Collaborating and advocating for a strong and vibrant mathematics teaching profession

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This session

- Some thoughts about what it will take to make mathematics teaching a strong and vibrant profession;
- The special role of mathematics teacher educators and why our advocacy may be especially important;
- A few initiatives:
  - a letter from the US National Commission on Mathematics Instruction;
  - the online Mathematics Teaching Community.

How can math teaching become a strong and vibrant profession?

- The current system is not fostering excellence in math teaching *at any level*;
- math teaching is not regarded as a top-notch profession *at any level*;
- math teaching is not vigorous and vibrant the way some other professions are, e.g., research.

How can math teaching become a strong and vibrant profession?

Current policies:
Strengthen K–12 math teaching and learning by evaluating teachers based on their students' achievement on high stakes assessments.

But . . .

Research on motivation

“It is well established that use of salient extrinsic rewards to motivate work behavior can be deleterious to intrinsic motivation and can thus have negative consequences for psychological adjustment, performance on interesting and personally important activities, and citizenship behavior.” (Gagne & Deci, 2005)

Research on motivation

“SDT [self-determination theory] research has found that motivation based on more controlled motives, such as rewards or punishments (external regulations), or self-esteem-based pressures (e.g., ego involvement) is associated with lower quality of learning, lessened persistence, and more negative emotional experience.” (Ryan & Brown, 2005)

The need for learning and improvement

- Teachers should have learning opportunities throughout their careers;
- teachers should be supported to make continuous improvements in their teaching;
- feedback and evaluation are a part of such processes;
- *but these need not entail external regulations such as rewards and punishments based on numerical performance measures.*

Instead?

We need systems in which:

- teachers collaborate;
- examine and discuss their work,
- use and build on each other's ideas,
- seek to impress their peers with the quality of their methods and ideas.

We need a mathematics teaching community

All of us who teach math:

- Let's see ourselves as a *professional* community. Let's
  - take collective responsibility for math teaching at all levels;
  - demand that *we* decide what qualifies as appropriate professional education and development;
  - demand high standards for entry into *our* community.

We need a mathematics teaching community

All of us who teach math:

- Let's develop repositories of shared, vetted knowledge about math and its teaching. Let's
  - develop system that allows knowledge about math and its teaching to build and evolve;
  - compete for each other's admiration through the sharing of ideas;
  - use this system to evaluate our work.

We need a mathematics teaching community

All of us who teach math:

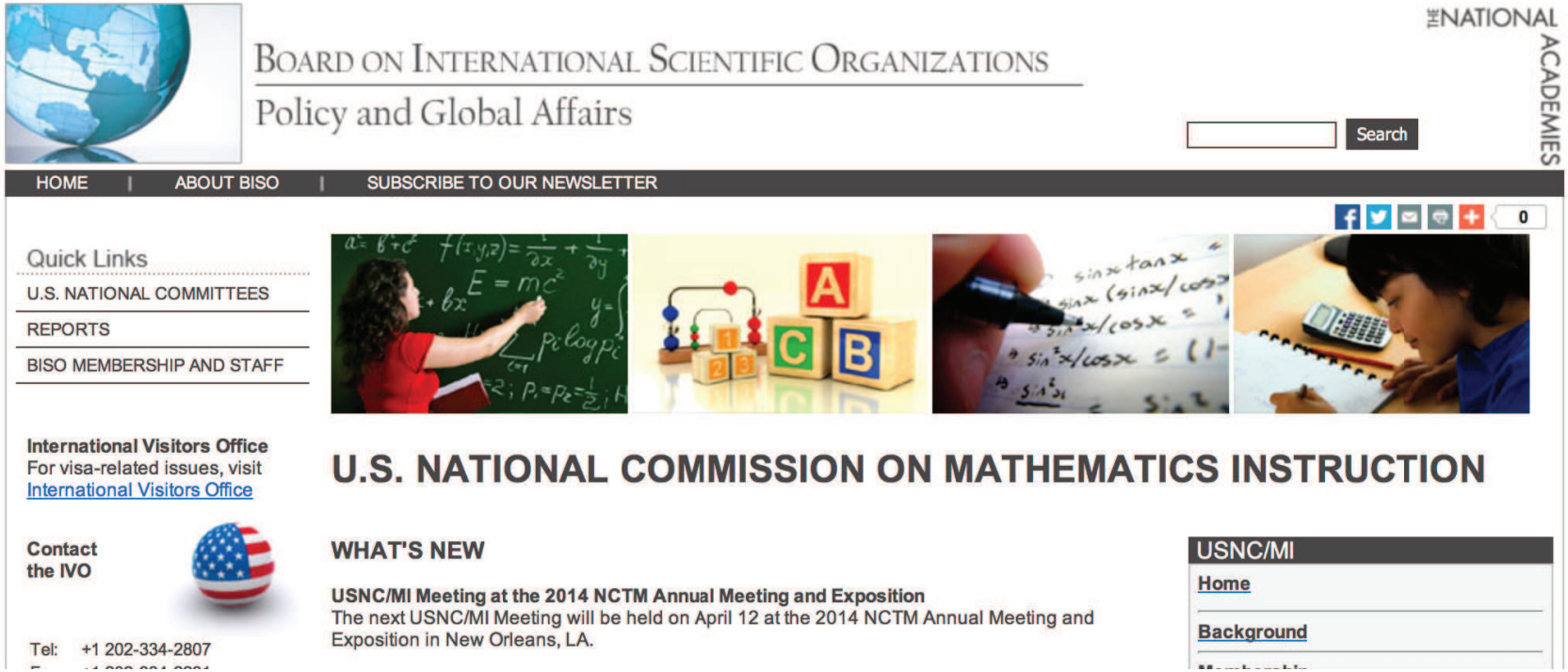
- Let's negotiate and promote excellence in math teaching *from within our community*. Let's
  - evaluate our work using qualitative, descriptive means;
  - resist external accountability measures;
  - not allow summative assessments to drive teaching — lofty visions about learning and understanding should guide us!

