

AAPT/METROLOGIC 2000 PHYSICS BOWL RESULTS

Dear Physics Teacher,

Thank you for having your students participate in this year's AAPT/Metrologic PHYSICS BOWL High School Physics Contest.

You have been provided with the core distributions, answer key, and list of top schools in each region. This was the second year that the tests have been batch-processed. It was particularly important that the students filled out the forms properly: including their names, the school's 9 digit identification (ZIP + four) code and the Division (1st or 2nd year) in which they were competing. Improperly filled out forms were grounds for disqualification. Well over 90% of the forms were properly filled out, but it is suggested that teachers look over the forms before they are returned. A school's score in a division is the sum of the four highest student scores on accurately completed forms.

The envelope contains the individual scores for each student who marked your school's 9 digit identification (ZIP+four) code. Several schools could not be identified with any school due to inadequate information on the forms. If you contact the EMAIL address below, an attempt will be made to provide scores for any missing students. Improperly filled out forms are not included in the team scores.

Over 6,800 students from nearly 400 schools participated in the 2000 PHYSICS BOWL competition. The top two schools in each of the 15 divisions will receive a plaque. Metrologic will also provide a \$1000 scholarship to each of the ten highest scoring students overall, \$300 scholarships to the highest scoring student in each region, and \$100 for each second-place student in each region. If your student has won a scholarship, it will be posted on two websites (<http://www.AAPT.org> or <http://physics.unco.edu/physicsbowl>). Several placings were decided by a tie-breaker. The entries were compared, from the end of the test forward, until the tie was resolved. The names of all winners have been forwarded to Metrologic, the sponsors of the examination. They will provide and distribute the prizes.

In order to determine a clear winner in a competition such as PHYSICS BOWL, the test must be moderately difficult so that the scores are not concentrated at the upper end of the scale. This year the test appeared to be significantly more difficult than in recent years. The distribution of scores is shown in the included graphs. Overall, the average was 15.09 with a standard deviation of 5.62. This was a bit lower than desired. We will strive to make the test a bit easier next year so as not to be too discouraging to students. The production of a test of only 40 questions that is appropriate for both first and second year students is an enormous task. If you would like to help prepare next year's exam, submit possible questions, or give feedback for next year's exam EMAIL the address below.

Once again, AAPT and Metrologic would like to thank you for participating in this year's competition. We hope that you will enter your students in the 2001 PHYSICS BOWL next year.

Thank You,

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1999 PHYSICS BOWL ANSWERS

1. A	5. B	9. E	13. B	17. E	21. B	25. C	29. B	33. B	37. A
2. B	6. E	10. D	14. E	18. C	22. E	26. B	30. D	34. D	38. D
3. A	7. C	11. A	15. C	19. D	23. D	27. E	31. E	35. D	39. A
4. A	8. C	12. E	16. B	20. A	24. D	28. C	32. C	36. B	40. A

The enclosed sheet gives the school's team score and the following information obtained from each student answer form:

Student name School ID number Division Region Score

If any of the above information is incorrect, it is because the student did not properly fill out the answer form so that it could be properly read electronically.

First Year Physics Results

	Score	First Place School		Score	Second Place School
02	106	Concord Academy, Concord, MA	02	101	Lexington High School, Lexington, MA
03	97	Commack High School, Commack, NY	03	95	Clarkstown South H.S., West Nyack, NY
04	125	George Washington H.S., Philadelphia, PA	04	118	Valley High School, New Kensington, PA
05	114	Charlotte Latin School, Charlotte, NC	05	106	T.C. Williams High School, Alexandria, VA
06	115	The Bolles School, Jacksonville, FL	06	97	Walton High School, Marietta, GA
07	115	Hawken School, Gates Mills, OH	07	111	Revere High School, Richfield, OH
08	93	Northville High School, Northville, MI	08	85	Andover High School, Bloomfield Hills, MI
09	*113	Libertyville High School, Libertyville, IL	09	*113	Crystal Lake South H.S., Crystal Lake, IL
10	99	Marquette University H.S., Milwaukee, WI	10	83	Stillwater Area High School, Stillwater, MN
11	98	Webb School of Knoxville, Knoxville, KY	11	95	Martin Luther King, Nashville, TN
12	119	Clayton High School, Clayton, MO	12	97	St. Louis University H.S., St. Louis, MO
13	94	Bellaire High School, Bellaire, TX	13	88	Clements High School, Sugarland, TX
14	116	Piedmont Hills High School, San Jose, CA	14	109	Wilcox High School, Santa Clara, CA
15	116	Timberline High School, Boise, ID	15	100	Sir Winston Churchill Second., Vancouver, BC
20	*105	Manalapan High School, Englishtown, NJ	20	*105	Mississippi School Math&Sci., Columbus, MO

* Places determined by tie breaker.

