

# IOWME NEWSLETTER

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**INTERNATIONAL ORGANISATION OF WOMEN AND  
MATHEMATICS EDUCATION**

An affiliate of the International Commission on Mathematical Instruction

Read part of the story about behind Barbie's new career at:

[http://www.computerworld.com/s/article/9158118/Look\\_who\\_s\\_a\\_nerd\\_Barbie\\_becomes\\_computer\\_engineer](http://www.computerworld.com/s/article/9158118/Look_who_s_a_nerd_Barbie_becomes_computer_engineer)



IOWME meets every four-year at the International Congress of Mathematics Education or ICME. Four years has passed and ICME-12 is just around the corner, from July 8 - 15, 2012. As at previous ICME meetings, IOWME is hosting two exciting sessions at ICME-12. We hope as many of you as possible will be able to join us in South Korea. Please let us know if you are coming as it will help us in our planning ([olly.steintho@uni.edu](mailto:olly.steintho@uni.edu)). Also, during our meeting a new convenor and newsletter editor will be selected and we ask you to consider putting your name forward or nominate someone. The sessions are:

Wednesday, July 11, 17:00 - 18:30

The focus of our first session is the current status of gender research in the field of mathematics education. Our guest speakers this year are Dr. Helen Forgaz and the Felix Klein 2009 award recipient Professor Gilah Leder. Both Professor Leder and Associate Professor Forgazs are leaders in the field of gender and mathematics education research. IOWME is very excited. The session will start with the talk from our guest speakers on "The gender divide: Once more under the microscope" and we feel very fortunate to have them as guest speakers. followed by interactive group discussions.

Friday, July 13, 17:00 - 18:30

The focus of the second session is the future and the role of our organization and it will be structured as interactive group discussions. At the last IOWME meeting in Mexico 2008, discussions started on the future of IOWME and the role to be played by the organization. We would like to continue the discussions this year and elicit thoughts and ideas from IOWME participants. New convenor, newsletter editor, copy editor, and technology coordinator will be elected during our meeting.

In addition to the IOWME sessions, Topic Study Group 29 - Gender and Mathematics (TSG 29) has 4 sessions, which I hope you will consider joining. An exciting program is being set up for the TSG 29, with papers from around the world addressing different aspects of gender and mathematics education research.

Tamsin and I are looking forward to seeing many of you in Korea.

Olly Bjorg Steinthorsdottir, IOWME Convenor

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### Barbie, Computer Engineer

Throughout the newsletter there are web links to how Barbie gained her new occupation. What is not told is the role of the Society for Women Engineers. If the choice of career had been left up to the young girls accessing the poll through the manufacturer's web page, Barbie would have been a news anchor woman. Of all the choices that children (girls) were given, news anchor woman was the career which needed the least amount of mathematics. However, the popular choice for Barbie's new career was an open vote and so the Society of Women Engineer organised its 20000 members and other interested people so that computer engineer became the most popular choice. On reflection, the company who made Barbie decided to give her two different careers and in so doing also consulted with the Society of Women Engineers over what computer engineer Barbie should look like. This is a story which in many ways shares points with some of the stories in this newsletter.

[http://articles.chicagotribune.com/2010-04-14/business/ct-biz-0414-confidential-20100414\\_1\\_barbie-betty-shanahan-mattel-marketers](http://articles.chicagotribune.com/2010-04-14/business/ct-biz-0414-confidential-20100414_1_barbie-betty-shanahan-mattel-marketers)

## WOMEN IN STATISTICS CONFERENCE

**New Zealand: October, 2010**

The Conference, hosted by the Victoria University's School of Government in Wellington, was well attended with 55 registrations and a number of one-day attendees from a range of backgrounds. Statistics New Zealand, the New Zealand Statistics Association, the New Zealand Institute of Mathematics and its Applications (NZIMA), the Statistics Department and Faculty of Science at the University of Auckland, the Department of Mathematics and Statistics at University of Canterbury and the School of Mathematics, Statistics and Operations Research at Victoria University all provided sponsorship. This covered administrative costs, attendance at the conference and catering (morning and afternoon teas and a light lunch).

