Physics Day at Lagoon 2009

The twentieth annual Utah State University Physics Day at Lagoon was held on Friday May 15. This year USU Physics Department and the Idaho National Lab (INL) teamed to coordinate and run the event. There were approximately 6790 students and 326 teachers from 112 schools in four states [Utah, Idaho, Nevada and Wyoming] who attended. A number of special activities were added as part of the anniversary celebration. We added a lunch for participating teachers and for students on the top eight Physics Bowl teams. We also hosted the First Annual FIRST Robotics Utah/Idaho Grudge Match, with 4 teams participating. To complement this, 5 elementary schools with about 75 students participated in our first Lego Mindstorm Robotics Competition; this generated great enthusiasm and was featured in several news stories. A most exciting development was a large increase in the number of students participating in our organized activities, with an estimated 4015 students participating (that is ~59% of those attending)! Finally, The USU Physics Department, USU College of Education, USU College of Science, USU Space Dynamics Laboratory and Idaho National Laboratory teamed to sponsor a one day teacher workshop on held Saturday May 16 on the USU campus. The workshop focusing on outreach for STEM (Science, Technology, Engineering and Mathematics) education had about 30 participants and contributors.

<table>
<thead>
<tr>
<th>Event</th>
<th>High Schools</th>
<th>Middle Schools/ Junior High Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics Bowl</td>
<td>25 Teams, 75 Students</td>
<td>---</td>
</tr>
<tr>
<td>G-forces Contest</td>
<td>8 Teams, 33 Students</td>
<td>40 Teams, 191 Students</td>
</tr>
<tr>
<td>Demonstration Design Contest</td>
<td>13 Entries, 13 Students</td>
<td>15 Entries, 15 Students</td>
</tr>
<tr>
<td>Ride Design Contest</td>
<td>3 Entries, 3 Students</td>
<td>49 Entries, 49 Students</td>
</tr>
<tr>
<td>Logo Design Contest</td>
<td>14 Entries, 15 Students</td>
<td>168 Entries, 185 Students</td>
</tr>
<tr>
<td>Student Workbooks*</td>
<td>28 Schools, 1297 Students</td>
<td>23 Schools, 1450 Students</td>
</tr>
<tr>
<td>Sky Drop Contest</td>
<td>15 Schools, 174 Students (24 eggs survived)</td>
<td>22 Schools, 515 Students (82 eggs survived)</td>
</tr>
<tr>
<td>Total Contest Participation</td>
<td>1610 Participants</td>
<td>2405 Participants</td>
</tr>
</tbody>
</table>

| Totals Registered         | 59 Schools, 105 Teachers, 2750 Students | 44 Schools, 167 Teachers, 4040 Students |

(*Numbers in the table reflect actual registration. Estimates for Workbooks based on pre-registration.)

About one hundred faculty, staff, and students from the USU Physics Department, ten INL staff, and about fifty-five additional judges and helpers from other sponsoring agencies were on hand to assist with registration, organization and contest judging. The number of sponsor displays continues to grow in both number and ability to impress the students. There were an estimated $30,166 in prizes awarded this year, in addition to as much as $123,600 in scholarships to USU. The top six students of the Physics Bowl were offered four year scholarships to USU by the USU Admissions Office. Sponsors included American Physical Society, ATK Space Systems, Boeing, Eastern Idaho Regional Medical Center, Hill Aerospace Museum, IM Flash Technologies, Lagoon, Micron, Moog Aircraft, North Wind Environmental, Pasco Scientific, Portage, PTC,
Rocky Mountain NASA Space Grant Consortium, US Navy, USU College of Science, USU College of Education, USU Space Dynamics Laboratory, and USU Admissions Office.

Television coverage was provided by Ch. 5 in Salt Lake City. The Salt Lake Tribune, Deseret News, the Ogden Standard Examiner and USU Today also had nice stories to cover the event. Many stories were also posted on the internet, as listed below.


