

The Mathematical Contest in Modeling

An Advisor's Perspective

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Outline

- 1 What is the MCM?
- 2 MCM 08 at The UI
- 3 Results and Future Plans

The Anti-Putnam

- Teams of three.
- Unlimited use of inanimate resources allowed.
- Choice of problem.

2008 MCM

This year's contest asked students to choose between the following two questions:

Problem A: Take a Bath

Model the effects on the coast of Florida every ten years for the next 50 years due to melting.

Problem B: Creating Sudoku Puzzles

Develop an algorithm to construct Sudoku puzzles of varying difficulty. Develop metrics to define a difficulty level.

The University of Iowa and the MCM

No relationship until this year...

In The Beginning...

Initial plan for participation in the MCM:

- 1 Find interested graduate students / faculty to serve as advisors.
- 2 Find interested undergraduate student competitors.
- 3 Introduce students (and advisors) to the MCM by looking at old problems.
- 4 Participate in the MCM.

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Whoops!

This plan worked for about three weeks.

A Lot of Help From Our Friends

- *Heartland Partnership Workshop on Organizing and Coaching Undergraduate Math Modeling Teams*
- Professors Karen Shuman (Grinnell College) and Steve Smith (Truman State) led workshop discussion.
- Representatives from seven schools attended.

Team Selection

- Consider team composition.
- *Invite* students to participate.
- Be honest regarding contest difficulty and time commitment.

Team Preparation

Advising \neq Coaching

- Meet with teams to discuss rules.
- Emphasize the importance of clear, concise writing.
- Stick to a predetermined format.
- Create a weekend schedule.

UI MCM 2.0

- Created teams with assigned advisors.
- Encouraged teams to have private meetings to discuss how to start problems
- Introduced teams to formatting materials.
- Identified necessary resources.

Hooray!

Results of the 2008 MCM:

- Four Honorable Mentions
- One Meritorious
- All (non - graduating) students look forward to participating again!

MCM 09 and Beyond

- 1 Encourage more faculty and graduate student involvement.
- 2 Set teams in advance.
- 3 Teach non-math material prior to contest.
- 4 Prepare teams mentally.
- 5 Create an organized schedule for the weekend.
- 6 Continue to interact with other schools interested in the MCM.

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Thanks!

- Workshop Participants
- Graduate student advisors
- Keith Stroyan
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