Programme at a Glance

* Plenary IV is canceled
** Poster authors will be available for discussion in front of each posters
*** Oral Presentations and Round Table Discussion with poster authors

- AO: Affiliated Organization - WSG: Workshops and Sharing Groups - NP: National Presentation - DG: Discussion Groups
- TSG: Topic Study Groups - RL: Regular Lecture - RT: Round Table

International Commission on Mathematical Instruction

Monday, July 9, 2012

ICME-12 Daily Newsletter

The 12th International Congress on Mathematical Education

Today's Highlight

· Opening Ceremony: 9:30~11:30, Hall D2
· Plenary Lecture: Mathematics Education in the National Curriculum System (Don Hee Lee, Korea), 12:00~13:00, Hall D2
· ICMI Studies & Klein Project, 16:30~18:00, Hall E1, Hall E2, Hall E3, Hall E4, Room 401

Announcement

ICME-12 Newsletter will be released in July 9, 10, 11, 13, 14, and 15 at Ask me desk.
ICME-12 Newsletter contains the review of conference and the daily changes.

Welcome Message

Bill Barton

Welcome to Seoul, welcome to ICME, welcome to a week of collaboration, interest, and meeting old friends and new acquaintances.

As you read this, you will probably already have met several people. You will have met some of the huge team of people who have worked for many months to make this event happen. You may have seen some familiar faces. You may already have met someone new. If you have not met anyone new, I invite you now to approach the next person you see and introduce yourself.

ICMI is primarily a community, a large family of people with a common interest and a commitment to mathematics education - a vital component of all our societies. Therefore, if you speak to someone at this event, you will be speaking to a family member. It will not be hard to find things to talk about, to find a topic where your views differ, and others where your views coincide. Either way, the interaction will be interesting and probably fruitful.

Participation at ICME-12 will take many forms. The organisers, from Convenor, Sung Je Cho, to student helpers, to International Programme Committee, to presenters, to exhibitors, to session organisers have all played their part. I invite you to involve yourself with anticipation and pleasure in any and everything on offer.

The ICMI community meets at ICME conferences, but also at other events and in other forums. You have chosen to participate in ICME-12, I invite you to participate beyond this conference subscribe to the ICMI Newsletter as a first action and as a way to find out what else is on offer.

Finally, as you enjoy this conference, please bear in mind those in the community who cannot be here. Please tell your colleagues back home about the ideas and stimulation that you will experience over the next week. Lead their debate, and encourage others to come to Hamburg in four years time.

I hope you enjoy ICME-12 and that it becomes an exciting moment in your mathematics education life.

Yours sincerely,

Bill Barton
President of ICMI

Sung Je Cho

I would like to extend my warmest welcome to you all. We, the Korean Mathematics Society and Korean Mathematics Education Society, are very proud to host the 12th International Congress on Mathematical Education. Our International Programme Committee has worked tirelessly through two face-to-face meetings and numerous internet discussions. It is needless to say that this conference would not be possible without the dedicated and coordinated efforts of members of the various committees, presenters and participants. We thank all of you for making this a reality.

Mathematics has been at the heart of human culture, philosophy, technology and advancement since the dawn of civilization. We cannot think of our modern society apart from mathematics because mathematics influences every facet of our daily lives. Due to the far-reaching effects of mathematics in our world, mathematics education may be one of the most efficient ways to influence betterment of mankind. For the week starting today, we are gathered here to nurture and cultivate the mathematics educational environment for our future generation so that they may become a significant part of the solution and advancement of our society.

It is our sincere hope that this conference would inspire wider and tighter mathematics education research network as well as invite and stimulate mathematics classrooms all over the world.

