

N E W S R E L E A S E

March 14, 2005

Caltech fluid dynamics expert wins annual Feynman Award for excellence in teaching

PASADENA, Calif.-Chris Brennen has many pleasant memories of the "frosh camp" trips he used to make to Catalina Island with famed physicist Richard Feynman. As two California Institute of Technology faculty members who were particularly willing to accompany the new crop of Caltech freshmen on the annual orientation trip, Brennen and Feynman shared various interesting experiences at the rustic Camp Fox.

"I remember him sitting on the low stone wall at Camp Fox surrounded by maybe a hundred frosh," says Brennen, a professor of mechanical engineering, "all enthralled by his stories of particle physics, or lock picking, or Mayan hieroglyphics, or whatever."

Now, two decades later and 16 years after the passing of his friend, Brennen has been named winner of the annual Feynman Prize, which is Caltech's most prestigious teaching honor. The prize is given to a faculty member each year for "exceptional ability, creativity, and innovation in both laboratory and classroom instruction."

Brennen is known to the student body as an especially lucid and helpful teacher of fluid mechanics, which is a crucial field for any future engineer to master if he or she intends to work in pretty much any technical application that concerns their flow. The rudiments of fluid mechanics were important to the Wright brothers, and are just as important today to the designers of Mars landers-and someday, perhaps even to the designers of future Europa submarines. Brennen himself has done research on one of the components of the space shuttle's engine, and his interests generally center on the still-imperfectly understood issues of complex multiphase and multicomponent flows.

"These are a ubiquitous part of almost all existing and projected energy systems, yet our understanding of these flows is inadequate for many engineering purposes," Brennen writes on his Web site.

Brennen's research also involves acoustics, and one of the students nominating him for the Feynman Award recalls a student field trip to the Mojave Desert, where the group hiked up several miles to the top of a sand dune, then slid back down to cause the dunes to "boom."

"Professor Brennen's enthusiasm, even in hundred-degree-plus temperatures, was an inspiration," the student said in nominating him. "His scientific intuition in the field taught me a lot."

Another student applauded Brennen's "perpetual enthusiasm that kept me interested through unavoidably dry material." Yet another remarked that he'll never forget Brennen, "dressed up in a suit, riding a bike into the swimming pool at the year-end swimming party-that is, the year-end real-life experimental laboratory in fluid mechanics, where the undergrads compete in underwater bicycle racing."

As for his faculty peers, Caltech mechanical engineering professor Melany Hunt notes that Brennen "has shown us the importance of connecting with students, of encouraging their interests and their abilities, and of enjoying and appreciating student-faculty interactions.

"He has also demonstrated that it is okay to be a little crazy-such as riding a bicycle into a swimming pool-especially if it helps students to appreciate the wonder of fluid mechanics and engineering."

The bicycle stunt is a Brennen original, but is very much in keeping with the spirit and enthusiasm of the Nobel laureate for whom the award is named. Brennen says he is thrilled to be associated with Feynman through the award.

"I regard myself as being truly blessed to have lived out my career at this unique institution, to have interacted with such inspiring colleagues and to have had the privilege of teaching the best students in the world," he says.

Contact: Robert Tindol
(626) 395-3631
tindol@caltech.edu