http://investing.businessweek.com/businessweek/research/stocks/news/article.asp?docKey=600-200905160655KRTRIB_BUSNEWS_41762-2MBGMT3RM7NUQ3FVGSP7M8HF&params=timestamp%7C%7C05/16/2009%206:55%20AM%20ET%7C%7Cheadline%7C%7CFor%20kids%20Physics%20Day%20a%20wild%20ride%3A%20Education%20%3F%20Elementary%20students%20invited%20for%20first%20time%20to%20USU%20event%20at%20Lagoon.%20%5BThe%20Salt%20Lake%20Tribune%5D%7C%7CdocSource%7C%7CKnight%20Riddle/Tribune%7C%7Cprovider%7C%7CACQUIREMEDIA&ric=BA (Business Week, Russ Randle mention)

http://www.usu.edu/ust/index.cfm?article=36528

http://www.standard.net/live/news/173442/

http://www.deseretnews.com/article/1,5143,705304510,00.html

http://answers.yahoo.com/question/index?qid=20090502133106AAcU9sT

### Summary of Prizes awarded:

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Items</th>
<th>Quantity Awarded</th>
<th>Unit Price</th>
<th>Total Dollar Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagoon</td>
<td>Season Passes</td>
<td>20</td>
<td>$93.95</td>
<td>$1,879.00</td>
</tr>
<tr>
<td>Lagoon</td>
<td>Day Passes</td>
<td>250</td>
<td>$33.95</td>
<td>$8,475.00</td>
</tr>
<tr>
<td>ATK Space Systems</td>
<td>Highlighters, etc</td>
<td>100</td>
<td>$2.00 *</td>
<td>$200.00</td>
</tr>
<tr>
<td>INL</td>
<td>Mugs, Pens, etc.</td>
<td></td>
<td></td>
<td>$1062.00</td>
</tr>
<tr>
<td>PTC</td>
<td>Mathcad</td>
<td>20</td>
<td>$120.00</td>
<td>$2,400</td>
</tr>
<tr>
<td>Navy</td>
<td>Water Bottles, Pens, etc</td>
<td></td>
<td></td>
<td>$100.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>USU College of Science, RMNSGC, Thiokol, Boeing, INSGC, INEEL</td>
<td>T-shirts</td>
<td>525</td>
<td></td>
<td>$1,975.00</td>
</tr>
<tr>
<td>USU College of Science, RMNSGC, Thiokol, Boeing, INSGC, INEEL</td>
<td>Purchased Prizes</td>
<td></td>
<td></td>
<td>$2,751.98</td>
</tr>
<tr>
<td>USU High School Relations</td>
<td>Four Year Scholarship</td>
<td>6</td>
<td>$20,600</td>
<td>$123,600.00</td>
</tr>
<tr>
<td><strong>Total Prizes</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$123,600.00</strong></td>
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</tbody>
</table>

* Estimated value.  
# Committed.
## Summary of Purchased Prizes

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Vendor</th>
<th>Date</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Prizes: Neutron Stun Gun</td>
<td>Edmund</td>
<td>4/28/09</td>
<td>$363.30</td>
</tr>
<tr>
<td>2</td>
<td>Prizes: Gyro Ring</td>
<td>Ed. Innovations</td>
<td>4/28/09</td>
<td>$361.35</td>
</tr>
<tr>
<td>3</td>
<td>Prizes: Mirascope</td>
<td>Ed. Innovations</td>
<td>4/28/09</td>
<td>$262.35</td>
</tr>
<tr>
<td>4</td>
<td>Prizes: Globe Strobe</td>
<td>Westminster</td>
<td>4/28/09</td>
<td>$241.68</td>
</tr>
<tr>
<td>5</td>
<td>Prizes: Hydro Car</td>
<td>JC Penny’s</td>
<td>2/15/09</td>
<td>$900.00</td>
</tr>
<tr>
<td>7</td>
<td>Prizes: Mysterious Glow Ball</td>
<td>Ed. Innovations</td>
<td>4/28/09</td>
<td>$250.20</td>
</tr>
<tr>
<td>8</td>
<td>Prizes: Newton’s Apple</td>
<td>Ed Innovations</td>
<td>4/28/09</td>
<td>$89.85</td>
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<tr>
<td>9</td>
<td>Prizes: FunFly Sticks</td>
<td>Ed. Innovations</td>
<td>4/28/09</td>
<td>$323.40</td>
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<tr>
<td>10</td>
<td>T Shirts</td>
<td>Badger Printing</td>
<td>4/20/09</td>
<td>$1975.00</td>
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<tr>
<td>11</td>
<td>Candy, eggs, etc</td>
<td>Smiths</td>
<td>5/09</td>
<td>143.03</td>
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<tr>
<td>12</td>
<td>Prizes</td>
<td>Smiths</td>
<td>5/09</td>
<td>180.46</td>
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<tr>
<td>13</td>
<td></td>
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<tr>
<td>17</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Total Purchased Prizes</td>
<td></td>
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<td>$5592.82</td>
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</table>

