In this issue:

1. 23rd Annual Spring Research Conference

2. Important Dates

3. Student Employee of the Year: Hollie Irving

4. SRC Winners

3. Art Benjamin: Mathemagician!

4. BYU Professor Shows Which Way the Wind Blows on Saturn’s Largest Moon

4. College Publications

Spring Research Conference 2009

The College’s 23rd annual Spring Research Conference (SRC) was held from 8 a.m. to 2 p.m. on Saturday, March 21. The SRC gives students, both undergraduate and graduate, a chance to present the results of their research from the previous year. Each student participant had twelve minutes to present his or her research, with three minutes afterward to answer questions from the audience and session judges. Students were judged on organization, verbal presentation, visual presentation, the content of the research, and the impact of the research on society1. This year, over 300 students presented their original research in a variety of fields.

The conference also held a special session for high school students from 10:00 am to 1:00 pm on the same day. This session included free t-shirts, a drawing for a free iPod, and pizza. The titles were as follows:

- “DNA Origami” — Chemistry and Biochemistry
- “Active Learning in Computers” — Computer Science
- “Exploring Io, Jupiter’s Volcanic Moon” — Geological Sciences
- “Why Mathematicians Play With Bubbles” — Mathematics
- “CRT: Risky Business” — Mathematics Education
- “Ultraviolet Optics: Magnetospheres And Solar Flares” — Physics and Astronomy
- “Adaptive Clinical Trials: Don’t Stick To The Status Quo” — Statistics

(The winners of the Spring Research Conference can be found on page two.)

2http://byunews.byu.edu/archive09-mar-springconf.aspx
Important Dates & Events in the College
April 2009

Wednesday, April 8th
Chemistry/Biochemistry Awards Banquet
3220-3222 WSC
5:45 PM
RSVP to Janet Fonoimoana

Friday, April 10th
Geology Awards Banquet
Skyroom
6:30 PM

Tuesday, April 14th
Last Day of Class—Winter

Wednesday/Thursday, April 15th-16th
Reading Days

Thursday, April 23rd
Commencement

Friday, April 24th
Convocation
WSC Ballroom
8:00 AM

Tuesday, April 28th
First Day of Class—Spring

Student Employee of the Year: Hollie Irving

Hollie Irving, Student Budget Assistant for the Physics and Astronomy Department, was awarded the Brigham Young University Student Employee of the Year on March 31, 2009, and received a plaque and BYU Cougar blanket. In addition to the BYU Student of the Year, Hollie was also awarded the Utah State Student Employee of the Year Award by the Western Association of Student Employment Administrators, and received a plaque and stipend. Hollie's nomination has now been submitted to the regional competition for their consideration.

Hollie's employer, Nan Ah You, reports that Hollie is a very motivated and determined person, and is always anxious to get things done. "She has added valuable input regarding department procedures and has enhanced department programs. She also recently created a check-list process for student employees to eliminate in-house errors with paymentnet. This process not only eliminated careless errors, but also helped to identify problems different student employees were having so that the issues could be addressed and further training provided. Hollie visualizes the needs of students and the Department of Physics and Astronomy personnel."

An example of Hollie's team spirit was described as follows, "We had a bus taking faculty members and students to a conference in El Paso, Texas. There was not time for the bus to stop for meals, reach the conference on time, and keep the bus charges within budget. Her supervisor chose to be at work at 3:00 am. to prepare meals for those traveling and Hollie was the only student worker who volunteered to assist her (she was not asked to volunteer). Without her assistance it would have been difficult for all of the Department goals to have been met."

Along with the above information, Hollie is reported to be valiant in the Gospel, smart, considerate, and an exceptional problem solver. She is extremely respected by her peers and co-workers and shows equal respect to everyone. She is hard working, well groomed, and trustworthy in all walks of life. She not only brings efficiency to the work place, but also happiness to those around her.

The college wishes to join the Department of Physics and Astronomy in congratulating Hollie on her well-deserved awards.

Spring Research Conference Winners

Chemistry & Biochemistry
- Elisabeth Pound
- Changna Wang
- Jie Xuan
- Thomas Ence
- Jon Low
- Michael Wood
- Na Li
- Allen Nicholson
- Marie Chilton

Geological Sciences
- John Hoopes
- Landon Burgener
- Colton Goodrich
- Christopher Spencer

Mathematics
- Skylar Simmons
- Mark Meilstrup
- Emma Turner
- Mark Kempton
- Drew Johnson
- Sijin Chen

Computer Science
- Kenneth Sundberg
- Maria Soledad Pera
- Joseph Butler
- Paul Felt
- Adam Drake
- Nathan Rasmussen
- John (Alan) Atherton
- William Lund

Physics & Astronomy
- Adam Hall
- Nicholas Morrill
- Brian Wilcken
- Chris Verhaaren
- Jun Song
- Daniel Wilcox
- David Krueger
- Steven Allen
- Brian Davis
- Joseph Nelson

Mathematics Education
- John Gruver
- Erin Sorensen

Statistics
- Erica Hernandez
- Tomo Funai
- Andrea Thomas
- Rachel Poulsen
BYU geologist Jani Radebaugh is part of a team that mapped the vast sand dunes of Titan with four years of radar data collected by the Cassini spacecraft.

— Joe Hadfield, BYU News

Titan’s vast dune fields, which may act like weather vanes to determine general wind direction on Saturn’s biggest moon, have been mapped by scientists who compiled four years of radar data collected by the Cassini spacecraft.

Titan’s rippled dunes are generally oriented east-west. Surprisingly, their orientation and characteristics indicate that near the surface, Titan’s winds blow toward the east instead of toward the west. This means that Titan’s surface winds blow opposite the direction suggested by previous global circulation models of Titan.

“At Titan there are very few clouds, so determining which way the wind blows is not an easy thing, but by tracking the direction in which Titan’s sand dunes form, we get some insight into the global wind pattern,” says Ralph Lorenz, Cassini radar scientist at Johns Hopkins University Applied Physics Laboratory in Laurel, Md. "Think of the dunes sort of like a weather vane, pointing us to the direction the winds are blowing." A paper based on these findings appeared in the Feb. 11 issue of Geophysical Research Letters.

"Titan's dunes are young, dynamic features that interact with topographic obstacles and give us clues about the wind regimes," said Jani Radebaugh, Brigham Young University, Provo, Utah. "Winds come at these dunes from at least a couple of different directions, but then combine to create the overall dune orientation."

The new map, based on all the high-resolution radar data collected during a four-year period, is now available at: http://saturn.jpl.nasa.gov and http://www.nasa.gov/cassini.

The wind pattern is important for planning future Titan explorations that might involve balloon-borne experiments. Some 16,000 dune segments were mapped out from about 20 radar images, digitized and combined to produce the new map.

For the full article from NASA, please see http://www.jpl.nasa.gov/news/news.cfm?release=2009-032

Art Benjamin: Mathemagician!

On April 1st, 2009 at 8:00 pm in 140 JSB, BYU will have the opportunity to enjoy Arthur Benjamin’s unique presentation.

“Dr. Arthur Benjamin is both a professor of mathematics and a magician. He has combined his two loves to create a dynamic presentation called "Mathemagics," suitable for all audiences, where he demonstrates and explains his secrets for performing rapid mental calculations faster than a calculator. Reader’s Digest calls him "America's Best Math Whiz". He has presented his high energy talk on over a thousand occasions to audiences throughout the world.


For more information, see https://math.byu.edu/home/colloquia/event/26
Chemistry & Biochemistry


Computer Science

Mathematics

Mathematics Education

Physics and Astronomy

Statistics

Geological Sciences