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

Nº 107 **July 2021**

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).

NOTE FROM THE CHAIR

It was with great sadness that earlier this year we learnt of the passing of Ubiratan D'Ambrosio (1932-2021). A truly inspirational historian of mathematics, Ubi was also a founding member of the HPM during the ICME-3 (Karlsruhe, Germany, 1976). He was the Chair of HPM between 1984 and 1988. There are two articles in this issue of the Newsletter dedicated to Ubi, one of which gives his full bibliography.

After more than a year of postponements and changes of plans, it is a great pleasure to see that we have been able to organise a one-day online HPM Satellite ICME14 meeting. The meeting is being organised jointly with the British Society for the History of Mathematics (BSHM) and will take place on 19th July – you still have the time to register! Here is the link to registration and the programme: https://www.bshm.ac.uk/events/history-and-pedagogy-mathematics-icme14-satellite-meeting.

Our European Summer University is also being organised for the next summer. It will take place in Salerno, Italy, and hopefully by then we will be more free to travel and able to meet in person. Details of this conference are given here https://esu9.unisa.it/.

Some months ago we had our presence updated on the IMU website, which you can see here - https://www.mathunion.org/icmi/organization/affiliated-organizations/hpm .

As was mentioned last year when I took office, we will look now towards re-organising our online presence and putting all our available resources in one place.

Volunteers (in particular those knowledgeable in online data management) are very welcome!

Along with all of us, I am sure the hope is that soon we will resume in-person meetings and events. Until then, there is plenty to do online, so keep in touch, 'visit' online events, and take part in our great community. Hope to you see you there.

Snezana Lawrence

HPM 2020
History and Pedagogy of Mathematics (HPM) 2020 – Satellite Meeting of ICME-14

New dates: 19 July 2021
~~University of Macau~~ Online

Important Announcement:

The 2020 HPM Conference will be held **fully online**.

To register, please follow this link; details will be sent to your registered email address on 16th July. (Videos will be available to preview on the same day from a link you will receive.)

Conference Programme

10:00 am Welcome: HPM Chair Snezana Lawrence, Middlesex University, London, UK & BSHM
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10:15 am **Michael N. Fried**, Associate Professor in the Program for Science and Technology Education, Ben Gurion University of the Negev, Beer-Sheva, ISRAEL.
Edmond Halley's Posture towards Apollonius's Works and Its Relevance for Teaching Historical Material in Modern Mathematics Classrooms

This talk addresses the HPM Theme: Theoretical and/or conceptual frameworks for integrating history in mathematics education
***

11:00 am **Man Keung Siu**, Honorary Professor, The University of Hong Kong, Hong Kong SAR, CHINA
Mathematical World (or Worlds) in the context of HPM

This talk addresses the HPM Theme: Mathematics and its relation to science, technology, and the arts: Historical issues and interdisciplinary teaching and learning
***

11:45 am **Marc Moyon**, Maître de Conférences (Lecturer), University of Limoges (France)
I would like to introduce history in my mathematics lessons but I do not know how to do it! A challenge for in-service teacher training

This talk addresses the HPM Theme: History and epistemology in students' and teachers' mathematics education: Classroom experiments and teaching materials
***

12:30 pm **Lunch time** – with informal discussion

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1:30 pm **Discussion**

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2:15 pm **Luis Saraiva**, Associate Professor, University of Lisbon, PORTUGAL

Matteo Ricci and the introduction in China of Euclid's Elements

This talk addresses the HPM Theme: History of Mathematics in China and Eastern Asia

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3:00 pm **Mary Flagg**, Associate Professor, University of St. Thomas (Houston, Texas, USA)

Using Original Sources in the Classroom to Enrich the Learning Experience

This talk addresses the HPM Theme: Original sources in the classroom and their educational effects

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3:45 pm **Discussion**

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5:00 pm **Close of conference**

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To get in touch with the organiser, please email snezana@mathsisgoodforyou.com

All the timings on the programme are given as BST, i.e. British Summer Time: London UK. The conversion time-table for your city can be accessed at https://www.timeanddate.com/worldclock/

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The IPC includes the following groups:

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Tang Mei-yue (formerly Hong Kong Education and Manpower Bureau)

UBIRATAN D'AMBROSIO (1932-2021) – IN MEMORIAM

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On May 12, 2021, Ubiratan D'Ambrosio died in S. Paulo, Brazil. His parents were Nicola and Albertina D'Ambrosio. Nicola was a mathematics teacher and a lawyer, Albertina was an accountant. They had three children. Although they were Italian descendants, the children were baptized with native names: Ubiratan, the eldest, Iara, their only daughter, and Ubirajara, the youngest. Ubiratan, or Ubi, as he was known in the international academic circles, was born on December 8, 1932, in S. Paulo, and he lived his childhood in the traditional quarters of the central zone of the city (Brás, Belenzinho and Bom Retiro).

He started his basic school upbringing (1941 to 1944) at the *Liceu Coração de Jesus*, an institution where his father was teaching mathematics, and then, for two years was at *Colégio Caetano de Campos*, one of the more traditional public schools of the S. Paulo state. He attended the scientific course between 1948 and 1950, at the *Colégio Visconde de Porto Seguro*, another school where his father also taught mathematics. In 1952 Ubiratan started the mathematics course at *the Philosophy, Sciences, and Arts Faculty of the University of S. Paulo* (USP). He obtained his bachelor's degree in 1954 and completed his graduation in 1955. From 1958 to 1963 he did research on his PhD thesis, *Generalized Parametric Surfaces and Sets of Finite Perimeter*, supervised by Jaurès Pacifico Cecconi (1918-2012), an Italian mathematician who had taught Mathematical Analysis at the Italian Universities of Pisa, Messina, Padova and Genova, and at the USP. Ubiratan successfully presented his thesis in 1963, getting his PhD in Mathematical Sciences at the *Engineering School of S. Carlos*, a part of USP. Jaurès Cecconi returned to Italy, and Ubiratan, with no other funds than his own, followed him, and continued his research in the *Istituto Matematico dell'a Università di Genova*. He did some post PhD research supervised by Professor Wendell Helms Fleming (1928-) in the Mathematics Department of *Brown University*, Providence, Rhode Island, USA.

On July 2, 1958, Ubiratan married Maria José Silva, a lawyer, with whom he would stay for the rest of his life. They

had two children: Beatriz D' Ambrosio (1960-2015), later in life a mathematics teacher at the University, and Alexandre D'Ambrosio (1962-), a future lawyer. Beatriz has two daughters, Rafaela and Gabriela, and Alexandre another two girls, Maria Eugenia and Maria Alice. Rafaela also has two daughters, Juni Simone and Emori Olivia.

Ubiratan D'Ambrosio started his teaching career while still a student at the University. Between 1952 and 1958 he was a Mathematics and Physics teacher at *Colégio Visconde de Porto Seguro*, at *Liceu Coração de Jesus* and at *Colégio Nossa Senhora de Sion*, all in S. Paulo. After completing his course, he became *Professor Assistente* at the *Faculty of Economic Sciences of Liceu Coração de Jesus* (part of the *Pontifical Catholic University of S. Paulo)*. Between 1956 and 1958 he was a Mathematical Analysis teacher at the P*ontifical Catholic University of Campinas.* Between 1958 and 1961 he was also hired as an instructor at the *Engineering School of São Carlos*, part of USP, where he developed his PhD research. In 1961 he became a teacher in charge of Mathematical Analysis at the then newly created Mathematics course of the *Philosophy, Sciences and Arts Faculty of Rio Claro*, where he stayed until his departure to the USA.

In August 1963, together with his wife and his two children, he left Brazil and went to the USA, where he would start, in 1964, his post-doctoral research at *Brown University*. In March 1964 there was a military coup in Brazil, followed by the consequent political instability. The military regime persecuted many university teachers, staff and students, and D'Ambrosio decided to stay in the USA. During 1964 and 1965 he was a Research Assistant Professor of Mathematics successively at *Brown University*, at the *State University of New York -SUNY- at Buffalo* in 1965 and 1966, at the *University of Rhode Island* from 1966 to 1968, and again at the *State University of New York-SUNY- at Buffalo*, from 1968 to 1972. In 1972, answering to the call of Professor Zeferino Vaz (1908-1981), rector of the then newly founded *State University of Campinas* -UNICAMP-, Ubiratan returned to Brazil and became the Director of the *Mathematics, Statistics and Computer Science Institute* (IMECC), a position he fulfilled until 1980. Due to his hiring policy of researchers during his term as Director of the IMECC, there was an international acknowledgement of the Institute in its areas of research: Pure Mathematics, Applied Mathematics, Statistics and Computer Science. At UNICAMP, besides strengthening IMECC, he also acted in other areas: Dean of University Development (1982-1990); Director of the Master Program in Science and Mathematics Instruction in a covenant with the *Organization of American States* (OAS) and the Brazil Ministry of Education; and founder in 1976 of the *Interdisciplinary Laboratory for the Improvement of Teaching and of the Curriculum* (LIMEC). Later on, this laboratory expanded its intervention to other University units and was the foundation for the creation of UNICAMP TV. He also participated in the creation of UNICAMP's *Logic, Epistemology and History of Science Centre* (CLE) in 1977. Ubiratan retired in 1992, and was awarded the title of UNICAMP's Emeritus Professor in 1995.

At international level Ubiratan had a significative institutional participation: he was a UNESCO adviser in Brazil's *Higher Education and Staff Training Education Department* from 1970 to 1990; Director of the *Multinational Project for the Improvement of the Teaching of Sciences and Mathematics* of the OAS from 1974 to 1983; head of the *Unit for the Improvement of Educational Systems* of the OAS, Washington DC, from 1980 to 1982; member of the *Institute for Information Technology in Education*, UNESCO, Moscow, Russia, from 1998 to 2002; founding member of the *Conseil International de Recherches et Études Transdisciplinaires*, CIRET, in 1987, France; UNESCO adviser and visiting professor in the post-graduate program of the *Centre Pédagogique Supérieur de Bakamo*, Republic of Mali, from 1970 to 1980, among others. One of Ubiratan's mottos was *Education for Peac*e and certainly the most important international organization in which he had a relevant participation was the *Pugwash Conferences on Science and World Affairs*, where he was a member of the Executive Board from 1980 to 1996. *Pugwash* is a non-governmental organization that was awarded the Nobel Peace Prize in 1995. Therefore Professor Ubiratan, as a member of Pugwash's Executive Board, can be considered as having been instrumental in their being awarded the Nobel Peace Prize.

In the 70s, when he travelled several times in Africa, Ubiratan developed a new theory based in components which are not a part of the Euro centrist mathematical knowledge, but which have, in its source, the concepts of a kind of mathematics and of a kind of science which are rigorous and organized, and which are used by Africans to build their societies. To this new theory was given the name of Ethnomathematics, and it was based in historical, sociological, educational and, naturally, mathematical data. The Ethnomathematics movement gained momentum, acquired supporters all over the world, and the research in this area obtained a special classification (01A07) in *Mathematical Reviews*, one of the main periodicals for reviews of mathematical papers, published by the *American Mathematical Society.*

His academic output has over 27 books, 70 book chapters, and 100 scientific papers published in specialized journals or congress proceedings. To this it must be added over 260 presentations in Brazilian and international meetings. We highlight one of the opening talks in International Congresses, *Socio-Cultural Bases for Mathematical Education*, at the opening of the *Fifth International Congress on Mathematical Education*, in Adelaide, Australia, in 1984. All this contributed to some prizes and academic honors being awarded to D'Ambrosio. We point out the Kenneth O May Medal, in 2001, awarded by the *International Commission on History of Mathematics*, and the Felix Klein Medal in 2005, awarded by the *International Commission on Mathematical Instruction.*

Ubiratan D'Ambrosio was also a visiting professor at the University of Iowa (UIOWA) in 1982, at the University of Illinois in Chicago (UIC), in 1986, and at Basel Universität, Switzerland, in 1990. He also supervised several post-graduation programs in Brazil. Under his supervision, more than 60 master thesis and 80 PhD thesis were completed.

