# ICMI

## Bulletin

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on
Mathematical Instruction

**No. 41**

**December 1996**

The International Commission on Mathematical Instruction

# ICMI

# Bulletin No. 41

# December 1996

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**The International Commission on Mathematical Instruction**

# Executive Committee 1995-1998

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**Legend**: IMU stands for *The International Mathematical Union*.

# Minutes of the General Assembly of ICMI, July 1996

The General Assembly was held at the Universidad de Sevilla on Wednesday the 17th July 1996, 17.00-19.00 in conjunction with the 8th International Congress on Mathematical Education.

The Assembly was opened by the President, Miguel de Guzmán, who welcomed all the members present. He reminded the Assembly that the agenda and the materials for the meeting were published in the ICMI Bulletin, No. 40, June 1996.

The Secretary, Mogens Niss, gave a brief outline of the nature of the meeting. ICMI consists of two bodies, the Executive Commmittee, appointed by the International Mathematical Union, and the National Representatives of the member states of ICMI. The two bodies together form the General Assembly. Traditionally, ICMI has invited also representatives of the Affiliated Study Groups to attend the General Assembly. Besides, National Representatives are asked to appoint substitutes in case they are prevented from being present at the General Assembly themselves. Furthermore, it is also the tradition to welcome representatives of non-ICMI countries to attend the Assembly as observers. However, in case the Assembly is to vote in relation to any item on the agenda, only the formal members of the General Assembly are entitled to give their vote. Finally, although the Assembly is formally a closed meeting, it is the tradition to accept the presence of interested observers.

**1. Finances**

Miguel de Guzmán referred to the accounts as published in the ICMI Bulletin No. 40 and as endorsed by the IMU Executive Committee. No questions were asked and no comments were made by members of the Assembly with respect to the finances.

**2. Debate on ICMI activities 1992-96**

*ICMI internal affairs*
Mogens Niss informed the General Assembly that several countries have either applied or are in a process of applying for co-option as non-IMU members of ICMI. This possibility is available to countries which for some reason or other are unable to become members of ICMI automatically, by simply joining IMU. Co-option is applied for, and considered, on an individual basis. For a country to be eligible for co-option, the application has to come univocally from relevant bodies of mathematics education or mathematics (i.e. teacher associations, societies of didacticians of mathematics, mathematical societies etc.) If the EC decides to accept the co-option of a country and the EC of IMU approves of the decision, the co-opted member state is entitled to appoint a National Representative who is then also a member of the General Assembly. Mogens Niss further informed the Assembly that the Executive Committee had recently decided to co-opt Thailand as a non-IMU member of ICMI and had asked the IMU Executive Committee to endorse this decision.

Miguel de Guzmán emphasised the very constructive and fruitful role which a National Sub-Commission may play if established in a member country. Not only does a National Sub-Commission usually imply a strengthening of the links between the country at issue and ICMI, its main significance is to discuss ICMI affairs at a national level, organise and coordinate ICMI-related activities in the country and to serve as a platform for the work of the National Representative. Therefore Miguel de Guzmán encouraged National Representatives to explore the possibility of establishing National Sub-Commissions in countries where such a body does not already exist. Inspiration concerning the formation and bylaws of recently established National Sub-Commissions may be obtained from the Secretary.

The Representative of the UK, Margaret Brown, expressed the wish that more information were available to National Representatives concerning the appointment of the EC, the appointment of the International Programme Committees of the ICMEs, and so forth. Such information could serve as a useful basis for replying to queries and requests from national bodies, individuals etc. The President and the Secretary agreed that although such information had actually been published in the Bulletin, from time to time, it would be desirable to have it available for a more systematic introduction to the structure and activities of ICMI for new National Representatives and other relevant parties.

The Representative of Egypt, William Ebeid, asked for information about the bylaws and the role of the General Assembly. He felt that the Assembly occupied a fairly marginal role of little significance, limited mainly to attending a two hour meeting every four years. He would like to see bylaws for the General Assembly that could define its competence and tasks as an independent body vis-à-vis the Executive Committee and IMU. Miguel de Guzmán, and other EC members, explained that the terms of reference contain no specific mention of bylaws and modes of operation for the General Assembly. He found that it might well be worthwhile to consider the possibility of formulating terms of reference for the Assembly. He and other members of the EC, including Vice-President Anna Sierpinska, went on to emphasise that the General Assembly served a number of very important functions: (a) The expression - directly in front of the EC - of concerns, ideas and proposals of National Representatives, as well as feedback to the EC regarding the work done by ICMI during the past Congress term; (b) A forum for debate and exchange of information, views, experiences and ideas between the National Representatives themselves. For this to be possible and to make sense, it seems important that National Representatives consult and discuss with mathematics education bodies and parties in their own countries to enquire whether particular points should be raised at the General Assembly within or outside of the agenda of the Assembly. Finally, Jeremy Kilpatrick, Vice-President, pointed out that the structure of ICMI was mainly determined by the fact that ICMI is a Commission established by the International Mathematical Union and not an individual membership organisation.

An attendee in the Assembly proposed that it be considered to establish an interactive Internet forum for discussion within ICMI-related bodies. Miguel de Guzmán found the idea interesting and agreed to ask the EC to explore it further.

*Information and communication, incl. the Bulletin*
Mogens Niss referred to the announcements in recent issues of the Bulletin that information about ICMI is now available from the World Wide Web (http:// elib.zib-berlin.de/imu.icmi) as is also the Bulletin (http:// elib.zib-berlin.de/imu.icmi.-bull [no.]). Besides, as before, the Bulletin can be obtained in ASCII format through e-mail from the Editor/Secretary. When it comes to the paper version of the Bulletin, copies continue to be sent to a limited number of individuals and agencies only. However, National Representatives are still kindly asked to help disseminate the content of the Bulletin in their countries. National Representatives were also asked to provide feedback to the Editor/Secretary as to the form and content of the Bulletin. At the meeting no comments were made to this effect.

*ICMEs 7 & 8*
The President officially expressed ICMI's sincere thanks to the organisers of ICME-7 (Québec, 1992), both for the Congress and for the fact that the final surplus had been donated to the ICMI Solidarity Fund.

As to the ongoing congress, ICME-8, it was, of course, still to early to make a full assessment of its structure, content and outcomes. Members of the Assembly were invited to give preliminary comments at the meeting and to send whichever comments, ideas, and suggestions they might have to the Secretary. Moreover, in countries with a National Sub-Commission, it was often decided to make a national evaluation of the ICMEs. The EC would welcome if Sub-Commissions undertook such an evaluation with respect to ICME-8. Evaluation reports may be sent to the Secretary. The National Representative of Egypt, William Ebeid, found that the congresses have become too large. He wanted 'more genuine interaction and less carnival' and asked for a restructuring of future ICMEs. Another participant in the Assembly thought that over the years the ICMEs have come to focus more and more on school mathematics and to contain fewer and fewer programme items dealing with mathematics education at university level. He found this to be an unfortunate line of development.

As regards the Solidarity Tax of 10% imposed on the registration fees, Mogens Niss informed the General Assembly that this tax, together with other funds, had made it possible to support - partially - the attendance of about 250 delegates from about 55 different countries. Many of these delegates would not have been able to attend ICME-8 without this support. The grants were measured out and distributed to applicants by a special Grants Committee appointed jointly by the Congress organisers and ICMI. This Committee will produce a report on the proceedings and results of its activities.

