

## SAMSA Faculty Workshop

11/28/14

The first Department Heads/Chairs Workshop was held at the 2011 SAMSA conference and examined problems and challenges faced by math departments in both the United States and Africa. Many challenges were found to be universal and experienced by universities in both locations. Today's workshop will focus on increasing the pipeline of students majoring in math at American and African universities.

The Mathematical Association of America (MAA) is interested in working with SAMSA to increase the pipeline of students majoring in mathematics. One possible avenue of collaboration is through the International Mathematical Olympiad (IMO), a six-problem, 42-point math competition held over two days. More than 90 nations compete in this annual event, which is the oldest of the International Science Olympiads. Questions cover a wide range of mathematics. Although several countries participate, there has not traditionally been much African presence. Participation in IMOs could be valuable for universities in identifying top students in the area for recruitment.

Points of discussion regarding African participation in IMOs:

- South Africa is currently involved in international and Pan-African organizations. Large competitions are held at the University of Cape Town each year for students in grades 8-12, but have not expanded to the rest of the country.
- Pretoria participates in competitions, but is skeptical of American/International competitions. Feels that regional competitions are more effective.
- The position was brought up that competitions may not have any impact on basic math education or standards.
- National math associations used to be active within SAMSA, but involvement has declined over the years.
- Job markets in more fields (biology, economics, etc.) are opening to mathematicians, but not enough mathematics graduates are being produced – again, a pipeline issue.
- The Minister of Education in each country can distribute materials and resources to schools and universities, and can put SAMSA members in contact with the right personnel for involvement in the International Mathematical Olympiads.

Suggestions for future involvement:

- Universities should be connected to the activities that are already taking place in Africa.
- Math Counts – also hosts competitions, which may be more accessible for middle school students and less intimidating in general than the IMOs.
- Host competitions with more of a “conference feel” – the focus can be on a wider range of students, not just top students who enjoy competition.

- Math Circles are gaining popularity, and materials and information are available online.
- Research Experiences for Undergraduates (REUs) are also popular in the US to build interest and excitement about mathematics research.

Next steps:

- SAMSA Executive Committee will discuss opportunities.
- US faculty members can check on matching funds from NSF/Simons Foundation and working with organizations such as the American Mathematical Society (AMS), African Women in Mathematics, etc.
- Send a SAMSA representative to the next Joint Mathematics Meeting held in the US.
- Increased communication within SAMSA, between local chapters, and with national organizations.

Books donated by the Mathematical Association of America were presented to the SAMSA Executive Committee for use by math clubs throughout the SAMSA region. Titles included:

1. *Writing in the Teaching and Learning of Mathematics* by John Meier & Thomas Rishel (MAA Notes Number 48)
2. *Problems from Murray Klamkin: The Canadian Collection*, edited by Andy Liu and Bruce Shawyer
3. *Aha! Solutions* by Martin Erickson (MAA Problem Books Series)