Hon Pansy Wong, Minister of Women's Affairs, opened the Conference and enthusiastically promoted the importance of statistics. As well as acknowledging pioneers in gender equity in statistics education, she described statistics as being of direct relevance to women, for example, in relationship to the gender-pay gap. The Chair for the Conference was Kim Hill, a local radio presenter, who unfortunately was available for the afternoon only. However, she was a lively interjector, often providing an alternative perspective and an air of levity. The six speakers presented a range of papers and perspectives designed both to convey information and to stimulate discussion.

Professor Natalie Jackson's paper made parallels between the life of Rita, in the 1983 film 'Educating Rita' (a 26-year-old Liverpudlian who enrolled in Britain's Open University in an attempt to improve her situation) and New Zealand women at that time. She made the point that women have increasingly embarked upon further education as their families grew older, showing graphically the gaps between early study and further tertiary education for successive cohorts. However, increasing education and decreasing reproduction has not necessarily advantaged women, with the burden of student debt taking longer to pay off with the gender pay gap.

Lisa Davies, discussed the use of statistics to inform Māori development policy focussing on the research behind the Closing the Gaps initiatives in 1998 and 2000 that showed Māori had poorer outcomes than the rest of the population. She pointed out some of the controversies that arose from this 'deficit-model' and how it led to the concept of Whānau Ora (based on the logic that service

delivery was the key impediment to improving Māori outcomes and that the whānau, or family, not the individual, should be the focus of public policy). She advocated tertiary institutions providing statistics as a core component of qualifications as evidence-based policy would require a growing pool of statisticians.

Sharleen Forbes stressed the importance of visualising data and provided examples from currently available sources including [www.worldmapper.org](http://www.worldmapper.org) and [www.gapminder.org](http://www.gapminder.org) together with a range of tools in current use by national statistics offices. These included population pyramids, a tool for looking within the CPI, and the application of GeoVista software to 2006 Census data in Auckland city. She also cautioned that new ways of looking at available data were often not useful for small populations or when not sure of the data quality.

Megan Clark's talk covered the use of statistics by organisations where a minor statistic can be blown-up by the media to become an item. Quantification where none is necessary can be interpreted as an attempt to mislead. She warned of the danger of using statistics in isolation. Megan noted that throwing in numbers to 'authenticate' policy was becoming increasingly common and that the production of statistics by government agencies was occupying increasing numbers of staff positions.

Jennifer Brown presented some of her statistics research in environmental monitoring of endangered and pest species, both in NZ and overseas. In a very visual talk she discussed the use of adaptive and spatially balanced sampling in possum monitoring and in the estimation of rare and endangered populations (such as the Pyrenees Desman or the Crau Plain grasshopper) or in early detection of threats to our biosecurity (such as weeds).

The day was rounded off by Rachael Milicich giving a personal account of how statistics have influenced her life and how they continue to do so. She presented birth, marriage and employment figures at the time of these events in her life and compared them with other time periods. She also discussed her work managing National Accounts and using the Sustainable Development indicators in Statistics New Zealand.

That the attendees enjoyed the day was evidenced by the number who stayed to chat for an hour or so after the conference had formally ended and from the emails since received. A number of requests have already been made for copies of the presentations (including from the Minister of Women's Affairs). These are available from [lu.folau@stats.govt.nz](mailto:lu.folau@stats.govt.nz).

Sharleen Forbes



Jenny Brown, Lisa Davies (speakers), Hon Pansy Wong (Minister of Women's Affairs), Sharleen Forbes, Megan Clark, Natalie Jackson (speakers)

## How much of your personal life should be known about in your professional life?

Last year, I read a blog of woman researcher, Kate Clancy, in the United States, about her struggles to obtain tenure and raise her family: <http://blogs.scientificamerican.com/context-and-variation/2011/10/07/the-three-things-i-learned-at-the-purdue-conference-for-pre-tenure-women-on-being-a-radical-scholar/> . It is well worth reading at whatever stage you are in your career. It certainly made me think about how I presented myself to my colleagues.

