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# ICMI News 17 : April 2011

- Extra-muros -



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<BR/>UREM :<BR/>Unité de Recherche sur l'Enseignement des  
Mathématiques

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ICMI News 17 : April 2011 A Bimonthly Email Newsletter from the ICMI-International Commission on Mathematical Instruction

Editor : Jaime Carvalho e Silva, Dep. Matematica, Universidade de Coimbra, Portugal

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## 1. Editorial : Supporting and fostering solidarity and collaboration around mathematics education : A key mission for ICMI

As was stressed at the Symposium in Roma celebrating its centennial, supporting and fostering solidarity, connections, exchanges and collaborations around mathematics education has been a central mission of ICMI since its creation. In the last decade, ICMI has been especially active in that direction, launching collaborative projects such as the Pipeline Study or the Klein Project with its mother institution IMU, collaborating with IASE (International Association for Statistics Education) for ICMI Study 18 devoted to statistics education and with ICIAM (International Council for Industrial and Applied Mathematics) for ICMI Study 20 devoted to the educational interfaces between mathematics and industry, creating a new format of Affiliate Group, new regional networks such as AFRICME in Anglophone Africa and EMF, the Francophone Mathematics Space, renewing its links to UNESCO. This renewal, which began with the collaboration in the design and circulation all around the world of the successful exhibition : "Experiencing Mathematics !", has been more recently attested by the role played by the ICMI Community in the production of the document just published by UNESCO and entitled "Les défis de l'enseignement des mathématiques dans l'éducation de base" (<http://unesdoc.unesco.org/images/0019/001917/191776F.pdf>) whose translation in different languages is being organized. As this document makes clear, for taking up the challenge of quality mathematics education for all, the key challenge for basic mathematics education, we are not deprived from resources, but as this document makes also clear, the reinforcement of solidarities and collaborations in a diversity of ways is essential.

IACME (Interamerican Committee on Mathematics Education), the first ICMI regional organization, is preparing the celebration of its 50th anniversary next June in Brazil and Edward Jacobsen who has played a key role in the collaboration between ICMI and UNESCO has been just awarded the Luis Santaló Medal by IACME. ICMI and IMU are launching a new program, the "Capacity and Networking Program" directed to teacher educators in the developing world, with the support of UNESCO, ICIAM, and CIMPA (International Centre of Pure and Applied Mathematics) whose first realization will take place next September in Mali. These are two more reasons reinforcing my conviction that the values it cultivates make ICMI a key organization for nurturing and fostering the necessary solidarities and collaborations around mathematics education worldwide.

Michèle Artigue, past President of ICMI, artigue@math.jussieu.fr

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## 2. ICMI is on Facebook

ICMI is now alive and active on Facebook under the name "IcMI Mathematical Instruction". If you want to know the latest updates of the ICMI website, the latest about ICMI activities or details about the site visit a delegation of the ICMI Executive Committee did to Durban, South Africa, to select the site for ICME-13, 2016, you should ask to be our friend in Facebook. We uploaded some pictures and videos of the site visit, and we will do the same for the two other site visits still to be done (to Hamburg, Germany and to Prague, Czech Republic).

So, we ask all that have facebook accounts that you :

- ▶ click LIKE at the institutional webpage :  
<http://www.facebook.com/pages/ICMI-International-Commission-on-Mathematical-Instruction/146491102081123>
- ▶ become friends of the ICMI Facebook account ; you just have to search for "IcMI Mathematical Instruction".

All this can also be done from the ICMI main webpage, choosing the options on the lower right corner :  
<http://www.mathunion.org/ICMI/> Please tell all people interested in your networks.

Jaime Carvalho e Silva, Secretary-General of ICMI, jaimecs@mat.uc.pt

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## 3. ICME-12 is here : look

The ICME-12 webpage has been revamped in preparation for the launching of the second announcement. Be attentive, it will be out shortly. In the meantime look at the revamped ICME-12 webpage <http://www.icme12.org/> and see which will be the Congress timetable (somewhat different from previous ones), how the scientific program will be organized, how the grants to delegates from non-affluent countries to attend the ICME-12 will be administered, and who will need a visa to enter South Korea, etc.

Jaime Carvalho e Silva, Secretary-General of ICMI, jaimecs@mat.uc.pt

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## 4. Topic Study Groups for ICME-12

The Topic Study Groups (TSG) for ICME-12 have been announced on the ICME-12 webpage :  
<http://www.icme12.org/> Two of the TSG have already issued their call for papers that can be found on the ICMI website on a special area on the front page of the ICMI website. All the other call for papers and announcements will be posted there. Please visit the ICMI webpage and the ICME-12 webpage to be sure not to miss important information. This is the list of the TSGs and their 2 co-chairs ; the rest of the team members will be posted shortly on the ICME-12 webpage.

