

## 2003 Mathematical/Interdisciplinary Contest in Modeling Press Release—March 18, 2003

COMAP is pleased to announce the results of the 19th annual Mathematical Contest in Modeling (MCM) and the 5th annual Interdisciplinary Contest in Modeling (ICM). This year 638 teams representing 265 institutions from nine countries participated in the contest. The following institutions had teams designated as this year's Outstanding Winners: **California Institute of Technology, Carroll College, Dong Hua University, Harvard University, Harvey Mudd College(2), Humboldt State University, Peking University, Southeast University, United States Military Academy, University of Colorado at Boulder, University Washington(2), Wake Forest, Youngstown State University, and Zhejiang University**

The 2003 MCM/ICM began at 8:01 p.m. on Thursday, February 6 and officially ended at 8:00 p.m. on Monday, February 10, 2003. 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.

### MCM Problem A:

Teams were asked to determine the size, location, and number of cardboard boxes needed to cushion a stunt person's fall using different combined weights (stuntperson & motorcycle) and different jump heights.

### MCM Problem B:

Dealt with the use of a Gamma Knife in the treatment of tumor cells in brain tissue. Teams were asked to design a model to provide the fewest and most direct doses in order to treat the tumor without going outside the target tumor itself.

### ICM Problem C:

Asked teams to develop a model showing the required number of Explosive Detection Systems at two large airports to scan checked bags based on cost and utilization, along with many other factors at each airport.

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### 2003 MCM/ICM Statistics

- 679 teams registered and 638 participated (94%)
  - 305 U.S. Teams (48%) from 165 institutions
  - 333 Foreign Teams (52%) from Australia, Canada, Finland, Hong Kong, Ireland, Lithuania, P.R. China, and South Africa
  - 267 Problem A MCM entries (42%)
  - 225 Problem B MCM entries (35%)
  - 146 Problem C ICM entries (23%)
  - 16 Outstanding Winners (3%) – 6 A, 5 B, 5 ICM
  - 89 Meritorious Winners (14%) – 36 A, 34 B, 19 ICM
  - 213 Honorable Mentions (33%) – 97 A, 56 B, 60 ICM
  - 320 Successful Participants (50%) – 128 A, 130 B, 62 ICM
  - 609 four-year institutions (95%)
  - 9 two-year institutions (2%)
  - 20 high schools (3%)
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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.

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Major funding provided by  
The National Security Agency and  
The National Science Foundation



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<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
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### Outstanding Winner INFORMS

235	Humboldt State University	CA	USA	C
25	University of Washington	WA	USA	B
177	Zhejiang University	Zhejiang	P.R.China	A

### Outstanding Winner - MAA

24	University of Washington	WA	USA	A
611	Youngstown State University	OH	USA	B

### Outstanding Winner - SIAM

526	California Institute of Technology	CA	USA	A
457	University of Colorado at Boulder	CO	USA	B

### Outstanding Winner

480	Carroll College	MT	USA	C
179	Dong Hua University	Shanghai	P.R.China	B
192	Harvard University	MA	USA	A
576	Harvey Mudd College	CA	USA	A
582	Harvey Mudd College	CA	USA	C
169	Peking University, School of Mathematical Sciences		P.R.China	B
239	Southeast University		P.R.China	A
439	United States Military Academy	NY	USA	C
465	Wake Forest University	NC	USA	C

### Meritorious

672	Asbury College	KY	USA	A
673	Asbury College	KY	USA	C
134	Beijing Northern Jiaotong University		P.R.China	C
75	Beijing University of Posts and Telecommunications		P.R.China	C
265	Bethel College	MN	USA	B
266	Bethel College	MN	USA	B
359	Boston University	MA	USA	B
522	California Polytechnic State University, San Luis Obispo	CA	USA	A
523	California Polytechnic State University, San Luis Obispo	CA	USA	B
188	Central Washington University	WA	USA	A
116	Chongqing University		P.R.China	C
346	City Univ of Hong Kong		P.R.China	A
579	Dalhousie University	Nova Scotia	Canada	B
562	Duke University	NC	USA	A
385	Earlham College	IN	USA	A
387	Earlham College	IN	USA	A
591	Elon University	NC	USA	C