One of the points that she made was that you should bring your whole self to your job, not to hide the "non-academic," family-yearning part of you. The second point was to have a plan. The third and final point was to be a radical.

When I asked a friend who was planning her return to finishing her PhD in mathematics education to write a piece about what it was like to come back after so many years away, I did not expect to receive a story that included all three of Kate Clancy's points. It is a deeply personal story and many will not find it comfortable to read. In fact some of you will feel that it contains too much personal information that you do not want to read.

Nevertheless, like all good writing, it challenges you to think more about what it means to get up in the morning and put one more word into the PhD thesis. It also makes you think about what it should be like to be part of a supportive community for women in mathematics education.

So here it is:

Writing this small piece for the IOWME newsletter on the 31<sup>st</sup> December seems somewhat appropriate. 2012 is looming and with it the challenge of finally finishing my PhD in mathematics education and at the same time laying a few ghosts to rest.

I began my research in 2004 and for the first two years my study ran relatively smoothly. I managed to squeeze study in-between family commitments and part-time work. But then finishing my thesis became an obstacle rather too high to climb.

I have four children, my 14-year marriage ended, my children suffered some unforeseen trauma with long-lasting effects, I moved them away from the university city where I had been living to a small town, got remarried to a wonderful man, struggled to find work, fell very ill resulting in gall bladder removal and subsequent health issues, had two miscarriages, went on a wonderful first-ever overseas holiday, the recession affected our business a lot on our return, had another miscarriage and then the very late loss of our wee baby boy. During all of this I have lived with constant emotional abuse from my new husband's ex-wife. This year my 16-year-old daughter had massive scoliosis back surgery and I had to support her through her first year of formal exams. All in all, a massive roller coaster of life's ups and downs. Ultimately though, I have to look inside myself, leave behind the past and look forward to what only I can make possible.

I've tried a few times to restart writing however I think until now the hardest part has been trying to regain the self-belief that I can actually do it. After sustained periods away from my work I have not lost the passion for my research but I have lost the confidence in myself that I can actually do it. My husband is totally supportive of me finishing but I keep telling him that this means a huge block of time with me being 'locked' away with my computer which I do not think he will fully understand until he sees it happen. I've watched my female friends and my closest cousin finish their theses, now it is my time.

2012 is to be my year! My youngest child is now 9. My eldest is starting his undergraduate degree. I have left my part-time tutoring position and my Christmas present was a new iMac. My two original supervisors have moved on and therefore I begin this next chapter of my life with new supervision, a family and friends standing behind me to encourage me, and a self-imposed deadline of July 2013 to get 'the thing' submitted!





## Mathematics and Girls' Clothes

Beth Herbel-Eisenmann

February 1, 2012

In 1992, I was teaching grade 7 and 9 mathematics in the state of Minnesota in the US. In July of that year, the Teen-Talk Barbie doll appeared on the shelves of stores all over the US (and possibly other countries?). The doll said many things including, "Math class is tough." (As an aside, other things this Barbie said but that I'm not addressing here included "Will we ever have enough clothes?" and "I love shopping!") I was shocked that Mattel would think to release such a ridiculous toy. At that time, I knew nothing about feminist theory or critical theory but had grown up knowing that girls were often told, implicitly or explicitly, that they could not do math. But, I also grew up knowing that this was absurd, something that I was implicitly and explicitly told to me by my parents. My father, in fact, was my teacher for algebra I and geometry and told me and my siblings that we would do well in mathematics, language arts, and science, no matter how hard we had to work. When the Barbie doll was released, I remember talking to the girls in my math classes and on my basketball team about how much I disagreed with what the Barbie said. Needless to say, many people disagreed with it and expressed their disagreement loudly, especially the American Association of University Women. In October, the Barbie was taken off the shelf and Mattel offered an apology for its ignorance (my words, though, not theirs!).