# Not yet spent.
## Summary of Sponsor Cash Contributions

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<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Source</th>
<th>Date</th>
<th>Income</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Contribution for prizes and workshop</td>
<td>USU College of Science</td>
<td>2/26</td>
<td>$1250.00</td>
</tr>
<tr>
<td>2</td>
<td>Contribution for t-shirts</td>
<td>Boeing Corp.</td>
<td>4/22</td>
<td>$2000.00</td>
</tr>
<tr>
<td>3</td>
<td>Contributions for operations</td>
<td>Lagoon</td>
<td>4/06</td>
<td>$9000.00</td>
</tr>
<tr>
<td>4</td>
<td>Contribution for prizes</td>
<td>RMNSGC</td>
<td>02/02</td>
<td>$500.00</td>
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<tr>
<td>6</td>
<td>Contribution for prizes</td>
<td>ATK Space Systems</td>
<td>5/29</td>
<td>$500.00</td>
</tr>
<tr>
<td>7</td>
<td>Contribution for prizes</td>
<td>Micron</td>
<td>4/24</td>
<td>$0.00</td>
</tr>
<tr>
<td>8</td>
<td>Contribution for workshop</td>
<td>BEA</td>
<td>5/06</td>
<td>$1000.00</td>
</tr>
<tr>
<td>9</td>
<td>Contribution for prizes</td>
<td>INL(BEA)</td>
<td>5/29</td>
<td>$1000.00</td>
</tr>
<tr>
<td>10</td>
<td>Contribution for prizes</td>
<td>Portage</td>
<td>5/08</td>
<td>$500.00</td>
</tr>
<tr>
<td>11</td>
<td>Contribution for prizes</td>
<td>North Wind Environmental</td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>EIRMC</td>
<td>5/15</td>
<td>$100.00</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>USU Space Dynamics Lab</td>
<td>6/15</td>
<td>$500.00</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>PTC</td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Navy</td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>IM Flash Technologie (micron)s</td>
<td></td>
<td>$0.00</td>
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<tr>
<td></td>
<td></td>
<td>Moog Aircraft</td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>USU College of Education</td>
<td>*</td>
<td>$750.00</td>
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</table>

Total Cash Contributions $17100.00

* Support committed, but not yet received.
<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Source</th>
<th>Date</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prizes: 6 Four-Year Scholarships ($19,312 each in state, $55,201 each out-of-state)</td>
<td>USU Admissions Office</td>
<td>3/09</td>
<td>$115,372.00</td>
</tr>
<tr>
<td>2</td>
<td>Prizes: Calculators, T-shirts etc.</td>
<td>INL</td>
<td>4/09</td>
<td>$1062.00</td>
</tr>
<tr>
<td>3</td>
<td>Prizes: Highlighters, etc</td>
<td>ATK</td>
<td>4/09</td>
<td>$0</td>
</tr>
<tr>
<td>4</td>
<td>Prizes: Water bottles, etc.</td>
<td>US Navy</td>
<td>4/09</td>
<td>$100.00</td>
</tr>
<tr>
<td>5</td>
<td>Prizes: 250 Day Passes</td>
<td>Lagoon</td>
<td>4/09</td>
<td>$11,250.00</td>
</tr>
<tr>
<td>6</td>
<td>Prizes: 20 Season Passes</td>
<td>Lagoon</td>
<td>4/09</td>
<td>$2040.00</td>
</tr>
<tr>
<td>7</td>
<td>Prizes: Mathcad and Pro Engineer</td>
<td>PTC</td>
<td>4/09</td>
<td>$10,480.00</td>
</tr>
<tr>
<td></td>
<td>Prizes: Flash Drives</td>
<td>IM Flash</td>
<td>5/09</td>
<td>$200.00</td>
</tr>
<tr>
<td></td>
<td>In-Kind Prizes Subtotal</td>
<td></td>
<td>4/09</td>
<td>$140,504.00</td>
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<tr>
<td></td>
<td><strong>Total In-Kind Prizes</strong></td>
<td></td>
<td></td>
<td><strong>$140,504</strong></td>
</tr>
</tbody>
</table>
# Physics Day at Lagoon 2009 School Prizes