<b><u>Control #</u></b>	<b><u>Institution</u></b>	<b><u>State</u></b>	<b><u>Country</u></b>	<b><u>Problem Selected</u></b>
366	Hangzhou University of Commerce	Zhejiang	P.R.China	B
131	Harbin Institute of Technology	Heilongjiang	P.R.China	C
572	Harvey Mudd College	CA	USA	B
580	Harvey Mudd College	CA	USA	A
581	Harvey Mudd College	CA	USA	A
583	Harvey Mudd College	CA	USA	C
64	Hong Kong Baptist University		Hong Kong	B
650	James Madison University	VA	USA	A
335	Jinan University	Guangdong	P.R.China	C
420	Kansas State University	KS	USA	A
565	Kenyon College	OH	USA	B
432	Lawrence Technological University	MI	USA	B
461	Luther College	IA	USA	A
597	Maggie Walker Governor's School	VA	USA	A
606	Maggie Walker Governor's School	VA	USA	C
668	Massachusetts Institute of Technology	MA	USA	A
466	Mesa State College	CO	USA	A
144	Messiah College	PA	USA	A
204	N C School of Science and Mathematics	NC	USA	A
483	National University of Defence Technology	Hunan	P.R.China	A
36	Northwestern Polytechnical University	Shaanxi	P.R.China	B
475	Olin College of Engineering	MA	USA	C
136	Peking University, School of Mathematical Sciences		P.R.China	C
536	Rensselaer Polytechnic Institute	NY	USA	B
614	Rose-Hulman Institute of Technology	IN	USA	A
100	Rowan University	NJ	USA	B
501	Saint Louis University	MO	USA	B
424	Science Institution of Northeastern University	Liaoning	P.R.China	B
302	Shanghai Jiaotong University	Shanghai	P.R.China	B
305	Shanghai Jiaotong University	Shanghai	P.R.China	B
378	Simpson College	IA	USA	B
322	South China University of Technology	Guangdong	P.R.China	B
500	Southeast Missouri State University	MO	USA	B
356	Southeastern Oklahoma State University	OK	USA	A
193	Southern Oregon University	OR	USA	A
16	State University of West Georgia	GA	USA	A
339	Tianjin University	TJ	P.R.China	B
398	Tri-State University	IN	USA	A
513	Trinity University	TX	USA	C
558	Trinity University	TX	USA	B
278	Truman State University	MO	USA	A
284	Tsinghua University		P.R.China	B
588	United States Air Force Academy	CO	USA	A
436	United States Military Academy	NY	USA	A
456	United States Military Academy	NY	USA	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
548	United States Military Academy	NY	USA	C
491	University College Cork		Ireland	A
496	University College Cork		Ireland	A
215	University College Dublin	Dublin	Ireland	B
225	University College Dublin	Dublin	Ireland	C
472	University of Alaska Fairbanks	AK	USA	A
675	University of Arizona	AZ	USA	B
455	University of Colorado at Boulder	CO	USA	B
379	University of Delaware	DE	USA	B
530	University of New South Wales	NSW	Australia	A
469	University of Puget Sound	WA	USA	A
191	University of Richmond	VA	USA	B
665	University of San Diego	CA	USA	A
671	University of Saskatchewan	SK	Canada	B
674	University of Saskatchewan	SK	Canada	B
310	University of Science and Technology of China	Anhui	P.R.China	C
312	University of Science and Technology of China	AnHui	P.R.China	A
434	University of Virginia	VA	USA	C
463	Wake Forest University	NC	USA	C
413	Washington University	MO	USA	B
656	Westminster College	PA	USA	B
555	Worcester Polytechnic Institute	MA	USA	A
163	Wuhan University of Technology	Hubei	P.R.China	B
293	Xidian University	Shaanxi	P.R.China	B
294	Xidian University	Shaanxi	P.R.China	A
560	York University	Ontario	Canada	A
174	Zhejiang University	Zhejiang	P.R.China	C