Second Year Physics Results

	Score	First Place School		Score	Second Place School
02	116	Staples High School, Westport, CT	02	*112	Concord Academy, Concord, MA
03	142	Woburn Collegiate Institute, Scarborough, ON	03	112	Clarkstown South H.S., West Nyack, NY
04	111	Livingston High School, Livingston, NJ	04	104	Pingery School, Martinsville, NJ
05	119	Sidwell Friends School, Washington, DC	05	109	Wootton High School, Rockville, MD
06	*122	Stanton College Prep. School, Jacksonville, FL	06	*122	The Bolles School, Jacksonville, FL
07	125	Hawken School, Gates Mills, OH	07	93	Trinity High School, Louisville, KY
08	101	Noblesville High School, Noblesville, IN	08	97	Rochester Adams H.S., Rochester Hills, MI
09	*120	Evanston Township High School, Evanston, IL	09	*120	Libertyville High School, Libertyville, IL
10	127	Stillwater Area High School, Stillwater, MN	10	118	Arrowhead High School, Hartland, WI
11	104	Martin Luther King, Nashville, TN	11	102	Jackson Preparatory School, Jackson, MS
12	93	Clayton High School, Clayton, MO	12	67	Rocky Mountain High School, Ft. Collins, CO
13	124	Clements High School, Sugarland, TX	13	109	St. Mark's School of Texas, Dallas, TX
14	*124	Torrey Pines High School, San Diego, CA	14	*124	Punahou School, Honolulu, HI
15	132	Corvallis High School, Corvallis, OR	15	124	Western Canada High School, Calgary, AB
20	130	Manalapan High School, Englishtown, NJ	20	121	Oklahoma School Sci.&Math, Okla. City, OK

* Places determined by tie breaker.

Top Ten Individual Overall Winners

1	39	VRABLE MICHAEL D	Torrey Pines High School	San Diego	CA
2	38	YU JOSEPH H	University High School	Irvine	CA
3	38	SHI WEN	Andover High School	Bloomfield Hills	MI
4	37	PRITCHARD DAVID A G	Woburn Collegiate Institute	Scarborough	ON
5	37	CRUGNALE JAMES A	Central Bucks H.S. West	Doylestown	PA
6	37	SINKOVITS DANIEL W	Crystal Lake South H.S.	Crystal Lake	IL
7	37	THOMAS ANDREW C	Woburn Collegiate Institute	Scarborough	ON
8	37	DUPUIS FREDERIC S	Western Canada High School	Calgary	AB
9	*36	STINCHCOMBE KAI H	Evanston Township High School	Evanston	IL
10	*36	LIAO DAVID	Piedmont Hills High School	San Jose	CA

* Places determined by tie breaker.

First Year Physics – First Place Regional Winners

02	34	LIU YUEN JONG	Lexington High School	Lexington	MA
03	33	TRACY DANIEL M	Cobleskill-Richmondville H.S.	Warnerville	NY
04	*32	TAHVILDARAN AMIR D	George Washington High School	Philadelphia	PA
05	33	SHAFROTH ABIGAIL E	T.C. Williams High School	Alexandria	VA
06	31	BEECKLER CHRISTOPHER	The Bolles School	Jacksonville	FL
07	*31	OSENAR MICHAEL J	Hawken School	Gates Mills	OH
08	31	MIHALIK DANIEL S	Northville High School	Northville	MI
09	32	CARLSON BRANT E	Libertyville High School	Libertyville	IL
10	*27	PETRO ANDREW W	Marquette University H.S.	Milwaukee	WI
11	29	ALLARD CHRISTOPHER R	Oakland High School	Murfreesboro	TN
12	33	DEBUHR JACKSON E	Clayton High School	Clayton	MO
13	26	WANG ALBERT	Bellaire High School	Bellaire	TX
14	*32	BERSOHN DANIEL J	North Hollywood High School	North Hollywood	CA
15	34	MALM ERIC J	Saint George's School	Spokane	WA
20	*33	PENG DANIEL J	Manalapan High School	Englishtown	NJ

* Places determined by tie breaker.

