2000 Mathematical/Interdisciplinary Contest in Modeling Press Release—March 17, 2000

COMAP is pleased to announce the results of the 16th annual Mathematical Contest in Modeling (MCM) and the 2nd annual Interdisciplinary Contest in Modeling (ICM). This year 495 teams representing 231 institutions from nine countries participated in the contest. The following institutions had teams designated as this year's Outstanding Winners: **California Polytechnic State University, Duke University, Harvey Mudd College, Governor's School, Lewis & Clark College, National University of Defense Technology, North Carolina School of Science and Mathematics(2), U.S. Military Academy, University of Colorado, Wake Forest, and Washington University.**

The 2000 MCM/ICM began at 12:01 a.m. on Friday, February 4 and officially ended at 5:00 p.m. on Monday, February 7, 2000. 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 was dedicated to the memory of Dr. Robert Machol, former chief scientist of the Federal Aviation Agency. Dr. Machol posed the problem when the FAA was considering adding software to the air traffic control system that would alert controllers to potential problems, and thus improve safety and reduce workload. In addition to solving the problem, participants were asked to write a summary that could be presented to the FAA Administrator, Ms. Jane Garvey.

Problem B this year sought to model the assignment of radio channels to a symmetric network of transmitter locations so as to avoid interference. Many groups came to the conclusion that the pure mathematical solution needed some practical applications, and included those as well.

This year's ICM problem offered information regarding the need to keep the elephant population in a national park in South Africa down to 11,000 while avoiding the option of having to destroy any of the animals. A contraceptive dart has been developed that prevents conception for two years. Participants were tasked with investigating how to use the dart successfully. Six specific questions were to be addressed and data was offered about emigration patterns, gender ratios, elephant conception patterns, and new calf survival rates.

2000 MCM/ICM Statistics

282 U.S. Teams (57%) from 163 institutions
213 Foreign Teams (43%) from Australia, Canada, Finland, Hong Kong, Ireland, Lithuania, P.R. China, and South Africa
154 Problem A entries (31%)
271 Problem B entries (55%)
70 ICM entries (14%)
12 Outstanding Winners (3%) - 4 A, 5 B, 3 ICM
76 Meritorious Winners (15%) - 21 A, 43 B, 12 ICM
135 Honorable Mentions (27%) - 45 A, 72 B, 18 ICM
272 Successful Participants (55%) - 84 A, 151 B, 37 ICM
477 four-year institutions (96%)
8 two-year institutions (2%)
10 high schools (2%)

Major funding for the MCM/ICM is provided by a grant from the National Security Agency, National Science Foundation, 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.

Contest Directors
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  Frank R. Giordano, *COMAP, Inc., MA*
  John H. Grubbs, *Tulane University, LA*
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  Bob Borrelli, *Harvey Mudd College, CA*
  Bill Fox, *Francis Marion University, SC*
  Bernard Fusaro, *Florida State University, FL*
  Michael Kelley, *U.S. Military Academy, NY*
  Gary W. Krahn, *U.S. Military Academy, NY*
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  Maria Vanisko, *Carroll College, MT*
Contest Coordinator
  Clarice Callahan, *COMAP, Inc., MA*

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

2000 INTERDISCIPLINARY CONTEST IN MODELING FINAL RESULTS

Institution: Harvey Mudd College   **City:** Claremont   **State:** CA   **Designation:** Outstanding Winner
Control #: 61   **Advisor 1:** Michael Moody   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: NC School of Science &   **City:** Durham   **State:** NC   **Designation:** Outstanding Winner INFORMS Prize Recipient
Control #: 65   **Advisor 1:** Dot Doyle   **Advisor 2:** Dan Teague
Department of: Mathematics   **Department of:** Mathematic

Institution: NC School of Science &   **City:** Durham   **State:** NC   **Designation:** Outstanding Winner
Control #: 66   **Advisor 1:** Dot Doyle   **Advisor 2:** Dan Teague
Department of: Mathematics   **Department of:** Mathematics