### Honorable Mention

69	Anhui University	Anhui	P.R.China	B
349	Appalachian State University	NC	USA	C
403	Arkansas School for Math & Sciences	AR	USA	A
676	Asbury College	KY	USA	C
679	Asbury College	KY	USA	C
622	Austin Peay State University	TN	USA	A
451	Baylor University	TX	USA	A
520	Baylor University	TX	USA	A
189	BeiHang University		P.R.China	C
190	BeiHang University	Beijing	P.R.China	A
155	Beijing Institute of Technology	Beijing	P.R.China	C
159	Beijing Institute of Technology	Beijing	P.R.China	C
319	Beijing Northern Jiaotong University		P.R.China	B
267	Beijing University of Chemical Technology	Beijing	P.R.China	A
268	Beijing University of Chemical Technology	Beijing	P.R.China	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
271	Beijing University of Chemical Technology	Beijing	P.R.China	C
71	Beijing University of Posts and Telecommunications		P.R.China	B
72	Beijing University of Posts and Telecommunications		P.R.China	C
73	Beijing University of Posts and Telecommunications		P.R.China	A
74	Beijing University of Posts and Telecommunications		P.R.China	C
76	Beijing University of Posts and Telecommunications		P.R.China	B
375	Beijing University of Technology(original name:Beijing Polytechnic)		P.R.China	A
60	Bellarmino University	KY	USA	A
62	Bellarmino University	KY	USA	C
430	Bemidji State University	MN	USA	B
459	Bemidji State University	MN	USA	C
505	Boise State University	ID	USA	A
358	Boston University	MA	USA	A
592	California State University at Monterey Bay	CA	USA	A
418	California State University, Bakersfield	CA	USA	A
444	California State University, Northridge	CA	USA	A
477	Carroll College	MT	USA	C
478	Carroll College	MT	USA	A
479	Carroll College	MT	USA	C
207	Central South University	Hunan	P.R.China	B
211	Central South University	Hunan	P.R.China	C
212	Central South University	Hunan	P.R.China	B
313	Chesterfield County Mathematics and Science High School	VA	USA	A
264	China University of Mining and Technology	Jiangsu	P.R.China	C
152	Chongqing University		P.R.China	C
161	Chongqing University		P.R.China	B
162	Chongqing University		P.R.China	C
171	Chongqing University		P.R.China	B
187	Chongqing University		P.R.China	B
48	Colby College	ME	USA	A
228	College of Saint Benedict/Saint John's University	MN	USA	A
540	Colorado College	CO	USA	A
13	Concordia college	ny	USA	C
14	Concordia college	ny	USA	C
481	Cornell University	NY	USA	A
97	Dalian Univ of Tech		P.R.China	C
98	Dalian Univ of Tech		P.R.China	C
99	Dalian Univ of Tech		Dalian	C
297	Dalian University	Liaoning	P.R.China	B
638	Davidson College	NC	USA	B
639	Davidson College	NC	USA	A
181	Dong Hua University	Shanghai	P.R.China	B
182	Dong Hua University	Shanghai	P.R.China	B
328	Dulwich College		United Kingdom	C
362	Earlham College	IN	USA	B

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
113	East China University of Science and Technology		P.R.China	A
624	Eastern Oregon University	OR	USA	A
678	Eastern Oregon University	OR	USA	C
445	Edgewood College	WI	USA	A
593	Elon University	NC	USA	B
447	Embry-Riddle Aeronautical University	FL	USA	A
504	Florida Gulf Coast University	FL	USA	B
83	Fudan University	Shanghai	P.R.China	B
86	Fudan University	Shanghai	P.R.China	C
437	Georgia Southern University	GA,	USA	A
438	Georgia Southern University	GA,	USA	A
15	Gettysburg College	PA	USA	A
460	Goshen College	IN	USA	A
18	Goucher College	MD	USA	A
388	Greenville College	IL	USA	A
519	Grinnell College	IA	USA	B
315	Gustavus Adolphus College	MN	USA	A
370	Hangzhou University of Commerce	Zhejiang	P.R.China	C
371	Hangzhou University of Commerce	Zhejiang	P.R.China	C
372	Hangzhou University of Commerce	Zhejiang	P.R.China	C
121	Harbin Engineering University	Heilongjiang	P.R.China	C
128	Harbin Institute of Technology	Heilongjiang	P.R.China	A
145	Harbin University of Science and Technology	Heilongjiang	P.R.China	A
146	Harbin University of Science and Technology	Heilongjiang	P.R.China	C
584	Harvey Mudd College	CA	USA	C
510	Hastings College	NE	USA	A
511	Hastings College	NE	USA	A
307	Hefei University of Technology	Anhui	P.R.China	A
143	Hillsdale College	MI	USA	A
502	Hobart and William Smith Colleges	NY	USA	A
51	Huazhong University of Science & Technology		P.R.China	B
318	Huazhong University of Science & Technology		P.R.China	B
365	Information Science & Eng Inst of Northeastern University	Liaoning	P.R.China	B
544	Institut Teknologi Bandung		Indonesia	B
545	Institut Teknologi Bandung	Jawa Barat	Indonesia	A
632	Institut Teknologi Bandung	Jabar	Indonesia	C
547	Institute of Theoretical Physics	Beijing	P.R.China	A
609	Jacksonville University	FL	USA	A
659	Jacksonville University	FL	USA	A
599	James Madison University	VA	USA	A
336	Jinan University	Guangdong	P.R.China	B
627	Lafayette College	PA	USA	A
628	Lafayette College	PA	USA	C
433	Lawrence Technological University	MI	USA	A
508	Lewis and Clark College	OR	USA	A