Ubiratan D'Ambrosio and his work in History of Science and in History of Mathematics

Although he graduated in Mathematics, during his course he became interested in the history of Mathematics. His PhD Thesis, in addition to its mathematical contents, includes an overview of the history of the Calculus of Variations. While he was at *Brown University* he was a frequent participant in the seminars and courses of the Department of History of Mathematics (founded by Otto Neugebauer). Ubiratan was a founding member of *HPM International Study Group on the Relations Between History and Pedagogy of Mathematics*, which took place during *ICME-3 Third International Congress on Mathematical Education* in Karlsruhe, Germany (1976), and he was the Chairperson of HPM between 1984 and 1988.

D'Ambrosio had an intense interest and participation in the History of Mathematics sessions of the *American Mathematical Society* (AMS), of the *MAA/Mathematical Association of America*, and of many events in several countries, namely the *ICHS/International Congresses of History of Science*, *ICM/International Congresses of Mathematicians* and *ICME/International Congress on Mathematics Education.* His prominent participation in these international events opened the way to his entrance to the international net of historians of science and, in particular, in the net of historians of mathematics. In the course of time, Ubiratan assumed positions in important academic institutions connected to this area. He was President of the *Latin American Society of the History of Sciences and Technology*, SLHCT, from 1988 to 1992; he was a member of the Executive Committee of the *International Commission on the History of Mathematics*, ICHM, from 1989 to 1997; he was a founding member and the President of the *Brazilian Society of the History of Science*, SBHC, from 1991 to 1993; he was a member of the Advisory Council of the *Philosophy and History of Science of the South Cone Association*; AHFIC, from 2002 to 2004, and he was a founding member and the President of the *Brazilian Society of the History of Mathematics*, SBHMat, from 1999 to 2007.

Among his participations in important events on the subject of History of Mathematics, the talk "*Latin American Mathematics in the Conquest and Early Colonization*", presented in Germany in 1979, at the *Mathematisches Forschunginstitut Oberwolfach*, is considered a milestone. Through the ideas there presented, he showed the need for a new way of writing scientific history, and particularly for writing the history of mathematics. Simultaneously he pointed out the need for the development of new communities of historians of science aiming at doing research on themes up to then considered peripherical.

In Brazil this movement grew and became an important force in the nineties.

The role of D'Ambrosio as the articulator of this movement which then was beginning was decisive. Through his own initiative, the scholars in Brazil that were then beginning to do research on the History of Mathematics started to meet. Although the geographical dimensions of Brazil implied that distances between researchers were sometimes quite big, and

there was also the case of the researchers who were in foreign countries, Brazilian researchers who were working on History of Mathematics subjects began to establish connections, and national scientific meetings on the History of Mathematics took place from 1993 onwards, the first one being in the *Federal University of Paraná*, in Curitiba.

But D'Ambrosio had anticipated this process when in 1987 he established contacts with the starting community of Portuguese historians of Mathematics. The year 1987 was a crucial year for the development of the History of Mathematics as a research subject in Portugal. There was an important international meeting in Lisbon celebrating the Portuguese mathematician José Anastácio da Cunha (1744-1787). This meeting made the Portuguese scholars interested in the History of Mathematics aware of the lack of an organized structure for researchers who had the common aim to do research on this subject. Since the early forties of the 20th century research on the history of mathematics in Portugal had been done by a few isolated researchers.

D'Ambrosio was one of the invited speakers at this meeting, giving a talk on the influence of the scientific and literary works of Da Cunha in Brazil. He immediately established connections with the Portuguese scholars. As a direct consequence of the international meeting, the Portuguese *National Seminar for the History of Mathematics* (SNHM) was founded in early 1988, and D'Ambrosio was the first invited speaker at the First National meeting of the Seminar, which took place in April 1988. Later, in 1990, an important international summer school on the History of Mathematics took place in the city of Évora, organized by SNHM. The scientific organization was by Professors Jean Dhombres, Enrico Giusti, Ahmed Djebbar and Giorgio Israel. Professor D'Ambrosio was well informed of all events around the world concerning the history of mathematics, and therefore he spotted the Evora meeting and advised one of his students, Sergio Nobre, to attend it. At the time Sergio was preparing his PhD in Leipzig, supervised by Professor Hans Wussing. D'Ambrosio said that it should be a very good summer school and that it would be very useful for him to attend the meeting. This was crucial for the establishment of continuous working relations between Brazilian and Portuguese researchers on the History of Mathematics. Most probably those relations would have been established even if Professor D'Ambrosio had not acted, but surely thanks to him they were established at a much earlier date. As a consequence, from then onwards the two communities maintained contact, and together they organized the first *Luso-Brazilian Meeting on the History of Mathematics*, which took place at the University of Coimbra in 1993. Its beginning was strategically chosen just after the *19th International Congress on the History of Science*, which took place in Zaragoza, Spain, so it would allow Brazilians who attended the Congress to also participate in the Coimbra meeting. This important event showed to its participants how much was there to be done in research in this area, and that a joint cooperation was essential to reach this aim. So D'Ambrosio's wish that lasting ties should be established between the Brazilian and the Portuguese

communities of historians of mathematics became a reality. Since then the contacts and meetings have continued regularly, the Luso Brazilian meetings alternatively organized in Brazil and in Portugal. The 9th meeting will take place in 2022 in Portugal.

Professor Ubiratan continued to be a constant visitor to Portugal, participating in meetings and giving talks, either on the history of mathematics, on ethnomathematics or on the history of mathematical instruction. D'Ambrosio presence always had a very positive influence on those who talked to him or simply heard him talk, not only through the larger perspective of problems he always presented, but by the calm way in which he expressed his views. For Portuguese researchers he was an inspiration. He was invited to give plenary talks in several national meetings of the SNHM. Besides the First Meeting, in 1988, he participated in the 8th Meeting, in 1996, in the 9th Meeting, in 1997, and in the 19th Meeting, in 2006. In this last meeting, which took place at the University of Aveiro, besides his talk he also participated in a round table with the theme *The teaching of the History of Mathematics at the University: the challenge of the Bologna Process.* He participated in an ICME satellite meeting in Braga (Portugal), in 1996, which happened conjointly with the *2nd European Summer University in the History and Epistemology in Mathematics Education*[1]. He was invited by the University of Aveiro to give the opening talk in what was the beginning of the celebrations for the international year of Mathematics, in 2000 which had the title *Ethnomathematics: a Proposal in History, Epistemology and Pedagogy of Mathematics*[2]. In 2006, in the city of Viana do Castelo, he presented the talk *Ethnomathematics and Education* at the *2nd International Meeting on Elementary Mathematics Education*[3]. In 2012 he was an invited speaker at the *2nd Meeting on the History of Mathematics and of the Sciences*, which took place at the *Azores University* in Ponta Delgada. He gave talks in the first six *Luso Brazilian Meetings on the History of Mathematics*, the last one in 2011. Because of his medical condition, which forbade airplane travel, this was the last one at which he was present. For the following meeting,in Óbidos, Portugal, in 2014, the organizers asked him to be present, if not in person then through a pre-recorded video. So D'Ambrosio recorded a video of his talk on his reminiscences about the Portuguese mathematician José Sebastião e Silva (1914-1972) and his influence in Brazil, and this was shown at the Meeting.

The effect of D'Ambrosio's words and deeds was felt in many other countries: we give as an example Mozambique, where Paulus Gerdes (1952-2014), a Professor at the *University Eduardo Mondlane* until the late 80s, and then at the *Pedagogic University*, did an important and influential work. In his research Gerdes applied Ubiratan's Ethnomathematics ideas and concepts, and developed them in his own way. In 1989 he founded in Maputo the

[1] We thank Professor João Caramalho Domingues for this information.

[2] We thank Professor Helmuth Malonek for this information.

[3] We thank Professors Helmuth Malonek and Mária Almeida for this information.

Ethnomathematics Research Centre-Culture, Mathematics, and Education[4].

In Brazil, as mentioned above, starting with the first meetings in Curitiba, came the idea of organizing a National meeting, so that the possibility of staging such meetings could be analyzed. The History of the *National Seminars of the History of Mathematics* in Brazil, that we will describe in the following lines, is the proof that the dreams of Ubiratan D'Ambrósio could become real, and that the establishment of a specialized scientific community of researchers in History of Mathematics would be a fact. The *First National Seminar for the History of Mathematics* took place in the city of Recife, state of Pernambuco, in 1995. In that meeting the scientific community became aware that the History of Mathematics, as a scientific subject, should be promoted, and, having this in mind, it was decided that other national events would take place, with the aim of strengthening the different groups that already were developing research in that area. The *National Seminars for the History of Mathematics* happen every two years in different places in Brazil, and in 2021 the 14th Meeting took place. During the 3rd Meeting, in 1999, in the city of Vitória, in the state of Espírito Santo, the *Brazilian Society for the History of Mathematics* was founded, and D'Ambrosio became its first president.

Among the many activities to strengthen the scientific movement of History of Mathematics in Brazil, Ubiratan left us an important legacy: his interpretation of Mathematics in Brazil, both as a mathematician and as a historian, is a new important view which will be very useful for the coming historians. This is presented in his book *Uma História Concisa da Matemática no Brasil* (A Brief History of Mathematics in Brazil). D'Ambrosio offers his readers a thought-provoking invitation to deepen through historical research several themes about the History of Mathematics in Brazil. Besides presenting a specific and very original overview of Brazil's scientific development, the author tackles themes that practically have not been studied, and which still require a thorough investigation. In the opening explanatory note, D'Ambrosio emphasizes that his aim was "to give a critical overview of the receptivity of a thought elaborated and produced in Europe, brought by the conqueror and by the settler". In this sense this panoramic flight enables the reader to identify specific matters that appear mentioned in the text, with the aim to increase the knowledge of details which have not yet being researched.

Publications
Books published

1. *Educação Matemática. Da teoria á prática.* Campinas: Papirus, 1996.
2. *Globalização e Multiculturalismo.* Blumenau: FURB, 1996.
3. *A Era da Consciência.* São Paulo: Peirópolis, 1997.
4. *Transdisciplinaridade.* São Paulo: Palas Athena, 1997.

[4] We thank Professor Henrique Guimarães for the information on Paulus Gerdes.

5. *Ethnomathematics. The art or technique of explaining and knowing.* Las Cruces: ISGEm/NMSU, 1998.

6. *Educação para uma Sociedade em Transição.* Campinas: Papirus, 1999.

7. *Etnomatemática. Ele entre as tradições e a modernidade.* Belo Horizonte: Autêntica Editora, 2001.

8. *Etnomatematica.* Bologna: Pitagoras Editrice, 2002.

9. *Ethnomathematics. Link between Traditions and Modernity.* Rotterdam/Taipei: Sense Publishers, 2006.

10. *Etnomatemática. Eslabón entre las tradiciones y la modernidad.* Limusa, 2008.