Institution: Bloomsburg University   **City:** Bloomsburg   **State:** PA   **Designation:** Meritorious
Control #: 4   **Advisor 1:** Kevin Ferland   **Advisor 2:** Scott Inch
Department of: Mathematics   **Department of:** Mathematics

Institution: California Academy of Math   **City:** Carson   **State:** CA   **Designation:** Meritorious
Control #: 110   **Advisor 1:** Brian R. Lawler   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: China University of Mining &   **City:** Xuzhou,   **State:**   **Designation:** Meritorious
Control #: 16   **Advisor 1:** Zhou Shengwu   **Advisor 2:** Zhou Shengwu
Department of: Mathematics &   **Department of:** Mathematics & Mechanics

Institution: MIT   **City:** Cambridge   **State:** MA   **Designation:** Meritorious
Control #: 78   **Advisor 1:** Michael P. Brenner   **Advisor 2:** Lakshmirarayanan
Department of: Mathematics   **Department of:** Mechanical Engineering

Institution: Northwestern Polytechnical   **City:** Xi'an, Shaanxi   **State:**   **Designation:** Meritorious
Control #: 82   **Advisor 1:** Xu Wei   **Advisor 2:** Wang Mingyu
Department of: Mathematics Science   **Department of:** Mathematics Science

Institution: Peking University   **City:** Beijing,   **State:**   **Designation:** Meritorious
Control #: 93   **Advisor 1:** Min Zhou   **Advisor 2:**
Department of: Urban & Environmental   **Department of:**

Institution: Southeast University   **City:** Nanjing   **State:**   **Designation:** Meritorious
Control #: 70   **Advisor 1:** En-shui Chen   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: U.S. Military Academy   **City:** West Point   **State:** NY   **Designation:** Meritorious
Control #: 104   **Advisor 1:** LTC Michael Jaye   **Advisor 2:** Greg Fleming
Department of: Mathematical Sciences   **Department of:** Geography & Environmental

Institution: Univ. of Science Tech. of   **City:** Hefei, Anhui   **State:**   **Designation:** Meritorious
Control #: 116   **Advisor 1:** Wan Qian   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Youngstown State University   **City:** Youngstown   **State:** OH   **Designation:** Meritorious
Control #: 25   **Advisor 1:** Dr. Scott Martin   **Advisor 2:**
Department of: Civil, Environmental &   **Department of:**

Institution: Zhejiang University   **City:** Hangzhou,   **State:**   **Designation:** Meritorious
Control #: 19   **Advisor 1:** Zhang Cong & Jaio Wu   **Advisor 2:** Yong He
Department of: Mathematics   **Department of:** Mathematics

Institution: Zhejiang University   **City:** Hangzhou,   **State:**   **Designation:** Meritorious
Control #: 18   **Advisor 1:** Zhang Cong & Jiao Wu   **Advisor 2:** Qifan Yang
Department of: Mathematics   **Department of:** Applied Mathematics

Institution: Brandon University   **City:** Brandon   **State:**   **Designation:** Honorable Mention
Control #: 121   **Advisor 1:** Doug Pickering   **Advisor 2:**
Department of: Mathematics & Computer   **Department of:**

Institution: California State University   **City:** Fullerton   **State:** CA   **Designation:** Honorable Mention
Control #: 3   **Advisor 1:** Mario Martelli   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Chongqing University   **City:** Chongqing   **State:**   **Designation:** Honorable Mention
Control #: 14   **Advisor 1:** He Renbin   **Advisor 2:** Zhang Dan
Department of: Applied Mathematics   **Department of:** School of Mechanical

Institution: Chongqing University   **City:** Chongqing   **State:**   **Designation:** Honorable Mention
Control #: 53   **Advisor 1:** He Zhongshi   **Advisor 2:**
Department of: Applied Physics   **Department of:**