*ICMI Studies, Affiliated Study Groups, and Regional Meetings*
Miguel de Guzmán referred to the ICMI Bulletin No. 40, June 1996, for information concerning the Studies, the Affiliated Study Groups and the Regional Meetings since the last General Assembly and asked for comments. Unfortunately, the report from IOWME (The International Organisation of Women and Mathematics Education) could not be included in No. 40 of the Bulletin. Instead, the report will be published in No. 41, December 1996. No comments regarding activities since 1992 were made at the Assembly.

at the Assembly.

**3. Future plans and developments**

*ICMEs 9 & 10*
In view of the fact that experiences have now been gained from various realisations of the current congress format, time seems to be ripe to review this format. National Representatives and Sub-Commissions were encouraged to share their concerns and ideas with the Executive Committee. The Secretary hoped to receive deliberations to this effect.

The President announced the decision of the EC to accept, with great pleasure and gratitude, Japan's invitation to host ICME-9 in the year 2000. The Chair of the Japanese Invitation Committee, Hiroshi Fujita, former National Representative of Japan to ICMI, took the floor to thank ICMI for the honour it is to be entrusted with the task of hosting ICME-9. He concluded by extending a warm welcome to the Congress. His colleague Toshio Sawada then informed the General Assembly that the dates proposed for the Congress are 31.7-7.8.2000 and that the venue will be Chiba Convention Centre, Makuhari, at the Tokyo Bay, not far from Narita International Airport. The General Assembly applauded the decision as well as the welcoming words from the Japanese delegates.

As to ICME-10, the EC invited National Representatives to contemplate whether their country should consider submitting a bid to host the congress in the year 2004. As the process of preparing such a bid is normally quite lengthy it will probably be worthwhile to initiate considerations already at this stage. The envoyé from Brazil, R. Lins, standing in for the National Representative, informed the Assembly that a number of Brazilian associations involved in mathematics education have decided to join forces in preparing Brazil to submit a bid to host ICME-10.

*Future studies*
Mogens Niss informed the General Assembly that the EC, at its meeting in Sevilla, has decided to mount the following two studies in late 1997 (early 1998) and late 1998, respectively: *The Role of the History of Mathematics in the Teaching and Learning of Mathematics*, the study conference of which is going to be held in France, and the *Teaching and Learning of Mathematics at University Level*, for which no site has been determined as yet.

With respect to future studies, the following ideas, among others, were under consideration by the EC:

* Proofs and proving in mathematics education
* Stohastics in mathematics education
* The professional development of teachers of mathematics, from primary school to university
* Mathematics for and from the work-place

General Assembly delegates were encouraged to send comments and suggestions

concerning the ICMI studies to the Secretary. Margaret Brown, UK, thought that it would be valuable to mount a study in which practising teachers could take part. Perhaps the prospective study on the professional development of teachers would provide a suitable opportunity to this end.

*Affiliated Study Groups, future plans*
John Fauvel, Chair of the HPM, mentioned that the next major activity of the HPM was a meeting which was going to be held in Braga, Portugal, immediately after ICME-8. The next HPM meeting was scheduled for Caracas, Venezuela, in 1998. Besides, the HPM very much looked forward to participating in and contributing to the forthcoming ICMI study on history (cf. previous item). He finally informed the Assembly that his successor as the Chair of the HPM had now been elected: Jan van Maanen, The Netherlands.

Stephen Lerman, the President of the PME, referred to the XXth PME meeting (1996) which had just been held in Valencia, prior to ICME-8, as having attracted more than 400 participants. This made it the largest PME meeting ever held. The meetings in 1997 and 1998 are to be held in Lahti, Finland, and Stellenbosch, South Africa, respectively. He further informed the Assembly that one of the important issues on the agenda was a widening of the access to the PME, in particular in terms of geographical representation.

No representatives of the IOWME or the WFNMC were present at the General Assembly.

*Solidarity Programme and Fund*
The President reminded the General Assembly of the genesis of the Solidarity Programme and Fund at ICME-7, in 1992, and briefly outlined the development since then as well as the current state of the Solidarity Programme and Fund. As an example, he mentioned the work done in El Salvador by a large international group of mathematics educators (mainly, but not exclusively, Spanish) to assist master's programmes in statistics and mathematics education. He also mentioned projects to establish centres of excellence in mathematics education and in teacher education in Africa as potential recipients of assistance from the Solidarity Programme and Fund. Although the Fund is still of a fairly modest size, ideas and proposals for small scale projects were called for by the EC.

Miguel de Guzmán then asked the National Representative of the USA, John Dossey, to sketch the ideas and the initiatives of the US National Sub-Commission of ICMI. John Dossey informed the General Assembly that a scheme which would allow individuals to contribute, on a tax exempt basis, to a variety of activities relevant to this context and channelled through US bodies was now almost in place. The aim is to support specific international and national projects that may help progress in mathematics education. He hoped that this initiative may inspire other National Sub-Commissions to consider establishing analogous structures in their countries.

One participant in the Assembly suggested that the possibility of supplying books and journals to relevant institutions in eligible countries be explored. Another participant

proposed that an International Centre for Mathematical Education be established in parallel to similar international centres in theoretical physics and in the mechanical sciences. The President thanked for these ideas and invited delegates to not hesitate to express their views and to make proposals to the EC on these matters at any time.

*Regional meetings*
A meeting of East Asian National Representatives to ICMI is being planned. It is scheduled for Chungbuk, Korea in 1998. In conjunction with this meeting a regional meeting will be held as well. So far, no other plans for future regional meetings are known to the EC.

In addition to the series of successful meetings which have been held in South East Asia and in Latin America, the EC would welcome regional meetings to be mounted in Africa, the Middle East, Eastern Europe and South Asia. In these regions, no ICMI meeting has been held for very many years, if ever. However, the specific initiative to mount a regional meeting has to come from the region at issue and not from ICMI. In the Bulletin No. 40 (p. 7) the requirements for granting the status of ICMI Regional Meeting to a conference under planning are listed.

*ICMI infra-structure*
Once again, the President encouraged National Representatives to work for the establishment of National Sub-Commissions in their countries, cf. item 2 above.

*WMY 2000*
The General Assembly was informed that the Executive Committee is in the process of appointing a small Ad Hoc Committee as a combined 'think tank' and 'task force' to take the lead in staging ICMI's contributions to the World Mathematical Year 2000. The EC has decided that ICMI should now begin to work on its own plans. At the moment, the EC is working in the 'brain storming mode'. One idea is to hold an ICMI Study on Mathematics for and from the Work Place in the year 2000 - well separated in time and space from ICME-9.

Another idea is to ask National Representatives to take initiatives with respect to WMY 2000 in their countries in ways that are suitable to the national situations, conditions, and circumstances. For instance, it was thought to be very valuable to produce and collect bibliographical studies of publications concerned with popularisation of mathematics in the ICMI countries. For such and other activities, the help and cooperation of the National Representatives are crucial, as are their ideas and proposals.