11. *Uma História Concisa da Matemática no Brasil.* Petrópolis: Editora VOZES, 2008.

12. *Educação para uma Sociedade em Transição.* 2. ed. Natal - RN: Editora da UFRN, 2011.

13. (with P. Ghils, P. Loisel, M. Debono and M. Loisel) *Recherche scientifique, plasticite et transdisciplinarite: une chaire transdisciplinaire possible dans les universites, La Communaute de pratiques comme outil de dialogue interreligieux et interculturel.* 82. ed. Firenze: Firenze University Press, 2011.

14. *Asphalt Children and City Streets. A Life, a City and a Case Study of History Culture and Ethnomathematics in São Paulo.* Rotherdam: Sense Publishers, 2011.

15. *Ea, Pitágoras e Avatar: cenários Distintos em Matemática.* São Paulo: Arte-Livros Editora, 2011.

16. *Uma Síntese Sociocultural da História da Matemática.* São Paulo - SP: PROEM Editora, 2011.

17. (with S. Junqueira and F. Figueira) *Desafios atuais para a educação cristã, Teologia e Educação: Educar para a caridade e a solidariedade.* São Paulo: Paulinas, 2012.

18. (with I. W. Cruz) *Corpo Ordenado Completo: Um convite ao professor de matemática.* Barbacena: Editora do autor, 2012.

19. (with I. Fonseca) *Funções Trigonométricas. Elementos "De" & "Para" uma Engenharia Didática.* São Paulo: Livraria da Física, 2012.

20. *Formação de valores. Um enfoque transdisciplinar, Caminhos da Educação Integral no Brasil: direito a outros tempos e espaços educativos.* Porto Alegre: Penso, 2012.

21. *Teaching Mathematics for Social Justice. Conversations with Educators.* Reston, VA: NCTM/National Council of Teachers of Mathematics, 2012.

22. *Transdisciplinaridade.* 3. ed. São Paulo: Palas Athena, 2012.

23. *Educação Matemática. Da Teoria à Prática.* 23. ed. Campinas: Editora Papirus, 2012.

24. *Cultura de Paz e a Luta pela Sobrevivência.* São Paulo: TRION Centro de Estudos Marina e Martin Harvey Editorial e Comercial, 2012.

25. *Ensino de Matemática. Pontos e Contrapontos.* São Paulo: Summus Editorial, 2014.

26. *Educação para uma sociedade em transição.* 3. ed. São Paulo: Editora Livraria da Física, 2016.

27. *Etnomatemática. Elo entre as tradições e a modernidade.* 6. ed. Belo Horizonte: Autêntica, 2019.

Chapters in Published Books

1. Science, mathematics and technology education and the dysfunctional civilization. In: Avi Hofstein; Bat-Sheva Eylon; Geoffrey Giddings. (Org.). *Science Education: from theory to practice*. Rehovot: the Weizmann Institute of Science, 1995, p. 411-418

2. Entre a extinção e a sobrevivência. In: Cremilda Medina; Milton Greco. (Org.). *Sobre vivências no mundo do trabalho*. São Paulo: ECA/USP/CNPq, 1995, p. 285-293.

3. Threats and Hopes. In: UNESCO. (Org.). *Science and Culture: A common path for the future*. Tokyo: UNESCO/UNU, 1996, p. 49-54.

4. Ethnomathematics: an explanation. In: Ronald Calinger. (Org.). *Vita Mathematica. Historical Research and Integration with Teaching*. Washington DC: The Mathematical Association of América, 1996, p. 245-250.

5. Colonialism and science in the Americas. In: Helaine Selin. (Org.). *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures*. Dordrecht: Kluwer Academic Publishers, 1997, p. 221-223.

6. Americas: native american science. In: Helaine Selin. (Org.). *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures.* Dordrecht: Kluwer Academic Publhishers, 1997, p. 60-64.

7. Diversity, equity, and peace: from dream to reality. In: Janet Trentacosta; Margaret J. Kenney. (Org.). *Multicultural and gender equity in the mathematics classroom. The gift of diversity*. Reston: NCTM, 1997, p. 243-248.

8. Globalización, educación multicultural y etnomatemática. In: UNESCO. (Org.). *Conocimiento matemático en la educación de jovenes y adultos*. Santiago: UNESCO, 1997, p. 13-26.

9. Ethnomathematics and its place in history and pedagogy of mathematics. In: Arthur B. Powell; Marilyn Frankenstein. (Org.). *Ethnomathematics. Challenging Eurocentrism in mathematics education*. New York: State University of New York Press, 1997, p. 13-24.

10. Foreword. In: Arthur B. Powell; Marilyn Frankenstein. (Org.). *Ethnomathematics. Challenging Eurocentrism in Mathematics Education*. New York: State University of New York Press, 1997, p. 15-21.

11. As propostas curriculares de Matemática no Brasil. In: Alexander Maz;Manuel Torralbo;Concepción Abraira. (Org.). *Currículo y Matemáticas en la Enseñanza Secundária en Iberoamérica*. Córdoba: Servício de Publicaciones de la Universidad de Córdoba, 2002, p. 29-50.

12. South America. In: Christoph Scriba; Joseph W. Dauben. (Org.). *Writing the History of Mathematics: Its Historical Development*. Basel: Birkhauser Verlag, 2002, p. 249-255.

13. Teoria da Relatividade, o Princípio da Incerteza. In: J. Guinsburg. (Org.). *O Expressionismo*. São Paulo: Editora Perspectiva, 2002, p. 103-120.

14. Ethnosciences and ethnomathematics: the evolution of modes of thought in the last five hundred years. In: Serguei Demidov. (Org.). *Studiers in History of Mathematics Dedicated to A.P. Youschkevitsch*. Turnhout: Brepols Publisher, 2002, v. único, p. 59-71.

15. Tendências historiográficas na história da ciência. In: Ana Maria Alfonso-Goldfarb; Maria Helena Roxo Beltran. (Org.). *Escrevendo a História da Ciência: tendências, propostas e discussões historiográficas*. São Paulo: Editora Livraria da Física, 2004, p. 166-200.

16. Ethnomathematics and its Place in the History and Pedagogy of Mathematics. In: Thomas P. Carpenter, John A. Dossey, Julie L. Koehler. (Org.). *Classics in Mathematics Education Research*. Reston VA: National Council of Teachers of Mathematics, 2004, p. 194-199.

17. Prefácio: Etnomatemática. In: Charoula Stathopoulu. (Org.). *Etnomatemática*. Atenas: Editora ATRAPOS, 2005, p. 10-17.

18. Investimentos em educação, ciência e tecnologia. In: Jorge Wertheim; Célio da Cunha. (Org.). *Educação Científica e Desenvolvimento. O Que Pensam os Cientistas.* Brasília: UNESCO/Instituto Sangari, 2005, p. 203-217.

19. Uma Mente Brilhante. John Forbes Nash Jr. In: Bernardo Jefferson de Oliveira. (Org.). *História da Ciência no Cinema.* Belo Horizonte: Argumentum, 2005, p. 111-130.

20. Prefácio: Epistemologia e Didática da Matemática. In: Bruno D'Amore. (Org.). *Epistemologia e Didática da Matemática*. São Paulo: Escrituras Editora, 2005, p. 9-12.

21. Paulo Abrantes: em memória, Educação Matemática: Caminhos e Encruzilhadas. In: Leonor Santos; Ana Paula Canavarro; Joana Brocardo. (Org.). *Actas do Encontro internacional em homenagem a Paulo Abrantes*. Lisboa, 2005, p. 319-324.

22. Sobre o CIBEM. Uma reflexão a partir dos modelos de desenvolvimento das Américas e seus reflexos na educação. In: Henrique Manuel Gonçalves; Lurdes Serrazina. (Org.). *V CIBEM/Quinto Congresso Ibero-americano de Educação Matemática Conferências*. Porto:

Associação de Professores de Matemática, 2005, p. 9-18.

23. Lecturas de Etnomatemáticas, traducción de Socio-Cultural Bases of Mathematics Education. In: Maria Luiza Oliversas. (Org.). Granada: Electronic Form, 2005, v. cd-rom.

24. Prefácio: Humans-with-Media and the Reorganization of Mathematical Thinking Information and Communication Technologies, Modeling, Experimentation and Visualization. In: Marcelo de Carvalho Borba; Mónica E. Villarreal. (Org.). *Humans-with-Media and the Reorganization of Mathematical Thinking Information and Communication Technologies, Modeling, Experimentation and Visualization* - Series: Mathematics Education Library. São Paulo: Springer/Kluwer, 2005, v. 39, p. 13-15.

25. Educação para uma Civilização em Transição. In: Selva Guimarães Fonseca. (Org.). *Ensino Fundamental. Conteúdos, Metodologias e Práticas*. Campinas: Editora Alines, 2009, p. 73-92.

26. Perchè gli educatori e i ricercatori che si occupano di Matemática non possono ignorare le istanze che vengono della política?, *Contributo a Bruno D'Amore. Matemática, stupore e poesia.* Milano: Giunti Editori, 2009, p. 194-200.

27. Filosofia, Matemática e a Formação de Professores. In: Maria Helena Fávero; Célio da Cunha. (Org.). *Psicologia do Conhecimento.O diálogo entre as ciências e a cidadania*. Brasília: UNESCO/Universidade de Brasília/Liber Livro Editora, 2009, p. 85-100.

28. Nonkilling Mathematics. In: Joám Evans Pim. (Org.). *Toward a Nonkilling Paradigm*. Honolulu: XXX, 2009, p. 239-268.

29. Some Reflections on Education, Mathematics and Mathematics Education. In: Ruhama Even; Deborah Loewenberg Ball. (Org.). *The Professional Education and Development of Teachers of Mathematics, The 15th ICMI Study.* New York: Springer, 2009, p. 239-244.

30. A Transdisciplinaridade e sua importância para o diálogo coim as tradições e a sustentabilidade do planeta. In: Helio de Moraes e Marques; Luiz Eduardo Valiengo Berni. (Org.). *O Homem Alfa e Ômega da Criação: a visão Rosacruz dol conhecimento rumo à transdisciplinaridade*. Curitiba: Ordem Rosa-Cruz-AMORC, 2010, p. 220-241.

31. O Encontro Transdisciplinar das Ciências com a Realidade dos Povos Nativos. In: Lumena Celi Teixeira; Luiz Eduardo V. Berni. (Org.). *Psicologia e Povos Indígenas*. São Paulo: Conselho Regional de Psicologia, 2010, p. 196-209.

32. Ethnomathematics and its place in the history and pedagogy of mathematics. In: A. J. Bishop. (Org.). *Mathematics Education*. London: Routledge, 2010

33. Mathematics Education and Survival with Dignity. In: Helle Atro; Ole Ravn; Paola Valero. (Org.). *Critical Mathematics Education: Past, Present and Future*. Rotterdam: Sense Publishers, 2010, p. 51-63.

34. The Transmission and Acquisition of Mathematics in Latin America. In: Victor Katz; Constantinos Tzanakis. (Org.). *Recent Developments on Introducing a Historical Dimension in Mathematics Education*. 259ed.Washington: Mathematical Association of America, 2011, p. -251.

35. A Nonkilling Mathematics?. In: Joam Evans Pim. (Org.). *Engineering Nonkilling Scientific Responsability and the Advancement of Killing-free Societies*. Honolulu: Center for Global Nonkilling, 2011, p. 121-148.