Fast forward about 20 years later to 2011 and imagine my surprise to learn that a Los Angeles retailer called Forever 21 released a set of school-related t-shirts that said "Allergic =to= Algebra" "Skool sucks" and "I love school... (on the front) Not! (on the back)." And, of course, all of these t-shirts were being marketed to girls. Thanks to social networking and online petitions, these shirts were pulled from the market fairly quickly. This incident reminds me, again, how far we have still have to go in terms of social perceptions of young women in relationship to mathematics. It led me to a Google search of blogs that were posted about the incident, including:

<http://disgrasian.com/2011/09/forever-21-tells-girls-that-math-is-hard/>

<http://sargentspeaks.wordpress.com/tag/algebra-is-hard/>

<http://www.circleofmoms.com/article/forever-21-pulls-allergic-algebra-girls-tees-photo-01533>

[http://www.democraticunderground.com/discuss/duboard.php?az=view\\_all&address=439x1924945](http://www.democraticunderground.com/discuss/duboard.php?az=view_all&address=439x1924945)

<http://www.retailonlineintegration.com/blog/allergic-algebra-geometry-makes-me-gag>

<http://blog.sfgate.com/sfmoms/2011/09/12/forever-21-insults-women-with-allergic-to-algebra-t-shirt/>

I spent some time, in particular, reading the last of these websites, which had almost 500 posts. Some of the posts vehemently disagreed with these t-shirts and pointed out the underlying social messages and constructions of young women in relation to mathematics and success in school. Other posts chastised people who responded negatively as needing more to do in life if they had time to worry about such things, or as not being able to take a joke. A few were not clear in their agreement or disagreement with the release of such t-shirts.

Although I did not do an analysis of these posts, I wanted to share some interesting things I noticed as I read the posts. It would be interesting to know whether other IOWME members have contended with these issues and what they think about some of the posts I have shared below.

Some of the people who thought these t-shirts were not a big deal, added additional descriptions to women who might be good at math or school, writing "*I bet they're not hot. That's what really matters*" (StupidGirl77)

Others invoke a freedom-of-speech-type reasoning to justify why people should not boycott or threaten major retailers for marketing such t-shirts. Along similar lines, there was a strong focus on individuality ("mind your own business").

*... If you don't like the message on the shirt, don't wear it. SIMPLE as key lime pie. I hate when people try to regulate and speak for whole groups... get a hobby, be concerned with what you choose to represent and promote. Busy yourselves with what you kids are wearing, not Suzies kids down the block... Mind your own business. Please...feminitity, Sheminitity... get a life. ..."*

*You could also try raising a girl who is able to make smart decisions of her own rather than imposing your opinions on everyone. I am an uber feminist who thinks these shirts are stupid but the self righteousness here offends a whole*

*other batch of sensibilities. I cannot stand a "mommy" who thinks she knows what's right for my kids and everyone else.*

In response to this last post, one person wrote:

*Your naivete (to be generous) is breathtaking. Would you also think objections to racist stereotypes as 'self-righteous'? Read the research on power of even mild negative descriptions to change the ability of an individual - even using the word 'old' before giving a test to older people makes them perform worse than test takers of the same age who didn't hear the word 'old'*

In fact, there were some references about how selling this message to girls seemed okay, but that "Race is never ok to insult." When considering the many different systems of oppression at work in society, it's interesting that some people pitted these systems against one another, as if they are not all interlocking and always present.

