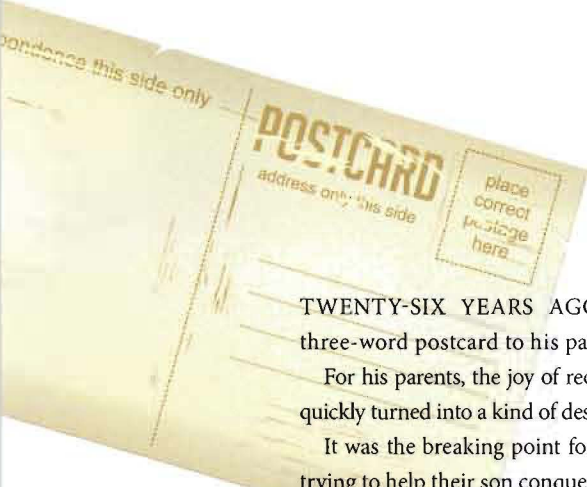


DYSLEXIA TO DESIGN

PROFESSOR PIONEERS NEW LEARNING SYNERGY

BY PAT KETCHUM



TWENTY-SIX YEARS AGO, Louis Rosenberg wrote a three-word postcard to his parents from summer camp.

For his parents, the joy of receiving a dispatch from their son quickly turned into a kind of despair – all three words had errors.

It was the breaking point for the Rosenbergs. After years of trying to help their son conquer his dyslexia, they tried another tack, at Louis's request.

“When I said I wanted a computer, my parents paid attention – even though they had no idea what one was, except that it was really expensive,” Rosenberg recalls.

It was 1980, when computers were scarce even in the workplace. Yet it was an immediate mind meld with the machine for the young student, who was soon teaching himself to write programs. “If I spelled things wrong it would give me a syntax error and let me try again,” he said, adding “that’s a helpful feature for someone who is dyslexic.”

In the following years, Rosenberg developed into a straight-A student. As his programming skills improved, so did his self-esteem. By age 16, he joined the high-tech work force, developing his own line of educational software.

One full academic scholarship, two successful start-up companies, three degrees from Stanford, and more than 100 patents later, Rosenberg landed at Cal Poly.

His role on campus is groundbreaking. An engineering whiz devoted to helping children learn, Rosenberg is a professor of educational technology for both the College of Education and the College of Engineering. It is the university's first joint appointment.

Rosenberg is in sync with how students learn in the 21st century, according to Dean Bonnie Konopak of the College

of Education. “He provides a critical bridge between the polytechnic colleges and teacher education at Cal Poly. His joint appointment is just the beginning of an ongoing collaboration between education and engineering.”

To nurture such synergy, Rosenberg combines innovative technologies with learning environments. The result is the development of a Center for Exhibit Design, where students create high-tech exhibits for children's museums and learning institutions throughout California.

Steer a mock submarine through underwater caverns using a robotic camera or learn about marine life in a “real time” tide pool in a huge wave tank – these are two engineering students' state-of-the-art creations on display at the new Avila Beach Marine Institute.

Institute founder Jim Bucheri says the students' exhibits are already making big waves in Avila Beach and in the Southern California marine community. “My colleagues at the Cabrillo Aquarium in San Pedro were so impressed with the design of the underwater robotic camera, they're now having one created for them by Cal Poly.”

Engineering senior Drew Gray is busy this quarter designing the camera for the Cabrillo Aquarium. It's the perfect project for this “mechatronics” major who marvels that his invention will be showcased for years to come. “I someday want to bring my own children to see what I built.”

Anyone who has ever wished that a child's boundless energy could be channeled to light the house will get a kick out of the Energy of Motion Exhibit at the soon-to-open San Luis Obispo Children's Museum. Cal Poly students are designing energy meters that will clip onto children's clothing, documenting the

(Top) Rendering of an exhibit being developed by Louis Rosenberg's students for the Avila Beach Marine Institute - a "Magic Portal," a Virtual Telescope and an Underwater Robotic Camera (Middle) Rosenberg, (Bottom, L-R) mechanical engineering students Joe Walsh and Adam Tanner with their "Plankton Viewing" exhibit at the Port San Luis Marine Institute in Avila Beach, CA.



amount of energy the child generates exploring the museum.

Giving new meaning to the idiom "Flower Power," engineering students have also developed a 30-foot-tall interactive solar sunflower for the children's museum. It demonstrates solar power as a renewable energy source in a way that kids will love: Aim the freely rotating flower at the sun, and three-foot streams of water shoot into the air.

Sunflower techno-artists Rachel Santee, Steve Teran and Kyle Hayes all agree the seemingly simple sunflower is a complex learning tool. Its design incorporates all four years of their mechanical engineering curriculum, including dynamics, statics, fluids, electronics and even vibration analysis.

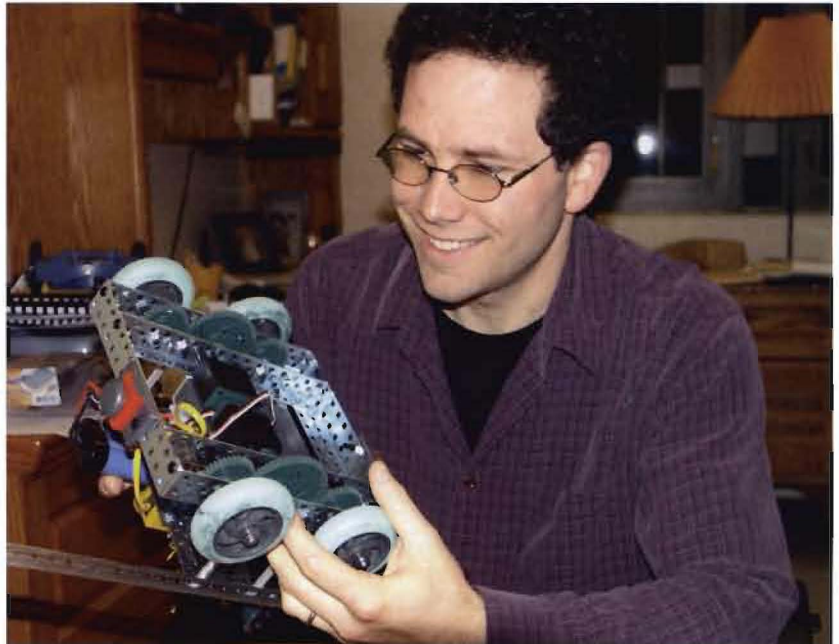
It's a good thing one of the developers of the museum's clay-mation exhibit loves to get his hands dirty. College of Education grad student Steve Rotondo says kids will be able to make short animated films of lava flow with a computer while developing critical math, logic, creativity and thinking skills.

"A three-way win" is how Roy Mueller, executive director of the museum, describes the collaboration.

"Students gain real-world experience from designing and fabricating exhibits – and we benefit from some very creative thinkers and reduced labor costs. Most importantly, the children and families will be exposed to fantastic learning experiences at the new museum," he added.

Rosenberg marvels at the opportunities that have come his way.

A firm believer in the power of technology to help people learn, he says his career has allowed him to focus on studying human perception, bending the rules, twisting the perspective – and using his personal experiences with dyslexia as a source of insight. □



(Photo by Pat Ketchum)



(Photo by Dennis Steers, College of Engineering)