conclusions of the Royamount Seminar. *International Journal for the History of Mathematics Education, 9*(1).

Sørensen, H. K. (2014). Confluences of agendas: Emigrant mathematicians in transit in Denmark, 1933–1945. *Historia Mathematica*, *41*(2), 157-187.

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–Gresham College Joint Meeting.
4 pm at Barnard's Inn Hall, Thursday,
30th October 2014.

"History of Statistics"

- Professor Emerita, Lynn McDonald, University of Guelph
- Professor R.A. Bailey, University of St Andrews and Queen Mary London
- Dr Eileen Magnello, University College London

The afternoon programme will explore the History of Statistics from various novel standpoints.
Professor McDonald will discuss Florence Nightingale and her Crimean War Statistics: Lessons for hospital safety, public administration and nursing.
Professor Bailey will then consider Some history of Latin squares in experiments.
There will be a Reception at 5.30pm, after which Dr Eileen Magnello will present the annual Gresham-BSHM lecture, on Karl Pearson's Gresham Lectures on Geometry (1890-1894).

2. BSHM Annual Christmas Meeting
The Birmingham and Midland Institute, Margaret Street, Birmingham, B3 3BS. Saturday 6th December 2014.

Guest Speaker: **Professor Lisa Jardine, CBE**

'MORE LIVES THAN A CAT': PUTTING WOMEN'S ACHIEVEMENTS BACK INTO THE RECENT HISTORY OF MATHEMATICS

Abstract: The title of this lecture is taken from Marie Curie's close mathematician friend Hertha Ayrton's remark — when the two women's important work was consistently credited to their husbands — that 'An error that ascribes to a man what was actually the work of a woman has more lives than a cat'. Can we do better today? Might the visibility of women help overcome that annoying casual admission to mathematical illiteracy ('I never could do sums') that continues to dog maths's fortunes in Britain?

A daytime meeting with a mixture of invited speakers and members' talks.

3. Research in Progress
The Queen's College, Oxford OX1 4AW, Saturday 21 February 2015.

Annual meeting for research students in the history of mathematics to speak about their work. The keynote guest speaker is Professor Adrian Rice (Randolph-Macon College, Virginia, USA).

4. BSHM/CSHPM Joint Meeting in North America 2015
Washington, DC, USA, 5th-8th August 2015.

Third International Conference on the History and Education of Modern Mathematics

September 20-25, 2014
Hangzhou, China

Organized by

Zhejiang University of Science and Technology, Hangzhou; Department of Mathematics, Northwest University, Xi'an

In Association with

REHSEIS (SPHERE), CNRS & University Paris Diderot; Dept of Mathematics, Simon Fraser University
Chinese Society for the History of Mathematics

Organization Scientific Committee

* Qu Anjing (Northwest University, Xi'an, China, Co-Chair)
* Tom Archibald (Simon Fraser University, Vancouver, Canada, Co-Chair)
* Karine Chemla (REHSEIS—SPHERE, CNRS & University Paris Diderot, Paris, France)
* Niccolò Guiccardini (University of Bergamo, Italy)
* Tinne Hoff Kjeldsen (Roskilde University, Copenhagen, Denmark)
* Norbert Schappacher (Université de Strasbourg, France)
* Ueno Kenji (Seki Kowa Institute of Mathematics, Japan)

Local Organizing Committee

Zheng Youqu (Chair), Cen Gang, Tao Xiangxing, Ruan Shiping, Xue Youcai, Qiu Binqiang, Yin Weidong, Wang Wenbin (Zhejiang University of Science and technology, Zhejiang China), Yuan Min (Northwest University, Xi'an, China)

Program

Four days of scientific sessions are planned.

1. Plenary Invited Lectures
Invited lectures will be announced later.

2. Scientific Sessions for Contributed Papers
Parallel sessions will be organized on specific topics.

3. One day of sightseeing

4. Language: English

5. Tentative Schedule
Sept 20, arrival, registration, getting together
Sept 21-24, Scientific program
Sept 25 Sightseeing

6. Topic

CONTEMPORARY RESEARCH IN THE HISTORY OF MODERN MATHEMATICS AND APPLICATIONS TO PEDAGOGY

Research in both the history of mathematics and the applications of history of mathematics to pedagogy have in recent years been enriched by new directions. The results have included new emphases in both disciplines, with diverse and far-reaching consequences. On the side of history, we see a

renewed interest in the philosophical issues of various kinds, on the transmission of mathematical knowledge from local settings to global norms, on networks of scholars and networks of texts, on the nature and importance of application in mathematics, and on a reassessment of the importance of computation in all its forms. On the side of education, we see an expansion of the strategic use of history as a tool, going beyond cross-cultural comparison to being an ingredient in various theoretical approaches.

