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## Graduate Students Critical to UC San Diego Success Story

Graduate students become tomorrow's innovators, leaders, artists, teachers and entrepreneurs to make a difference locally, nationally and around the globe. A fellowship is a game-changing investment in these students' lives. Following is just a brief sampling of UC San Diego's outstanding graduate fellows:

### Christina Frieder, Scripps Institution of Oceanography



The focus of Scripps Oceanography graduate student Christina Frieder's research is to investigate how a changing oxygen and pH ocean climate will affect the early life stages of key marine species.

"My favorite component of my research is that it incorporates a great deal of field work, both going to sea and research-based SCUBA diving," said Frieder, a recipient of several fellowships. "I hope that my research will make great strides in understanding how changing ocean climates will affect marine populations, with an emphasis on the local coastal habitats of San Diego."

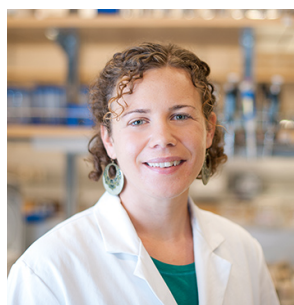
### Chirag Patel, Jacobs School of Engineering



Many modern electronics, from satellites to MRI machines, operate using radio-frequency relays based on electromagnetic actuation, which route signals using current pulses and magnetic fields. But they soon could be replaced by high-power, large-force, temperature-stable RF MEMS metal-contact switches, which route electrical signals using electro-statics fields. Chirag Patel, a Jacobs Fellow, presented the technology at last year's Research Expo. The high-power metal-contact switches Patel worked on are hundreds to thousands of times smaller than the electromagnetic switches currently in use. As a result, they get higher frequency performance,

improved reliability and are much lighter, which could lead to significant savings. “It’s very expensive to put things in space, and so this can yield huge cost savings,” Patel said.

### **Britt Flaherty, Biological Sciences**



A Tyler Dylan-Hyde Graduate Fellow, Britt Flaherty is pursuing a Ph.D. in molecular biology at UC San Diego. Her research on the green algae *Anabaena* holds exciting possibilities for the future of biofuels and developing green energy. In addition, she participates in science outreach programs for high school students. “Being a grad student poses financial challenges. You can’t really save money and you have unique needs—a fast computer, textbooks, special computer software—that can be very expensive,” she said. “Thanks to fellowship support, I can focus on my research instead of worrying whether or not I can afford to order dinner when I have a late night in the lab.”

### **Nels Lind, Social Sciences**



Nels Lind, 2011-12 Kroner Fellow, is researching macroeconomics for his Ph.D. “Initially, I had a significantly better offer from the University of Minnesota,” he said. “Minnesota is an exceptional place for economics, but it is known to have a particular focus—e.g. many people there didn’t want to consider talking about behavioral economics. I wanted a more open and inclusive department and a place like UC San Diego that excelled in econometrics. After flying out to both departments it was clear that UC San Diego was my top choice and a much better fit. The fellowship solidified my decision. I am very grateful for the opportunity to be here.”

### **Bonnie Whiting Smith, Music**

A lecturer and doctoral candidate in contemporary music at the UC San Diego department of music, Bonnie Whiting Smith performs and commissions new music for speaking percussionist. As a member of the percussion group *red fish blue fish*, she has traveled to major concert halls and festivals across the country, including the Walt Disney Concert Hall in Los Angeles and New York’s Miller Theatre.



“I’m not exaggerating when I say that my three years at UC San Diego have changed my life, and truly transformed me as an artist,” said Smith. “I have also had the opportunity to do a great deal of outreach work, helping to develop experimental music education programs in the community. It’s all been possible thanks to help from the Stewart Fellowship.”

### **Nicholas Obradovich, Social Sciences**



A Ph.D. candidate in political science, Obradovich is studying the politics and economies of Sub-Saharan Africa. “My goal is to provide useful information to help policymakers establish effective climate change programs in the region.

The *Gramercy Fellowship* helped solidify my choice of UC San Diego, which was the right location for my research based on the Africanist academics located here. It increased my interest in emerging markets research and is a reflection that my efforts are funded by a notable entity in that arena.

Pragmatically, the fellowship allows me to devote more time to accomplishing research while at UC San Diego.”

### **Elide Pantoli, Jacobs School of Engineering**



Elide Pantoli, a Powell Fellow, was one of two lead structural engineering graduate students on the Jacobs School of Engineering’s recent seismic tests to evaluate the damage that could occur to key buildings such as hospitals during a major earthquake. The series of tests assessed earthquake and fire readiness of elevators, fire systems, medical equipment, computer services and other components.

Pantoli said, “After a major earthquake you need hospitals to be 100 percent functional because there will be a lot of injured people needing help. What we are trying to achieve is to check the performance of the non-structural components in a real earthquake to see what needs to be improved.”

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