36. Una Mirada Etnomatemática sobre la Cuestión de la Idea de Multiplicar,. In: Masami Isoda; Raimundo Olfos. (Org.). *Enseñanza de la Multiplicación: Desde el estudio de Clases Japonés a las Propuestas Iberoamericanas*. Valparaiso - Chile: Ediciones Universitarias de Valparaiso - PUC de Valparaiso, 2011, p. 303-319.

37. Desafios atuais para a educação cristã. In: Eulálio Figueira e Sérgio Junqueira. (Org.). *Teologia e Educação. Educar para a caridade e a solidariedade*. São Paulo: Paulinas, 2012, p. 259-272.

38. Matemática na transição das disciplinas para a trandisciplinaridade. In: Cibelle Celestino Silva e Luis Salvatico. (Org.). *História e Filosofia da Ciência no Cone Sul: Seleção de Trabalhos do 7º Encontro da AFHIC-Selección de Trabajos del 7º Encuentro del AFHIC*. Porto Alegre: Entrementes Editorial, 2012, p. 565-571.

39. Recherche scientifique, plasticite et transdisciplinarite: une chaire transdisciplinaire possible dans les universites. In: Silvia Guetta et Antonella Verdiani. (Org.). *La Communaute de pratiques comme outil de dialogue interreligieux et interculturel*. Firenze: Firenze University Press, 2012, v. 82, p. 119-196.

40. A Broad Concept of Social Justice. In: David Stinson and Anita Wager. (Org.). *Teaching Mathematics for Social Justice. Conversations with Educators.* Vancouver: NCTM/National Council of Teachers of Mathematics, 2012, p. 201-213.

41. O contexto internacional do surgimento da Educação Matemática e a fundação da SBEM (Entrevista Comentada),. In: Nancy Campos Muniz. (Org.). *Relatos de memórias: a trajetória histórica de 25 anos da Sociedade Brasileira de Educação Matemática (1988-2013)*. São Paulo: Editora Livraria da Física, 2013, p. 25-60.

42. Interview. In: Karp, Alexander; Roberts, David Lindsay. (Org.). *Interview*. Roterdam: Sense Publishers, 2014, p. 57-67.

43. Emoções como uma Estratégia de Transcendência. In: Norval Baitello

Junior; Christoph Wulf. (Org.). *Emoção e Imaginação: Os Sentidos e as Imagens em Movimento*. São Paulo: Estação das Letras e Cores, 2014, p. 113-128.

44. Lições do Passado e Perspectivas para o Futuro. In: Ana Maria Haddad Baptista; Rosemary Roggero. (Org.). *Tempo-Memória em Educação*. São Paulo: BT Acadêmica, 2014, p. 267-280.

45. Conocimientos y valores humanos. In: Ana Cecilia Espinoza Martínez; Pascal Galvani. (Org.). *Transdisciplinariedad y formación universitária: Teorías y práticas emergentes*. Puerto Vallarta, Jal.: Centro de Estúdios Universitários Arkos, 2014, p. 25-44.

46. Science of the Native Americans. In: Helaine Selin. (Org.). *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures*. New York: Springer, 2014, p. 19-25.

47. Colonialism and Science in the Americas. In: Helaine Selin. (Org.). *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures*. New York: Springer, 2014, p. 1-18.

48. Introduction. Traversing the Path of Mathematics Education in the Southern Americas. In: Hector Rosario, Patrick Scott; Bruce Vogelli. (Org.). *Mathematics and its Teaching in the Southern Americas*. Singapore: World Scientific Publications, 2014, p. 11-28.

49. The Galois Legacy, In the Steps of Galois. In: Fabio Maia Bertato; José Carlos Cifuentes; Jean-Jacques Szczeciniarz. (Org.). *Proceedings of the Evariste Galois Bicentenary Meeting*. Paris: Hermann Editeurs, 2014, p. 13-38.

50. Uma síntese do Programa Experimental de Mestrado em Ensino de Ciências e Matemática da UNICAMP/OEA/MEC (1975-1982). In: Robert Nardi; Terezinha Valim Oliver Gonçalves. (Org.). *A Pós-Graduação em Ensino de Ciências e Matemática no Brasil. Memórias, Programas e Consolidação da Pesquisa na área*. São Paulo: Livraria da Física, 2014, p. 56-84.

51. Mathematics Education in Latin America in the Premodern Period. In: Alexander Karp; Gert Schubring. (Org.). *Handbook on the History of Mathematics Education*. New York: Springer, 2014, p. 186-196.

52. Two Realities, The Academic and The Exterior: We Have To Think In a New Way. In: Beatriz Silva D'Ambrosio; Celi Espasandin Lopes. (Org.). *Creative Insubordination in Brazilian Mathematics Education Research*. Raleigh NC: Lulu Press, Inc, 2015, p. 41-52.

53. Metáfora de Jano na educação: mesmice e inovação como faces da prática educativa. In: Ana Maria Haddad Baptist;, Rosemary Roggero; Jason Mafra. (Org.). *Tempo-Memória: Perspectivas em Educação*. São Paulo: BT Acadêmica, 2015, p. 305-326.

54. Insubordinação Criativa na Educação e na Pesquisa: Das Disciplinas à Transdisciplinaridade. In: Beatriz Silva D'Ambrosio; Celi Espasandin Lopes. (Org.). *Vertentes da Subversão na Produção Científica em Educação Matemática*. Campinas: Mercado das Letras, 2015, p. 17-42.

55. Memórias da Educação Matemática. In: Antonio Vicente Marafioti Garnica. (Org.). *Pesquisa em História da Educação Matemática no Brasil: sob o signo da pluralidade.* São Paulo: Editora Livraria da Física, 2016, p. 183-210.

56. An Overview of the History of Ethnomathematics. In: Milton Rosa et al. (Org.). *Current and Future Perspectives of Ethnomathematics as a Program*. Hamburgo: Springer Open, 2016, p. 5-10.

57. A Response to the Changing Role of Mathematics in Society. *Critical Mathematics Education. Theory, Práxis, and Reality*. NC: Information Age Publishing, 2016, p. 23-34.

58. Os primórdios da epistemologia do Cálculo: dos babilônios a Arquimedes. In: Laerte Fonseca. (Org.). *Didática do Cálculo: Epistemologia, Ensino e Aprendizagem*. São Paulo: Editora da Física, 2016, p. 10-25.

59. Change in space, urban culture and ethnomathematics. In: Zehlia Babaci-Wilhite. (Org.). *Human Rights in Language and STEM (Science, Technology, Engineering and Mathematics) Education*. Roterdam: Sense Publishers, 2016, p. 207-219.

60. Educação para uma Civilização Ameaçada. In: Marilza Vanessa Rosa Suanno. (Org.). *Caminhos Arados para Florescer Ipês: complexidade e transdisciplinaridade na Educação*. Palmas, Tocantins: EDUET, 2017, p. 115-135.

61. Ethn and its Pedagogical Action in Mathematics Education mathematics. In: Milton Rosa. (Org.). *Ethnomathematics and its Diverse Approaches for Mathematics Education*. Cham, Switzerland: Springer, 2017, p. 285-305.

62. Ethnomathematics and the Emergence of Mathematics. In: John W. Adams. (Org.). *The Nature and Development of Mathematics: Cross disciplinary Perspectives on Cognition, Learning and Culture.* New York: Routledge, 2017, p. 69-85.

63. Signos Artísticos em Movimento? In: Ana Maria Haddad Baptista. (Org.). *Signos Artísticos em Movimento*. São Paulo: BT Acadêmica, 2017, p. 175-192.

64. Transdisciplinaridade, ética e futuro. In: Ettiene Guerios et al.. (Org.). *Complexidade e Educação: diálogos epistemológicos transformadores*. Curitiba: Editora CRV, 2017, p. 25-40.

65. Reminiscências do meu tempo de estudante na Maria Antonia. In: Maria Cecília Loschiavo dos Santos. (Org.). *Maria Antonia: uma rua na contramão*. 2a.ed.São Paulo: FFLCH-USP, 2018, p. 68-78.

66. Nonkilling Mathematics Education?. In: Joám Evans Pim; Sofía Herrero

Rico. (Org.). *Nonkilling Education*. Honolulu: CreateSpace Independent Publishing Platform, 2018, p. 71-98.

67. To Think in a New Way in Mathematics Education. In Mathematics Education in Brazil. In: Ribeiro, A.J.; Healy, L.; Borba; R., Fernandes, S.H.A.A.. (Org.). *Mathematics Education in Brazil: Panorama of Current Research*. New York: Springer International Publishing, 2018, p. 1-19.

68. Minhas reminiscências pessoais de Claude Gaulin. In: Esther Pillar Grossi. (Org.). *Homenagem Claude Gaulin*. Porto Alegre: GEEMPA, 2018, p. 125-126.

69. Como foi gerado o nome etnomatemática ou alustapasivistykselitys. In: Maria Cecília Fantinato ; Adriano Vargas Freitas. (Org.). *Etnomatemática. Concepções, Dinâmicas e Desafios*. Jundiaí: Paco Editorial, 2018, p. 21-30.

70. Humanity moving since pre-historic times to the future with creative STEAM. In: Zehlia Babaci-Wilhite. (Org.). *Promoting Language and STEAM as Human Rights in Education*. New York: Springer, 2019, p. 163-175.

Papers in Journals and in Congress Proceedings

1. Etnomotemática: teoria e prática pedagógica (prima parte) / Ethnomathematics: theory and pedagogical practice (firts part). *L Educazione Matematica*, Itália, v. XVI, n.3, p. 45-48, 1995.

2. Ethnomathematics, History of Mathematics and the Basin Methafor Histoire et Epistemologie dans l´Education Mathématique/History and Epistemology. In: *Première Université d´Eté Europeenne, 1995, Montpellier. Actes de la Première Université d´Eté Europeenne*. Montpellier: IREM, 1995. p. 571-580.

3. Globalização, educação multicultural e a etnomatemática. In: J*ornada de reflexão e capacitação sobre a matemática na educação básica de jovens e adultos, 1996, Brasília. Anais da Jornada de reflexão e capacitação sobre a matemática na educação básica de jovens e adultos.* Brasília: MEC/SEF, 1996. p. 7-23.

4. Menaces et espoirs. La civilisation peut-elle survivre sans éthique?. In: *La mutation du futur. Colloque de Tokyo, 1996, Paris. Anais do La mutation du futur. Colloque de Tokyo*. Paris: Albin Michel, 1996. p. 125-132.

5. Os paradigmas da ciência e sua presença nos currículos. In: *I Encontro Setorial dos Cursos de Graduação da UNESP, 1995, Águas de Lindóia. Anais do I Encontro Setorial dos Cursos de Graduação da UNESP*. São Paulo: UNESP, 1996. p. 13-29.

6. Evaluácion del rendimiento del alumno. Investigaciones en la sala de clases: Acciones pedagógicas complementarias. *Boletin 40 Del Proyecto Principal de Educación En*

América Latina y El Caribe, Santiago, p. 55-61, 1996.

7. América ou Columba e a figura controvertida de Américo Vespucci. *A Presença Italiana no Brasil*, Porto Alegre/Torino, v. III, p. 15-20, 1996.

8. Etnomatemática: teoria e prática pedagógica (seconda parte) / Ethnomathematic: theory and pedagogical practice (second part). *L Educazione Matematica*, v. XVII, n.01, p. 29-48, 1996.

9. Etnomatemáticas: un modelo de pensamiento que atiende el multiculturalismo reinvindicando la dignidad. *Revista Pedagogia*, Lima, v. 6, p. 14-15, 1997.