In response to this, John Dossey, USA, mentioned that the US National Sub-Commission had suggested to the EC to solicit a series of 'Hilbert type' lectures in mathematics education to form a centre piece in the programme of ICME-9. These lectures should focus on the development in mathematics education during the past, say, 25 years - or more - and pay particular attention to the progress which has been made in mathematics education during the last 100 years. John Dossey thought it would be of utmost importance to speak to the public about these issues as part of the WMY 2000. Miguel de Guzmán found this proposal excellent and promised that the

EC would encourage the organisers of ICME-9 to work for its realisation.

*ICMI and ICM-98*
Miguel de Guzmán reported on the recent development in the role of ICMI in the International Congresses of Mathematicians. At ICM-94 in Zürich, it was, in the first place, rather difficult to achieve that ICMI lectures were to be given at the Congress as had been the case with past ICMs. When this was finally achieved, the ICMI lectures were not considered part of the official Congress programme, let alone included in the Proceedings. Instead, ICM-94 organisers had, without consulting ICMI (a body appointed by the IMU), selected and scheduled a few lectures in the section Teaching and Popularization of Mathematics. ICMI was very unhappy with this course of events. It was therefore with great pleasure that the President was able to inform the General Assembly that for ICM-98 in Berlin the situation has been changed considerably. ICMI has been asked by the Chair of the International Programme Committee to appoint the panel in charge of selecting the speakers for the section Teaching and Popularization of Mathematics. This implies that the lectures on these topics will be included in the proceedings and that there will be no special ICMI lectures at ICM-98. Miguel de Guzmán concluded by inviting Assembly delegates to inform the EC of the proposals they might have for speakers at ICM-98.

**4. Any other business**

Stephen Lerman, UK, raised the issue of the nature of the relationship between an Affiliated Study Group and ICMI. This was spurred by the fact the EC had appointed an Ad Hoc Committee on the Identity of the Professional Community of Mathematics Education Researchers without having consulted the PME as a - if not the - major international body devoted to research in mathematics education. Miguel de Guzmán explained that the Affiliated Study Groups were independent - and independently created - groups which are neither appointed by ICMI nor acting on its behalf. Anna Sierpinska, Vice-President, emphasised that the Ad Hoc Committee was not a representative body but a working committee. She therefore failed to see what sort of consultation might have been appropriate. Instead, each member of the Committee is expected to seek information and advice from whichever relevant and available source, including, of course, PME. Stephen Lerman said that he had made his point and that he did not want to pursue the matter any further at the Assembly. The issue had caused some dissatisfaction within the PME and he thought that it would have been natural for ICMI to seek the advice of an Affiliated Study Group in such a context.

As no other issues were raised under this item on the agenda the President closed the General Assembly thanking the delegates for a very constructive and productive meeting. On behalf of the Executive Committee he looked forward to further collaboration between all the bodies of ICMI in the years to come.

**Mogens Niss,**
Secretary, 29 July 1996

# IOWME Report 1992-1996

At Québec ICME 7, a new Convenor, a new Newsletter Editor and an Advisory Board for Convenor and Newsletter Editor was elected:

*Convenor*: Christine Keitel (Germany)
*Newsletter Editor*: Anna Kristjansdottir (Iceland)
*Advisory Board*:
Lesley Jones (UK), Lisbeth Lindberg (Sweden), Roberta Mura (Canada), Neela Sukthankar (Papua New Guinea), Sue Willis (Australia)

The following tasks were set up for the Convenor:

*1. Continuing IOWME activities:*

1.1. Making IOWME more widely known, in particular in those countries which are not represented within IOWME as, e.g., former socialist countries, South-East Asian, South-American and African countries.
1.2. Establishing and maintaining contact to National Coordinators of the member countries and to organisations which are connected to or are affiliated to IOWME (MOIFEM, Ada Byron, Femmes et Math, European Women and Mathematics etc.).

*2. Designing a constitution for IOWME*

2.1. Discussing various models for a constitution of IOWME.
Discussion point: national or personal membership.
2.2. Role and status of Convenor, Newsletter Editor and Advisory Board of IOWME.
2.3. Role of the National Coordinators, possible connections to international or national organisations or associations and to ICMI.

*3. Preparation of IOWME conferences*

3.1. Participation in the steering committee and International Program Committee of the ICMI-study conference 1993, to be held in Höör (Sweden).
3.2. Developing a conference structure, an organisational scheme and sub-themes/working groups for the IOWME-sessions at ICME 8

**1. Continuing IOWME activites**

*IOWME and Convenor's activities 1992-1993*:

1992-1993
Preparation of IOWME involvement in the ICMI Study Conference "Gender and Mathematics Education"
Gila Hanna (Chair)
Barbro Grevholm (Local Organiser)

IPC-members from IOWME: Gilah Leder, Christine Keitel

Activities in the conference "Gender and Mathematics Education", Höör (Sweden):
Panelist on the panel: "Gender and Mathematics Education"
Chair of the panel: "The Role of Organisations in Gender and Mathematics Education"
Chair of Working group: "Mathematics as a Discipline"
Chair of Working group: "Teachers - Personal and Psychological Factors"
Organisation of an IOWME - meeting in Höör

As the main activities of IOWME in these years were concerned with the ICMI Study Conference on "Gender and Mathematics Education", directed by the former Convenor of IOWME and Chair of the ICMI Study, Gila Hanna, the new Convenor actually commenced in 1994.

*Convenor's activities 1994-1996:*

Activities to inform about and to present IOWME around the world, i.e. IOWME - presentations at various conferences in Australasia, Europe, South Africa, USA

*1994*:
- Presentation of IOWME at the SAARMSE (Southern African Association for Research in Mathematics and Science Education) conference, Durban (South Africa)
- National Meeting of "Femmes et Math", Lyon (France)
- Invited speaker at the Workshop on "Women and Maths" at the Universities of Pavia and Parma (Italy)
- Plenary speaker at the National Conference of the Organización Espanola para la Coeducación Matemática "Ada Byron" Madrid (Spain)
- Participation in sessions on "Gender and maths" at the AERA meeting in New Orleans (USA) (Discussion and work with IOWME-members from USA, England, Australia, Canada (i.e. Fennema, Becker, Leder, Burton, Barnes et al.)
- IOWME officers meeting at the ICMI-Study on "What is Research in Mathematics Education and What are Its Results?" in College Park, Maryland (USA) (A. Kristjansdottir, Roberta Mura)

*1995*:
- Meeting of IOWME members at the ICMI - Regional Study on Collaboration in Mathematics Education in Melbourne (Australia)
- Presentations of IOWME at various visits to Australian and New Zealand universities (e.g. Sydney, Brisbane, Auckland, Wellington) (which had a positive effect on the participation and contribution to IOWME-sessions at ICME 8)
- Section on Gender Problems at CIEAEM 47 (WG)
- Conference of the organisation of EWM (European Women in Mathematics) in Madrid

*1996*:
- Participation in sessions on "Gender and maths" at the AERA meeting in

New York (Discussion and work with IOWME-members from USA, Australia, the Netherlands (i.e. Becker, Fennema, Leder, Forgasz, van Heuvel-Panhuizen))

- Invitation of the Swedish group on "Women and Mathematics" in April for a Nordic conference in Gothenborg, lecture on "International perspectives of mathematics education".