The purpose of the meeting proposed is to assemble senior scholars active in these fields, junior scholars whose work promises to be transformative, and scholars who are ambitious to acquire new approaches while presenting contributed papers on work of their own for comment by their peers.

With a broadly inclusive scope we hope to build on the positive experiences of earlier meeting to continue to build a Chinese and international research community and to build links for the future.

We are deeply convinced that the better understanding of modern mathematical activity that such an approach can yield will be helpful for mathematics education at all levels, and that the presence of researchers with education as a primary focus will enhance this aim.

Practicalities

Registration

Registration Fees (Registration covers the book of abstracts, all the conference sessions, including the banquet and all meals. It does not cover accommodation).

Date	Participators	Students	Accompanying
Before June 30	USD$ 150	USD$ 90	USD$ 120
After June 30	USD$ 200	USD$ 120	USD$ 150

Modalities of payment will be announced later.

Accommodation

Rooms will be available on campus or near the campus. Precise information will be given in the second circular.

DEADLINES

Title and Abstract

Please send title of your talk to Dr. Wang Chang: heart_cw@126.com, before **15 April 2014.**

We expect that you send the abstract of your paper by email to Dr. Wang Chang: heart_cw@126.com, before **30 June 2014.** We accept *.doc and *.txt files.

Webpage and Contact persons

Official webpage will be announced.

Dr. Wang Chang, Northwest University, heart_cw@126.com

Prof. Xue Youcai, Zhejiang University of Science and Technology, xueyoucai@126.com

VII Portuguese-Brazilian Meeting on History of Mathematics

(VII Encontro Luso-Brasileiro de História da Matemática)

October 15-19, 2014
Óbidos, Portugal

http://encontrohistoriamatematicaobidos.com/

The VII Portuguese-Brazilian Meeting on History of Mathematics is the latest of a series of meetings which started in Coimbra, Portugal, in 1993, and since then have taken place regularly, alternately in Portugal and in Brazil. Meeting aims:

– To encourage the exchange between Brazilian and Portuguese researchers working in the History of Mathematics.

– To disseminate and discuss the research conducted in the history of mathematics and/or in relations between History, Epistemology and Education in Mathematics.

– To disseminate the history of mathematics among teachers of all education levels and between undergraduates and graduate students in mathematics, mathematics education, history of science and related fields.

The VII Portuguese-Brazilian Meeting on History of Mathematics is an international event that brings together researchers and those interested in History of Mathematics from Brazil and Portugal. The organization is a joint initiative of the Brazilian Society of the History of Mathematics (Brazil) and the National Seminar for the History of Mathematics (Portugal). Its goal is to deepen relations between the scientific researchers in this area of the two countries which have a few centuries of common history. For more information see the website http://www.spm.pt/arquivo/1105.

The following information is in Portuguese:

Comissão Organizadora Local:
Ana Calçada (Coordenadora local) e Celeste Afonso

Comissão Científica:
Em Portugal: António Canas (Museu da Marinha, Lisboa); Helmuth Malonek (Universidade de Aveiro); Henrique Guimarães (Instituto de Educação, Universidade de Lisboa); Jaime Carvalho e Silva (Universidade de Coimbra); João Caramalho Domingues (Universidade do Minho); José Francisco Rodrigues (CMAF/Universidade de Lisboa); Luís Saraiva (CMAF/Universidade de Lisboa, Portugal) - Coordenador em Portugal.

No Brasil: António Vicente Marafioti Garnica (Universidade Estadual Paulista, Bauru); Carlos Henrique Gonçalves (EACH / Universidade de São Paulo); Iran Abreu Mendes (Universidade Federal do Rio Grande do Norte); Lígia Arantes Sad (Universidade Federal do Espírito Santo); Sérgio Nobre (Universidade Estadual Paulista, Rio Claro) - Coordenador no Brasil; Tatiana Roque (Universidade Federal do Rio de Janeiro); Wagner Rodrigues Valente (Universidade Federal de São Paulo).

Apresentação de Trabalhos: Estão preparadas sessões especiais dedicadas a José Sebastião e Silva, no centenário do seu nascimento, história da Astronomia, história da Lógica e história do Ensino da Matemática Outras sessões temáticas serão atempadamente anunciadas. Serão considerados trabalhos que digam respeito a quaisquer temas de História da Matemática, e suas vertentes. Enviar resumo (entre 10 e 30 linhas), incluindo bibliografia, para:
Em Portugal:
Luis Saraiva -mmff5@ptmat.fc.ul.pt
No Brasil:
Sergio Nobre - sernobre@rc.unesp.br

Prazo limite para o envio de resumos: 15 de Junho de 2014. As duas partes da Comissão Científica pronunciar-se-ão pela admissibilidade da comunicação, dela informando o/a proponente até ao fim de Junho de 2014.