TSG 1 : Mathematics education at preschool level Co-chairs : Elin Reikerås (Norway) elin.reikeraas@uis.no, Marilyn Taylor(New Zealand) meta@waikato.ac.nz

TSG 2 : Mathematics education at tertiary level and access to tertiary level Co-chairs : Ansie Harding (South Africa)

aharding@up.ac.za, Juha Oikkonen (Finland) Juha.Oikkonen@helsinki.fi

TSG 3 : Activities and programs for gifted students Co-chairs : Peter Taylor (Australia) pjt@amt.canberra.edu.au, Rosa Leikin (Israel) rozal@construct.haifa.ac.il

TSG 4 : Activities and programs for students with special needs Co-chairs : Jean-Philippe Drouhard (France) jpdrouhard@gmail.com, Sung-kyu Choi(Korea) skchoi@daegu.ac.kr

TSG 5 : Mathematics education in and for work Co-chairs : Tine Wedege (Sweden) tine.wedege@mah.se, Keiko Yasukawa (Australia) Keiko.Yasukawa@uts.edu.au

TSG 6 : Mathematics literacy Co-chairs : Mogens Niss (Denmark) mn@ruc.dk, Hileni Magano-Kapenda (Namibia) hkapenda@unam.na

TSG 7 : Teaching and learning of number systems and arithmetic --- focusing especially on primary education Co-chairs : Joana Brocardo (Portugal) joana.brocardo@ese.ips.pt, Geoffrey Saxe(USA) saxe@socrates.berkeley.edu

TSG 8 : Measurement --- focusing especially on primary education Co-chairs : Jeong Suk Pang(Korea), jeongsuk@knue.ac.kr, Kees Buys(the Netherlands) c.buys@slo.nl

TSG 9 : Teaching and learning of algebra Co-chairs : Rakhi Banerjee (India) rakhi@tiss.edu, Luis Puig (Spain) luis.puig@uv.es

TSG 10 : Teaching and learning of geometry Co-chairs : Colette Laborde(France) Colette.Laborde@imag.fr, Linquan Wang(China) wanglq@scnu.edu.cn

TSG 11 : Teaching and learning of probability Co-chairs : Per Nilsson (Sweden), Per.Nilsson@vxu.se, Jun Li (China) lijun@math.ecnu.edu.cn

TSG 12 : Teaching and learning of statistics Co-chairs : Dani Ben-Zvi (Israel) dbenzvi@univ.haifa.ac.il, Jean-Claude Oriol (France) jeanclaude.oriol@gmail.com

TSG 13 : Teaching and learning of calculus Co-chairs : Victor Martinez-Luaces (Uruguay) victoreml@gmail.com, Sunsook Noh (Korea) noh@ewha.ac.kr

TSG 14 : Reasoning, proof and proving in mathematics education Co-chairs : Stéphane Cyr (Canada) cyr.stephane@uqam.ca, Maria Alessandra Mariotti (Italy) marialessandra.mariotti@gmail.com

TSG 15 : Problem solving in mathematics education Co-chairs : Zahra Gooya (Iran) zahra.gooya@yahoo.com, Manuel Santos Trigo(Mexico) msantos@cinvestav.mx

TSG 16 : Visualization in the teaching and learning of mathematics Co-chairs : Gert Kadunz (Austria), gert.kadunz@uni-klu.ac.at, Michal Yerushalmy (Israel) michalyr@construct.haifa.ac.il

TSG 17 : Mathematical applications and modeling in the teaching and learning of mathematics Co-chairs : Jill Brown (Australia) [jill.brown@acu.edu.au](mailto:jill.brown@acu.edu.au), Toshikazu Ikeda (Japan) [ikeda@ed.ynu.ac.jp](mailto:ikeda@ed.ynu.ac.jp)

TSG 18 : Analysis of uses of technology in the teaching of mathematics Co-chairs : Morten Misfeldt (Denmark) [mimi@dpu.dk](mailto:mimi@dpu.dk), Wei-Chi Yang(USA) [wyang@radford.edu](mailto:wyang@radford.edu)

TSG 19 : Analysis of uses of technology in the learning of mathematics Co-chairs : Hans-Georg Weigand(Germany) [weigand@mathematik.uni-wuerzburg.de](mailto:weigand@mathematik.uni-wuerzburg.de), Marcelo Borba(Brazil) [mborba@rc.unesp.br](mailto:mborba@rc.unesp.br)

TSG 20 : The role of history of mathematics in mathematics education Co-chairs : Renaud Chorlay(France) [renaud-chorlay@noos.fr](mailto:renaud-chorlay@noos.fr), Wann-Sheng Horng (Taiwan) [horng@math.ntnu.edu.tw](mailto:horng@math.ntnu.edu.tw)