**2. Working on a Constitution for IOWME**

In various letters to the Newsletter Editor for publication, to the Advisory Board and to the National Coordinators, the Convenor has tried to set up a lively discussion on the particular problems of a formal constitution for IOWME. Only few colleagues have responded, among them Roberta Mura, Lesley Jones, Teresa Smart, Leone Burton, Helga Jungwirth, Gilah Leder, Helen Forgasz, Maria Jesus Luelmo, Josette Adda, Claudie Solar. The communication has been disrupted by the lack of Newsletter issues and the preparation of the IOWME-sessions at ICME 8. There was no feedback from National Coordinators apart from those of the UK, France, Spain and Canada. There did not seem to be a great deal of interest or an urgent need to address the question of designing a constitution and it proved impossible to agree on the type of membership which was appropriate.

**3. Designing an IOWME Program at ICME 8**

A circular letter including a "Call for Papers" was first sent out in November 1994 and revised in February 1995. The Convenor received feedback and proposals for a possible structure of the IOWME-sessions from Leone Burton (UK), Helga Jungwirth (Austria), Lesley Jones (UK), Teresa Smart (UK), Roberta Mura (Canada). This led to a second "Call for Papers" with a scheme for the sessions and themes for subgroups which was distributed by the Convenor in November 1995 and printed in the 3rd Newsletter in February 1996.

In January 1996, a meeting of the Program Committee for the IOWME sessions at ICME 8 was held in Berlin, financed by the Free University of Berlin. M.J. Luelmo, Eugenia Jimenez, M. Carmen Rodriguez, Fidela Velazquez (all Spain), Lesley Jones, Teresa Smart (UK), Gabriele Kaiser (Germany) as organiser of IOWME sessions at ICME 7, Barbro Grevholm (Sweden) as Chair of the WG 6 "Gender and Mathematics Education" of ICME 8, together with the Convenor, had agreed to be members of the Program Committee.

In May and June 1996, the Convenor was kept busy collecting and editing all the extended abstracts of submitted contributions for IOWME sessions as well as for WG 6 of ICME 8. Between June and July 1996, the Spanish translation and editing of all the abstracts was completed by Maria Jesus Luelmo and Eugenia Jimenez with the additonal help of Adela Salvador-Alcaide, the secretary of "Ada Byron". The final booklet containing the full program and the extended abstracts in English and Spanish was printed in July (with support from the Gobierno de Canaris, the European Social Funds, the Organización Espanola para la Coeducación Matemática"Ada Byron") and distributed to all participants of IOWME sessions and WG6 of ICME 8.

The programme of the IOWME sessions was devoted to the celebration of 20 years of IOWME and therefore had the title: *IOWME - 20 years of cooperative research on gender and mathematics. Where we are - where we go?*

The three sessions were organised according to the following schedule:

Plenary session (July 16). Keynote speakers: J. Rossi-Becker (USA), Claudie Solar (Canada), Gelsa Knijnik (Brazil), Sue Willis (Australia)

Working group sessions: (July 17 and July 20). Group A: Conceptualisation of mathematics (Chair: Diane Resek); Group B: Co-education - pupils and teacher's perspectives (Chair: Teresa Smart); Group C: Social and Cultural influences (Chair: Lesley Jones); Group D: Policy issues (Chair: Gilah Leder); Group E: Research methodology and theories (Chair: Gabriele Kaiser)

The booklet of extended abstracts in both conference languages was, distributed to session participants, was considered by all participants as the important and effective basis and means for discussion and collaborative work in the IOWME-sessions and, in particular, for the intensive work in the subgroups. We have planned to publish the contributions to the IOWME sessions in an international publication "Social justice and mathematics education", edited by Christine Keitel, Maria Jesus Luelmo, and Teresa Smart.

On July 17, 1996, a business-meeting of IOWME was held at ICME 8 in Sevilla. IOWME succeeded in establishing contact with colleagues in the former socialist countries, Russia, Estonia and Poland, as well as to colleagues in some of the countries in South America: Brazil, Argentina and Chile. Teresa Smart (UK) was elected as the new Convenor of IOWME. Lisbeth Lindberg (Sweden) and Lesley Jones (UK) were elected to jointly act as the new Newsletter Editors. Sharleen Forbes (New Zealand) and Barbro Grevholm (Sweden) agreed to work in the new Advisory Board for IOWME.

Christine Keitel,
Freie Universität Berlin

# Next ICMI Study: The Role of the History of Mathematics in the Teaching and Learning of Mathematics

In the series of ICMI Studies on issues and themes which are crucial in contemporary mathematics education, the next study is devoted to the role of the history of mathematics in the teaching and learning of mathematics.

As is the case with any ICMI Study, the Executive Committee of ICMI appoints an International Programme Committee (IPC) to conduct the study. This means that the IPC is responsible for producing a so-called Discussion Document to set the stage for the study. The Discussion Document, which will contain a brief outline of the field in question and identify the issues and themes to be dealt with in the study, is going to be published internationally as widely as possible, including in this Bulletin. Readers are invited to react to the Discussion Documents in writing by submitting ideas, proposals, abstracts or drafts of papers and so forth for consideration by the IPC. On the basis of the reactions received and of the deliberations within the IPC itself, the IPC will organise an invited Study Conference of 50-100 participants (presumably about 80) to be held in France, most probably in the beginning of 1998. Attendance will be a mixture of international experts in the field and newcomers to it who have interesting ideas or considerations to offer.

After the Study Conference, and based mainly but not exclusively on invited and contributed papers to this conference, the final result of the Study will be produced: A volume in the ICMI Study Series published under the general editorship of the Series editors, the President and the Secretary of ICMI. This volume will have the two Co-Chairs of the IPC as editors-in-chief. It is intended that the Study Volume will be ready for presentation at ICME-9 in 2000.

The IPC for the *ICMI Study on the Role of the History in the Teaching and Learning of Mathematics* is composed as follows:

John Fauvel, UK, Co-Chair
Jan van Maanen, The Netherlands, Co-Chair
Jean-Luc Dorier, France, Local Organiser
Abraham Arcavi, Israel
Evelyne Barbin, France
Florence Fasanelli, USA
Alejandro Garciadiego, Mexico
Ewa Lakoma, Poland
Man-Keung Siu, Hong Kong
Mogens Niss, Denmark, ex officio, representing ICMI.

If you are interested in this Study in some way or other, or if you have any queries, please contact one of the Co-Chairs:

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# Thailand co-opted member of ICMI

Very recently ICMI, and its mother organisation the International Mathematical Union, have agreed to co-opt Thailand as a non-IMU member of ICMI in accordance with the Terms of Reference for ICMI. The background is this: All member states of the IMU are automatically members of ICMI as well. However, states which for some reason or other are unable to join the IMU may apply for co-option as a non-IMU member of ICMI. Such applications are submitted to ICMI on an individual basis. When considering an application, ICMI will put emphasis on the representative involvement in the application of all major relevant parties of mathematics education and mathematics in the applicant country. For co-option to be decided, the Executive Committees of ICMI and the IMU both have to give their consent.

Also a body corresponding to an Adhering Organisation of the IMU has to be identified as the formal carrier of ICMI membership. Moreover, the Adhering Organisation is responsible for appointing the National Representative on ICMI of the co-opted country. In the case of Thailand this body is the Mathematical Association of Thailand under the Patronage of His Majesty the King. No National Representative has been appointed as yet.