Thank you,

Sung Je Cho
Chair of the International Programme Committee

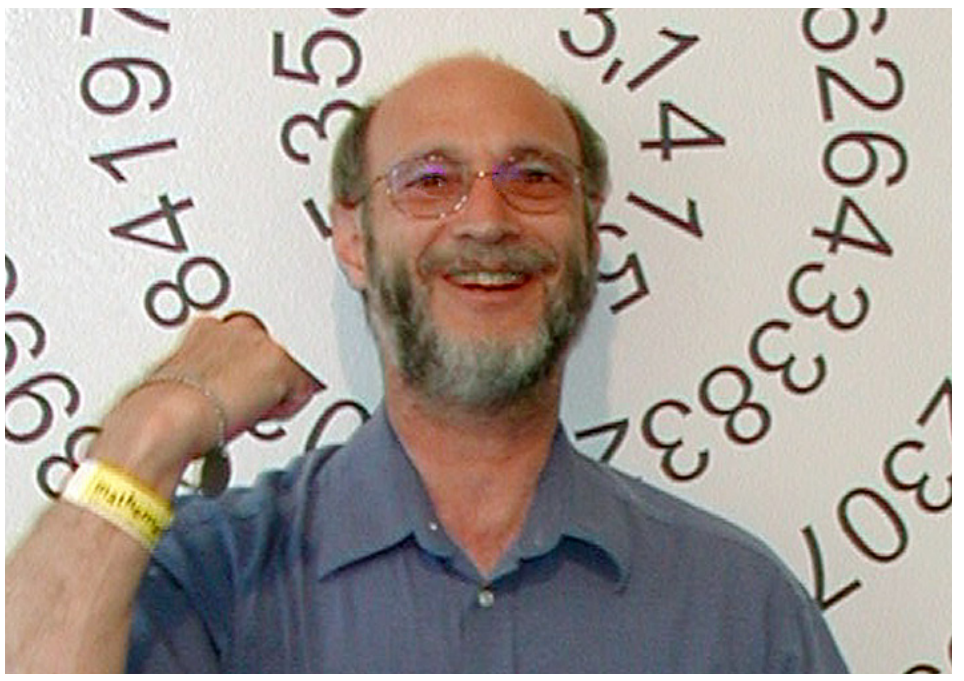
Hosts

International Commission on Mathematical Instruction

Sponsors

교육과학기술부 · SEOUL METROPOLITAN GOVERNMENT · 한국과학창의재단 · LOCOM 복권위원회 · KIAS Korea Institute for Advanced Study · 국가수리과학연구소 National Institute for Mathematical Sciences · 한국교육과정평가원

Key Speaker of Today



Alan Schoenfeld

Alan Schoenfeld was awarded the 2011 Felix Klein medal "in recognition of his more than thirty years of sustained, consistent, and outstanding lifetime achievements in mathematics education research and development." Schoenfeld is the Elizabeth and Edward Conner Professor of Education and Affiliated Professor of Mathematics at the University of California at Berkeley. He is a Fellow of the American Association for the Advancement of Science and of the American Educational Research Association, and a Laureate of the education honor society Kappa Delta Pi. He has served as President of the American Educational Research Association and vice president of the U.S. National Academy of Education.

After obtaining his Ph.D. in mathematics from Stanford University in 1973, Schoenfeld turned his attention to issues of mathematical thinking, teaching, and learning. His work has focused on problem solving (what makes people good problem solvers, and how can people get better at it?), assessment (how can we test what really counts in mathematical thinking?) teachers' decision-making, (why do teachers make the decisions they do?), professional development, and issues of equity and diversity. The goal of his research is to help all students experience the joy and richness of mathematics that led him to become a mathematician in the first place.

Schoenfeld has written, edited, or co-edited twenty-two books and more than two hundred articles on thinking and learning. He has an ongoing interest in the development of productive mechanisms for systemic change and for deepening the connections between educational research and practice. His most recent book, How we Think, provides detailed models of human decision making in complex situations such as teaching. His current research focuses on ways to create productive learning environments, in which students can experience mathematics in ways that are meaningful and powerful for them.

