

MOODY'S MEGA MATH CHALLENGE 2015:

“STEM Sells: What is higher education really worth?”

Participants of Moody's Mega Math (M^3) Challenge 2015 were asked to develop mathematical models to assess and determine the true cost of earning a degree, account for the impact of President Obama's recent free two-year community college proposal, and contrast potential financial outcomes for those pursuing STEM and non-STEM degrees. Students also quantified factors that would influence a graduate's overall quality of life after school. Close to 1,200 solutions, representing the work of over 5,000 high school juniors and seniors, were submitted for the rigorous three-stages of judging. Students from North Carolina School of Science and Mathematics were awarded top honors – and top dollar – in late April 2015, when the team of five seniors earned the title of “Champs” at the tenth annual Moody's Mega Math (M^3) Challenge. As Champions, they received \$20,000 in scholarships for presenting the *best* answer to the question.

This problem statement was written and submitted by Dr. Eric Eager, of the University of Wisconsin at Lacrosse.

Moody's Mega Math (M^3) Challenge is a math modeling contest organized by the Society for Industrial and Applied Mathematics (SIAM) and sponsored by The Moody's Foundation.

The Internet-based Challenge is designed to spotlight the relevancy and power of mathematics in solving real-world issues as well as motivate students to consider further education and careers in math. It gives participating teams 14 hours to study the issue in question, collect data, and devise models before uploading their solutions online in the form of a report with recommendations. The problem is completely unknown to teams until they download it on the morning of their Challenge day.

The following is the Champion team's paper from the 2015 Moody's Mega Math Challenge **with some reviewer suggestions incorporated**.

Complete information about the M^3 Challenge is available at <http://m3challenge.siam.org>.