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Programs in Mathematics for Future Teachers

In many universities, an important cohort of mathematics majors are preparing to teach mathematics at the secondary level. Increasingly, research and discussions in Mathematics Education are identifying specific courses, and specific processes which should be included in the undergraduate programs of future teachers. In 2002, a working group at the Canadian Mathematics Education Study Group identified some key content and pedagogical features to be included within such programs. (The link http://wiki.math.yorku.ca/index.php/Mathematics_for_Education_Program has a download of this report.)

In this session, we will approach the topic from two directions:

- descriptions of courses for future teachers of mathematics, currently offered, or being designed, in Mathematics (and Science) departments;
- reflections by classroom teachers about lessons that they wish they had learned in their own undergraduate programs in mathematics.

I will begin the session with a short review of these CMESG recommendations and an introduction of the speakers for the day. I will bookend the session with a presentation of the new Mathematics for Education program at York University (see the link above). I will discuss our plans for our redesigned capstone course for the program: Topics in Mathematics Education. Rather than focus on specific material to be mastered, this course will focus on processes, such as group work, open ended investigations, expanded proofs as 'convincing arguments', the process of 'unpacking' concepts and problems, and reflections on the practice and learning of mathematics.

We plan to provide ample opportunity for discussion during the day.