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
509	Lewis and Clark College	OR	USA	B
575	Lewis and Clark College	OR	USA	C
440	Loyola College	MD	USA	A
449	Loyola College	MD	USA	A
462	Luther College	IA	USA	A
489	Macalester College	MN	USA	A
607	Maggie Walker Governor's School	VA	USA	C
660	Mathematical High School Of Helsinki	ESL	Finland	A
423	Mechanic Institution of Northeastern University	Liaoning	P.R.China	B
428	Mechanic Institution of Northeastern University	Liaoning	P.R.China	A
651	Monta Vista High School	CA	USA	A
383	Mount St. Mary's College	MD	USA	A
331	Mount Vernon Nazarene University	OH	USA	A
282	Nanchang University	Jiangxi	P.R.China	B
220	Nanjing Univ of Sci. & Tech.	Jiangsu	P.R.China	C
533	National University of Defence Technology	Hunan	P.R.China	B
140	Nazareth College	NY	USA	A
105	Northern Jiaotong University		P.R.China	A
495	Northern Kentucky University	KY	USA	B
557	Northern Kentucky University	KY	USA	C
34	Northwestern Polytechnical University	Shaanxi	P.R.China	C
37	Northwestern Polytechnical University	Shaanxi	P.R.China	C
39	Northwestern Polytechnical University	Shaanxi	P.R.China	A
314	Ohio Wesleyan University	OH	USA	C
476	Olin College of Engineering	MA	USA	A
245	Pacific Lutheran Uinversity	WA	USA	A
246	Pacific Lutheran Uinversity	WA	USA	A
549	Paivola College		Finland	A
137	Peking University, School of Mathematical Sciences		P.R.China	C
661	Randolph-Macon College	VA	USA	A
333	Regis University	CO	USA	C
537	Rensselaer Polytechnic Institute	NY	USA	B
78	Roanoke College	VA	USA	B
23	Sacred Heart University	CT	USA	A
499	Saint Louis University	MO	USA	A
88	Saint Mary's College	IN	USA	A
647	Salisbury University	MD	USA	A
238	School of Mathematics & Comp Science of HeBei University	Hebei Province	P.R.China	B
425	Science Institution of Northeastern University	Liaoning	P.R.China	B
206	Shanghai Foreign Language School	Shanghai	P.R.China	B
303	Shanghai Jiaotong University	Shanghai	P.R.China	B
391	Shanghai Jiaotong University	Shanghai	P.R.China	C
539	Shanghai Normal University	Shanghai	P.R.China	B
202	Siena Heights University	MI	USA	A
377	Simpson College	IA	USA	A

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
325	South China University of Technology	Guangdong	P.R.China	C
326	South China University of Technology	Guangdong	P.R.China	C
17	South Dakota School of Mines and Technology	SD	USA	B
139	South-China Normal University	Guangdong	P.R.China	A
244	Southeast University	Jiangsu	P.R.China	C
521	Southwestern University	TX	USA	B
151	St. Norbert College	WI	USA	A
200	Tianjin Polytechnic University	Tianjin	P.R.China	B
343	Tianjin University	TJ	P.R.China	C
344	Tianjin University	TJ	P.R.China	C
412	Towson University	MD	USA	A
279	Truman State University	MO	USA	A
150	Tsinghua University		P.R.China	B
286	Tsinghua University		P.R.China	A
287	Tsinghua University		P.R.China	C
288	Tsinghua University		P.R.China	C
402	United States Military Academy	NY	USA	A
493	University College Cork	-	Ireland	A
442	University College Dublin	Dublin	Ireland	A
550	University College Dublin	Dublin	Ireland	B
468	University of Colorado	CO	USA	C
381	University of Delaware	DE	USA	A
45	University of Electronic Science and Technology	Sichuan	P.R.China	C
46	University of Electronic Science and Technology	Sichuan	P.R.China	C
89	University of Massachusetts Lowell	MA	USA	B
529	University of New South Wales	NSW	Australia	B
524	University of Pittsburgh	PA	USA	B
574	University of Puget Sound	WA	USA	A
308	University of Science and Technology of China	AnHui	P.R.China	B
311	University of Science & Technology of China	Anhui	P.R.China	C
26	University of Stellenbosch	Western Cape	South Africa	A
677	University of Utah	UT	USA	C
601	University of Western Ontario	Ontario	Canada	A
107	University of Wisconsin--River Falls	WI	USA	A
108	University of Wisconsin--River Falls	WI	USA	A
249	Virginia Western	VA	USA	A
250	Virginia Western	VA	USA	A
514	Wartburg College	IA	USA	A
595	Washington University	MO	USA	B
399	Western Washington University	WA	USA	A
400	Western Washington University	WA	USA	A
401	Western Washington University	WA	USA	A
669	Westminster College	PA	USA	A
194	Wuhan University	Hubei	P.R.China	A
195	Wuhan University	Hubei	P.R.China	A



