

LIMIT

LESSS



Whether they're hanging off a rock face or hanging ten atop a wave, Caltech and JPL scientists seem drawn to hard-core sports. Meet five of our most intrepid adventurers.

by Judy Hill



A

rock-climbing biologist. A JPL research scientist who unicycles up mountains in her spare time. An Earth scientist turned ultramarathoner.

Caltech is home to extreme athletes of every stripe, from runners to surfers to enough rock-jocks to support an active Alpine Club, whose members—mostly graduate students, postdocs, and faculty—gather regularly to plan trips, talk about technique, and watch rock-climbing movies.

What is it about feats of physical daring and endurance that calls so irresistibly to the science-and-engineering minded? Meeting just a sample of the hard-core competitors at Caltech and JPL provides a tantalizing glimpse of why the highest peaks and the longest trails beckon to those who otherwise spend their lives in labs.

Riding the Crest Rob Phillips

- > Fred and Nancy Morris Professor of Biophysics and Biology
- > **Surfer, mountaineer, snowboarder**

Phillips grew up in San Diego close to the beach, so surfing is something he has been “doing forever,” he says, noting that he feels most himself when he’s in the ocean.

“Surfing is one of those weird sports that causes people to be obsessive. It’s a dynamic environment. Every instant depends on the tide, the wind, the swell. To be in the ocean and to be a part of the ocean when it’s doing its thing is really so cool.”

Still, he says, “as I’ve gotten older, I’m a bit more grumpy in the water.” So, last year, Phillips traveled to Alaska to find his surfing sweet spot. “I try to go places where there’s no one else. In Alaska I found a place never surfed by anybody.” He has also sought surf nirvana in Sumatra, the Maldives, Biarritz, and—closer at hand—off Carpinteria State Beach in Santa Barbara County.



Pushing Past

Far left: Rob Phillips seeks surfing solitude in the Maldives. Kai Zinn, at left, shows his Caltech pride atop Tibet's Cho Oyu, with Everest in the background. Previous page: JPL scientist Susan Owen finishes the Angeles Crest 100.

On the connection between sports and science, Phillips says, “One of the things I notice about the people I admire the most in science is that they’re still in touch with a childlike enthusiasm, an intensity, a curiosity.”

Born to Climb

Kai Zinn

> Professor of Biology

> **Rock climber, mountaineer, mountain biker**

Zinn spent his childhood in Los Alamos, New Mexico, where cliffs rise up right at the edge of town. As a graduate student at Harvard, Zinn climbed frequently in New Hampshire with his then-girlfriend (and now wife), Pamela Bjorkman, Caltech’s Centennial Professor of Biology. After moving to California to become a Stanford postdoc, Zinn began tackling the big rock faces of Yosemite.

But when Zinn arrived at Caltech in 1989 to set up his lab, climbing took a back seat. With the advent of “sport climbing” in the ’90s—in which permanent bolts on a cliff face mark the route—he found his way back to the sport. “With that kind of climbing, you could go out with the family and bring the kids along,” he notes.

For a while, Williamson Rock in the San Gabriel Mountains was a popular spot for Zinn and his colleagues, who would get up at 5 a.m. once a week, climb for four hours, and make it back to campus by the afternoon.

When that rock was closed in 2005 to protect an endangered species of frog, Zinn found other climbs in Joshua Tree, around Bishop, and at a rock quarry in Riverside.

Today, although he climbs outdoors less—“There aren’t really any other people my age who do this stuff,” he laments—Zinn still visits the downtown LA Boulders rock gym three times a week. And, last year, he ascended Tibet’s Cho Oyu, the sixth-highest mountain in the world.

The appeal to a scientist, he says, is obvious. “Climbing is a way to focus your attention entirely and intensely on one thing. Also, a climb is like a puzzle. When you rehearse a move, you’re creating an engram—a sequence of muscle movements, stored in the motor cortex or premotor cortex.”

Breaking the Century

Susan Owen

> Earth Science Deputy Section Manager, JPL
> **Ultramarathon runner**

Though Owen had run for exercise all through college and graduate school, she did not enter her first marathon until she moved to Los Angeles after earning her PhD from Stanford. She’s been distance running ever since, signing up for her first 50K race in 2007 and her first 50-mile race in 2011, and completing the Angeles Crest 100, a 100-mile endurance run, in 2015.