# New Korean Sub-Commission of ICMI

The Korean mathematics education community has decided to establish a Korean Sub-Commission of ICMI, KSICMI, endorsed by the Korean Mathematical Society. The Sub-Commission has the following members:

Chairman: Professor Han Shick Park (Korean National University of Education)
Secretary: Professor Hyunyong Shin (Korean National University of Education)

Members:
Choe, Young Han (Professor, Institute of Science and Technology)
Hyun, Jong-Ik (Professor, Cheju National University)
Kang, Meekwang (Professor, Dongeui University)
Kim, Byung Moo (Professor, Chungju National University)
Kim, Jin Lak (Ministry of Education)
Kim, Soo-Hwan (Professor, Chungju National University of Education)
Kim, Tai Sung (Professor, Chungbuk National University)
Kim, Won Kyung (Professor, Korea National University of Education)
Kim, Young Kuk (Professor, Seowon University)
Koo, Kwang Jo (Professor, Dan Kook University)
Lee, Byung Soo (Professor, Kyungsung University)
Lee, Jae Wok (Professor, Inha Technical Junior College)
Lew, Hee-Chan (Professor, Korea National University of Education)
Park, Bae Hun (Professor, Korea National University of Education)
Park, Kyungmee (Professor, Korean Educational Development Institute)
Shin, Dong Sun (Professor, Ewha Wonan's University)

The first activity of KSICMI is to organise the First ICMI-East Asia Regional Conference on Mathematics Education (ICMI-EARCOME 1) which will be held at the Korean National University of Education 17-21 August 1998 (see announcement elsewhere in this Bulletin).

Hyunyong Shin, Secretary of KSICMI
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# ICMI-EARCOME 1

The First ICMI East Asia Regional Conference on Mathematics Education (ICMI-EARCOME 1) will be held 17-21 August 1998 at the Korea National University of Education, Chungbuk, Republic of Korea. The conference has been granted the status of an ICMI Regional Conference.

The region of East Asia, including among other countries Korea, China, and Japan, has similar culture, tradition and social environment. The mathematicians who are interested in mathematics education are preparing ICMI-EARCOME 1 to search for desirable ways in mathematics education.

The scientific programme will include plenary lectures, regular lectures, and short presentations. Exhibitions of posters, textbooks, mathematical software and other educational materials are being planned as well.

Group A:
1. Examination (evaluation)
2. Curriculum
3. Teaching and Learning

Group B:
1. Primary School Mathematics
2. Secondary School Mathematics
3. University and Professional Education

Group C:
1. Teacher Training
2. Education for Gifted Students
3. Mathematics and Technology

Group D:
1. Comparative Study
2. History and Pedagogy of Mathematics
3. Socio-mathematical Norms

English and Korean will be the official conference languages and Korean presentations will be translated into English. All papers and other documents will be available in English.

The International Programme Committee has the following composition

| | |
|---|---|
| Han Schick Park (Chair) | Korea National University of Education (Korea) |
| Shigeru Iitaka (Vice-Chair) | Gakushuin University (Japan) |
| Peng Yee Lee (Vice-Chair) | National Institute of Education (Singapore) |
| Dianzhou Zhang (Vice-Chair) | East China Normal University (China) |
| Hyunyong Shin (Secretary) | Korea National University of Education (Korea) |
| Young Han Choe | Institute of Science and Technology (Korea) |
| Ichiei Hirabayashi | Hiroshima University (Japan) |
| Yan Shi Jian | Beijing Normal University (China) |

| | |
|---|---|
| Hee Chan Lew | Korea National University of Education (Korea) |
| Fou-Lai Lin | National Taiwan Normal University (Taiwan) |
| S.J. Nebres | Ateneo de Manila University (Philippines) |
| Abu Osman | University Kebang Saan Malaysia (Malaysia) |
| Toshio Sawada | National Institute for Educational Research (Japan) |
| R. K. Sembiring | Institute Technology Bandung (Indonesia) |
| Nguyen Dinh Tri | Hanoi National University of Technology (Vietnam) |
| Jane Watson | University of Tasmania (Australia) |

The conference venue is the Korean National University of Education (KNUE), founded in 1985. The university is located in the suburbs of Chongju, 120 km south of Seoul, a rural area with fresh air and clean water.

In conjunction with the conference participants will also have an opportunity to visit traditional old Korean cities such as Kyongju, Buyou and Seoul.

The second announcement, to be released in April 1997, will contain detailed information about the program, registration, and application forms for lectures and other presentations. Effective as from 1 January 1997, the home-page of ICMI-EARCOME 1 will be open at http://math1.knue.ac.kr./~icmi For further information, please contact

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e-mail: shin@kneucc-sun.knue.ac.kr

# Report on SEACME 7

**Nguyen Dinh Tri**

The Seventh South East Asian Conference on Mathematics Education was held on 3-7 June, 1996, at Hanoi University of Technology. The emphasis of the conference was on mathematics education in upper secondary schools, in universities and for mathematics teachers. There were 135 participants from 17 countries. The chair of the International Programme Committee was Professor Lee Peng Yee of the National Institute of Education, Singapore.

There were 8 plenary lectures. Lee Peng Yee (Singapore) proposed a new mathematics curriculum at the National Institute of Education for the preparation of school

teachers. Bernard Hodgson (Canada) stressed the role and responsibilities of the mathematician in school teacher education in mathematics. Alan Bishop (Australia) explained how mathematics teaching in modern technological societies should relate to cultural values. Hoang Tuy (Vietnam) reported on the experience of special classes for mathematically gifted students in Vietnam. Shigeru Iitaka (Japan) offered a view on new trends of mathematics education in Japan at college level. Anthony Ralston (USA) proposed a zero-based approach to school mathematics for the 21st century. Zhang Dianzhou (China) featured some characteristics of mathematics education in East China by some data and tests in China. Jean-Pierre Kahane (France) gave a survey of typical mathematical competitions organised in some countries.

Furthermore, there were two lectures, by Toshio Sawada (Japan) on some problems of students' achievement and attitude in mathematics in Japan, and by Claude Comiti (France) on new trends in French teacher education. Also, there were 52 presentations at the working groups and topic groups.

Nguyen Dinh Tri,
Hanoi University of Technology
Dai Co Viet Road, Hanoi
VIETNAM

# The Japan Society of Mathematical Education (JSME)

**Yoshishige Sugiyama**
**President of the Japan Society of Mathematical Education**

**History**

The Japan Society of Mathematical Education (JSME) is a nonprofit professional association. Started as an organization for secondary mathematics teachers, the JSME was established in 1919. Since then, the JSME has played an important role to develop research in mathematics education and to improve, nation-wide, mathematics education in Japan. The JSME is the largest mathematics education organization in Japan. It is composed of about 4,000 members distributed over all areas of Japan, and includes teachers from kindergarten to university, administrators and researchers. The JSME is officially acknowledged by the Science Council of Japan.

**Goals**

The JSME has several goals for improving Japanese mathematics education and it has been active with respect to the following points.

*Leading Curriculum Reform*

The JSME has played a critical role in developing the national school mathematics curriculum, which is revised about every ten years and is officially authorized by the

Standards).

*Promoting Professional Development*

The main activity of the JSME is the annual meeting of mathematics teachers which is held in every summer, the biggest meeting of the Society. It includes several workshops and lectures focusing on up-to-date teaching and learning issues. The annual meeting involves local organizations and teachers, two thirds of whom are non-members. The JSME also organizes a research-oriented annual conference which is held in every autumn.