Lecture Title: How we think: A theory of human decision-making, with a focus on teaching

When & Where to find: Room 401 from 14:30 to 15:30

K l e i n P r o j e c t

Felix Klein (1849-1925)

The Klein Project is an IMU/ICMI project to produce mathematical materials for secondary teachers. It has an international Design Team, and there have been Klein meetings in four continents and eight countries. Sweden and Brazil, in particular, now have national Klein Projects underway.

The Klein Project will ultimately produce a small volume for teachers, but at present, its focus is on producing and disseminating Klein Vignettes. These are short (~6-page) stand-alone pieces about a contemporary mathematical topic. They are written for secondary teachers with undergraduate mathematical backgrounds, and aim to inspire and keep alive teachers' interest in their subject. At present, Vignettes are posted on a blog (http://blog.kleinproject.org) and all Vignettes are available in English and French. However, German, Spanish, Russian, Chinese, and Portuguese versions are being prepared, and we welcome all languages. Ultimately we hope that Klein Vignettes will be supplemented by further documents: historical notes, further reading, interactive apps, and so on.

It has been our experience that the Klein Project is a forum in which mathematicians, mathematics educators, and mathematics teachers can all participate equally. Indeed, the project will not succeed unless all groups provide their expert input.

We therefore welcome contributions of all kinds, from the writing of new Vignettes, to feedback on existing ones, from the preparation of supplementary documents to translations of existing ones, and from participation in future Klein conferences to offers to host Klein meetings.

Please come and meet some of the Klein Project Design Team, discuss the existing Vignettes (and provide us with ideas for future ones), and become part of this growing international group.

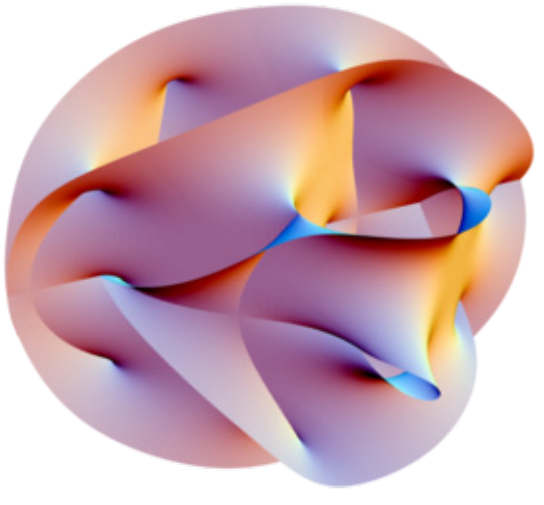


Illustration of a Calabi-Yau-manifold (Important for the description of higher dimensional models in superstring-theory)

Mathematics Education All Around the World

Germany

Curriculum revision

Generally, in Germany the individual federal states (Länder) are responsible for their educational system, i.e. the school systems, curricula, textbooks etc. differ from state to state, whereby there are common structures. The federal states cooperate within the framework of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder (Kultusministerkonferenz – KMK). The KMK adopted national educational standards for core subjects (as mathematics) for the different school-leaving qualifications (Hauptschulabschluss, Mittlere Reife, Abitur) as well as for the primary education. The educational standards in mathematics are output-orientated and define the competencies students should have acquired at a particular time. The national educational standards are intended as a framework and are specified by the federal states.

Differentiated class

German school system separates children in the age of 10 (after grade 4) in two or four different kinds of schools, depending on their marks. In general, 4 units per week are allocated for mathematics in the 8th grade (out of total 34 units per week). That is common in 1 of the two or four kinds of schools mentioned above. This kind school has students with a wider spreading ability (the other three ones focus on one of three levels) and start differentiated groups starting grade 7. But even in these schools there is a tendency to teach all students in one group.

Gender difference

At school entry there are hardly gender differences in mathematics. But still teachers, parents and the children themselves often think that boys are mathematically more talented than girls – this often leads to higher interest of boys in mathematics, but also to a higher motivation, greater confidence, more stable self-concept and finally higher competencies: girls in upper classes, for example, select less often advanced courses in mathematics. One important task is to break these stereotypes. There are some policies to reduce the gap between boys and girls in mathematics (for example girls day).