<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
197	Wuhan University	Hubei	P.R.China	B
198	Wuhan University	Hubei	P.R.China	B
274	Wuhan University of Technology	Hubei	P.R.China	C
230	Xavier University	OH	USA	A
232	Xi'an Jiaotong University		P.R.China	B
233	Xi'an Jiaotong University		P.R.China	B
292	Xidian University	Shaanxi	P.R.China	B
295	Xidian University	Shaanxi	P.R.China	A
256	Xuzhou Institute of Technology	Jiangsu	P.R.China	B
561	York University	Ontario	Canada	B
615	Youngstown State University	OH	USA	A
619	Youngstown State University	OH	USA	C
620	Youngstown State University	OH	USA	A
175	Zhejiang University	Zhejiang	P.R.China	B
176	Zhejiang University	Zhejiang	P.R.China	C
178	Zhejiang University	Zhejiang	P.R.China	B
56	Zhongshan(Sun Yat-sen) University	Guangdong	P.R.China	C
50	Zhongshan University	Guangdong	P.R.China	B

### Successful Participant

66	Anhui University	Anhui	P.R.China	B
67	Anhui University	Anhui	P.R.China	C
68	Anhui University	Anhui	P.R.China	A
348	Appalachian State University	NC	USA	B
458	Arkansas School for Math & Sciences	AR	USA	A
135	Art Education Ctr of South China Normal Univ	Guangdong	P.R.China	B
670	Asbury College	KY	USA	B
360	Athens State University	AL	USA	C
590	Augsburg College	MN	USA	B
153	Beijing Institute of Technology	Beijing	P.R.China	C
154	Beijing Institute of Technology	Beijing	P.R.China	A
156	Beijing Institute of Technology	Beijing	P.R.China	B
157	Beijing Institute of Technology	Beijing	P.R.China	A
158	Beijing Institute of Technology	Beijing	P.R.China	B
291	Beijing Normal University		P.R.China	A
269	Beijing University of Chemical Technology	Beijing	P.R.China	A
270	Beijing University of Chemical Technology	Beijing	P.R.China	A
272	Beijing University of Chemical Technology	Beijing	P.R.China	B
273	Beijing University of Chemical Technology	Beijing	P.R.China	C
77	Beijing University of Posts and Telecommunications		P.R.China	B
317	Beijing University of Technology		P.R.China	A
374	Beijing University of Technology		P.R.China	B
585	Beloit College	WI	USA	A
586	Beloit College	WI	USA	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
431	Bemidji State University	MN	USA	A
102	Benedict College	SC	USA	A
380	Bloomsburg University	PA	USA	B
602	Brazoswood High School	TX	USA	C
227	Brevard College	NC	USA	A
396	Bucknell University	PA	USA	B
452	California State Polytechnic University, Pomona	CA	USA	C
443	California State University, Northridge	CA	USA	A
657	California State University, Stanislaus	CA	USA	A
556	Calvin College	MI	USA	A
208	Central South University	Hunan	P.R.China	C
209	Central South University	Hunan	P.R.China	A
210	Central South University	Hunan	P.R.China	A
253	China University of Mining and Technology	Jiangsu	P.R.China	B
255	China University of Mining and Technology		P.R.China	B
259	China University of Mining and Technology	Jiangsu	P.R.China	B
263	China University of Mining and Technology	Jiangsu	P.R.China	C
47	Chongqing University		P.R.China	A
160	Chongqing University		P.R.China	A
644	City University of Hong Kong		P.R.China	A
645	City University of Hong Kong		Hong Kong	A
646	City University of Hong Kong		Hong Kong	A
404	Clarion University of Pennsylvania	PA	USA	A
405	Clarion University of Pennsylvania	PA	USA	A
406	Clarion University of Pennsylvania	PA	USA	A
49	Colby College	ME	USA	A
229	College of Saint Benedict/Saint John's University	MN	USA	A
506	Colorado College	CO	USA	B
567	Colorado State University	CO	USA	B
626	Colorado State University - Pueblo	CO	USA	A
93	Dalian Univ of Tech		P.R.China	B
94	Dalian Univ of Tech		P.R.China	B
95	Dalian Univ of Tech		P.R.China	B
96	Dalian Univ of Tech		P.R.China	B
296	Dalian University	Liaoning	P.R.China	A
298	Dalian University	Liaoning	P.R.China	C
180	Dong Hua University	Shanghai	P.R.China	B
183	Dong Hua University	Shanghai	P.R.China	C
357	Earlham College	IN	USA	C
361	Earlham College	IN	USA	B
110	East China University of Science and Technology		P.R.China	B
111	East China University of Science and Technology		P.R.China	B
112	East China University of Science and Technology		P.R.China	A
114	East China University of Science and Technology		P.R.China	C
115	East China University of Science and Technology		P.R.China	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
603	Eastern Mennonite University	VA	USA	B
605	Eastern Mennonite University	VA	USA	A
608	Eastern Mennonite University	VA	USA	B
79	Eastern Michigan University	MI	USA	B
80	Eastern Michigan University	MI	USA	A
587	Elon University	NC	USA	C
594	Francis Marion University	SC	USA	A
84	Fudan University	Shanghai	P.R.China	B
85	Fudan University	Shanghai	P.R.China	C
617	Georgetown University	DC	USA	A
512	Gonzaga University	WA	USA	A
19	Goucher College	MD	USA	A
494	Grand View College	IA	USA	A
497	Grand View College	IA	USA	A
350	Greenville College	IL	USA	B
389	Greenville College	IL	USA	A
515	Grinnell College	IA	USA	A
516	Grinnell College	IA	USA	A
517	Grinnell College	IA	USA	B
535	Guangxi University	Guangxi	P.R.China	B
538	Guangxi University	Guangxi	P.R.China	A
542	Guangxi University	Guangxi	P.R.China	A
367	Hangzhou University of Commerce	Zhejiang	P.R.China	A
368	Hangzhou University of Commerce	Zhejiang	P.R.China	B
369	Hangzhou University of Commerce	Zhejiang	P.R.China	B
122	Harbin Engineering University	Heilongjiang	P.R.China	C
123	Harbin Engineering University	Heilongjiang	P.R.China	A
124	Harbin Engineering University	Heilongjiang	P.R.China	A
125	Harbin Engineering University	Heilongjiang	P.R.China	C
126	Harbin Engineering University	Heilongjiang	P.R.China	B
127	Harbin Institute of Technology	Heilongjiang	P.R.China	A
129	Harbin Institute of Technology	Heilongjiang	P.R.China	C
130	Harbin Institute of Technology	Heilongjiang	P.R.China	A
132	Harbin Institute of Technology	Heilongjiang	P.R.China	C
133	Harbin Institute of Technology	Heilongjiang	P.R.China	B
147	Harbin University of Science and Technology	Heilongjiang	P.R.China	A
637	Harbin University of Science and Technology	Heilongjiang	P.R.China	B
304	Hefei University of Technology	Anhui	P.R.China	B
334	Hefei University of Technology	Anhui	P.R.China	A
393	Hefei University of Technology	Anhui	P.R.China	B
394	Hefei University of Technology	Anhui	P.R.China	C
395	Hefei University of Technology	Anhui	P.R.China	C
667	Hendrix College	AR	USA	B
4	Heritage College	WA	USA	B
435	Heritage College	WA	USA	A