Inscrição: sócios da SPM, APM ou SBHMat: 70 Euros (210 reais para os participantes vindos do Brasil); não sócios: 90 Euros (270 reais). As inscrições feitas depois de 30 de Junho de 2014 terão um agravamento de cerca de 15%, passando a ser de 80 Euros (240 reais) para sócios e de 104 euros (312 reais) para não sócios. A inscrição inclui a documentação, os coffee-breaks e a excursão que se fará num dos dias do evento. Os alunos de licenciatura ou de mestrado têm um preço especial de 15 Euros (45 reais) (que passarão a ser 17.50 euros ou 52.50 reais após 30 de Junho de 2014), o que inclui a documentação e os coffee-breaks, mas não inclui a excursão.

Prazo limite de inscrição: 15 de Setembro de 2014

CERME 9

February 4-8, 2015
Prague, Czech Republic

http://www.cerme9.org/about-cerme-9/

Thematic Working Groups Teams

The following is the list of thematic working groups.

1. Argumentation and proof
2. Arithmetic and number systems
3. Algebraic thinking
4. Geometrical thinking
5. Probability and statistics education
6. Applications and modeling
7. Mathematical potential, creativity and talent
8. Affect and mathematical thinking
9. Mathematics and language
10. Cultural diversity and Mathematics Education
11. Comparative studies in Mathematics Education
12. **History in Mathematics Education**
13. Early Years Mathematics
14. University mathematics education
15. Teaching mathematics with resources and technology
16. Students' learning mathematics with resources and technology
17. Theoretical perspectives and approaches in mathematics education research
18. Mathematics teacher education and professional development
19. Mathematics teaching practices and resources for teaching

Thematic Working Group 12
History in Mathematics Education

Leaders

Uffe Thomas Jankvist (Denmark) utj@dpu.dk

Renaud Chorlay (France)
renaud.chorlay@espe-paris.fr,

Kathy Clark (USA) kclark@fsu.edu,

Snezana Lawrence (UK)
s.lawrence2@bathspa.ac.uk,

Jan van Maanen (The Netherlands)
J.A.vanMaanen@uu.nl

Scope and focus of the Thematic Working Group

History of mathematics in mathematics education has received much attention during the last decades. However, empirical research and coherent theoretical/conceptual frameworks within this area have been emerging relatively recently. The purpose of this CERME TWG is to provide a forum to approach mathematics education in connection with history and epistemology dedicated primarily to theory and research on all aspects of the role, effect, and efficacy of history and epistemology as elements in mathematics education.

Call for papers and poster proposals

TWG12 in particular welcomes empirical and theoretical research papers, but to some degree also methodological and developmental papers (10 pages maximum), and poster proposals (2 pages) related to one or more of the following issues – although any paper/poster of relevance to the overall focus of the group will be taken into consideration:

1. Ways of integrating original sources in classrooms, and their educational effects, preferably with conclusions based on classroom experiments;
2. Surveys on the existing uses of history or epistemology in curricula, textbooks, and/or classrooms in primary, secondary, and tertiary levels;
3. Design and/or assessment of teaching/learning materials on the history of mathematics;
4. The role of history or epistemology of mathematics at the primary, secondary, and tertiary level, and in pre- and in-service teacher education, from cognitive, pedagogical, and/or affective points of view;
5. Investigations or descriptions of the historical instances of research cultures and cultures of teaching and learning in mathematics;
6. Relationships between (frameworks for and empirical studies on) history in mathematics education and theories and frameworks in other parts of mathematics education;
7. Possible parallelism between the historical development and the cognitive development of mathematical ideas;
8. Theoretical, conceptual and/or methodological frameworks for including history in mathematics education;
9. The potential role of history of mathematics/mathematical practices in relation to more general problems and issues in mathematics education and mathematics education research.

Papers and poster proposals should use the CERME word template, and conform to the guidelines at http://www.cerme9.org/guidelines/guidelines-for-authors/. To submit, you need to email your proposal as a WORD document to **Uffe Thomas Jankvist**, utj@dpu.dk, AND at the same time, to the conference secretariat at submission@cerme9.org. If possible, please also send a pdf version in addition to the WORD document.