For her 100-miler, Owen trained from November through August. “A lot of evenings, I was going down to the Rose Bowl and running around there, and weekday mornings I’d get up and go running with our dog on the trails behind Descanso Gardens. If I had time in my work schedule I’d run up the Arroyo right behind JPL too, or around Hahamongna Park. But the bulk of my training was long runs on weekends, where I’d run in the San Gabriel or Santa Monica mountains for many hours.”

The Angeles Crest run follows the Pacific Crest Trail over the San Gabriel Mountains and ends in Altadena’s Loma Alta Park. Halfway through, runners can pick up a friend to pace them as they run. Both of Owen’s pacers were from JPL, one of whom ran through the night with her in the Angeles National Forest. After 32 hours and 40 minutes, an exhausted but triumphant Owen crossed the finish line.

As a geophysicist, Owen analyzes data from space to better understand earthquakes here on Earth. Much of that work involves sitting at a computer. “Running involves a lot more movement,” she says. “Another thing I find appealing is the linear relationship between the time you put into training and the result. As a scientist, there’s a lot of uncertainty. But if I put in 45 minutes running, I know what the result will be.”

Perfect Preparation

John Doyle

> Jean-Lou Chameau Professor of Control and Dynamical Systems, Electrical Engineering, and Bioengineering

> **Runner, cyclist, record breaker**

Doyle’s athletic résumé is almost as impressive as his scientific one. In 1994, he won the speed time trial in the International Human Powered Vehicles Association championship in Eureka, California. That year he also broke the world record in indoor rowing at the World Masters Games in Brisbane, Australia. Over the years, he has finished first in triathlons in San Bernardino, Santa Barbara, and throughout California. Duathlon wins include Chicago’s Powerman Sprint, the Sundgau in northern France, and the Big Bear Duathlon, among others.

Still, he has been beset by injuries throughout his athletic career. “Broken bones, torn rotator cuff, ankles totally shot, back’s a wreck. I’m sufficiently injured now that I’m just rehabbing all the time. I have a world-class nervous system in terms of speed, but it’s connected to a relatively weak body, which easily breaks.”

In fact, although Doyle played football in high school and basketball in college, and as a child hoped to be a professional athlete, he deems his athletic career a disaster

in the sense that he never had a season in which he was not badly hurt and consistently made mistakes despite his natural talent.

Because of this tendency toward injury, Doyle has reduced his daily workouts from three hours a day to two. “I live a mile from the downtown Equinox,” he says, “so in the morning and evening I run there and back, and when I’m there I lift weights and use machines and stuff. I work around my injuries.”

In the end, though, he says all the effort and pain might have been worth it, and a perfect preparation for his scientific career. “Athletics let me experience a lot of failure in things I cared about, and that was probably healthy for me as an intellectual,” says Doyle. “When you get into research it’s like that—you’re mostly wrong most of the time. At least I am.”

Falling Hard

Morgan Cable

> Research Scientist, JPL

> **Mountain unicyclist**

While an undergraduate, Cable spent a summer as an intern at JPL, where she met fellow intern Josh Schoolcraft, who had brought a unicycle with him. “It didn’t look like a normal unicycle,” says Cable. “It had a tall, fat tire and a handle in front.”


Schoolcraft explained that it was a mountain unicycle; Cable, intrigued, asked for lessons and caught on quickly. Nothing, she says, could have prepared her for such an extreme workout. “Falling is part of the deal, too. When you’re pushing yourself by trying difficult terrain, sometimes gravity wins.”

Still, she says, “it’s a lot of fun because of the other people who do it. It reminds me of what surfing must have been like when it started out—a group of people doing a crazy thing no one thought possible.”

Cable takes to the trails behind JPL as well as at nearby Cherry Canyon and up the coast near Santa Barbara. Once a year she and Schoolcraft—who married in 2011—make the trip to Utah for the annual Moab Munifest. “Ninety percent of everyone who does the sport—about 50 or 60 people—converge for a long spring weekend,” she says.

Trail Ride

JPL scientist Morgan Cable (right) heads to Utah once a year to hit the trails on her mountain unicycle and take part in the Moab Munifest.

Cable, who counts many engineers among her unicycling peers, says the sport appeals to “intense people who like things that require their full attention and like to push themselves. It’s sort of like meditation in motion. You have to put everything else aside and focus on the moment. If you don’t, you’ll fall.” 

“It’s sort of like meditation in motion. You have to put everything else aside and focus on the moment.”