Institution: East China University of   **City:** Shanghai   **State:**   **Designation:** Honorable Mention
Control #: 51   **Advisor 1:** Yuanhong Lu   **Advisor 2:** Liming Dong
Department of: Mathematics   **Department of:** Department of Physics

Institution: Fudan University   **City:** Shanghai   **State:**   **Designation:** Honorable Mention
Control #: 107   **Advisor 1:** Cao Yuan   **Advisor 2:** Zhijie Cai
Department of: Mathematics   **Department of:** Mathematics

Institution: Harbin Institute of   **City:** Harbin   **State:**   **Designation:** Honorable Mention
Control #: 30   **Advisor 1:** Shang Shouting   **Advisor 2:** Zheng Tong
Department of: Experimental College,   **Department of:** Applied Chemistry

Institution: Hefei University of   **City:** Hefei, Anhui   **State:**   **Designation:** Honorable Mention
Control #: 48   **Advisor 1:** Su Huaming   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: MIT   **City:** Cambridge   **State:** MA   **Designation:** Honorable Mention
Control #: 79   **Advisor 1:** Michael P. Brenner   **Advisor 2:** Lakshmirarayanan
Department of: Mathematics   **Department of:** Mechanical Engineering

Institution: North Carolina State   **City:** Raleigh   **State:** NC   **Designation:** Honorable Mention
Control #: 112   **Advisor 1:** Ranji S. Ranjithan   **Advisor 2:**
Department of: Civil Engineering   **Department of:**

Institution: Peking University   **City:** Beijing,   **State:**   **Designation:** Honorable Mention
Control #: 92   **Advisor 1:** Tao Zhang   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Rose-Hulman Institute of   **City:** Terre Haute   **State:** IN   **Designation:** Honorable Mention
Control #: 12   **Advisor 1:** Sharon A. Jones   **Advisor 2:** Robert J. Houghtalen
Department of: Civil Engineering   **Department of:** Civil Engineering

Institution: Science School of Xi'an   **City:** Xi'an, Shaanxi   **State:**   **Designation:** Honorable Mention
Control #: 43   **Advisor 1:** Zhou Yicang   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: South China Univ. of   **City:**   **State:**   **Designation:** Honorable Mention
Control #: 136   **Advisor 1:** HE Chunxiong   **Advisor 2:** Dehua He
Department of: Applied Mathematics   **Department of:** Applied Physics

Institution: Univ. of Science &   **City:** Hefei, Anhui   **State:**   **Designation:** Honorable Mention
Control #: 117   **Advisor 1:** Xu Jizheng   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: University of Colorado at   **City:** Boulder   **State:** CO   **Designation:** Honorable Mention
Control #: 21   **Advisor 1:** Anne Dougherty   **Advisor 2:** Bengt Fornberg
Department of: Applied Mathematics   **Department of:** Applied Mathematics

Institution: Zhong Shan University   **City:** Guang Zhou   **State:**   **Designation:** Honorable Mention
Control #: 63   **Advisor 1:** Tang Meng Xi   **Advisor 2:**
Department of: Physics   **Department of:**

Institution: Zhong Shan University   **City:** Guang Zhou   **State:**   **Designation:** Honorable Mention
Control #: 64   **Advisor 1:** Yuan Zhuo Jian   **Advisor 2:**
Department of: Atmospheric Science   **Department of:**

Institution: Beloit College   **City:** Beloit   **State:** WI   **Designation:** Successful Participant
Control #: 115   **Advisor 1:** Paul J. Campbell   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Boise State University   **City:** Boise   **State:** ID   **Designation:** Successful Participant
Control #: 100   **Advisor 1:** Stephen H. Brill   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: California State University   **City:** Fullerton   **State:** CA   **Designation:** Successful Participant
Control #: 2   **Advisor 1:** Mario Martelli   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Carroll College   **City:** Helena   **State:** MT   **Designation:** Successful Participant
Control #: 120   **Advisor 1:** Terry Mullen   **Advisor 2:**
Department of: Engineering   **Department of:**