TSG 21 : Research on classroom practice Co-chairs : Yeping Li (USA) [yepingli@tamu.edu](mailto:yepingli@tamu.edu), Hélia Oliveira (Portugal) [hmoliveira@fc.ul.pt](mailto:hmoliveira@fc.ul.pt)

TSG 22 : Learning and cognition in mathematics Co-chairs : Hsin-Mei Huang(Taiwan) [hhuang22@gmail.com](mailto:hhuang22@gmail.com), Gaye Williams (Australia) [gaye.williams@deakin.edu.au](mailto:gaye.williams@deakin.edu.au)

TSG 23 : Mathematical knowledge for teaching at primary level Co-chairs : Christoph Selter (Germany), [christoph.selter@t-online.de](mailto:christoph.selter@t-online.de), Suck Yoon Paik (Korea) [sypaik@snue.ac.kr](mailto:sypaik@snue.ac.kr)

TSG 24 : Mathematical knowledge for teaching at secondary level Co-chairs : Aihui Peng (China), [huihui0@163.com](mailto:huihui0@163.com), Hikma Smida (Tunisia) [Hikma.Smida@ipest.rnu.tn](mailto:Hikma.Smida@ipest.rnu.tn)

TSG 25 : In-services education, professional development of mathematics teachers Co-chairs : Shuha An (USA), [san@csulb.edu](mailto:san@csulb.edu), Andrea Peter-Koop (Germany) [peter-koop@mathematik.uni-oldenburg.de](mailto:peter-koop@mathematik.uni-oldenburg.de)

TSG 26 : Preservice mathematical education of teachers Co-chairs : Sylvie Coppé (France), [sylvie.coppe@univ-lyon2.fr](mailto:sylvie.coppe@univ-lyon2.fr), Ngai-Ying Wong (Hong Kong) [nywong@cuhk.edu.hk](mailto:nywong@cuhk.edu.hk)

TSG 27 : Motivation, beliefs and attitudes towards mathematics and its teaching Co-chairs : Birgit Pepin (Norway), [birgit.pepin@hist.no](mailto:birgit.pepin@hist.no), Ji Won Son(USA) [sonjiwon@utk.edu](mailto:sonjiwon@utk.edu)

TSG 28 : Language and communication in mathematics education Co-chairs : Tracy Craig (South Africa) [Tracy.craig@uct.ac.za](mailto:Tracy.craig@uct.ac.za), Candia Morgan (UK) [C.Morgan@ioe.ac.uk](mailto:C.Morgan@ioe.ac.uk)

TSG 29 : Gender and mathematics education Co-chairs : Olof Steinhorsdottir (USA) [steintho@email.unc.edu](mailto:steintho@email.unc.edu), Veronique Lizan (France) [vlizan@toulouse.iufm.fr](mailto:vlizan@toulouse.iufm.fr)

TSG 30 : Mathematics education in a multilingual and multicultural environment Co-chairs : Anjum Halai(Pakistan), [anjum.halai@aku.edu](mailto:anjum.halai@aku.edu), Clement Dlamini(Swaziland) [dlamini.c@examsCouncil.org.sz](mailto:dlamini.c@examsCouncil.org.sz)

TSG 31 : Task design and analysis Co-chairs : Xuhua Sun (China) [xhsun@umac.mo](mailto:xhsun@umac.mo), Lalina Coulange (France) [lalina.coulange@free.fr](mailto:lalina.coulange@free.fr) or [lalina.coulange@gmail.com](mailto:lalina.coulange@gmail.com)

TSG 32 : Mathematics curriculum development Co-chairs : Koeno Gravemeijer (Netherlands),  
koneo.gravemeijer@esoe.nl, Anita Rampal (India) anita.rampal@gmail.com

TSG 33 : Assessment and testing in mathematics education Co-chairs : Michael Neubrand (Germany)  
neubrand@mathematik.uni-oldenburg.de, Christine Suurtamm(Canada) suurtamm@uottawa.ca

TSG 34 : The role of mathematical competitions and other challenging contexts in the teaching and learning of  
mathematics Co-chairs : Maria de Losada (Columbia), mariadelosada@gmail.com, Ali Rejali (Iran)  
a\_rejali@cc.iut.ac.ir

TSG 35 : The history of the teaching and learning of mathematics Co-chairs : Fulvia Furinghetti (Italy)  
furinghetti@dima.unige.it, Arlete de Jesus Brito(Brazil) arlete@rc.unesp.br

TSG 36 : The role of ethnomathematics in mathematics education Co-chairs : Pedro Palhares (Portugal),  
palhares@iec.uminho.pt palhares2307@gmail.com, Lawrence Shirley(USA) lshirley@towson.edu

TSG 37 : Theoretical issues in mathematics education Co-chairs : Angelika Bikner(Germany), bikner@t-online.de,  
David Clarke (Australia) d.clarke@unimelb.edu.au

Jaime Carvalho e Silva, Secretary-General of ICMI, jaimecs@mat.uc.pt

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### 5. Discussion Groups for ICME-12

Contrary to past ICME practice, Discussion Groups for ICME-12 will be created in response to a proposal submitted by a group of up to five persons representing a diverse region of the world. As their name suggests, Discussion Groups (DGs) are designed to gather Congress participants who are interested in discussing, in a genuinely interactive way, certain challenging, controversial or emerging issues and dilemmas of interest to an international or regional audience. The focus of DGs should be distinct from the subjects covered in the Topic Study Groups (TSG) (see Topic Study Groups for a listing of the TSGs for ICME 12) but could discuss a specific issue in greater detail than that of a TSG. Each DG will be allocated two time slots of 90 minutes each during the Congress.