Reviews and decisions

Each paper will be peer-reviewed by two persons from among those who submit papers to this Thematic Working Group. Please expect to be asked to review up to three papers. It may be necessary for you to revise your paper before final acceptance. The group leaders will decide about the acceptance of posters.

Important dates

September 15, 2014: Deadline for submission of papers
October 1, 2014: Deadline for submission of poster proposals
November 25, 2014: Deadline for reviewers to submit their reviews
December 5, 2014: Decisions about paper or poster acceptance
December 20, 2014: Reduced fee registration deadline
January 10, 2015: Deadline for revisions of papers
January 20, 2015: Papers for presentation at the congress available on the CERME website.

ICME-13
International Congress on Mathematical Education

July 24-31, 2016
Hamburg, Germany

http://icme13.org/home

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 Topic Study Group 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 high-standard discussions enabling the newcomer to get a broad overview on the state-of-the-art 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 under-represented 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
33. 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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IPC Liaison person: Alain Kuzniak (France)

The aim of the TSG is to provide a forum for the discussion of findings and unsolved problems in the history of mathematics education as well as of issues in methodology of research in this field. During the last years research in the history of mathematics education has been actively developed – important books and articles, specialized conferences, specialized journals, and special issues of some major serials have been devoted to the relevant topics. Still, it is very clear that many themes are not explored sufficiently and sometimes almost nothing is known about some periods and regions. Additionally, the history of mathematics education is often explored from a local (or national) point of view only. Often connections with similar processes happening elsewhere need to be revealed and understood. This TSG is supposed to help researchers in identifying new topics and new techniques for studies and in establishing fruitful collaboration in their work.
Meetings of the TSG will offer presentations on a variety of topics including the following (but not limited to them):

- History of reforms in mathematics education
- History of tools in mathematics education (including textbooks, manipulatives, calculators, etc.)
- Mathematics teachers: history of professionalization
- Local, national, and international dimensions in the history of mathematics education
- History of mathematics education and other directions in mathematics education (for example, teacher education)

In addition, a panel discussion on past and future developments will be organized.

References

Karp, A., & Schubring, G. (Eds.) (2014). *Handbook on the history of mathematics education*. New York: Springer.

Schubring, G., Furinghetti, F., & Siu, M.K. (2012). Turning points in the history of mathematics teaching – Studies of National Policies. *ZDM - The International Journal on Mathematics Education, 44*(4).

TSG 25
The Role of History of Mathematics in Mathematics Education

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Aim

TSG 25 aims to provide a forum for participants to share their research interests and results, as well as their teaching ideas and classroom experience in connection with the integration of the History of Mathematics (HM) in Mathematics Education (ME). Special care is taken to present and promote ideas and research results of an as broad as possible international interest, while still focusing due attention to the national aspects of research and teaching experience in this area. Every effort will be made to allow researchers to present their work and to get fruitful feedback from the discussion, and at the same time to stimulate the interest of the newcomers by giving them the opportunity to get a broad overview on the state-of-the-art in this area.

The discussion within this TSG refers to all levels of education–from primary school, to tertiary education, including in-service teachers' training—preferably on work and conclusions based on actual classroom experiments and/or produced teaching & learning materials.

Rationale

Putting emphasis on integrating historical and epistemological issues in mathematics teaching and learning constitutes a possible natural way for exposing mathematics in the making that may lead to a better understanding of specific parts of mathematics and to a deeper awareness of what mathematics as a whole really is. This is important for ME, helping to realize that mathematics:

- is the result of contributions from many different cultures;
- has been in constant dialogue with other scientific disciplines, philosophy, the
- arts and technology;
- has undergone changes over time; there have been shifting views of what
- mathematics is; and
- has constituted a constant force for stimulating and supporting scientific,
- technical, artistic and social development.

Focus

The programme of TSG 25 will be structured around the following main themes:

1. Theoretical and/or conceptual frameworks for integrating history in mathematics education;
2. History and epistemology implemented in mathematics education: Classroom experiments & teaching materials, considered from either the cognitive or/and affective points of view;
3. Surveys on the history of mathematics as it appears in curriculum and/or textbooks (including the history of mathematics in old mathematics textbooks);
4. Original sources in the classroom, and their educational effects;
5. History and epistemology as a tool for an interdisciplinary approach in the teaching and learning of mathematics and the sciences; unfolding fruitful interrelations; and
6. Cultures and mathematics fruitfully interwoven.

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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).

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

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87	**12 October 2014**	**1 November 2014**
88	12 February 2015	1 March 2015
89	12 June 2015	1 July 2015

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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.