Institution: Clarion University   **City:** Clarion   **State:** PA   **Designation:** Successful Participant
Control #: 40   **Advisor 1:** Andrew Turner   **Advisor 2:** Sharon Challener
Department of: Biology   **Department of:** Physics

Institution: Clarion University   **City:** Clarion   **State:** PA   **Designation:** Successful Participant
Control #: 39   **Advisor 1:** William D. Krugh   **Advisor 2:**
Department of: Chemistry   **Department of:**

Institution: Crowder College   **City:** Neosho   **State:** MO   **Designation:** Successful Participant
Control #: 34   **Advisor 1:** Cheryl Ingram   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: CSUMB   **City:** Seaside   **State:** CA   **Designation:** Successful Participant
Control #: 95   **Advisor 1:** Dan Fernandez   **Advisor 2:** Michael Dalton
Department of: Mathematics   **Department of:** Earth Systems

Institution: East China University of   **City:** Shanghai   **State:**   **Designation:** Successful Participant
Control #: 52   **Advisor 1:** Xiwen Lu   **Advisor 2:** Nianci Shao
Department of: Mathematics   **Department of:** Department of Physics

Institution: Eastern Oregon University   **City:** LaGrande   **State:** OR   **Designation:** Successful Participant
Control #: 71   **Advisor 1:** Anthony Tovar   **Advisor 2:** Jeffrey Putnam
Department of: Physics   **Department of:** Computer Science

Institution: Eastern Oregon University   **City:** LaGrande   **State:** OR   **Designation:** Successful Participant
Control #: 72   **Advisor 1:** Richard Hermens   **Advisor 2:** Tom Herrmann
Department of: Chemistry   **Department of:** Physics

Institution: Elon College   **City:** Elon College   **State:** NC   **Designation:** Successful Participant
Control #: 113   **Advisor 1:** Todd Lee   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Fudan University   **City:** Shanghai   **State:**   **Designation:** Successful Participant
Control #: 106   **Advisor 1:** Zhijie Cai   **Advisor 2:** Cao Yuan
Department of: Mathematics   **Department of:** Mathematics

Institution: Goshen College   **City:** Goshen   **State:** IN   **Designation:** Successful Participant
Control #: 111   **Advisor 1:** David Housman   **Advisor 2:** Patricia Oakley
Department of: Mathematics   **Department of:** Mathematics

Institution: Harbin Institute of   **City:** Harbin   **State:**   **Designation:** Successful Participant
Control #: 29   **Advisor 1:** Shang Shouting   **Advisor 2:** Yu Xiujuan
Department of: Experimental College,   **Department of:** Applied Chemistry

Institution: Harvey Mudd College   **City:** Claremont   **State:** CA   **Designation:** Successful Participant
Control #: 60   **Advisor 1:** Michael Moody   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Hefei University of   **City:** Hefei, Anhui   **State:**   **Designation:** Successful Participant
Control #: 49   **Advisor 1:** Yang Youqing   **Advisor 2:**
Department of: Computer & Information   **Department of:**

Institution: Mt. Mercy College   **City:** Cedar Rapids   **State:** IA   **Designation:** Successful Participant
Control #: 84   **Advisor 1:** Kent R. Knopp   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Nankai University   **City:** Tianjin   **State:**   **Designation:** Successful Participant
Control #: 20   **Advisor 1:** Lei Fu   **Advisor 2:** Jishou Ruan
Department of: Mathematics   **Department of:** Mathematics

Institution: Northwestern Polytechnical   **City:** Xi'an, Shaanxi   **State:**   **Designation:** Successful Participant
Control #: 80   **Advisor 1:** Liu Xiaodong   **Advisor 2:** Peng Guohua
Department of: Information Science   **Department of:** Information Science