A proposal should include

- ▶ 1. Description of the background and expertise of the proposed organizers
- ▶ 2. Detailed description of the topic including anticipated aims and a rationale for the topic
- ▶ 3. Key questions and issues for the DG to consider
- ▶ 4. A precise description of the anticipated structure that will be used to manage the discussion during the two sessions, taking into account there will be no oral presentations in a DG except introductions by the organizers of the group to provide the background and framework for the discussion.

Application forms are available on the website (<http://icme12.org>). Members of the organizing team must conform to the ICME custom that a person may only play one major (TSG, DG, Survey Team, Panel, plenary and regular lecture) and one minor role (poster presentation & other forms of contribution to the scientific program) at ICME. Note that proposing a DG will be considered a major role. Proposals should be received by the International Program Committee (IPC) by June 30, 2011. Proposals will be reviewed in accordance to the relevance of the topic to an international audience, the diversity and expertise of the proposed organizing team, and the format proposed for the discussion. Proposers will be notified of acceptance by August 15, 2011.

Tasks for Organizing Teams (OT) The OT will be expected to :

- ▶ 1. Set up and maintain the DG web page Before the congress, the discussion group organizing team will post their page at the ICME-12 web site (<http://icme12.org>) including contributions that define, limit, and/or present basic premises, theoretical considerations, research findings, viewpoints and facts that should be accounted for if a fruitful discussion is to be attained. Prior to the congress, participants can send individual contributions to the organizers for consideration as additional background information and may raise questions or participate in an exchange of ideas through the web site.
- ▶ 2. Produce a progress report by December 30, 2011
- ▶ 3. Submit a final version of the DG presentation to be included in the Final program booklet. The final version must be sent to the Local Organizing Committee by April 10th, 2012. This description for the Final Program booklet should be between one and two pages (700 to 1,400 words) with the following :
  - ▶ a) Name of DG and composition of the organizing team
  - ▶ b) General description of the program for this DG ; that is the aims, scope, list of main questions it addresses, the rationale which guided the OT in arriving at the program, and so on.
  - ▶ c) The program of the DG, that is, the manner in which the discussion is organized and distributed in the two sessions.
- ▶ 4. Organize and manage the DG sessions during the Congress
- ▶ 5. Produce a final report for the ICME-12 Proceedings
- ▶ 6. Deadline summary :
  - ▶ June 30, 2011 Proposal submission
  - ▶ August 15, 2011 Notification of acceptance
  - ▶ December 30, 2011 Progress report
  - ▶ April 10, 2012 Final version of the DG program submitted to Local Organizing Committee

An IPC liaison will be appointed for each DG. The role of the IPC liaison officer is to support and be an important resource on how a DG works. Another source for information and guidance in planning a DG are the websites of recent ICMEs (see [www.icme11.org](http://www.icme11.org) and [www.icme10.dk](http://www.icme10.dk)).

Thank you for your willingness to contribute to the success of ICME-12. We are looking forward to an energetic exchange of ideas and information through the Discussion Groups.

Hee-chan Lew, Vice Chair of the LOC and Chair of the Congress Subcommittee, [hclew@knue.ac.kr](mailto:hclew@knue.ac.kr)

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### 6. IACME awards the Luis Santaló Medal to Ed Jacobsen

The Comité Interamericano de Educación Matemática CIAEM (Interamerican Committee on Math Education IACME), affiliate organization of the International Commission on Mathematical Instruction, is pleased to announce that the first awardee of the Luis Santaló Medal will be Ed Jacobsen of the United States. The medal will be presented to Dr. Jacobsen in the opening ceremonies of the XIIIth Interamerican Conference on Mathematics Education, which will be held from June 26-30, 2011, in Recife, Brazil : [http://www.cimm.ucr.ac.cr/ocs/index.php/xiii\\_ciaem/xiii\\_ciaem](http://www.cimm.ucr.ac.cr/ocs/index.php/xiii_ciaem/xiii_ciaem)

On this first occasion the Luis Santaló Medal is awarded to Edward Carl Jacobsen for his generous solidarity, valued support activities and friendship with IACME during many decades, particularly when he was working in the central office of UNESCO in Paris, France.