*Encouraging Research and Classroom Practice*

The JSME publishes three kinds of Journals: *Arithmetic Education* (6 issues a year) focusing on elementary school mathematics, *Mathematics Education* (6 issues a year) focusing on secondary mathematics education, and the *Reports of Mathematics Education* (2 issues a year), a research-oriented journal. Newsletters are attached with the first two journals to provide teachers with useful information from domestic and/or international view points. The JSME also publishes its Yearbooks. The first volume of JSME Yearbook was published in 1995.

*Cooperating with Other Organizations*

Domestically, the JSME is recognized as the leading mathematics education organization, and has a great influence on local educational organizations all over the country. Internationally, the JSME has cooperated with organizations such as NCTM (National Council of Teachers of Mathematics) in the United States, GDM (Gesellschaft für Didaktik der Mathematik) in Germany and AAMT (Australian Association of Mathematics Teachers) which mutally recognize each other as Corresponding Societies.

*Organization*

The JSME is governed by a 23-member Board of Directors. It has seven sections; Administration, Research, Public and International Relations, Research Data Collection, Journals, Publication, and "Ronkyu" (Research Communications). The JSME also has several committees. These groups take the lead to develop, implement, and coordinate the JSME's services and programs.

**ICME-9 in Japan in the year 2000**

The JSME is looking forward to meeting you in Japan in the year 2000 at the ICME-9. It will be held in Tokyo / Makuhari at the beginning of August. In addition to research and scientific activities we are planning social and cultural activities which will give you a better understanding of Japan.

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# News from the PME

The current officers of the International Group for the Psychology of Mathematics Education, PME, are

| | |
|---|---|
| President: | Stephen Lerman (United Kingdom) |
| Vice President: | Teresa Rojana (Mexico) |
| Secretary: | João Felipe Matos (Portugal) |
| Treasurer: | Abraham Arcavi (Israel) |

The Executive Secretary is

Joop van Dormolen
Rehov Harofeh 48A,
Haifa 34367
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fax: +972 4 8258071
e-mail: joop@tx.technion.ac.il

As to the next PME conference, please see the section Future Conferences in this Bulletin.

# Obituary: Bent Christiansen, 1921-1996

**Geoffrey Howson and Mogens Niss**

At a meeting some years ago a colleague, a gifted caricaturist, drew a sketch of Bent and entitled it "Bent Christiansen: a nice man". While saying nothing at the time, Bent told me later of his annoyance. "I am not a 'nice' man who smiles sweetly andagrees with everyone: I have a will of my own and will not be swayed." Appearances could be deceptive: Bent Christiansen was always kindly, gracious and a most agreeable companion. Yet his great integrity led him to be intolerant of injustice, of those who were rude, self-seeking, inefficient and not disposed to think, and of those who peddled simple solutions to complex problems. He himself was driven by two great aims: to remove social injustices and to give more students competence in, and an appreciation of, mathematics through improved teaching methods.

He was to achieve much in both these areas. Bent's "background" was that of the "old-style" mathematics educator: he taught and then progressed into teacher-training. But in the 1960s mathematics education was entering into a new phase. He was greatly influenced through attendance at the Arlon (Belgian) seminars and contact with such educators as Lucienne Félix, Willy Servais and Georges Papy (whose

rudeness, however, appalled him) and began to incorporate some of their ideas into his teaching and writing in Denmark. By 1969 his reputation was such that he was invited to be a plenary speaker at the First International Congress on Mathematics Education (Lyons).

The next fifteen or so years saw Bent's greatest contributions to mathematics education. Initially this was through the two international bodies UNESCO and ICMI. Bent became UNESCO's programme specialist in 1972, a time when UNESCO was a force in education. Already Bent had demonstrated his wish to serve the developing countries by acting as a UNESCO-expert in Liberia in the late 1950s. Particularly memorable initiatives in this period were the Conference on Language and Mathematics - a topic of crucial interest to developing countries (Nairobi 1974) and UNESCO's New Trends in School Mathematics (Volume 4) (1979), which was planned in conjunction with ICME 3 (Karlsruhe, 1976).

Bent was to join the Executive Committee of ICMI as its Vice-President in 1975 and served in that post for twelve years. By 1980 it appeared that Bent might well become ICMI's next President, the first mathematics educator to hold that post since ICMI had been a sub-commission of the International Mathematical Union, and only the second since the Commission was founded (following D.E. Smith 1928-31). But this was a period in which ICMI was in disarray and in the end it was the mathematician, Jean-Pierre Kahane, whom IMU asked to be President and to restore credence to ICMI. Bent was disappointed - and not only for personal reasons - but it was entirely in character that he continued as Vice-President under Kahane, working as assiduously as ever to enhance ICMI's standing and work, and speedily and readily acknowledged the outstanding qualities which Kahane brought to the post.

By this time, however, Bent had begun to be involved with other international activities. One, in which Michael Otte and I collaborated, was the BACOMET Project (Basic Components of Mathematics Education for Teachers, 1978-). An outcome of this work, Perspectives on Mathematics Education (1986), possibly helped make Bent's name better known to younger readers internationally. This initiative again provides evidence of Bent's keen interest always to apply the results of research to the one specific goal: the improvement of teaching and learning. This aim also led him to instigate the formation of an international group seeking "systematic co-operation between theory and practice in mathematics education". In this period his influence was exerted much more through leadership and his part in discussions rather than through his writings. He would not have been happy in a 1990s North American or English Education Department. Reading, thinking, discussing, and then translating the results into classroom practice were always rated more highly by him than churning out papers. Moreover, he never established a production line for Ph D students. But he was particularly, and rightly, proud of his association with Stieg Mellin-Olsen, Mogens Niss and Ole Skovsmose (who was Bent's research student). All three clearly show (or alas, showed, for Stieg was to predecease Bent) the imprint of Bent's guidance.

It is possible that many readers of this obituary will know little about Bent, for it is some years since he was at the peak of his powers. Even then, many outside Europe

would not have had an opportunity to appreciate his impact on the thinking of others and on the way in which UNESCO and ICMI acted and developed. Yet there can be few mathematics educators who cannot have been affected in some way by Bent's industry, drive and thought and we must all be grateful for his legacy.

Geoffrey Howson,
The University of Southampton, UK

As demonstrated above, nobody is better able to write an appreciation of Bent Christiansen and his work for mathematics education at an international level than Geoffrey Howson. In my capacity as a compatriot of Bent's, I shall, in what follows, add some words about Bent and his accomplishments in a Danish context.

Bent Christiansen was born on the 7th May 1921. After having completed, in 1944, his Candidate's (extended Master's) degree in mathematics at the University of Copenhagen, he became a teacher of mathematics at the upper secondary level ("gymnasium") in Holte, a northern suburb of Copenhagen, where he taught until 1957. Already in 1949 he was concurrently working at the Emdrupborg Teacher Training College where he stayed until 1960. At about that time the Royal Danish School of Education was being reconstituted, and Bent Christiansen was appointed its first Professor of Mathematics in 1960. He retired from his professorship, at the age of 70, in 1991.