10. Educación, matemáticas y el futuro. *Epsilon*, México, v. 38, p. 105-113, 1997.

11. Where does ethnomathematics stand nowadays?. *For the Learning of Mathematics*, v. 17, n.2, p. 13-17, 1997.

12. O iluminismo e seus reflexos na matemática luso-brasileira. In: *Encontro Luso-Brasileiro de História da Matemática e Seminário nacional de História da Matemática, 1997, Águas de São Pedro. Anais-Actas do Encontro Luso-Brasileiro de História da Matemática e Seminário nacional de História da Matemática*. Rio Claro: Sérgio Nobre, 1997. p. 53-66.

13. Universidades, Transdisciplinariedade e Experiências Humanas. *THOT*, p. 73-85, 2001.

14. A matemática na época das grandes navegações e início da colonização. *Revista Brasileira de História da Matemática*, v. 1, p. 3-20, 2001.

15. O programa Ethomatemática: história, metodologia e pedagogia. In: *III Simpósio de Educación Matemática, 2001, Buenos Aires. Memórias del III Simpósio de Educación Matemática.* Buenos Aires: Editor Oscar L. Linardi, 2001.

16. What is Ethnomathematics, and How Can it Help Children in Schools?. *Teaching Children Mathematics (NCTM)*, v. 7, p. 308-310, 2001.

17. Etnomatemática e Educação. *Reflexão e Ação*, Santa Cruz do Sul, RS, v. 10, n.1, p. 7-19, 2002.

18. Ciência e Ética: um reencontro necessário. *SBPN Scientific Journal, São Paulo*, n.6, 2002.

19. Stakes in Mathematics Education for the Societies of Today and Tomorrow. *Monographies de L'Enseignement Mathématique, Genebra*, p. 301-316, 2003.

20. Um brasileiro no Congresso Internacional de Matemáticos de 1900. *Revista Brasileira de História da Matemática*, v. 3, n.5, p. 131-139, 2003.

21. A Busca da Paz como Responsabilidade dos Matemáticos. *Mathematicae Notae, Rosario*, v. XLII, p. 41-54, 2004.

22. Una riflessione dell'Etnomatematica: perchè insegnare matematica?. In: *Convegno sulla didattica della matematica 2004, 2004, Locarno. Atti del Convegno sulla didattica della*

matematica 2004. Locarno: Alta Scuola Pedagogica, 2004. p. 29-37.

23. Science in History: Latin América. *Science Technology And Society An Encyclopedia, Oxford*, v. 1, p. 524-530, 2005.

24. O Programa Etnomatemática como uma proposta de reconhecimento de outras formas culturais. *Yupana (Santa Fe)*, v. 2, n.5, p. 63-71, 2005.

25. Etnometodologia, Etnomatemática, Transdisciplinaridade: embasamento crítico-filosófico comuns e tendências atuais. *Revista Pesquisa Qualitativa*, São Paulo, v. 1, n.1, p. 155-167, 2005.

26. Armadilhas da Mesmice em Educação Matemática. *Bolema* v. 24, p. 95-109, 2005.

27. Albert Einstein e sua atuação para a Paz. *Revista Brasileira de História da Matemática*, v. 5, n.10, p. 1-17, 2005.

28. Volta ao mundo em 80 matemáticas. *Scientific American Brasil (Edição Especial)*, v. 11, p. 6-9, 2005.

29. Sociedade, cultura, matemática e seu ensino. *Educação e Pesquisa (USP)*, v. 31, n.1, p. 99-120, 2005.

30. Le tour du monde en 80 mathématiques, Pour la Science. *Mathématiques Exotiques*, v. 47, p. 2-5, 2005.

31. Sustentabilidade e Transdisciplinaridade. *Saneas (São Paulo*), v. 2, n.20, p. 7-9, 2005.

32. Escolas: espaços de construção da paz. *Cultura Educação e Comunicação, São Paulo*, v. 15, p. 4-4, 2005.

33. Educació matemática, etnomatemàtica i pau. *Perspectiva Escolar, Barcelona*, n.284, p. 15-22, 2005.

34. Para uma História da Etnomatemática ou A Matemática dos Não-Matemáticos. In: *I Colóquio Brasileiro de História da Matemática e IV Encontro Luso-Brasileiro de História da Matemática, 2005, Natal. Anais do I Colóquio Brasileiro de História da Matemática e IV Encontro Luso-Brasileiro de História da Matemática*. Natal: SBHMat/Editora da UFRN, 2005. v. 1. p. 188-213.

35. Sobre o CIBEM. In: *Quinto Congresso Ibero-americano de Educação Matemática, 2005, Porto. Programa do V CIBEM/Quinto Congresso Ibero-americano de Educação Matemática.* Porto: Faculdade de Ciências, Universidade do Porto, 2005. v. 1. p. 7-8.

36. Matemática, Etnomatemática e Visões do Mundo. *Movimento (Niterói)*, v. 14, p. 9-23, 2006.

37. The Program Ethnomathematics and the challenges of globalization. *Circumscribere*, v. 1, p. 74-82, 2006.

38. Ethnomathematics. Link between Traditions and Modernity. *La Matematica e la sua Didattica*, v. 1, p. 50-70, 2006.

39. Uma proposta curricular de educação para a paz. *Pátio. Revista Pedagógica (Porto Alegre)*, v. 39, p. 59-61, 2006.

40. Ocidente, Água, Sabedoria: Aprendendo a Conviver em Paz, A

Paz como Caminho. *Qualitymark*, v. 1, p. 152-166, 2006.

41. The Program Ethnomathematics: A Theoretical Basis of the Dynamics of Intra-Cultural Encounters. *The Journal of Mathematics and Culture*, v. 1, p. 1-8, 2006.

42. Società, cultura, matemática e suo insegnamento, la matemática e la sua didattica. *La Matematica e la sua Didattica*, v. 2, p. 187-221, 2006.

43. The role of mathematics in educational systems. *ZDM*, v. 39, p. 515-521, 2007.

44. Enlightenment and its Reflexion in Mathematics in Latin America, particularly in Brazil, in the 19th century,. *Revista Brasileira de História da Matemática*, v. 7 nº13, p. 3-11, 2007.

45. Peace, Social Justice and Ethnomathematics, International Perspectives on Social Justice and Mathematics Education, *The Montana Math Enthusiast*, v. 1, p. 25-34, 2007.

46. Occidente, Água y sabiduria. Aprendiendo a convivir en paz (traducción por Ana Cecília Espinosa Martinez). *Anais da 25a RBA Saberes e práticas antropológicas desafios para o século XXI*, v. IX, p. 5-16, 2009.

47. Euler, um Matemático Multifacetado. *Revista Brasileira de História da Matemática*, v. 9, p. 13-32, 2009.

48. A dinâmica cultural no encontro do Velho e do Novo Mundo. *Ea (Buenos Aires)*, v. 1, 2009.

49. A Matemática ao longo da história: novas direções impulsionadas pelas guerras. In: *VIII Seminário Nacional de História da Matemática, 2009. Atas do VIII Seminário Nacional de História da Matemática.* Belém: Universidade da Amazônia, 2009. p. 147-154.

50. Matemática Acadêmica e Matemática Escolar: as mesmas ou diferentes? In: *VI Congresso Iberoamericano de Educación Matemática/VI CIBEM, 2009, Puerto Montt. VI Congresso Iberoamericano de Educación Matemática/VI CIBEM.* Puerto Montt: Universidad de Los Lagos, 2009. p. 65-72.

51. Resenha de História das Ciências no Brasil. *Revista de História (Rio de Janeiro)*, v. 5, p. 1-105, 2010

52. From Ea, through Pythagoras, to Avatar: different setting for Mathematics. *Proceedings of the ... PME Conference*, v. 1, p. 1-20, 2010.

53. Presentation. *Journal of Mathematical Modelling and Application*, v. 1, p. 1, 2010.

54. Educação: do conhecimento disciplinar ao transdisciplinar e a questão de valores. *Ideação (Unioeste)*, v. 10, p. 79-91, 2010.

55. Ethnomathematics: a response to the changing role of mathematics in society. *Philosophy of Mathematics Education Journal*, v. 2, 2010

56. (with M. C. Borba) Tapestry of Trends in Mathematics Education. *ZDM*, v. 42, p. 271-419, 2010.

57. (with M. C. Borba) Dynamics of change of mathematics education in Brazil and a scenario of current research. *ZDM*, v. 42, p. 271-279, 2010.

58. (with L.M. Trivizoli, E. C. Santos, M. Leão) A Educação Matemática Focalizando Questões Sociais Maiores. *Bolema. Boletim de Educação Matemática*, v. 25, p. 99-124, 2011.

59. Fenomenologia e etnomatemática: para além das grades da gaiola. *IHU On-Line (UNISINOS. Online*), v. 378, p. 39-40, 2011.

60. Review of G.E.R. Lloyd: Disciplines in the making: Cross-cultural perspectives on Elites, Learning and Innovation. *Revista Brasileira de História da Matemática*, v. 11, p. 121-129, 2011.

61. A Transdisciplinaridade como uma Resposta à Sustentabilidade. *Revista Terceiro Incluído*, v. 1, p. 1-13, 2011.

62. Universidades y Transdisciplinariedad. *CEU Arkos La Universidad Vallartense*, v. X, p. 05-17, 2011.

63. A busca da paz: responsabilidade de matemáticos, cientistas e engenheiros. *Revista da Universidade Vale do Rio Verde*, v. 9, p. 66-77, 2011.

64. Álgebra Moderna e a Escola Secundária. *Cuadernos de Investigacion y Formacion en Educacion Matemática*, v. 6, p. 233-240, 2011.

65. Sobre o Programa de Matemática no curso ginasial e seu desenvolvimento. *Cuadernos de Investigacion y Formacion en Educacion Matemática*, v. 6, p. 225-232, 2011.

66. Considerações sobre o Ensino Atual da Matemática. *Cuadernos de Investigacion y Formacion en Educacion Matemática*, v. 6, p. 219-224, 2011.

67. A busca da paz como responsabilidade dos matemáticos. *Cuadernos de Investigacion y Formacion en Educacion Matemática*, v. 6, p. 201-215, 2011.

68. Matemática e Cultura. *Pátio - Ensino Fundamental*, v. XV, p. 6-9, 2011.

69. Um Estudo de História Institucional da Matemática no Brasil pós-guerra. In: *5º Encontro Luso-Brasileiro de História da Matemática, 2011, Castelo Branco - Portugal. Actas do 5º Encontro Luso-Brasileiro de História da Matemática*, 2011. p. 11-122.

70. Bicentenário de Évariste Galois: lições sobre historiografia. *Revista Brasileira de História da Matemática*, v. 11, p. 63-72, 2012.

71. An Ethnomathematics View of Space Occupation and Urban Culture. *Journal of Mathematics and Culture*, v. 1, p. 1-19, 2012.

72. Mathematicians, Mathematics Educators and the State of the World. *REDIMAT- Revista de investigación en didáctica de las matemáticas*, v. 1, p. 05-28, 2012.

73. Priorizar a Filosofia e a Matemática. *Cuadernos de Investigación y*

Formación en Educación Matemática, v. 8, p. 175-187, 2013.

74. Janus e as duas faces da Matemática. *Cuadernos de Investigación y Formación en Educación Matemática*, v. 8, p. 237-246, 2013.

75. Educação Matemática para a Cidadania, Criatividade, Educação e Matemática. *Educação e Matemática*, v. 125, p. 44-50, 2013.