## First Place

**Teachers**
- 2 Kick Disk Power Pucks
- Lagoon Day Pass
- 2005 Physics Day T-Shirt

**Students**
- Mirascope
- Gyro Ring
- Globe Strobe
- Lagoon Day Pass
- 2009 Physics Day T-Shirt

## Second Place

**Teachers**
- Nightstar Flashlight
- Hand Held DC Generator
- Buzz Magnets
- Lagoon Day Pass
- 2005 Physics Day T-Shirt

**Students**
- Neutron Stunt Top
- Globe Strobe
- Lagoon Day Pass
- 2009 Physics Day T-Shirt

## Third Place

**Teachers**
- Gyro Ring
- 2 Rattlebacks
- Flip ‘n Flyer
- Lagoon Day Pass
- 2005 Physics Day T-Shirt

**Students**
- i-top
- Lagoon Day Pass
- 2009 Physics Day T-Shirt
PHYSICS DAY AT LAGOON 2009

PRIZES FOR STUDENT WORKBOOKS

STUDENTS SUBMITTING STUDENT WORKBOOKS WILL RECEIVE AN OPPORTUNITY TO PARTICIPATE IN A RANDOM DRAWING

HUNDREDS OF PRIZES INCLUDE

10 SEASON PASSES TO LAGOON
25 DAY PASSES TO LAGOON
OTHER GREAT PRIZES

and

Candy for Every Entry!!!
UTAH STATE UNIVERSITY
PHYSICS DAY at LAGOON

CONTEST WINNERS (2009)

PHYSICS BOWL

**First Place:**
Riverton High School
Mr. Justis, Advisor
12575 S Silverwolfway
Riverton, UT 84065

Samuel White
Riverton, UT 84096

Nathan Burton
Riverton, UT 84065

Ryan Carlsen
Riverton, UT 84065

**Third Place:**
Viewmont High School
Mrs. Colister, Advisor
120 W 1000 N
Bountiful, UT 84010

Jeremy Dalrymple
Centerville, UT

Logan Gunner
Bountiful, UT

Marcus Murdock
Bountiful, UT

**Second Place:**
Mountain View High School
Mrs. Russo, Advisors
665 W Center St
Orem, UT 84058

Justin Liu
Orem, UT 84058

Elise Meiners
Orem, UT 84058

Emily Lazalde
Lindon, UT 84042

**Fourth Place:**
Weber High School
Mr. Hales, Advisor
3650 N 500 W
Pleasant View, UT 84414

Peter Hartuigsen
North Ogden, UT

Jacquelyn Jones
North Ogden, UT

Jared Baxter
North Ogden, UT
PHYSICS DEMONSTRATION DESIGN CONTEST
HIGH SCHOOL DIVISION

First Place:
Century High School
Deborah Hobdey, Advisor
7801 Diamondback Dr
Pocatello, ID  84003

Second Place:
Century High School
Deborah Hobdey, Advisor

Third Place:
Century High School
Deborah Hobdey, Advisor
7801 Diamondback Dr
Pocatello, ID  84003

PHYSICS DEMONSTRATION DESIGN CONTEST
MIDDLE/JUNIOR HIGH SCHOOL DIVISION

First Place:
Kaysville Jr. High School
Mark Tolman, Advisor
100 E 350 S
Kaysville, UT 84837

Second Place:
Kaysville Junior High School
Mark Tolman, Advisor

Third Place:
Grantsville Junior High
Carol Huston, Advisor
308 S Hale St
Grantsville, UT 84029
**RIDE DESIGN CONTEST**

**HIGH SCHOOL DIVISION**

**First Place:**
Wasatch High School  
Mr. Cowan, Advisor  
64 E 600 S  
Heber City, UT 84032

“Curse of Timpanogos”

Taylor Baird

**Second Place:**
Logan High School  
Kellie Yates, Advisor  
162 W 100 S  
Logan, UT  84321

“Side Winder”

Christian Seitter  
Bradles Knowlton  
Diya Zivo

**Third Place:**
Intech Collegiate High School  
Dr. Stephanie Kawamura, Advisor  
1787 N Research Parkway  
North Logan, UT 84341

“Monu Mountain”

AJ Bendal

--

**RIDE DESIGN CONTEST**

**MIDDLE/JUNIOR HIGH SCHOOL DIVISION**

**First Place:**
North Layton Jr. High School  
Michael Archibald, Advisor  
1100 W 2000 N  
Layton, UT 84041

“Archicoaster”