Second Year Physics – First Place Regional Winners

02	36	LU YURAN	Presque Isle High School	Presque Isle	ME
03	35	SHANNON ANDREW	Woburn Collegiate Institute	Scarborough	ON
04	35	LO KEITH J	West Morris Central H.S.	Chester	NJ
05	34	MCGEE JONATHAN A	Boonsboro High School	Boonsboro	MD
06	36	FINCK AARON D	Stanton College Prep. School	Jacksonville	FL
07	36	BECK BRIAN J	Hawken School	Gates Mills	OH
08	32	POWELL PHILIP D	Terre Haute South Vigo HS	Terre Haute	IN
09	34	KEMPER JONATHON B	Libertyville High School	Libertyville	IL
10	*34	POWELL MATTHEW R	Stillwater Area High School	Stillwater	MN
11	*28	GHOSH DEBMALLO S	Jackson Preparatory School	Jackson	MS
12	35	KARPE CHARVAK P	Homeschool	Stillwater	OK
13	34	ROSENQUIST ERIC J	Clements High School	Sugarland	TX
14	34	ESAKI ROY K	Punahou School	Honolulu	HI
15	36	HAND PAUL E	Corvallis High School	Corvallis	OR
20	36	BENDER RYAN K	Manalapan High School	Englishtown	NJ

* Places determined by tie breaker.

First Year Physics – Second Place Regional Winners

02	32	KERN CHRIS	Concord Academy	Concord	MA
03	29	JONES RONALD F	Commack High School	Commack	NY
04	*32	KERCHENTSEVA OLGA	George Washington High School	Philadelphia	PA
05	31	BORUTA RJ	Charlotte Latin School	Charlotte	NC
06	30	KWON YONG JAE	Walton High School	Marietta	GA
07	*31	LEIDAL RYAN A	Archbishop Hoban High School	Akron	OH
08	25	HOLLAND MICHAEL A	Noblesville High School	Noblesville	IN
09	29	MICHALAK KENNETH A	Crystal Lake South H.S.	Crystal Lake	IL
10	*27	KUECK AARON M	Marquette University H.S.	Milwaukee	WI
11	*26	VAN MOURIK REINIER A	Webb School of Knoxville	Knoxville	TN
12	32	WILSON JOHN PAUL	Lincoln High School	Lincoln	NE
13	*24	DANGAYACH VICKAS K	Bellaire High School	Bellaire	TX
14	*32	GOODWIN MARK T	Piedmont Hills High School	San Jose	CA
15	31	STANDLEY BRIAN L	Timberline High School	Boise	ID
20	*33	MEEK SAMUEL A	Oklahoma School of Sci.&Math	Oklahoma City	OK

* Places determined by tie breaker.

Second Year Physics – Second Place Regional Winners

02	35	SCHWARTZ BENJAMIN M	Staples High School	Westport	CT
03	*33	CHANG RACHEL	Woburn Collegiate Institute	Scarborough	ON
04	33	BAKER OWEN T	Columbia High School	Maplewood	NJ
05	*33	BLASIAK JONAH D	Wootton High School	Rockville	MD
06	*31	HILLEGASS WILLIAM G	Stanton College Prep. School	Jacksonville	FL
07	35	SHRESTHA KEVIN L	Hawken School	Gates Mills	OH
08	30	ALEXANDER TROY S	Noblesville High School	Noblesville	IN
09	*30	ZAVISLAK MARK J	St. Ignatius College Prep	Chicago	IL
10	*34	CHAMBERS MATTHEW D	Stillwater Area High School	Stillwater	MN
11	*28	CATANACH CHARLES N	Martin Luther King	Nashville	TN
12	*34	ZHANG DAVID Y	Shawnee Mission South H.S.	Shawnee Mission	KS
13	32	HEBERLE JOHN R	St. Mark's School of Texas	Dallas	TX
14	*33	ADAMS WILLIAM O	Rio American High School	Sacramento	CA
15	34	PROWS JOSEPH W	Corvallis High School	Corvallis	OR
20	33	STEINER MATTHEW S	Sci. Academy of South Texas	Mercedes	TX

* Places determined by tie breaker.