Winning is second nature | Day school has proud tradition at science fair:[1,2,6,7 Edition]

Bruce Lieberman. **The San Diego Union - Tribune**. San Diego, Calif.: Mar 26, 2004. pg. B.1

Full Text (1272 words)

Editions vary | For charts see end of text.

Back in the seventh grade, Abraham Broudy embarked on a science project to see the degree to which different colors of light promoted the growth of fungus.

The question was straightforward: could colors, each with discrete wavelengths, influence growth of an organism differently?

"I think it didn't much matter," Broudy said recently, laughing at the ambitious but imprecise nature of his experiment.

Still, the project offered one of many moments at the Soille San Diego Hebrew Day School, and at the annual Greater San Diego Science and Engineering Fair, that inspired the teenager to pursue a career in medicine.

Broudy, now 31 and a pediatrician in Chula Vista, tells of inspiration that has been repeated many times at the private religious school, one of the science fair's largest and most consistent sources of talent.

"Hebrew Day as always had a strong science department," Broudy said of his old school, which celebrated its 40-year anniversary last year and has competed in the county science fair for years. "The teachers have always been fabulous."

On the 50th anniversary of the fair, being held this week at the Balboa Park Activity Center, the school offers an example of how science education and the fair have motivated young people to nurture their curiosity of the world around them.

Top winners among the near 730 entrants to this year's fair are displaying their projects today at the Activity Center. They will advance to national and international competitions later this spring.

The day school, a preschool-through-eighth-grade private school in Kearny Mesa, takes the county science fair seriously.

The fair is open to seventh-graders, but Julie Reynolds, the school's science teacher, chooses to assign her seventh-graders "in- house" science projects to introduce them to the rigors of entering the fair the following year.

For an assignment called "Exploratorium," Reynolds assigns seventh-graders to research a topic, write a paper, display their experiment and give a lecture to fifth- and sixth-graders.

"I want them to do some kind of science research before they reach the eighth grade," Reynolds said.

The preparation has paid off well.

This year, county fair screeners selected 20 out of 23 projects at the school to compete in the fair. The school garnered 23 awards, said its headmaster, Rabbi Simcha Weiser.

Last year, all 25 of the school's projects were selected for competition, and all won awards. In 2002, all 12 were selected for competition and all won awards. Reynolds also that year was named "San Diego and Imperial Counties Science Teacher of the Year."

Hebrew Day School's tradition of a strong science curriculum goes back many years, Weiser said.

"Some people approach this school by saying, 'Aren't there basic conflicts between religion and science? How can you really embrace both?'

The fact is, that attitude is not an attitude that's represented here at Hebrew Day School at all," Weiser said. "The energy of exploration, of really investigating the world around you . . . is something which we really try very hard here to have happen."

Reynolds starts the students off early, introducing sixth- graders to the scientific method, the basics of chemistry, and space and Earth sciences.

Seventh-graders tackle biology, performing five dissections during the year, and complete their in-house science projects.

In eighth grade, students dive into physics. Reynolds teaches them about speed, motion and acceleration during a field trip to a roller coaster. Later, they learn about air and water pressure, and work, power and the physics of simple machines.

Eighth-grade science also is heavy on the science fair. Reynolds expects her students to prepare three proposals, each one progressively more detailed and sophisticated, detailing how they'll tackle a scientific problem. They prepare written reports and discuss their project in a conference with her.

She then takes them to the library, showing them how to use various research tools. The students also are assigned to seek out a working scientist to mentor them on their project. Reynolds offers contacts, but the eighth-graders also are expected to use the Internet and call professors at UCSD.

Reynolds, the 28-year-old daughter of an astrophysicist at the University of Wisconsin, said her students are inspired.

"Every kid is born with what they've got, but these kids are very motivated," she said. "They have great support at home."

Zac Jurkowski, a 13-year-old eighth-grader, is one of them. His father, Len, a family physician at Scripps Memorial Hospital in La Jolla, heaps credit on Reynolds and his son's mentor, scientist Ben Cravatt at The Scripps Research Institute in La Jolla.

Reynolds, he said, has driven Zac to Cravatt's lab every Monday after school, often staying there with him for two hours until he arrived to pick up Zac.

"He'd get in the car and could barely put into words what he did that day, he was so excited," Jurkowski said.

Zac, who said he wants to be a surgeon, has entered a science project in this week's county fair that compares bacteria buildup in two kinds of plastic water bottles -- the kind with a pop-up sports top and the kind with a twist-off cap.

Working in Cravatt's lab, the teen measured bacteria that grows in each bottle after four days. The result? Stay away from bottles with twist-off caps, or at least don't let them sit around half empty for days at a time. Zac has hypothesized that twist-off caps allow more saliva -- a breeding ground for all kinds of bacteria -- into the bottle.

Despite his effort, Zac this week said he faced some stiff competition.

"It's pretty complex stuff," he said of other science fair projects he saw during the fair's setup day Tuesday. "It's going to be difficult."

Sponsors of the Greater San Diego Science and Engineering fair include The San Diego Union-Tribune, the Biomedical Research Institute of America, the Intel Corporation, Qualcomm, the San Diego Community Foundation-Weingart Price Fund, and the San Diego County Water Authority.

Sweepstakes award winners

SENIOR DIVISION

Tarang Luthra, Torrey Pines High School

Edith Pierre-Jerome, Mt. Miguel High School

Ryan Short, Torrey Pines High School

Jessica Rucker, Torrey Pines High School

JUNIOR DIVISION

Kevin Kennedy, Diegueno Junior High School

Samuel Spevack, Hillsdale Middle School

Jacob Rucker, Rhoades School

Rachel Brown, Marshall Middle School

Science fair at a glance

WHEN: Today: 9 a.m. to 5 p.m. Tomorrow: 10 a.m. to 5 p.m. Sunday: 10 a.m. to 3 p.m.

WHERE: Balboa Park Activity Center, 2145 Park Blvd. (corner of Park Boulevard and Inspiration Park Way)

WHO: Nearly 730 students from San Diego and Imperial counties exhibit their projects in subjects ranging from genetics to physics to engineering.

FAMILY DAY: Tomorrow. Open exhibit hall, entertainment from the San Diego Zoo, Biomed science shows, a scavenger hunt and raffle prizes.

For more information, see www.gsdsef.org Bruce Lieberman: (619) 293-2836; bruce.lieberman@uniontrib.com

[Illustration]
3 PICS | 2 CHARTS; Caption: 1. Soille San Diego Hebrew Day School eighth-graders Daniel Bortz (left) and Zac Jurkowski studied color theory. For years, Hebrew Day School students have done well in the Greater San Diego Science and Engineering Fair, being held this week in Balboa Park. (B-1:1,6,7;B-10:2) 2. Soille San Diego Hebrew Day School eighth- graders Carolyn Goldenberg (left) and Sarah Alpert studied how water affects ink during an experiment in science class. (B-1:1,2,6,7) 3. A Soille San Diego Hebrew Day School eighth-grade science class studied color theory. The private Kearny Mesa school celebrated its 40-year anniversary last year and has competed in the county science fair for years. (B-4:1,6) 4. Sweepstakes award winners (B-4:1,6,7; B-10:2) 5. Science fair at a glance (B-4:1,6,7; B-10:2); Credit: 1,2,3. Laura Embry / Union-Tribune photos

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