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
503	Hobart and William Smith Colleges	NY	USA	A
65	Hong Kong Baptist University		P.R.China	A
464	Hood College	MD	USA	B
649	Hope College	MI	USA	A
309	Huazhong University of Science and Technology	Hubei	P.R.China	A
52	Huazhong University of Science & Technology		P.R.China	B
327	Information Scienc & Eng Institution of Northeastern University	Liaoning	P.R.China	B
363	Information Scienc & Eng Institution of Northeastern University	Liaoning	P.R.China	A
364	Information Scienc & Eng Institution of Northeastern University	Liaoning	P.R.China	B
633	Institut Teknologi Bandung	Jabar	Indonesia	C
635	Institut Teknologi Bandung	Jabar	Indonesia	C
260	Institution of Math.,Nankai Univ.	Tianjin	P.R.China	C
262	Institution of Math.,Nankai Univ.	Tianjin	P.R.China	C
527	Jacksonville University	FL	USA	A
528	Jacksonville University	FL	USA	B
299	Jiamusi University	Heilongjiang	P.R.China	B
300	Jiamusi University	Heilongjiang	P.R.China	A
301	Jiamusi University	Heilongjiang	P.R.China	B
411	Jilin University	Jilin	P.R.China	B
414	Jilin University	Jilin	P.R.China	B
415	Jilin University	Jilin	P.R.China	B
416	Jilin University	Jilin	P.R.China	B
417	Jilin University	Jilin	P.R.China	C
473	Jilin University		P.R.China	C
337	Jinan University	Guangdong	P.R.China	A
338	Jinan University	Guangdong	P.R.China	A
345	Jinan University	Guangdong	P.R.China	B
347	Jinan University	Guangdong	P.R.China	C
467	Johnson State College	VT	USA	A
382	Juniata College	PA	USA	B
421	Kansas State University	KS	USA	B
559	Lawrence Technological University	MI	USA	A
573	Lewis and Clark College	OR	USA	B
490	Macalester College	MN	USA	B
525	Macalester College	MN	USA	B
596	Maggie Walker Governor's School	VA	USA	B
409	Manhattan College	NY	USA	B
507	Marist College	NY	USA	A
658	Mathematical High School Of Helsinki	ESL	Finland	A
426	Mechanical Institution of Northeastern University	Liaoning	P.R.China	B
427	Mechanical Institution of Northeastern University	Liaoning	P.R.China	B
386	Meredith College	NC	USA	A
450	Miami University	OH	USA	B
598	Mills E. Godwin High School	VA	USA	A
641	Monmouth College	IL	USA	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
642	Monmouth College	IL	USA	A
654	Monta Vista High School	CA	USA	A
275	Mount Marty College	SD	USA	A
276	Mount Marty College	SD	USA	A
277	Mount Marty College	SD	USA	B
12	Mount St. Mary's College	MD	USA	A
205	N C School of Science and Mathematics	NC	USA	C
280	Nanchang University	Jiangxi	P.R.China	B
281	Nanchang University	Jiangxi	P.R.China	A
219	Nanjing	Jiangsu	P.R.China	B
213	Nanjing Normal University	Jiangsu	P.R.China	B
216	Nanjing Normal University	Jiangsu	P.R.China	A
217	Nanjing Normal University	Jiangsu	P.R.China	A
218	Nanjing Normal University	Jiangsu	P.R.China	B
221	Nanjing Univ. of Sci. & Tech.	Jiangsu	P.R.China	B
222	Nanjing Univ.of Sci. & Tech.	Jiangsu	P.R.China	C
223	Nanjing Univ. of Sci.& Tech.	Jiangsu	P.R.China	A
109	Nanjing University	Jiangsu	P.R.China	B
184	Nanjing University	Jiangsu	P.R.China	A
148	Nanjing University of Sci. & Tech.	Jiangsu	P.R.China	B
257	Nankai University		P.R.China	A
258	Nankai University		P.R.China	A
532	National University of Defence Technology	Hunan	P.R.China	B
534	National University of Defence Technology	Hunan	P.R.China	A
29	National University of Singapore		Singapore	A
407	Nazareth College	NY	USA	C
610	New Mexico State University	NM	USA	B
625	North Carolina State University	NC	USA	B
118	Northeast Agricultural University	Heilongjian	P.R.China	A
119	Northeast Agricultural University	Heilongjian	P.R.China	B
120	Northeast Agricultural University	Heilongjian	P.R.China	A
91	Northern Jiaotong University		P.R.China	B
92	Northern Jiaotong University		P.R.China	B
103	Northern Jiaotong University		P.R.China	C
104	Northern Jiaotong University		P.R.China	A
106	Northern Jiaotong University		P.R.China	C
354	Northwest Missouri State University	MO	USA	A
355	Northwest Missouri State University	MO	USA	A
33	Northwestern Polytechnical University	Shaanxi	P.R.China	C
35	Northwestern Polytechnical University	Shaan Xi	P.R.China	A
38	Northwestern Polytechnical University	ShaanXi	P.R.China	B
474	Olin College of Engineering	MA	USA	B
551	Paivola College		Finland	B
552	Paivola College		Finland	C
553	Paivola College		Finland	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
373	Peking University		P.R.China	C