Edward Carl Jacobsen Before retiring to the forests of Wisconsin, USA, Ed was responsible for Mathematics Education at UNESCO from 1976 to 1992. He directed the publication of eight volumes of Studies in Mathematics Education, which considered Mathematics Education from an international perspective. He participated on many International Program Committees for International Conferences on Mathematics Education and reoriented the

cooperation of UNESCO to regional commissions of the International Commission on Mathematical Instruction such as IACME. Ed received a Masters degree in Mathematics from the University of Wisconsin and a Ph.D. from the University of Kansas. He was a professor at Robert College in Turkey (today Bogaziçi Üniversitesi). He began his work for UNESCO in 1969 and worked in the faculties of education at Nairobi University and University of Botswana, Lesotho and Suaziland before moving in 1996 to the main offices of UNESCO in Paris. Ed was vice-president of IACME from 1995 to 1999.

Some publications : Adapting mathematics education for the next century [http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=90914&set=4DA7680E\\_3\\_454&gp=1&lin=1&ll=1](http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=90914&set=4DA7680E_3_454&gp=1&lin=1&ll=1)

What goals for mathematics teaching in African schools ? [http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=64217&set=4DA7680E\\_3\\_454&gp=1&lin=1&ll=1](http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=64217&set=4DA7680E_3_454&gp=1&lin=1&ll=1)

Preliminary evaluation of modern mathematics : Iraq - (mission) 18-24 September 1976  
[http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=21897&set=4DA7680E\\_3\\_454&gp=1&lin=1&ll=1](http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=21897&set=4DA7680E_3_454&gp=1&lin=1&ll=1)

Microcomputers : opportunities and challenges to reshape the content and method of teaching maths and science  
[http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=78108&set=4DA7680E\\_3\\_454&gp=1&lin=1&ll=1](http://www.unesco.org/ulis/cgi-bin/ulis.pl?catno=78108&set=4DA7680E_3_454&gp=1&lin=1&ll=1)

The cooperation between ICMI and UNESCO ICMI Bulletin No. 34 - June 1993

Luis Santaló Medal The name of Luis Santaló (1911-2001) was chosen because of his extraordinary career as a mathematician and educator. Among his many accomplishments is that he was a pioneer in integral geometry, a complex area of mathematics that combines more classical geometry with modern differential calculus. In 1993 he was awarded the Prince of Asturias Prize for Scientific Research and in 1996 the Order of Alfonso the Wise. The Generalitat of Catalonia presented him with the Narcís Monturiol Medal for Science in 1984 and the St. George's Cross (Creu de Sant Jordi) in 1994. He was a teacher for many generations and a point of reference for many Latin American Math Educators. He was on the Board of IACME in 1966 (when IACME II was held in Lima) and IACME's President from 1972 to 1979. More information can be found on a special web page created by IACME : <http://www.cimm.ucr.ac.cr/luissantalo> The medal will be presented to individuals who have contributed significantly to the development of IACME across their lifetimes.

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### 7. UNESCO : The challenges of mathematics education in basic education

The document "Les défis de l'enseignement des mathématiques dans l'éducation de base" referred to in number 16 of ICMI News has been published by UNESCO and is available here :

<http://unesdoc.unesco.org/images/0019/001917/191776f.pdf>

The document "Current challenges in basic science education" is also out and can be download here as a PDF file :

<http://unesdoc.unesco.org/images/0019/001914/191425e.pdf>

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### 8. Filippo Spagnolo (Italy)

It is our sad duty to inform that Filippo Spagnolo, Vice-President of CIEAEM, an Affiliate Organization to ICMI,



passed away. Filippo Spagnolo (born 29.7.1948) was Associate Professor at the Department of Mathematics and Informatics of the University of Palermo, Italy. He got his Ph. D. in Mathematics Education in 1995 at the Université de Bordeaux I ("Les Obstacles épistémologiques : Le Postulat d'Eudoxe-Archimede") under the supervision of Guy Brousseau. Since 1997 he was "Maître de Conference" of "Science de l'Education" by France's Ministry of Education. He was the coordinator of the Group of Research on Mathematics Learning and Teaching ( G.R.I.M. - Gruppo di Ricerca sull'Insegnamento/Apprendimento delle Matematiche, Dipartimento di Matematica dell'Università di Palermo, Italy) since 1979. Since 1999 he cooperated with University of Bratislava to follow the Ph.D. in Mathematics Education. Since 1999 he was a member of Scientific Board of International group "The Mathematics Education into the 21st Century Project".

He was Editor in Chief of the journal "Quaderni di Ricerca in Didattica", G.R.I.M. since 1990, Palermo, Italy. He was a member of the Editorial Board of "Mediterranean Journal for Research in Mathematics Education", Cyprus Mathematical Society, of "Canadian Journal of Science Mathematics and Technology Education", University of Toronto, and of "Acta Didactica Universitatis Comenianae Mathematics", University Slovakia.