People who posted suggested other t-shirts slogans, again falling on a continuum of supporting mathematics to just downright obnoxious:

*"Titillated by Trigonometry," "Boyz its kul 2 b stoopid," "Nimrod for life?" I'm a jock. I don't needz ta know dat!" "I got a scholarship with a degree in basketweaving" "School is 4 dumbies" "nerds are losers" "I'm the smart b###ch your mom warned you about" "Calculus. If you don't know it don't talk to me"*

Another person wrote: *Shoot why not print it with "I exist solely as a place to put your penis." Why not. Skip the "I'm stupid" and get straight to the point.*

Sarcasm also abounds in the posts... *Is this a store for blondes?*

Another dominating theme suggested that the issue raised occurred above gender lines and was more about celebrating anti-intellectualism:

*We're shocked that we celebrate ignorance and stupidity? I agree that this is rather lame, but this is a sad reflection of a recurring theme in American culture... [others about us getting out butts kicked in international comparisons... anti-intellectual culture of the US] ...*

*This goes beyond feminism. Anyone who steps onto a modern college campus knows that women outnumber men in higher education. What is offensive is the message that to be "cool" and "popular" one must shun education, especially math and science. Students in secondary schools essentially have to choose between social inclusion and creating a bright future for themselves.*

*Indeed. Kids who value academic achievement have been derided as nerds for generations. Being excluded socially has more to do with being awkward or inept in the social arena than with enjoying school, though. (Someone who's easy-going, who recognizes and uses humor well, and who isn't constantly correcting factual mistakes will generally be popular, whether s/he likes studying or not.)*

Should women who DON'T like school and think math is hard be able to buy/wear shirts that express that? Or should women be banned from wearing such things, because some of us would be shamed to wear them? If these were required school uniforms, that WOULD be negative sexual stereotyping. But first, teeshirts are inherently unisex, and second, some members of both sexes actually do share the sentiments expressed on the shirts. And it's just as condescending and presumptuous for us to ban that from their freedom of self-expression as it would be to require men or women to wear them.



(And Barbie's new career didn't miss out on a discussion about clothing.  
See: <http://news.bbc.co.uk/2/hi/8517097.stm>)

**Eighth Congress of European Research in Mathematics Education  
(CERME8)**

**Starlight Convention Center, Thalasso & Spa Hotel in Manavgat-Side,  
Antalya, Turkey from 6th to 10th February, 2013.**

CERME is the Congress of ERME, the European Society for Research in Mathematics Education, and is designed to foster a communicative spirit. It deliberately and distinctively moves away from research presentations by individuals towards collaborative group work. Its main feature is a number of thematic working groups whose members work together in a common research area. Researchers wishing to present a paper at the Congress should submit the paper to one of these groups. In addition to the thematic working groups, there will be plenary presentations by invited speakers, plenary sessions in which the work of each group can be communicated to other participants; poster sessions for new researchers, and others, to communicate their work and gain feedback; and policy and purpose sessions to negotiate the work and directions of ERME.

CERME is organised by ERME whose chief aims are to promote communication, cooperation and collaboration in research in mathematics education in Europe assuming that (i) we need to know more about the research which has been done and is ongoing, and the research groups and research interests in different European countries and (ii) we need to provide opportunities for cooperation in research areas and for inter-European collaboration between researchers in joint research projects.

CALL FOR PAPERS AND CONTRIBUTIONS

<http://www.cerme8.metu.edu.tr/index.html>

**Mathematics Education and Society 7<sup>th</sup> International Conference  
2 - 7 April 2013 Cape Town, South Africa**

The MES 7 Conference is a forum for discussing the social, political, cultural and ethical dimensions of mathematics education. The Conference aims to bring together mathematics educators from around the world to disseminate research that explores these dimensions of mathematics education, to discuss theoretical and methodological issues related to research of this type, to foster inter-national co-operation in the area, and to develop a strong research community interested in these dimensions. The residential nature of the conference, in which all participants reside at the same venue, is a key feature of MES conferences and is designed to encourage the development of such an interactional community.

CALL FOR PAPERS AND CONTRIBUTIONS

<http://www.mes7.uct.ac.za/>

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