Bent was a legend in mathematics education in Denmark and the Nordic countries. His impact on the development of the teaching and learning of mathematics in primary and lower secondary education and in teacher training can hardly be over-estimated. He wrote text books and books on mathematics education, especially the very influential 'Goals and means in basic mathematics education' ('Mål og midler i den elementære matematikundervisning', 1967). He gave inumerable in-service courses and invited lectures at meetings and conferences. Naturally, he also served on hosts of national committees, including the Danish National Sub-Commission of ICMI (1961-72). All this earned him a reputation as a charismatic, enthusiastic and extremely energetic mentor for generations of mathematics teachers, teacher trainers and colleagues. In addition to being a protagonist in curriculum development in Denmark, in particular in the 1960s and 1970s, Bent occupied equally significant positions in the Nordic scene. Thus he was a key member of the Nordic Committee for the Modernisation of Mathematics Education, 1960-67. These were the days of the so-called New Mathematics. Bent Christiansen was a leading figure in the introduction of some of the new ideas into Danish (and Nordic) mathematics education, but he always strived to put these ideas into a rich and varied context of mathematical meaning. He was very sad, therefore, to see how less visionary, derivative minds turned these ideas into sterile and stereotyped para-mathematical dry swimming, thus giving rise to (and cause for) skeptical reactions, not of all which were carried by what Bent would consider noble educational concerns. During the 1970s Bent was to develop different views of mathematics education from those of the modern movement, but nothing could make him more furious than representatives of later generations of mathematics educators who thoughtlessly misinterpreted or distrusted

the intentions and serious endeavours of himself and his colleagues during the 'modern era'.

During the 1970s, Bent Christiansen transformed himself from a curriculum developer and a teacher trainer to a didactician of mathematics who took a serious interest in all aspects of mathematics education. This gave him ample opportunity to involve his rich and multi-faceted personality in his professional work to an even greater extent than was the case in the first stages of his career. He developed his intensive and extensive interest in human beings and their lives in (not alsways so) democratic society into a creative platform for his own research and development activities. He tirelessly emphasised that mathematics education should not degenerate into a technical discipline of narrow-minded 'know how'. Especially, he saw undue reduction of complexity as perhaps the most fatal trap for mathematics education. Instead, he insisted that we should never forget that mathematics education involves, in an intrinsic manner, human, cultural, social, and political values which have to be taken into account in everything we do in the field. At the same time, he never forgot to emphasise that mathematics as a discipline has hosts of important contributions to offer to human beings who are to master their private, professional and social lives in society.

Bent continued to maintain a vivid and concerned interest in his beloved field, far beyond the age of retirement. The last time I saw him was at a meeting at the end of March of the Danish 'Forum for the Didactics of Mathematics', of which he was, most maturally, an (*the*) honorary member. I was giving a (critical) lecture on constructivism and Bent attended, despite the frail and evidently very unpleasant condition his long lasting kidney disease had brought him into. Not only did he want to meet and talk to old friends, he was very eager to take part in the subsequent discussion with fresh, thought-provoking and, above all, deeply concerned comments that moved all of us who were present. Bent Christiansen died on the 3rd September 1996. Mathematics education, his family, friends, and colleagues have lost a great humanist.

Mogens Niss
Roskilde University, Denmark

# FUTURE CONFERENCES

## Second Scientific Conference on The Future of Science and Mathematics Teaching and the Needs of Arab Society, December 1996

This conference, which will be held at the University of Science, Technology and Medicine in Tunisia (Tunis 2), 20-23 December 1996, is organised jointly by the Arab Development Institute (Beirut, Lebanon), the UNESCO Education Bureau in the Arab States (UNEDBAS), and the host university. The conference topics are the following:

*General Topics*: Recent developments in the teaching of science and mathematics; The taeching of science and mathematics in the light of the needs of society; New trends in the teaching of science and mathematics.

*Special Topics*: The role of information technology in the teaching of science and mathematics; The role of the teaching of science and mathematics in cultivating a healthy environment.

The deadline for submission of abstracts to the Organizing Commmittee was 15 March 1996.

The conference language is Arabic. However, papers may be submitted in English or French.

For further information concerning the conference programme, please contact

The Conference Coordinator
Dr. Mohamad Debs, Arab Development Institute,
P.O. Box: 14-5300 Beirut, LEBANON
Fax: +1 212-478-2932
e-mail: <cnrs10@calvacom.fr>

To reach the Organising Committee in Tunisia, please contact

Dr. Ahmad BouAzzi
Ecole Nationale d'Ingénieurs de Tunis
Tunis 2 University
P.O. Box 37, Tunis 1012
TUNISIA
Fax: +216 1-510729

## International Conference on Science, Mathematics, and Technology Education, January 1997

This conference, which will be held in Hanoi, Vietnam, 6-9 January 1997, is organised jointly by the National Key Centre for School Science and Mathematics, Curtin University of Technology (Perth, Australia), and Hanoi Pedagogy University.

The general theme of the conference is: Science, mathematics and technologyy education, and national development. More specifically, the following themes and topics will be addressed: Learning; Curriculum issues; Constructivism; Computer-assisted learning; Assessment and evaluation; Higher education; Primary Education; Secondary Education; Gender issues; Research methodology; Learning environments; Environmental studies; Cultural context; International education; Technological development; Distance education; Communication and language.

The conference will include keynote addresses, symposia, papers, posters, workshop presentations, and exhibits.

The conference language is English, but a special strand conducted in Vietnamese will be provided for Vietnamese mathematics and science educators and will allow the opportunity for overseas Vietnamese experts to interact with their colleagues in Vietnam.

The deadline for submission of abstracts (of approx. 250 words) is 15 September 1996. Abstracts should be posted to Dr. Fisher or sent by e-mail to Dr. Le (se below).

For further information, please contact

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or

Dr. Thao Le (Conference Assistant Director)
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Information may also be obtained from the World Wide Web, at URL:
http://www.educ.utas.edu.au/~thao.le/hn/n.html

## ATCM '97, June 1997

The Second Asian Technology Conference in Mathematics, focusing on computer technology in mathematical research and teaching, will be held 16- 20 June, 1997, in Penang, Malaysia, organised by School of Mathematical Sciences, Universiti Sains Malaysia.

The conference will provide an interdisciplinary forum where researchers in the fields of mathematics, education, computers and technology, together with teachers can present results and exchange ideas and information. The conference will cover a broad range of topics relevant to the use of technology in mathematics. These topics include: The potential use of technology in teaching and learning of mathematics; Development of user-friendly softwares; Computational mathematics. The programme will include plenary sessions, special sessions, short communications and exhibitions. Selected papers presented at the conferecne will be published in the proceedings.

For further information, please contact

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or

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## PME-1997, July 1997

The 1997 annual conference of the International Group for the Psychology of Mathematics Education, PME, will be held in Lahti, Finland, 14-19 July 1997.

The Richard Skemp Memorial Fund of PME has limited funds available to support both academics who find difficulties in attending PME conferences for racial, political, or philosophical reasons, and those from developing countries that are under-represented within the PME. Applications for an allowance from the Travel Fund containing relevant information my be sent to the Executive Secretary, Dr. Joop van Dormolen, Rehov Harofeh 48 Aleph, 34367 Haifa, ISRAEL, before 1 March 1997. Applicants are supposed to play an active part in a Working Group or Discussion Group, or otherwise). PME members may nominate recipients for support from this fund by writing to the Executive Secretary.