Institution: Roberts Wesleyan College   **City:** Rochester   **State:** NY   **Designation:** Successful Participant
Control #: 5   **Advisor 1:** Carlos A. Pereira   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: Rose-Hulman Institute of   **City:** Terre Haute   **State:** IN   **Designation:** Successful Participant
Control #: 11   **Advisor 1:** Sharon A. Jones   **Advisor 2:** Robert J. Houghtalen
Department of: Civil Engineering   **Department of:** Civil Engineering

Institution: Rowan University   **City:** Glassboro   **State:** NJ   **Designation:** Successful Participant
Control #: 101   **Advisor 1:** Sam Lofland   **Advisor 2:**
Department of: Chemistry & Physics   **Department of:**

Institution: Shanghai Jiao Tong   **City:** Shanghai   **State:**   **Designation:** Successful Participant
Control #: 88   **Advisor 1:** Gong Peimin   **Advisor 2:** Liu Xiaojun
Department of: Chemistry   **Department of:** Laboratory

Institution: Shanghai Jiao Tong   **City:** Shanghai   **State:**   **Designation:** Successful Participant
Control #: 89   **Advisor 1:** Gong Peimin   **Advisor 2:** Liu Xiaojun
Department of: Chemistry   **Department of:** Laboratory

Institution: Sierra Nevada College   **City:** Incline Village   **State:** NV   **Designation:** Successful Participant
Control #: 26   **Advisor 1:** Dr. Steve Ellsworth   **Advisor 2:**
Department of: Science & Technology   **Department of:**

Institution: South China Univ. of   **City:** Guang Zhou,   **State:**   **Designation:** Successful Participant
Control #: 137   **Advisor 1:** XU Shuwen   **Advisor 2:** HONG Yi
Department of: Mathematics   **Department of:**

Institution: SUNY Cortland   **City:** Cortland   **State:** NY   **Designation:** Successful Participant
Control #: 98   **Advisor 1:** R. Bruce Mattingly   **Advisor 2:** R. Lawrence Klotz
Department of: Mathematics   **Department of:** Biological Sciences

Institution: Tsinghua University   **City:** Beijing   **State:**   **Designation:** Successful Participant
Control #: 91   **Advisor 1:** Hu Zhi-ming   **Advisor 2:** Lu Mei
Department of: Applied Mathematics   **Department of:** Applied Mathematics

Institution: U.S. Military Academy   **City:** West Point   **State:** NY   **Designation:** Successful Participant
Control #: 105   **Advisor 1:** LTC Michael Phillips   **Advisor 2:** Michael Darrow
Department of: Math Sciences   **Department of:** Geography & Environmental

Institution: University of Central   **City:** Edmond   **State:** OK   **Designation:** Successful Participant
Control #: 108   **Advisor 1:** Dr. Charlotte Simmons   **Advisor 2:** Jesse Byrne
Department of: Mathematics   **Department of:**

Institution: University of Toronto   **City:** Toronto   **State:** ON   **Designation:** Successful Participant
Control #: 73   **Advisor 1:** Nicholas A. Derzko   **Advisor 2:**
Department of: Mathematics   **Department of:**

Institution: US Coast Guard Academy   **City:** New London   **State:** CT   **Designation:** Successful Participant
Control #: 96   **Advisor 1:** John Freda   **Advisor 2:**
Department of: Academic Division   **Department of:**

2000 Interdisciplinary Contest in Modeling Final Results

Institution: Xi'an Jiaotong University **City:** Xi'an, Shaanxi **State:** **Designation:** Successful Participant

Control #: 41 **Advisor 1:** Dai Yonghong **Advisor 2:**

Department of: School of Science **Department of:**

Institution: Xidian School of Computers **City:** Xi'an, Shann **State:** **Designation:** Successful Participant

Control #: 68 **Advisor 1:** Zhou Shuisheng **Advisor 2:** Liu Hongying

Department of: Mathematics **Department of:** Xidian School of Science

Institution: Youngstown State University **City:** Youngstown **State:** OH **Designation:** Successful Participant

Control #: 24 **Advisor 1:** Dr. Tom Smotter **Advisor 2:**

Department of: Mathematics & Statistics **Department of:**