

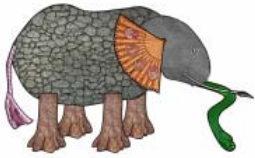
STEM Summit IV

Panel on Elementary Mathematics:

The Foundation for STEM

The Perfect Stew

The Symbiosis of Content and Pedagogy



Moderator: Andrew Chen, EduTron

Participants:

Richard Bisk, Worcester State College

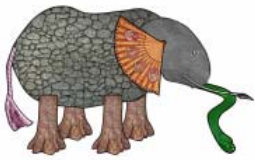
Anne Marie Condike, Westford Public Schools

Elaine Francis, Fitchburg State College

Steve Jackson, U. Mass Boston

Ray Lewis, Worcester State College

Steve Rosenberg, Boston University



Advice to the Panel *in Absentia*

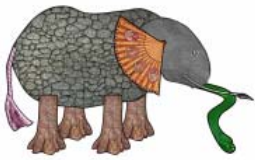
- Unless teacher preparation in mathematics is a life changing experience, it will not suffice. Teachers must have a very different view of mathematics than our current high school graduates do in order to significantly improve mathematics education.
- The sorry state of word problems in instruction is a symptom of the failure of our system. Inability to do word problems means that students cannot connect the mathematical concepts/procedures they learn with their applications in the real world. But there is very little point to math instruction if the ability to use math meaningfully is not an outcome.

—Roger Howe

Professor of Mathematics, Yale University

Member, National Academy of Sciences

Member, US Department of Education Advisory Committee on
Improving Teacher Content Knowledge in Mathematics



Comments on the *Guidelines*

- Mathematics instruction should be combined with discussion of methods, since not only mathematical principles, but also substantial discussions of how these ideas can play out in the classroom at various levels, will need to be supplied.
- Team teaching, between the mathematics department and the education department, may be the most effective method of delivery. This would also have the beneficial side effect of requiring very goal-oriented dialog between the two departments.

—Roger Howe

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