Correspondence to Gabriele Kaiser, University of Hamburg,
Email: gabriele.kaiser@uni-hamburg.de

Congress Information

Registration Desk

July 9th (Mon)	08:00~20:00	July 13th (Fri)	08:00~18:00
July 10th (Tue)	08:00~18:00	July 14th (Sat)	08:00~18:00
July 11th (Wed)	08:00~18:00	July 15th (Sun)	08:00~12:00

Social Events – Happy Hour

July 9th (Mon)	18:00~19:00	July 13th (Fri)	18:30~19:30
July 10th (Tue)	18:30~19:30	July 14th (Sat)	18:30~19:30
July 11th (Wed)	18:30~19:30	July 15th (Sun)	13:30~14:40

Internet Lounge - Foyer of Hall E (3F)

Coffee Break

July 9th (Mon)	11:30~12:00	16:00~16:30
July 10th (Tue)	10:00~10:30	16:30~17:00
July 11th (Wed)	10:00~10:30	16:30~17:00
July 13th (Fri)	10:30~11:30	16:30~17:00
July 14th (Sat)	10:00~10:30	16:30~17:00
July 15th (Sun)	10:00~10:30	

KOREA Traditional Cultural Experience & Tourism Information Center

What about visiting "KOREA Traditional Cultural Experience & Tourism Information Center" located near Hall E in your leisure time? With programs created exclusively for overseas participants, the Korea Tourism Organization(KTO) offers a chance to understand Korean culture through a range of hands-on experiences as well as great information on Tourism in Korea at no charge.
Location: Near Hall E on 3rd Floor (COEX)

July 9th (Mon)	09:00~18:00
July 10th (Tue)	09:00~18:00
July 11th (Wed)	09:00~18:00
July 13th (Fri)	09:00~18:00
July 14th (Sat)	09:00~18:00
July 15th(Sun)	09:00~13:00

1. Making your own fan – Traditional Crafts

In order to prepare for the hot summer, Koreans used to make fans and give them to their loved ones, wishing them health and well-being. How about partaking in this local gift-giving custom? Visitors can make their own fan by pasting images of traditional symbols of Korea on Hanji paper.

Date: 9 July(Mon) ~ 15 July(Sun)
Time: 09:00~18:00 [09:00~13:00 15 July]
Duration: ~10 min (2~3 people at a time)

2. All about (Dado) – Korean Traditional Tea Ceremony

This program is best suited for people who are interested in the Korean Traditional Tea Ceremony. Visitors can learn how to brew and drink tea from experts. There are two kinds of tea: one is green tea which is the most popular, and the other is chrysanthemum tea, which has a strong flavor.

Date: 9 July(Mon) ~ 15 July(Sun)
Time: 09:00~18:00 [09:00~13:00 15 July]
Duration: ~20 min (3~4 people at a time)

3. (Kkultarae) Performance – Korean Traditional Court Snack

A mound of hardened honey and malt is kneaded and stretched into 16,384 strands that look like a thin, white skein of glossy silk. Kkultarae, meaning honey skein, is filled with a mixture of ten ingredients such as almonds, walnuts, pine nuts, peanuts, black beans, and black sesame seeds, and then rolled. The candy, which was a royal Korean snack, is sweet and delectable. Best of all, you can watch the Kkultarae-maker as he creates his culinary work of art. Everyone visiting the center and watching the performance can taste some Kkultaraes at no cost (for foreigners only).

Date: 9 July(Mon) ~ 14 July(Sat)
Time: 10:00~16:00
Duration: ~10 min (approx. 12-15 people at a time)

4. Hanbok Experience – Wearing Korean Traditional Clothing

Visitors of all ages can take photos of themselves wearing Hanbok.

Date: 9 July(Mon) ~ 15 July(Sun)
Time: 09:00~18:00
Duration: ~10 min (~5 people at a time)