166	Peking University, School of Mathematical Sciences		P.R.China	B
168	Peking University, School of Mathematical Sciences		P.R.China	B
170	Peking University, School of Mathematical Sciences		P.R.China	B
384	Pomona College	CA	USA	B
663	Randolph-Macon College	VA	USA	A
332	Regis University	CO	USA	C
485	Roanoke College	VA	USA	B
613	Rose-Hulman Institute of Technology	IN	USA	B
616	Rose-Hulman Institute of Technology	IN	USA	B
101	Rowan University	NJ	USA	C
454	Saint Bonaventure	NY	USA	C
498	Saint Louis University	MO	USA	A
87	Saint Mary's College	IN	USA	B
252	School of Math. NanKai Univ.	Tianjin	P.R.China	B
254	School of Math. NanKai Univ.	Tianjin	P.R.China	B
241	School of Mathematics & Computer Science of HeBei University	Hebei Province	P.R.China	A
634	School of Mathematics & Computer Science of HeBei University	Hebei Province	P.R.China	B
636	School of Mathematics & Computer Science of HeBei University	Hebei Province	P.R.China	B
422	Science Institution of Northeastern University	Liaoning	P.R.China	A
429	Science Institution of Northeastern University	Liaoning	P.R.China	B
28	Shandong University		P.R.China	B
117	Shandong University	Shandong	P.R.China	B
199	Shanghai Foreign Language School	Shanghai	P.R.China	A
203	Shanghai Foreign Language School	Shanghai	P.R.China	A
81	Shanghai Jiading No.1 High School	Shanghai	P.R.China	B
82	Shanghai Jiading No.1 High School	Shanghai	P.R.China	B
390	Shanghai Jiao Tong University		P.R.China	C
306	Shanghai Jiaotong University	Shanghai	P.R.China	A
392	Shanghai Jiaotong University	Shanghai	P.R.China	C
486	Shanghai Normal University	Shanghai	P.R.China	A
541	Shanghai Normal University	Shanghai	P.R.China	B
543	Shanghai Normal University	Shanghai	P.R.China	A
643	Shanghai University of Finance and Economics		P.R.China	B
201	Siena Heights University	MI	USA	A
680	Siena Heights University	MI	USA	A
577	Sierra Nevada College	NV	USA	C
578	Sierra Nevada College	NV	USA	A
58	Simon's Rock College	MA	USA	A
59	Simon's Rock College	MA	USA	B
61	Simon's Rock College	MA	USA	A
63	Simon's Rock College	MA	USA	A
376	Simpson College	IA	USA	B
629	Sonoma State University	CA	USA	A
630	Sonoma State University	CA	USA	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
320	South China University of Technology	Guangdong	P.R.China	C
321	South China University of Technology	Guangdong	P.R.China	B
323	South China University of Technology	Guangdong	P.R.China	B
324	South China University of Technology	Guangdong	P.R.China	B
6	South Dakota School of Mines and Technology	SD	USA	A
138	South-China Normal University	Guangdong	P.R.China	A
237	Southeast University		P.R.China	B
240	Southeast University		P.R.China	B
242	Southeast University		P.R.China	B
243	Southeast University	Jiangsu	P.R.China	C
251	Southeast University	Jiangsu	P.R.China	C
612	St. Joseph's College	NY	USA	A
408	Stetson University	FL	USA	B
5	SUNY Westchester Community College	NY	USA	A
149	Tianjin Polytechnic University	Tianjin	P.R.China	B
340	Tianjin University	TJ	P.R.China	A
341	Tianjin University	TJ	P.R.China	B
342	Tianjin University	TJ	P.R.China	B
410	Towson University	MD	USA	A
471	Trinity University	TX	USA	B
283	Tsinghua University		P.R.China	B
285	Tsinghua University		P.R.China	B
289	Tsinghua University		P.R.China	C
563	U. of Michigan - Dearborn	MI	USA	B
351	United States Military Academy	NY	USA	B
446	United States Military Academy	NY	USA	B
214	University College Dublin	Dublin	Ireland	A
224	University College Dublin	Dublin	Ireland	C
546	University College Dublin		Ireland	C
570	University of Central Oklahoma	OK	USA	C
40	University of Electronic Science and Technology	Sichuan	P.R.China	B
41	University of Electronic Science and Technology	Sichuan	P.R.China	B
42	University of Electronic Science and Technology	Sichuan	P.R.China	B
43	University of Electronic Science and Technology	Sichuan	P.R.China	B
44	University of Electronic Science and Technology	Sichuan	P.R.China	C
631	University of Mary Hardin-Baylor	TX	USA	A
470	University of Puget Sound	WA	USA	A
664	University of San Diego	CA	USA	A
482	University of Science and Technology of China	Anhui	P.R.China	A
27	University of Stellenbosch	Western Cape	South Africa	B
141	University of Virginia's College at Wise	VA	USA	A
484	Wake Forest University	NC	USA	C
20	Washington College	MD	USA	A
21	Washington College	MD	USA	A
234	Washington State University	WA	USA	C