For further information about PME-1997, please contact

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## Justification and Enrolment Problems in Education Involving Mathematics or Physics, August 1997

On the occasion of the 25th anniversary of Roskilde University (Denmark), IMFUFA (the Department of Mathematics and Physics and their Functions in Education, Research and Applications) is pleased to invite mathematics and physics educators; scholars and scientists working in areas to which mathematics or physics are essential; representatives of institutions, agencies and organisations of research, industry or commerce; educational administrators, planners, authorities, and politicians; and other interested parties to attend this international conference which is going to be held at IMFUFA, Roskilde University, 22-26 August 1997.

Mathematics and physics play objectively significant roles in a large number of educational subjects and study programmes in various areas, not only as subjects in their own right but even more, perhaps, as essential components in other subjects and fields of study. Yet, in many places pupils and students have considerable difficulty in finding mathematics and physics relevant, and in coming to grips with their study. Similarly, in many countries students, to a manifest extent, are opting away from tertiary studies in which mathematics or physics form a key component.

Although national and local conditions and circumstances are undoubtedly important in this context, the problems are clearly international and non-superficial. This implies that attempts to explain or counteract the problems have to rely on in-depth analyses of their scientific, socio-economic, cultural, didactial, philisophical, and pedagogical

aspects. The main purpose of the international conference *Justification and enrolment problem in education involving mathematics or physics* is to elucidate and analyse the problems with respect to these aspects, and to do so from a variety of different perspectives, such as educational sector and level, geography and culture.

If you are interested in receiving further information about this conference please contact the organisers:

Jens Højgaard Jensen (physics)
e-mail: jhj@mmf.ruc.dk

or

Mogens Niss (mathematics)
e-mail: mn@mmf.ruc.dk

or the Conference Secretariat:

Ms. Karina Larsen,
IMFUFA, Roskilde University
P.O. Box 260,
DK-4000 Roskilde,
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## PME-NA XIX, October 1997

Illinois State University is proud to host the 1997 PME-NA (Psychology of Mathematics Education - North America) meeting at Chateau, Bloomington/Normal, Illinois, USA, 18-21 October 1997. A rich and stimulating program is in the planning stages. Tentative program planning features several plenary sessions with a focus on mathematics education research on learning and instruction. Suggestions for other plenary topics and/or speakers are invited.

At present the planned session formats include research paper sessions, symposia, discussion groups, short oral presentations, and poster sessions. As usual, decisions about acceptance will rely on peer review, which shortens the timeline for proposal subsmission. It is not too early to be thinking about your propossal, which will be due by 27 January, 1997.

Bloomington/Normal is located in Central Illinois, 125 miles south of Chicago. Weather in October will be moderate with trees and fields in fall harvest colors. Planned excursions may include an evening at the theatre or a barn dance. Accommodations will be availabe at Jumeïs Chateau, a five-storey hotel offering the warmth and charm of a French country estate. A walking-jogging trail in back of Jumeïs leads all the way to the University and can be particularly colorful in October. We look forward to your participation in the program and to your presence among

us in 1997.

For further information about the 1997 PME-NA meeting, please contact:

Jane Swafford, 1997 PME-NA Annual Conference
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## IFIP Working Group 3.1. Working Conference, October 1997

Working Group 3.1 (Secondary Education) of the International Federation for Information Processing (IFIP) is organising a Working Conference on the topic *Secondary School Mathematics in the World of Communication Technology: Learning, Teaching and the Curriculum*. This Working Conference is a sequel to two previous ones organised by IFIP WG 3.1 on similar themes in Varna (Bulgaria) in 1977, and in Sofia (Bulgaria) in 1987. It was felt appropriate to look again, ten years later, at the rich relationships between mathematics and the new technologies of information and communication. The conference will take place in Villard de Lans, a mountain resort located in the Alps 35 km from Grenoble (France), from October 26 to 31, 1997.

The programme of the conference will be built around four themes:

*A. Curriculum*: curriculum evolution; relationships with informatics
*B. Teachers*: professional development; methodology and practice
*C. Learners*: tools and techniques; concept development; research and theory
*D. Human and social issues*: culture and policy; personal impact

Participation at the Working Conference is by invitation only and will be limited to 80-90 participants. Both the philosophy underlying such a working conference and the physical capacities of the venue impose this limitation on the number of participants.

For further information, please contact

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If such is the case, you should briefly explain the reasons why you wish to take part in the Working Conference.

This Working Conference is being organised by IFIP WG 3.1, with the help of the IUFM (Institut Universitaire de Formation des Maîtres) of Grenoble and the Leibniz Laboratory of IMAG (Institut d'informatique et de mathématiques appliquées de Grenoble).

## ICMI-EARCOME 1, August 1998

The First ICMI East Asia Regional Conference on Mathematics Education (ICMI-EARCOME 1) will be held 17-21 August 1998 at the Korea National University of Education, Chungbuk, Republic of Korea. See announcement elsewhere in this Bulletin.

## International Congress of Mathematicians, ICM-98, August 1998

This congress will be held, under the auspices of the International Mathematical Union, 18-27 August 1998 in Berlin, Germany. The Board of Directors of the Organizing Committee consists of

*President*: M. Grötschel, Berlin
*Vice-President*: M. Aigner, Berlin
*Honorary President*: F. Hirzebruch, Bonn
*Treasurer*: J. Sprekels, Berlin
*Secretary General*: J. Winkler, Berlin

The International Programme Committee is chaired by Phil. J. Griffiths, Princeton, USA.

The current plans for the congress include the following sections: 1. Logic; 2. Algebra; 3. Number Theory and Arithmetic Algebraic Geometry; 4. Algebraic Geometry; 5. Differential Geometry and Global Analysis; 6. Symplectic Geometry and Hamiltonian Theory; 7. Topology; 8. Lie Groups and Lie Algebra; 9. Analysis; 10. Ordinary Differential Equations and Dynamical Systems; 11. Partial Differential Equations; 12. Mathematical Physics; 13. Probability and Statistics; 14. Combinatorics; 15. Mathematical Aspects of Computer Science; 16. Numerical Analysis and Scientific Computing; 17. Applications; 18. Control Theory and Optimization; 19. Teaching and Popularization of Mathematics; 20. History of Mathematics.

Further information about ICM-98 can be obtained through the World Wide Web, through URL:

http://elib.zib-berlin.de/icm98

### ICME-9, July-August 2000

The Ninth International Congress on Mathematical Education, ICME-9, is going to be held 31 July - 7 August 2000, at the Chiba Convention Centre, Makuhari, at the Tokyo Bay, near Narita Airport. Further information will be available in forthcoming issues of this Bulletin.

## ICMI and the ICMI Bulletin on the World Wide Web and on E-mail

Information about ICMI, including the most recent issue of the ICMI Bulletin, is now availabe from the ICMI pages of the IMU server at the Konrad-Zuse-Zentrum für Informationstechnik Berlin, (Germany). These pages can be found through URL:

http://elib.zib-berlin.de/imu.icmi

Direct access to the ICMI Bulletin on the WWW, through the IMU-server, is obtained by the URL:

http://elib.zib-berlin.de/imu.icmi.bull.[no]

The ICMI Bulletin is also stored as an ASCII file in the editor's (i.e. the ICMI Secretary's ) electronic post system. If you want to receive a copy of this issue as an ASCII text through e-mail, please contact Mogens Niss at <mn@mmf.ruc.dk>.

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