

1999 Mathematical Contest in Modeling Press Release—April 1, 1999

COMAP is pleased to announce the results of the 15th annual Mathematical Contest in Modeling (MCM). This year 478 teams representing 229 institutions from nine countries participated in the contest. The following institutions had teams designated as this year's Outstanding winners: Duke University, Earlham College, Harvey Mudd College, North Carolina School of Science and Mathematics, Pacific Lutheran University, Rose-Hulman Institute of Technology, University of Alaska Fairbanks, University of California at Berkeley, University of Puget Sound, Zhejiang University.

The 1999 MCM began at 12:01 a.m. on Friday, February 5 and officially ended at 5:00 p.m. on Monday, February 8, 1999. During that time, teams of up to three undergraduates were to research and submit an optimal solution for one of three open-ended modeling problems.

This year's Problem A sparked the interest of many students in part due to the blockbuster movie *Deep Impact*. From the movie students were able to recall the terror and the devastating effects of a large asteroid's impact with Earth. Participants were able to conclude that although our hypothetical asteroid would be quite disastrous causing coastal flooding, climatic changes, and human casualties, the large-scale effects would be minimal due to its impact with Antarctica, rather than anywhere else on earth.

We received many interesting and different approaches to solving this year's B Problem: to develop a mathematical model for deciding what number to post on a "maximum capacity" sign as being the "lawful capacity". Solutions were to discuss criteria other than public safety that might govern the number of people considered "unlawful" to occupy a room. Students were asked to construct models considering different room types and compare and contrast what might be done for a variety of

Major funding for the MCM is provided by a grant from the National Security Agency and COMAP. Additional support is provided by The Institute for Operations Research and Industrial and Applied Mathematics (INFORMS), the Society for Industrial and Applied Mathematics (SIAM), and the Mathematical Association of America (MAA). COMAP's Mathematical Contest in Modeling is unique among modeling competitions in that it is the only international contest in which students work in teams to find a solution. Centering its educational philosophy on mathematical modeling, COMAP uses mathematical tools to explore real-world problems. It serves the educational community as well as the world of work by preparing students to become better informed—and prepared—citizens.

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environments. Then they were asked to apply their model to a local public facility and compare the results with the posted stated capacity. Students also wrote mock articles for local newspapers defending their analyses.

This year the MCM introduced an all-new Interdisciplinary modeling problem (Problem C) where advisors from both the mathematics and an associated discipline were encouraged to participate. 60 teams chose to submit solution papers for the C Problem and we expect that number to grow in the future. Some students working on the C Problem had trouble interpreting the given data set and were unable to come up with a reasonable solution, whereas other students immediately knew what to do with the data and tackled the problem head-on. Overall, it was an enlightening experience for everyone.

1999 MCM Statistics

- 291 U.S. Teams (61%) from 169 institutions
- 187 Foreign Teams (39%): Australia, Canada, Finland, Hong Kong, Ireland, Lithuania, P.R. China, South Africa
- 212 A Entries (44%)
- 206 B Entries (43%)
- 60 C Entries (13%)
- 12 Outstanding Winners (3%) 5 A, 5 B, 2 C
- 82 Meritorious (17%) 34 A, 39 B, 9 C
- 149 Honorable Mention (31%), 61 A, 71 B, 17 C
- 235 Successful Participant (49%) 112 A, 91 B, 32 C
- 452 4-year institutions (95%)
- 13 2-year institutions (2.5%)
- 12 High Schools (2.5%)

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Ad ministered by The Consortium for Mathematics and Its Applications

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To obtain additional MCM information and a complete listing of team designations visit www.comap.com/mcm.htm. Or you may call Clarice Callahan, MCM Contest Coordinator at (781) 862-7878 ext. 37 or email mcm@comap.com.