His areas of research included :

- ▶ Modelling of Teaching/Learning training phenomena in Mathematics Education :
- ▶ A classification of epistemological obstacles in mathematics
- ▶ Multicultural approach in mathematics education with contributions of history of mathematics, Epistemology, Natural Language, Semiotic approach in mathematics and mathematics communication.
- ▶ A statistical instruments of research in mathematics education

Some published works : SPAGNOLO, Obstacles Epistémologiques : Le Postulat d'Eudoxe-Archimede, Tesi di Dottorato di Ricerca, Università di Bordeaux I (Francia), Luglio 1995. SPAGNOLO et alii, "Sperimentazione sulla didattica della matematica nella prima elementare", Quaderni CIDI, n.4, 1979, Franco Angeli Editore. SPAGNOLO-Accardi, "Una esperienza di apprendimento della matematica nell'ambito dell'attività di sostegno di un alunno portatore di handicap nella scuola media", Quaderni CIDI, n.16, 1983, Franco Angeli editore. SPAGNOLO - Trencansky, Efficacité de l'enseignant du calcul vectoriel, Quaderni di Ricerca in Didattica, Palermo, 2001. Spagnolo F. & Di Paola B., The concept of operator in the numerical extensions : a theoretical base, Acta Didactica Universitatis Comenianae (Mathematics), Comenius University Slovakia, n.7, 2007, pp. 131-143, ISBN 978-80-223-2310-9. <http://www.ddm.fmph.uniba.sk/ADUC/index.html> Spagnolo F. & Malisani E., From Arithmetical Thought to Algebraic Thought : the role of the "variable", Educational Studies in Mathematics, 0013-1954 (Print) 1573-0816 (Online), Springer, October 2008. <http://dx.doi.org/10.1007/s10649-008-9157-x> Spagnolo F., Philosophy of Mathematics Education among east and west, Philosophy of Mathematics Education Journal, ISSN 1465-2978, n. 23, October 2008. <http://people.exeter.ac.uk/PErnest/pome23/index.htm> Spagnolo, G. Bagni & F. Furinghetti, History and epistemology in mathematics education, Italian Research and Teacher Training in Mathematics Education in Italy 2000-2003. (Presentato all'ICMI-10, Copenaghen), UMI-CIIM, 2004. Ghisetti&Corvi, Milano, pagg 170-192. Spagnolo F. & B. Di Paola, Different procedures in argumentation and conjecturation in primary school : an experience with Chinese students, Research in Mathematics Education, Nicosia, Cyprus 2008, pag. 235-252, ISBN 978-9963-8850-8-4.

Jaime Carvalho e Silva, Secretary-General of ICMI, [jaimecs@mat.uc.pt](mailto:jaimecs@mat.uc.pt)

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## 9. Calendar of Events of Interest to the ICMI Community

SIEMAT III - The Third International Seminar on Mathematics Education, Post-Graduation Programme of Mathematics Education at Bandeirante University of São Paulo, Brazil, June 21-25, 2011

<http://www.uniban.br/siemat/>

XIII CIAEM - Inter-American Conference on Mathematics Education Recife, Brasil, June 26-30, 2011.

<http://www.ciaem-iacme.org/>

ICTMT10 - 10th International Conference on Technology in Mathematics Teaching University of Portsmouth, July 5-8, 2011 <http://www.ictmt10.org/>

PME 35 - CONFERENCE OF THE INTERNATIONAL GROUP FOR THE PSYCHOLOGY OF MATHEMATICS EDUCATION Ankara, Turkey, July 10-15, 2011 <http://www.arber.com.tr/pme35.org/>

ICTMA 15 : 15th International Conference on the Teaching of Mathematical Modelling and Applications Melbourne, Australia, July 14-19, 2011 <http://www.ictma15.edu.au/>

FAMA - Family Math for adult learners international conference : "Family and communities in and out of the classroom : ways to improve mathematics' achievement", Barcelona, Spain, July 23, 2011

[http://www.mathforlive.net/fama\\_Conference.php](http://www.mathforlive.net/fama_Conference.php)

CIEAEM 63 : "Facilitating access and participation - Mathematical practices inside and outside the classroom" / "Faciliter l'accès et la participation - Les pratiques mathématiques à l'intérieur et à l'extérieur de la classe", University of Barcelona, Spain, July 24 - July 29, 2011 <http://www.cieaem.net/>

SEMT 11 - SYMPOSIUM ON ELEMENTARY MATHS TEACHING Prague, Czech Republic, August 21-26, 2011

<http://kmdm.pedf.cuni.cz/Default.aspx?PorZobr=7&PolozkaID=-1&ClanekID=267>

16e Ecole d'été de didactique des mathématiques - Association pour la Recherche en Didactique des Mathématiques, Carcassonne (Aude), France, August 21-28, 2011 <http://www.ardm.eu/contenu/2011-carcassonne>