Sage Harrison  
Julie Torig  
McKayla Chaffee  
Sara Bowker

**Second Place:**
Kaysville Junior High School  
Mark Tolman, Advisors  
100 E 350 S  
Kaysville, UT 84837

“Underwater Rollercoaster”

Lindsey Greer

**Third Place:**
Kaysville Junior High School  
Mark Tolman, Advisors  
100 E 350 S  
Kaysville, UT 84837

“The Knott”

Brianne Condie  
Katelyn Blood
LOGO DESIGN CONTEST
HIGH SCHOOL DIVISION

First Place:
InTech Collegiate High School
Dr. Stephanie Kawamura, Advisor
1787 Research Parkway
North Logan, UT 84341

Marcquessa Kaniip-Johnson

Second Place:
InTech Collegiate High School
Dr. Stephanie Kawamura, Advisor
1787 Research Parkway
North Logan, UT 84341

Musa Abdullahi

Third Place:
InTech Collegiate High School
Dr. Stephanie Kawamura, Advisor
1787 Research Parkway
North Logan, UT 84341

Sahn Woo Park

LOGO DESIGN CONTEST
MIDDLE/JUNIOR HIGH SCHOOL DIVISION

First Place:
Kaysville Junior High School
Mark Tolman, Advisor
100 E. 350 S.
Kaysville, UT 84037

Taylor Edwards

Layton, UT 84041

Janey Maher

Third Place:
Bountiful Junior High School
Deanne Maggio, Advisor
30 W 200 N
Bountiful, UT 84010

Jayden Jones

Mark Macklyn
COLOSSUS’ COLOSSAL G-FORCES CONTEST
HIGH SCHOOL DIVISION

First Place:
InTech High School
Dr. Stephanie Kawamura, Advisor
1787 Research Parkway
North Logan, UT 84341

Dylan Durrant

Second Place:

Third Place:

COLOSSUS’ COLOSSAL G-FORCES CONTEST
MIDDLE/JUNIOR HIGH SCHOOL DIVISION

First Place:
Churchill Junior High School
Brian Lestarge, Advisor
1632 S Stewart St
Salt Lake City, UT 84104

Comib Elias
Anita Lin
Maddy Jensen
Emma Larson
Jordan Keller

Second Place:
Burley Junior High School
Carrie Carson, Advisor

Tucker Lechemmant
Dominic Shaw
John Lenkersplorker

Third Place:

Churchill Junior High School
Brian Lestrange, Advisor
1632 S Stewart St
Salt Lake City, UT 84104

Tyler Pistorzus
Brenner Birth
2009 Logo Contest Winners

High School Winners

First Place
Marcquessa Kanip-Johnson
InTech Collegiate High School
Dr. Stephanie Kawamura,

Second Place
Musa Abdullahi
InTech Collegiate High School
Dr. Stephanie Kawamura,

Third Place
Sahn Woo Park
Brighton High School
Doug Baird, Advisor

Middle School Winners

First Place
Taylor Edwards
Kaysville Junior High
Mark Tolman, Advisor

Second Place
Janey Maher
North Layton Junior High
Deborah Patterniti, Advisor

Third Place
Jayden Jones
Bountiful Junior High School
Deanne Maggio, Advisor
The value of the scholarships will vary depending on whether the student is a resident or nonresident (resident $13,000 ea., nonres. $20,600 ea.). If the 1st place winners (3) and second place (3) are all nonresident students and they all come to USU, the total amount would total $123,600. We would like to add a bonus for the 1st place winners of a $500 book scholarship for each if the Bookstore comes through. We are still waiting on them to decide. If they do, it would add $1,500 to the total possible value of the prizes offered ($125,100).

Marie has agreed to donate $1500 this year. She wanted $1000 to go toward higher education for deserving students but since last year it was a challenge to link scholarship money to a winning contestant, I had an idea. I thought we could use the money we set aside as scholarship money last year to be used as prize money but specifically make these prizes $250 gift certificates to Textbook.com. This way it would help students with their college expenses but not create such an administrative burden for your department. Mrs. Putnam was excited about the idea.

I hope this will be acceptable to the requirements of the USU as well. In short, Marie would like $500 to be allocated to the general fund and $1000 be divided into gift certificates to textbook.com. What are your thoughts on this plan?