76. Por que e como Ensinar História da Matemática. *REMATEC. Revista de Matemática, Ensino e Cultura (UFRN)*, v. 8, p. 7-21, 2013.

77. (with B. S. D'Ambrosio) The Role of Ethnomathematics in Curricular Leadership in Mathematics Education. *Journal of Mathematics Education at Teachers College*, v. 4, p. 19-25, 2013.

78. Diálogo com um Educador (entrevista concedida a Fernando Guedes Cury em Janeiro 2013). *Revista de História da Matemática para Professores*, v. 1, p. 7-9, 2013.

79. Tipos de conhecimento; a proposta da transdisciplinaridade. *Diálogo (São Paulo)*, v. 71, p. 25-31-31, 2013.

80. (with N. Vieira) Do curriculum trivium ao conhecimento trivium: um estudo do desenvolvimento do conhecimento trivium nos professores de matemática. *REMATEC. Revista de Matemática, Ensino e Cultura (UFRN)*, v. 9, p. 87-106, 2014.

81. Las bases conceptuales del Programa Etnomatemática. *RLE (Pasto)*, v. 7, p. 181-188, 2014.

82. A Internacionalização da Educação Matemática na América Latina. *REMATEC. Revista de Matemática, Ensino e Cultura (UFRN)*, v. 9, p. 7-21, 2014.

83. A Educação Matemática e o Estado do Mundo: desafios. *Em Aberto*, v. 27, p. 157-169, 2014.

84. The past and future of For the Learning of Mathematics: a personal view. *For the Learning of Mathematics*, v. 34, p. 3-4, 2014.

85. Mathematics and Education: Endeavors for Survival. *Isonomia, On-line Journal of Philosophy Epistemologica*, v. 7, p. 77-95, 2015.

86. I Learned from Sandy. *For the Learning of Mathematics*, v. 35, p. 15-16, 2015.

87. Ciência, Literatura, Ficção: três formas de narrative que se complementam. *Tempo Brasileiro*, v. 200, p. 35-58, 2015.

88. From Mathematics education and Society to Mathematics Education and a Sustainable Civilization: A Threat, an Appeal and a Proposal. *Proceedings of the Eight International Mathematics Education & Society Conference*, v. 3, p. 19-30, 2015.

89. A Criatividade e um Novo Perfil de Professor. *Pátio: Ensino Fundamental*, v. 20, p. 14-17, 2016.

90. Paulus Gerdes (1952-2014). *Historia Mathematica*, v. 43, p. 129-132, 2016.

91. The Ethnomathematics Program as a proposal for peace. *Revista Internacional de Pesquisa em*

Educação Matemática (RIPEM), v. 6, p. 8-25, 2016.

92. On Survival Transcendence. *PLASTIR - La revue transdisciplinaire de plasticité humaine*, v. 48, p. 1-13, 2017.

93. Ethnomathematics and the pursuit of peace and social justice. *ETD: Educação Temática Digital*, v. 19, p. 653-666, 2017.

94. Etnomatemática, justiça social e sustentabilidade. *Estudos Avançados*, v. 32, p. 189-204, 2018.

95. Educação na Perspectiva de Filósofos. *Tempo Brasileiro*, v. 206, p. 97-113, 2018.

96. À guisa de um preâmbulo ao trabalho "O ensino da matemática elementar no Brasil'. *Revista História da Educação Matemática*, v. 4, p. 7-19, 2018.

97. Educação para a Paz. *Revista Pátio – Ensino Fundamental*, v. XXI, p. 10-13, 2018.

98. O Programa Etnomatemática e a Crise da Civilização. *Hipatía*, v. n.1, p. 16-25, 2019.

99. (with M. Vanegas, M. Yuli, J. G. Rodrigues) Discurso docente y prácticas matemáticas democráticas en la clase de matemáticas. *REDIMAT - Journal of Research in Mathematics Education*, v. 8, p. 139-165, 2019.

100. Sobre las propuestas curriculares STEM (Science, Technology, Engineering, Mathematics) y STEAM (Science, Technology, Engineering, Arts, Mathematics) y el Programa de Etnomatematica. *Paradigma (Maracay)*, v. XLI, p. 151-167, 2020.

101. A matemática no encontro do velho e do novo mundo. *Amazônia (UFPA)*, v. 16, p. 3, 2020.

102. Ethnomathematics: Past and Future.

UBIRATAN D'AMBROSIO (1932 - 2021)

The Last Words to our NL

Now we remember the words of Professor Ubiratan to our 100th Newsletter (2019), where we presented all our former chairs.

http://www.clab.edc.uoc.gr/hpm/HPMNews100_final2.pdf

UBIRATAN D'AMBROSIO

My academic background:
"Licenciado" in Mathematics, University of São Paulo (1955); Doctor in Mathematics, University of São Paulo, with thesis on the Calculus of Variations (1963).

My affiliation (then and now):
University of São Paulo (1958-1963),
Brown University, Providence, RI (1964-1966),
State University of New York at Buffalo (1966 & 1968-1972),
Universidade Estadual de Campinas, SP Brazil (since 1972).
Now retired.

My first HPM meeting:
Third International Congress on Mathematical Education, Karlsruhe, 1976.

My first publication in the HPM domain:
D'Ambrosio, U. (1977). Overall goals and objectives for mathematical teaching. In H. Athen & H. Kunle (Eds.), *Proceedings of the Third International Congress on Mathematics Education* (pp. 221-227). Karlsruhe: ZDM. (Full text in ICMI. (1979). *New trends in mathematics teaching IV* (pp. 180-198). Paris: UNESCO.

My publication in the HPM domain of which I am most proud:
D'Ambrosio, U. (1985). Ethnomathematics and its place in history and pedagogy of mathematics. *For the Learning of Mathematics*, *5*(1), 44-48.

My most recent publication in the HPM field:
D'Ambrosio, U. (2019). Humanity moving since pre-historic times to the future with creative STEAM. In Z. Babaci-Wilhite (Ed.), *Promoting language and STEAM as human rights in education* (pp. 163-175). New York, NY: Springer.

The biggest challenge I faced when I was HPM Chair:
Promoting, in teaching the history of mathematics, more importance to the presence on mathematics in the religions, arts, sciences, treating mathematics as a humanistic discipline, and also giving much importance to the presence of a broader concept of mathematics in different cultural environments.

My proudest achievements as HPM chair:
Founding of the SBHMat/Sociedade Brasileira de História da Matemática, in 1999; Delivering a plenary lecture on "Ethnomathematiques dans l'histoire des idées" in the First European Summer University on History and Epistemology

in Mathematics Education, in Montpellier, 1993; Organizing, in Florence, Italy, the Satellite Meeting of ICME-8, which took place in Budapest in 1988.

Final remarks

In my long journey, I realized that much of the unhappy and disgraceful state of the world can be traced back to our condition as individuals and as members of a social, planetary and cosmic reality. The major problem is that it lacks an ethics of respect, solidarity and cooperation in human behavior, both as individuals and as members of a society. This kind of moralist discourse follows naturally from a broad look into history of ideas, particularly in the history of science and mathematics, which are the essence of the Western civilization. In studying history, we need to recognize and reflect on the fact that the goal has been the advancement of the disciplines and progress in general. The advances of systems of knowledge, particularly of science and mathematics, do not show concern about the ideal of a planetary civilization with equity, solidarity and dignity for all. I have been instilling these ideals in my behavior and also in my academic and pedagogical practices. My sporadic courses in the history of Mathematics, which fulfill my days as an educator, convey this message.

Remark from the NL Editors:

You can find Ubiratan's personal webpage in here:

https://web.archive.org/web/20080928110149/http://vello.sites.uol.com.br/ubi.htm

UBIRATAN AROUND THE WORLD

Professor Ubiratan spread his knowledge around the world participating in numerous events. Please, send to us your images of Professor Ubiratan to be published in our next NL.

Almería, Spain, 1985
Photo courtesy of Vicente Meavilla

Aveiro, Portugal, 2006
Photo courtesy of Helmuth Malonek

ESU 9
9th EUROPEAN SUMMER UNIVERSITY ON THE HISTORY AND EPISTEMOLOGY IN MATHEMATICS EDUCATION

18-22 July 2022

University of Salerno
(Department of Mathematics)
Fisciano (SA), Italy

Website: https://esu9.unisa.it
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https://www.instagram.com/esu9_salerno
https://twitter.com/esu9sa
official email: esu9.sa@gmail.com

FIRST ANNOUNCEMENT

A Summer University (SU) on the History and Epistemology in Mathematics Education began as an initiative of the French Mathematics Education community in the early 1980s. From those meetings emerged the organization of a SU on a European scale and became the *European Summer University (ESU) on the History and Epistemology in Mathematics Education*. The first ESU was organized in Montpellier (France), 1993. Since then, ESU has been successfully organized in different places in Europe: Braga (Portugal), 1996; Louvain-la-Neuve and Leuven (Belgium), 1999; Uppsala (Sweden), 2004; Prague (Czech Republic), 2007; Vienna (Austria), 2010; Copenhagen (Denmark), 2014, Oslo (Norway), 2018. It has now been integrated into one of the main international activities of the HPM Group, which - from 2010 onwards - is organized every four years. Thus, every two years at least one major international meeting of the Group takes place; namely, ESU and the HPM Satellite Meeting of ICME.

1. Aim

The principal aims of the ESU are:
- to provide a forum for presenting research in mathematics education and innovative teaching methods based on a historical, epistemological and cultural approach to mathematics and their teaching, with emphasis on actual implementation;
- to offer an opportunity for mathematics teachers, educators and researchers to share their historical knowledge, their teaching ideas and classroom experience related to this perspective;
- in this way, to motivate further collaboration along these lines, among members of the mathematics education community in Europe and beyond.

2. Rationale

ESU attempts to bring out the following aspects of mathematics:
• Mathematics is a human intellectual enterprise with a long history and a vivid present. Besides its "polished" products, those that can be communicated, criticized and incorporated into the body of mathematical knowledge, the process of "doing mathematics" is equally important, especially from a didactical point of view;
• From this perspective, the meaning of mathematical knowledge is determined not only by the circumstances in which it becomes a deductively structured theory,

but also by the procedures that led, or may lead to it and which are indispensable for its understanding.

• Therefore, learning mathematics should include the understanding of implicit motivations, sense-making actions and reflective processes aimed at the construction of meaning, while teaching mathematics should give the learners the opportunity to "do mathematics."

• As a consequence, perceiving mathematics both as logically structured collections of intellectual products and as processes of knowledge production, should form the core of the teaching of mathematics as well as the image of mathematics spread to the outside world.

Along these lines, emphasizing the integration of historical and epistemological issues in mathematics teaching and learning constitutes a natural way for exposing mathematics in the making. This, in turn may lead to a better understanding of specific parts of mathematics and a deeper awareness of what mathematics as a discipline is. This is important for mathematics education in that it can help students understand 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 according to shifting views of what it is and how it should be taught and learnt;

• has constituted a constant force for stimulating and supporting scientific, philosophical, technical, artistic, and social development.