The Mathematics Education into the 21st Century Project 11th International Conference, Turning Dreams into Reality : Transformations and Paradigm Shifts in Mathematics Education, Rhodes University, Grahamstown, South Africa, September 11-17, 2011 <http://math.unipa.it/%7Egrim/21project.htm>

ECER 2011 - European Conference on Educational Research, Berlin, September 13-16, 2011

<http://www.eera-ecer.eu/ecer/ecer-2011-berlin/>

ICMI Study 21 Conference São Paulo, Brazil, September 16-20, 2011 <http://www.icmi-21.com/>

ATCM 2011 - 16th Asian Technology Conference of Mathematics, 'Integration of Technology into Mathematics Education-past, present and future', Abant İzzet Baysal University, Bolu, Turkey, September 19-23, 2011

<http://atcm2011.org/>

3rd International Realistic Mathematics Education Conference The Design and Use of Learning Progressions in Mathematics Education University of Colorado at Boulder, USA, September 23 - 25, 2011

<http://cucs.colorado.edu/confreg/rme2011>

MathTED 2011 - the 2011 Biennial Conference of the Philippine Council of Mathematics Teacher Educators, COLUMBAN COLLEGE, Olongapo City, Philippines, October 21-22, 2011 <http://mathtedphil.org/conferences.php>

ICREM5 - The 5th International Conference on Research and Education in Mathematics Institut Teknologi Bandung, Indonesia, October 22-24 2011 <http://www.math.itb.ac.id/icrem5>

CARN Conference 2011 (Collaborative Action Research Network) Bringing a different world into existence Action research as a trigger for innovations Vienna, Austria, November 4-6, 2011 <http://ius.uni-klu.ac.at/misc/carn/>

Volcanic DELTA 2011, Eighth Southern Hemisphere Conference on the Teaching and Learning of Undergraduate Mathematics and Statistics, Rotorua, NZ, November 27 - December 2, 2011 <http://www.delta2011.co.nz/delta2011/>

Creating Balance in an Unjust World Conference on Math Education and Social Justice Mission High School in San Francisco, CA, USA, January 13-15, 2012. <http://creatingbalanceconference.org/>

Seventh International Conference on Science, Mathematics & Technology Education : Transformations through Science, Mathematics and Technology Education - Towards an Innovative and Sustainable Society, Muscat, Oman, February 12-15, 2012 [d.fisher@smec.curtin.edu.au](mailto:d.fisher@smec.curtin.edu.au)

EMF 2012 - Espace Mathématique Francophone, Genève, 3-7 Février 2012 <http://www.emf2012.unige.ch/>

ICME-12 - Twelfth International Congress on Mathematical Education Seoul, Korea, July 8-15, 2012 <http://www.icme12.org/>

HPM 2012 History and Pedagogy of Mathematics The HPM Satellite Meeting of ICME-12 Daejeon (Korea), July 16-20, 2012 <http://www.hpm2012.org>

EARCOME6 - The Sixth East Asia Regional Conference on Mathematics Education, Thailand, March, 2013

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### 10. Publications of Interest to the ICMI Community

Teachers of Mathematics : recruitment and retention, professional development and identity" Editors : Glenda Anthony and Barbro Grevholm Skrifter fran SMDF, nr 8 SMDF - Swedish Society for Research in Mathematics Education, Kristiansand, 2010 ISBN 978-91-973934-7-8

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### 11. ICMI encounters : A conversation with Alan Bishop by Gilah Leder

I first met Alan some thirty years ago, on my first trip to the United Kingdom as a fully fledged academic. At the time Alan was working at Cambridge University and, among his other activities, was editor of Educational Studies in Mathematics. For me it was a memorable visit - not only for the many insights I gained into mathematics education but also for the warmth and generosity with which I was received at the Bishop home - an experience enjoyed by many other academics from around the world both before and after my visit. Many years have passed since that first meeting and we remain in regular contact. During a recent conversation I asked Alan to reflect on experiences which shaped his career as a mathematics educator. Excerpts from that conversation are the bones of the story below. Becoming a mathematics educator - a story of context and people

