

## Don't Call Them Geeks



Some 6,500 teens from Utah, Idaho, Wyoming, Nevada and Arizona will attend USU's 2006 Physics Day.



Olympic gold medalist Julia Mancuso is a former Physics Day enthusiast. Photo courtesy of the U.S. Ski Team.

*Who'd a-thunk it??* Before they were gold medal stars of Torino's 2006 Winter Olympics, U.S. skiers Julia Mancuso and Ted Ligety teamed up in 2000 for a USU Physics Day project.

The dynamic competitors were high school classmates at Park City, Utah's Winter Sports School. The small private academy holds classes from April to November to accommodate the busy training schedules of budding winter athletes.

Physics Day, initiated by USU's physics department in 1989, currently draws some 6,500 middle and high school students each May, accompanied by more than 300 teachers, from Utah and surrounding states to Davis County's Lagoon amusement park. This year's gathering, set for Friday, May 19, promises another well-attended round of hands-on learning experiences, academic competition and fun.

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Champion skier Ted Ligety

participated in Physics Day 2000's ride design contest. Photo courtesy of the U.S. Ski Team.

“We estimate that more than 65,000 students have attended Physics Day over the years,” says J.R. Dennison, USU physics professor and a founding organizer of the event. “What better laboratory to entice young people than an amusement park?”

USU coordinates the day-long extravaganza with partner Idaho National Laboratory. In addition to a Physics Bowl academic competition, and logo, demonstration and ride design contests, the day's activities include experiments performed directly

on the park's rides. Students build their own accelerometers to measure G-forces on the Colossus roller coaster and design their own protective containers to drop a raw egg to a ground target from a moving car on the Sky Coaster.

The Sky Drop Contest, which involves dropping an egg bombardier-style, without breaking it, from a 15-meter-high ride, was new to last year's Physics Day. Designed by USU physics education student Amanda Otterstrom as her senior project, the contest was a big hit, says Dennison.

“We had 992 participants, who dropped eggs about every 20 seconds for almost three hours,” he says. “Only about 15 percent of the eggs survived the fall, but we were impressed by the enthusiasm of the contenders.”

Participation, sponsorship, activities and prizes for the event have steadily grown during the past 17 years. This year, as it did last year, USU's admissions office offers four-year scholarships to the top six Physics Bowl competitors. An additional scholarship is offered to a participating student from the Idaho Falls area by USU supporter Marie Putnam. More than \$22,000 in prizes will go to other contest winners.

While the day includes a boatload of conventional amusement park fun, Dennison says it's gratifying to hear youngsters' lively discussions about free fall, drag forces, projectile motion, energy conservation, impulse, gravity and centrifugal force. “Who says physics has to be dull?”

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In addition to INL, USU's admissions office and Putnam, Physics Day sponsors include ATK Launch Systems, Boeing, Idaho NASA Space Grant Consortium, IM Flash Technologies, Lagoon, Mathsoft Engineering and Education, Micron, Moog Aircraft, North Wind Environmental, Rocky Mountain NASA Space Grant Consortium, SAIC, S&S Power, the U.S. Navy, and the USU College of Science. Numerous volunteers tackle registration, organization and contest judging, including 90 faculty and staff members and students from USU's physics department.

So what was Ligety and Mancuso's Physics Day project? The two were members of a team that placed third with their "Big K" entry in the ride design contest. "I really don't remember (the project)," says Ligety's mom, Cyndi Sharp. "Ted was good at math and science and thought he might like to study engineering in college."

David Seiger, Ligety and Mancuso's physics teacher who mentored their project, passed away last year, says Winter Sports School Headmaster Rob Clayton.

At the Torino games, Ligety and Mancuso bested their favored teammates and foreign competitors in two alpine skiing events. The youngest member of the U.S. men's squad, Ligety, 21, captured gold in the combined. Mancuso, 22, became the first American woman since 1984 (her year of birth) to win Olympic gold in the women's giant slalom.

The two skiers were the only two Americans to win medals in alpine skiing events in Torino.

Clayton says students from the Winter Sports School will be in attendance at this year's Physics Day. Perhaps we'll cheer alumni of Physics Day 2006 to victory at the 2010 Winter Olympics in Vancouver.

Contact: J.R. Dennison, 435-797-2936; [jr.dennison@usu.edu](mailto:jr.dennison@usu.edu)

Writer: Mary-Ann Muffoletto, 435-797-1429; [maryann.muffoletto@usu.edu](mailto:maryann.muffoletto@usu.edu)

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