In this way, learning mathematics and stimulating students' interest in it can be enhanced at all levels of education. Like other approaches, it maintains that mathematics is central to our modern society and a mathematically literate citizenry is essential to a country's vitality; but it also shows the crucial importance of historical and epistemological issues in mathematics. The harmony of mathematics with other intellectual and cultural pursuits, moreover, makes the subject interesting, meaningful, and worthwhile. In this wider context, history and epistemology of mathematics have an additional important role to play in providing a fuller education of the community: not being a natural science, but a formal science closer to logic – hence to philosophy – mathematics has the ability inherent in itself to connect the humanities with the sciences. Societies, of course, value the sciences and want young people to be scientifically educated. A cultural approach to mathematics and science aims to show how these subjects are deeply connected to the humanities: integrating history and epistemology in mathematics education can make this connection visible to students. This is most important, especially today when there is much concern about the level of mathematics that students are learning and about their decreasing interest in mathematics, at a time when the need is rising for both technical skills and a broader education.

3. Focus and main themes of ESU-9

The ESU is more a collection of intensive courses than a conference for researchers. It is a place where teachers and researchers meet and work together. It is

also a place where beginners, more experienced researchers and teachers present their teaching experience to the benefit of the participants and get a constructive feedback from them—and it refers to all levels of education, from primary school to tertiary education, including in-service teachers' training.

The programme and activities of ESU-9 are structured around the following main themes:
Theme 1: Theoretical and/or conceptual frameworks for integrating history and epistemology of mathematics in mathematics education;
Theme 2: History and epistemology in students and teachers mathematics education: Curricula, courses, textbooks, and didactical material of all kinds - their design, implementation and evaluation;
Theme 3: Original historical sources in teaching and learning of and about mathematics;
Theme 4: Mathematics and its relation to science, technology, and the arts: Historical issues and socio-cultural aspects in relation to interdisciplinary teaching and learning;
Theme 5: Topics in the history of mathematics education;
Theme 6: History of mathematics in Italy.
Emphasis is placed on empirical findings from actual classroom experiments and/or produced teaching & learning materials. Insightful theoretical ideas and/or historical analysis with visible didactical implications, however, are also welcome.

4. Activities during ESU-9

All activities should refer to the ESU-9 main themes. Its scientific program will be structured along these themes, consisting of a few plenary lectures & panels, as well as, parallel sessions of oral presentations, short communications and posters, for participants, who want to speak about their own experience, or research. A major part of the programme, however, consists of workshops.

• There will be at most one plenary lecture per theme, normally conceived as an introductory lecture for related workshops.
• In the panels, participants will work together, well in advance, so that, during the panel session, there is a real discussion among them and/or with the panel coordinator.
• Workshops consist in studying a specific subject and having a follow-up discussion. The workshop organizer prepares, presents and distributes the historical/epistemological or pedagogical/didactical material, which motivates and orients the exchange of ideas and the discussion among the participants. Participants read and work on the basis of this material (e.g. original historical texts, didactical material, students' worksheets etc). Workshops will be scheduled in parallel sessions and will vary in duration (1.5 hours for workshops based on didactical – pedagogical material; 2 hours for workshops based on historical and/or epistemological material).
• Oral presentations will be allocated a 30-minute time slot each (25 minutes for presentation and 5 minutes for discussion), scheduled in parallel sessions. It is an activity in the spirit of a conventional research conference.
• Parallel sessions for 10-minutes short oral communications and poster presentations, as well as exhibitions of books and other didactical material will also be possible.

5. Target population

Participants are expected to be mostly (elementary or secondary school) teachers who wish to gain new ideas on how they can integrate the history of mathematics into their teaching. However, there will be also university teachers and students, interested in the integration of the history and epistemology of mathematics into mathematics education, as well as, historians of mathematics, who may give a limited number of lectures and workshops to inform others about recent developments in their domain, and mathematicians with an interest in the relation between mathematics, its history and epistemology, and its role at present and in the past.

6. Time and place

The ESU-9 will take place from Monday 18 to Friday 22 July 2022 at the Department of Mathematics of University of Salerno, Fisciano (SA).

7. Official Languages

The official languages of ESU-9 are English, Italian and French.

More specifically:

- All plenary talks and panel discussions will be in English.
- It is preferable to organize Workshops in English. Nevertheless, workshop organizers who intend to organize their workshop in another language are advised and encouraged to prepare copies in English of the material to be distributed to the participants (e.g. slides, worksheets etc). This will certainly increase participation, as well as, facilitate communication among participants.
- Oral presentations can be delivered in any of the official languages. However, for presentations not in English, presenters will be asked to use two sets of slides; one set in the language they are going to give their presentation, and one set in English.

8. Submission of proposals

31 October 2021: deadline for submitting Abstracts of proposals for all types of activities.

15 December 2021: Notification of acceptance or not of the submitted proposals.

Important: Please, use the Application Form (https://esu9.unisa.it/proposal-submission/) and send it in electronic form to **esu9.sa@gmail.com**

The members of the Scientific Program Committee (SPC) will review the submitted abstracts. At this stage, acceptance of a proposal means that the proposed activity will be included in the ESU-9 Scientific Programme. However, this does not imply that a full text based on this activity will automatically be included in the ESU-9 Proceedings, which are going to be published after ESU-9. Full texts will be further reviewed by members of the SPC at the usual international standards. For more details, see Proceedings, §10 below.

9. The web site

Making known ESU-9 worldwide, is a major task to be realized by the SPC. To this end, a web site is operating at http://esu9.unisa.it

This is going to be an efficient tool for providing updated information, allowing for online registration, submission of proposals and full texts, supporting the reviewing process, etc.

10. Proceedings

Publishing the Proceedings of the ESU is also a major task. In fact, Proceedings of the previous ESU have become standard references in this area.

The Proceedings will be published after ESU-9, so that authors are given the opportunity to enrich their text as a result of the feedback they will gain during ESU-9.

Each submitted full text for a workshop, or an oral presentation will be reviewed by at least one member of the SPC at the usual international standards.

More details on the deadline for submitting full texts, their size, the format guidelines and the expected date by which the proceedings will be available and sent to all registered participants, will be announced in due course from the ESU-9 and HPM websites

http://esu9.unisa.it

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

You can connect with us through following social networks:

https://www.facebook.com/groups/170835957887148

https://www.instagram.com/esu9_salerno

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The official email is esu9.sa@gmail.com

11. The (international) Scientific Program Committee (SPC)

- Marta Menghini, University Roma La sapienza, Italy (chair)
- Évelyne Barbin, University of Nantes, France (co-chair)
- Roberto Capone, University of Salerno, Italy (co-chair)
- Michael N. Fried, Ben-Gurion University of the Negev, Israel (co-chair)
- Hélder Pinto, University of Aveiro & Piaget Institute, Portugal (co-chair)
- Francesco Saverio Tortoriello, University of Salerno, Italy (chair of local committee)

- Luis Carlos Arboleda, Universidad del Valle, Cali, Colombia
- Janet Barnett, Colorado State University, USA
- Aline Bernardes, Federal University of the State of Rio de Janeiro, Brazil
- Nathalie Chevalarias, Lycée Jaunay-Marigny & IREM of Poitiers, France
- Renaud Chorlay, INSPE de Paris, Paris, France
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- Man-Keung Siu, University of Hong Kong, Hong Kong SAR, China
- Bjørn Smestad, Oslo Metropolitan University, Oslo, & Volda University College, Volda, Norway
- Yi-Wen Su, University of Taipei, Taiwan
- Constantinos Tzanakis, University of Crete, Rethymnon, Greece
- Caterina Vicentini, Liceo "Buonarroti" Monfalcone (GO), Italy
- Ysette Weiss, Johannes Gutenberg-University Mainz, Germany
- Greisy Winicki-Landman, California State Polytechnic University, USA.

12. The Local Organizing Committee (LOC)

- Maria Giuseppina Adesso
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- Maria Rosaria Del Sorbo
- Oriana Fiore
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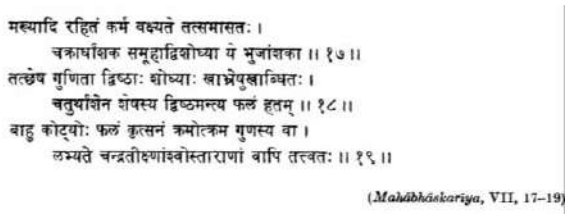
Hands-on Activities, Digital History, Student Role Models, and More in MAA Convergence

Since 2004, MAA *Convergence* has been 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. We highlight here some of our newest articles offering a variety of resources for use in your classroom.

Elliptical foundation of a *hare paenga*.
Photo provided by
Ximena Catepillán and Cynthia Huffman.

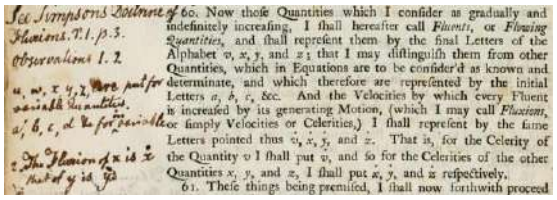
Editorial board member Ximena Catepillán, together with Cynthia Huffman and Scott Thuong, explain how a trip to Rapa Nui, also known as Easter Island, provided opportunities to explore the elliptical shape of the foundations of dwellings known as *hare paenga* and to learn about mathematical glyphs in Rapanui writing in "Mathematical Mysteries of Rapa Nui with Classroom Activities." Four activities involving ellipses help instructors share this example of ethnomathematics with their students. In "The Educational Times Database: Building an Online Database of Mathematics Questions and Solutions Published in a 19th-Century Journal," Robert M. Manzo discusses a new tool for identifying relevant problems from the long-running British periodical, *Educational Times*; provides an overview of the significance of the *ET* and its contributors in the history of mathematics; and charts the history of efforts to index the run of mathematical problems and solutions in *ET* and its sister publication, *Mathematical Questions*. *Convergence*'s collection of primary-source translations is augmented by David Derbes's "Mark Kac's First Publication: A Translation of 'O nowym sposobie rozwiązywania równań stopnia trzeciego'," which makes available Kac's first publication, written while he was in high school, on a new derivation of Cardano's formula.


मख्यादि रहितं कर्म वक्ष्यते तत्समासतः ।
चक्रार्धांशक समूहाद्विशोध्या ये भुजांशका ।। १७ ।।
तच्छेष गुणिता द्विष्ठाः शोध्याः खाभ्रेषुखाग्निताः ।
चतुर्थांशेन शेषस्य द्विष्ठमन्त्य फलं हृतम् ।। १८ ।।
बाहु कोट्योः फलं कृत्सनं क्रमोत्क्रम गुणस्य वा ।
लभ्यते चन्द्रतीक्ष्णांश्वोस्ताराणां वापि तत्त्वतः ।। १९ ।।
(*Mahābhāskarīya*, VII, 17–19)

Rendering of Bhāskara's original Sanskrit description of his sine approximation, as printed in Radha Charan Gupta, "Bhāskara I's Approximation to Sine," *Indian Journal of History of Science* 2, no. 2 (1967): 122.

New installments in our ongoing series include Ken Monks's exploration of different frameworks for algebraically approximating transcendental functions, set against a backdrop of astounding mathematical work done by three medieval Indian mathematicians/astronomers, in

"Bhāskara's Approximation to and Mādhava's Series for Sine: A Mini-Primary Source Project for Second-Semester Calculus Students." This is the 19th entry in "A Series of Mini-projects from **TR**ansforming **I**nstruction in **U**ndergraduate **M**athematics via **P**rimary **H**istorical **S**ources" from the TRIUMPHS team. Additionally, Daniel E. Otero has added a third episode to his series of curricular units based on primary source texts for use in teaching and learning trigonometry with his student project featuring another early Indian mathematician, Varāhamihira, who encoded a full table of sines for 24 arcs from 0° to 90° (in multiples of 3°45′) as well as statements of a handful of trigonometric theorems—all in just 11 lines of Sanskrit verse: "Varāhamihira and the Poetry of Sines."