<u>Control #</u>	<u>Institution</u>	<u>State</u>	<u>Country</u>	<u>Problem Selected</u>
3	Westchester Community College	NY	USA	A
32	Western Connecticut State University	CT	USA	A
352	Western New England College	MA	USA	A
353	Western New England College	MA	USA	A
248	Wheaton College	IL	USA	B
569	William Paterson University	NJ	USA	A
554	Worcester Polytechnic Institute	MA	USA	B
453	Wright State University	OH	USA	A
196	Wuhan University	Hubei	P.R.China	B
164	Wuhan University of Technology	Hubei	P.R.China	A
165	Wuhan University of Technology	Hubei	P.R.China	A
167	Wuhan University of Technology	Hubei	P.R.China	B
185	Wuhan University of Technology	Hubei	P.R.China	C
186	Wuhan University of Technology	Hubei	P.R.China	C
236	Xi'an University of Technology	Shaanxi	P.R.China	B
290	Xi'an University of Technology	Shaanxi	P.R.China	B
70	Xiamen University	Fujian	P.R.China	B
261	Xuzhou Institute of Technology	Jiangsu	P.R.China	A
618	Youngstown State University	OH	USA	C
621	Youngstown State University	OH	USA	C
623	Youngstown State University	OH	USA	B
172	Zhejiang University	Zhejiang	P.R.China	C
173	Zhejiang University	Zhejiang	P.R.China	A
53	Zhongshan University	Guangdong	P.R.China	A
54	Zhongshan University	Guangdong	P.R.China	A
55	Zhongshan University	Guangdong	P.R.China	B
57	Zhongshan University	Guangdong	P.R.China	C