Let's join together and let's advocate collectively to make math teaching strong!

Mathematics teacher educators

We are uniquely positioned to unite mathematics teaching at the PreK – 12 and college levels and to advocate for policies that support—rather than undermine—stronger mathematics teaching practices at all levels.

US National Commission on Mathematics Instruction



US National Commission on Mathematics Instruction

The U.S. National Commission on Mathematics Instruction (USNC/MI) plans, recommends, and encourages projects in areas of international importance in mathematical sciences education. It also advises the National Academy of Sciences-National Research Council (NAS-NRC) in all matters pertaining to the International Commission on Mathematical Instruction (ICMI).

Letter from USNC/MI members to Secretary Duncan

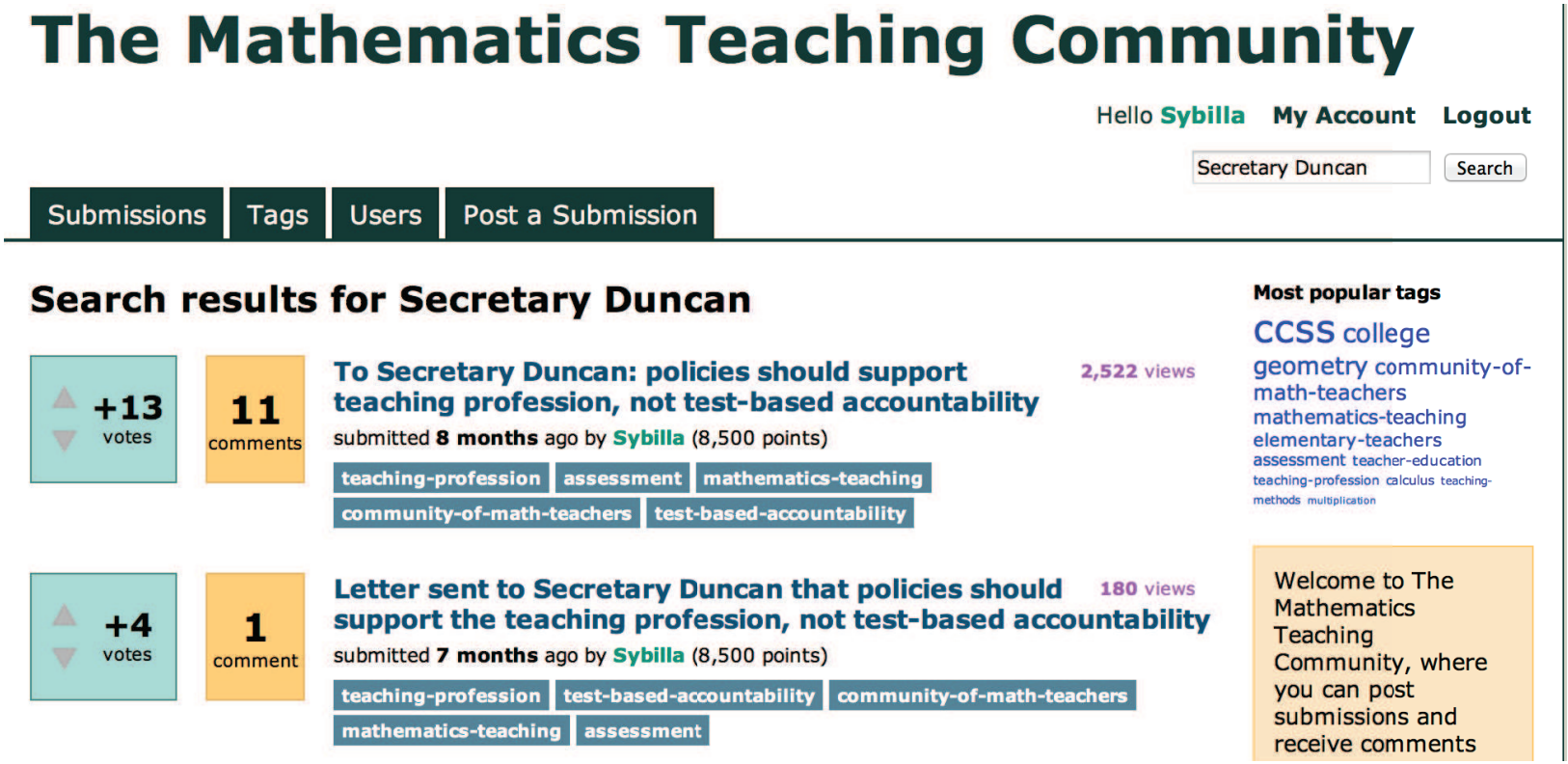
US Department of Education

Members of the USNC/MI, writing as individuals, wrote a letter to Secretary Duncan expressing concerns about current policies emphasizing test-based accountability.

Letter from USNC/MI members to Secretary Duncan

“From our work with educators in other countries we are finding that systems that support teachers’ autonomy and professionalism, set a high bar to entry into the teaching profession, and foster ongoing development within learning communities produce an environment in which teaching and learning thrive.”

Letter from USNC/MI members to Secretary Duncan



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The Mathematics Teaching Community

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Let's join to advocate for a strong mathematics teaching community!

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Please check out the Mathematics Teaching Community, online at:

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