See Simpsons Doctrine of Fluxions. T. I. p. 3. Observations 1. 2.

66. Now thefe Quantities which I conſider as gradually and indefinitely increaſing, I ſhall hereafter call *Fluents*, or *Flowing Quantities*, and ſhall repreſent them by the final Letters of the Alphabet *v*, *x*, *y*, and *z*; that I may diſtinguiſh them from other Quantities, which in Equations are to be conſider'd as known and determinate, and which therefore are repreſented by the initial Letters *a*, *b*, *c*, &c. And the Velocities by which every Fluent is increaſed by its generating Motion, (which I may call *Fluxions*, or ſimply Velocities or Celerities,) I ſhall repreſent by the ſame Letters pointed thus $\dot{v}$, $\dot{x}$, $\dot{y}$, and $\dot{z}$. That is, for the Celerity of the Quantity *v* I ſhall put $\dot{v}$, and ſo for the Celerities of the other Quantities *x*, *y*, and *z*, I ſhall put $\dot{x}$, $\dot{y}$, and $\dot{z}$ reſpectively.

61. Theſe things being premiſed, I ſhall now forthwith proceed

Newton's definitions for fluents and fluxions in his 1736 *The Method of Fluxions and Infinite Series*, with John Adams's handwritten notes in the margin. Image courtesy of Archive.org

Meanwhile, editorial board member Erik Tou brings his *Math Origins* series to a conclusion with a reflection on the various competing calculus notations that have been proposed and used over the centuries in "The Language of Change." This spring's reprint from NCTM's *Mathematics Teacher* shares Judith Grabiner's commentary on Richard Davitt's classroom application of her "use-discover-explore/develop-define" model for historical change in mathematics in his 2000 article, "The Evolutionary Character of Mathematics." Our annual tradition of publishing the winning entry in HOM SIGMAA's student paper contest continues with "The Suan shu shu and the Nine Chapters on the Mathematical Art: A Comparison," by Megan Ferguson of Adelphia University. Catch up on any contributions you may have missed by visiting our new index of Article Series in *Convergence*.

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

http://www.maa.org/press/periodicals/convergence

Interested in contributing? We'd love to hear from you at **convergence@maa.org**

Convergence publishes expository articles on the history of topics in the grades 8–16 mathematics curriculum; translations of primary sources suitable for classroom use; classroom activities, projects, or modules for using history to teach mathematics; and classroom testimonials after applications of such activities, projects, or modules. Additionally, we welcome submissions related to the following *Convergence* features:

- Mathematical Treasures, a collection of images of historical mathematical texts or objects for use in the classroom.
- "Problems from Another Time," highlighting historical problems.
- "On This Day," a listing of three or four historic mathematical

events that happened on any given date.

- "Today's Quotation," a quotation about mathematics from a historical figure selected from a searchable database of quotations.
- "Conference Calendar," an up-to-date guide to conferences and events around the world that feature or include the history of mathematics and its use in teaching.

For more details on *Convergence*'s submission and refereeing process, see our Guidelines for Authors at https://www.maa.org/press/periodicals/convergence/guidelines-for-convergence-authors.

Amy Ackerberg-Hastings,
Independent Scholar, USA
Janet Barnett,
Colorado State University – Pueblo, USA
Editors, *MAA Convergence*

Have you read these?

Barrow-Green, J. (2021). "Knowledge gained by experience": Olaus Henrici - engineer, geometer and maker of mathematical models. *Historia Mathematica, 54*, 41–76.

Brummelen, G. (2021). Before the end of an error: Giovanni Bianchini's original flawed treatise on the conversion of stellar coordinates. *Archive for History of Exact Sciences*, 75(1), 109–124.

Cerroni, C. & Brigaglia, A. (2021). The "Circolo Matematico di Palermo" and the First World War: The crisis of scientific internationalism: a view through the unedited correspondence of De Franchis with Edmund Landau and other mathematicians. *Historia Mathematica, 55*, 64–94.

Dong, H. (2021). Hobbes's model of refraction and derivation of the sine law. *Archive for History of Exact Sciences*, 75(3), 323–348.

Fincke, J.; Horowitz, W. & Ratzon, E. (2021). BM 76829: A small astronomical fragment with important implications for the Late Babylonian Astronomy and the Astronomical Book of Enoch. *Archive for History of Exact Sciences*, 75(3), 349–368.

Gimeno, G., Xipell, M., Baig, M. (2021). Operator calculus: the lost formulation of quantum mechanics. *Archive for History of Exact Sciences, 75*(3), 283–322.

Hurtado, R.; Nicolás, J. & Ezponda, J. (2021). The geometric origin of perspectivist science in G. W. Leibniz. Analysis based on unpublished manuscripts. *Historia Mathematica, 55*, 1–22.

Iohara, K. & Malbos, P. (2021). Maurice Janet's algorithms on systems of linear partial differential equations. *Archive for History of Exact Sciences*, 75(1), 43–81.

Lützen, J. (2021). Hjelmslev's geometry of reality. *Historia Mathematica, 54*, 95–116.

Maidment, A. (2021). The Edinburgh Mathematical Laboratory and Edmund Taylor Whittaker's role in the early development of numerical analysis in Britain. *Historia Mathematica, 55*, 39–63.

Marx, C. (2021). On the making of Ptolemy's star catalog. *Archive for History of Exact Sciences*, 75(1), 21–42.

Rowe, D. (2021). On resolving singularities of plane curves via a theorem attributed to Alfred Clebsch. *Historia Mathematica, 55*, 23–38.

Toader, I. (2021). Permanence as a principle of practice. *Historia Mathematica, 54*, 77–94.

Tracey, K. (2021). 'Disturbed' by Euclid: Thomas Fincke and the reading of Ramist mathematics in sixteenth-century Germany. *Historia Mathematica, 54*,1–40.

Announcements of Events

CERME 12
Thematic Working Group 12

History in Mathematics Education

2-6 February 2021
Bozen-Bolzano, Italy

Leader: Renaud Chorlay, (France), renaud.chorlay@inspe-paris.fr

Co-leaders:
Tanja Hamann (Germany); Jenneke Krüger (Netherlands); Antonio M. Oller-Marcén (Spain).

Scope and focus of the Working Group
History of mathematics *in* mathematics education, and history *of* mathematics education continue to receive much attention. Although empirical research and coherent theoretical/conceptual frameworks within this area have emerged relatively recently, there exists an increasing interest in these lines of work. The purpose of this CERME TWG is to provide a forum to approach mathematics education in connection with history and epistemology.

Call for papers and poster proposals
TWG12 welcomes both empirical and theoretical research papers, and posters proposals related to one or more of the following issues – although any paper or poster of relevance to the overall focus of the group will be taken into consideration. All educational levels can be considered, from early-age mathematics to tertiary education and teacher training:

1. Design of teaching/learning materials using the history of mathematics, preferably with conclusions based on empirical data.

2. Research on the existing uses of history or epistemology in curricula, textbooks, or classroom practice.

3. Research on the history of mathematics education, on local, national or international level.

4. Connections between mathematics education, history of mathematics, and history of mathematics education: Theoretical and methodological issues.

Papers and poster proposals should use the CERME template, and conform to the guidelines at www.cerme12.it CERME 12 uses an electronic submission system www.conftool.pro/cerme12 The authors submit the initial version of their paper on the website (uploading it both as a .doc and a .pdf file, and providing the required information, in particular the TWG number).

Reviews and decisions
Each paper will be peer-reviewed by two persons from among those who submit papers to this TWG. Please expect to be asked to review up to two papers. The group leaders will decide about the acceptance of posters.

Important dates

• **15th July 2021:** Deadline for Early Bird Procedure
• **15th September 2021:** Deadline for submission of papers and posters.
• **4th November 2021:** Preliminary decisions on papers.
• **12h November 2021:** Preliminary decisions on posters.
• **2nd - 6th February 2022:** CERME 12 takes place.
• See www.cerme12.it/deadlines/ f**or other important dates**

ICHME 7
Seventh International Conference on the History of Mathematics Education

Dear friends of the history of mathematics education,

The **ICHME7** (Seventh International Conference on the History of Mathematics Education) will be **postponed** from 09/20 - 09/24/2021 to **09/19 - 09/23/2022**. The conference venue remains Mainz in Germany.

The ICHME conferences have so far been characterised by a lively personal exchange not only during but also between and after the conference talks, during excursions and shared meals. We would like to keep this characteristic feature of the conference and have therefore refrained from an online conference this year. The decision was made by the Organising Committee in consultation with the local organisers on the basis of a survey.

Gert Schubring

Forthcoming BSHM Meetings

The British Society for the History of Mathematics
http://www.bshm.ac.uk/events

1. People, Places, Practices: Joint BSHM-CSHPM/SCHPM conference

New dates: 12–14 July 2021
University of St. Andrews, UK

http://www.mcs.st-andrews.ac.uk/bshm-cshpm/index.shtml

People, Places, Practices, is the 5-yearly joint conference of the British Society for the History of Mathematics and Canadian Society for History and Philosophy of Mathematics/La Société Canadienne d'Histoire et de Philosophie des Mathématiques, in collaboration with HOM-SIGMAA, the History of Mathematics Special Interest Group of the MAA.

The conference is hosted by the School of Mathematics and Statistics, St Andrews University, the home of the MacTutor History of Mathematics Archive.

An Education Strand within the conference will run on dates to be confirmed. This will provide practical talks and workshops for those teaching the 15+ age group. Professor Évelyne Barbin, author of *Let History into the Mathematics Classroom* will talk about the French experience, where history of mathematics has recently been made a required part of the secondary mathematics curriculum.

Confirmed invited speakers include Karen Parshall, Colm Mulcahy, Évelyne Barbin, Edmund Robertson, Valeria Giardino, Brendan Larvor, Robin Wilson, Serafina Cuomo.

The organising committee are: Maria Zack (CSHPM), Dirk Schlimm (CSHPM), Amy Shell-Gellasch (HOMsigmaa), Mark McCartney (BSHM), Isobel Falconer (BSHM)

The education subcommittee are: Chris Pritchard (BSHM & Scottish Mathematical Council), Amy Shell-Gellasch (HOMsigmaa), Danny Otero (HOMsigmaa), Snezana Lawrence (BSHM), Isobel Falconer (BSHM).

For further details of the conference and venue, see
http://www.mcs.st-andrews.ac.uk/bshm-cshpm/index.shtml

2. History of Mathematics and Flight

New date: 11 September 2021
Manchester Airport, UK

A day of talks about the history of mathematics and flight. Flight will be broadly conceived to cover the flight of man-made objects, animals, and even fugitives; flight formation, navigation and control.

The day will include an optional tour of the Concorde flight deck.

3. Non-Western Mathematics

20 October, 2021
London, UK or Online

http://www.mcs.st-andrews.ac.uk/bshm-cshpm/index.shtml

Confirmed speakers and topics:

- Anuj Misra (Copenhagen):
Sanskrit Mathematics in the Language of Poetry

- Manuel Medrano (St Andrews):
Knot Just Numbers: Mathematics and More in Andean Khipu Strings

- Karine Chemla (Paris-Diderot):
Gresham Lecturer: Histories of Numbers

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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
108	**12 October 2021**	**November 2021**
109	12 February 2022	March 2022
110	12 June 2022	July 2022

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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.