In the beginning... The choice of Southampton University as the place to embark on his undergraduate degree turned out to be critical. It was there Alan met Professor Wilfred (Bill) Cockcroft who served as his tutor in mathematics for three years. Bill, Alan reminisced, was not only a fellow jazz enthusiast, but a fine mathematician with a genuine

interest in education - an interest that Alan, whose father had been a mathematics teacher, soon shared. It was on Bill's advice that, after a year of teacher training in the UK, Alan, now married to Jennifer, travelled to Harvard University where he studied with Professor Ed Moise, a good friend of Bill Cockcroft and another influential figure in Alan's life. In addition to completing his MA in teaching Alan sampled many psychology classes taught, among others, by Skinner and Bruner. He availed himself of the rich opportunities to work and tutor in experimental programs. Trying out the School Mathematics Study Group (SMSG) material in school, tutoring patients in a mental hospital, working with mathematically gifted black students in an after school program in Boston, these are among the formative experiences he still cherishes. "It was there I got the research bug", he told me, but the mathematics education research then available was very, very skimpy. Most of what was available was work carried out by psychologists who were using mathematics as a vehicle for studying psychology, learning, and problems associated with learning.... It certainly made me think what sort of research could be done as far as mathematics education was concerned. It was at about this time that Professor Frank Land, "another influential figure", came into Alan's life. In his book *Language of Mathematics* Land discussed his views on visual language and visual representations - sparking in Alan an interest in this avenue for exploring relationships between teaching and learning. Hull University, where Alan worked with Donald McIntyre and Land for four years, provided the opportunity to do this. "We explored various multivariate statistical approaches to see if they were useful for exploring research in mathematics education ... but the emphasis on treatments and effects did not get us closer to the core of mathematics learning...".

Cambridge University After completing his PhD at Hull University, Alan took up a position at Cambridge University. As well as the many personal and professional friendships and partnerships made during that time, Alan was a grateful recipient of "the Cambridge context which enabled the development of all kinds of opportunities relevant to the teaching and learning of mathematics". The 1970s and early 1980s were years of growth - a continually broadening circle of professional contacts, attendance at national and international conferences, involvement with PME - all well recorded elsewhere - but there were also less well publicized developments. Throughout, the goal was unceasingly to find out "how teaching and learning really worked in mathematics ... including looking at children who were in difficult situations, for example, How do you teach a blind child geometry ? ... What approaches are best for teaching students who are deaf, ... Who are second language learners ?" The "Cambridge context" in which he worked proved invaluable as he searched not only for ways of making education a researchable area, but of convincing others that teaching should not be thought of as a "treatment" but rather an area worthy of research. In due course Alan was eligible for a sabbatical year. The time spent in Papua New Guinea, where he worked with Glendon Lean, singled out as another figure of substantial influence, is remembered as a period of particular growth and professional development. As he prepared for his time in PNG, Alan grew increasingly dissatisfied with the deficit models championed by psychologists in their descriptions of the lives of the indigenous population. Much could be learnt, he felt, from the more positive approach adopted by anthropologists in their examination of the many skills needed, and displayed, for successful survival in a harsh environment. But how and where were the important visualization skills so evident among Papua New Guineans fostered in school geometry ? What could mathematics educators learn from anthropology ? And, more prosaically, how, at a time of limited technological support, could he take with him to PNG materials critical for his research but far too bulky to put in a suitcase ?

Educational Studies in Mathematics An invitation from Hans Freudenthal to take over the editorship of *Educational Studies in Mathematics* [ESM], was another career influencing invitation that came during that year of study leave. "The role of a good editor", Freudenthal advised Alan, "is to be welcoming

- ▶ but not too much, and to be critical - but again not too much. And I have probably erred on both counts". While, on the one hand appreciating the free hand given by Freudenthal who recognized that his style and mode of working were unlikely to suit his successor and insisted that a completely new editorial board be appointed, consolidating and expanding the role played by ESM in supporting and publicizing research was a huge challenge. Alan set himself three goals : to increase the range of articles published in the journal, to increase the responsibilities of the editorial board, and to solicit submissions widely. For example, participants in the first two ICME conferences were actively targeted. Submissions in French were still welcome but those written in German were beyond the skills of the new editor and the newly appointed board. When, a decade or so later, Kluwer took over from Riedel as publishers of the journal and decided to increase the volume from four to six issues a year Alan decided it was time to pass on the

editorial baton - but that story is, unfortunately, beyond the scope of this article.

Monash University In 1992 Alan left Cambridge to take up a chair in mathematics education at Monash University. Professionally and personally, both Alan and Jennifer felt, the time was right to embrace new challenges and research opportunities in Australia's vibrant multi-cultural society. For Alan it became a time for rekindling projects considered or begun on earlier visits, forging new research collaborations with colleagues not only in Australia, but also in South East Asia, in New Zealand, and Papua New Guinea, setting up new publication ventures - in short being an active and supportive contributor to Australia's mathematics education research community. His current work centres on values in mathematics education and what he calls "mathematics well being".

Unfortunately space constraints dictated that I have been able to share only a small portion of my interview with Alan. "Critical issues in mathematics education : major contributions of Alan Bishop", edited by Philip Clarkson and Norma Presmeg and published by Springer is an excellent source for those wishing to know more about Alan and his work.

Gilah Leder, March 2011, email : [gilah.leder@monash.edu](mailto:gilah.leder@monash.edu)

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