

UC San Diego

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Elizabeth Lyons. Photo by Erik Jepsen/UC San Diego Publications

Understanding the Science of Work

From the hockey rinks of Canada, to conducting research on innovation, School of Global Policy and Strategy professor Elizabeth Lyons stays on the cutting edge

Boldness, creativity and an aptitude for taking risks are all characteristics of a successful innovator. They also apply to UC San Diego School of Global Policy and Strategy (GPS) assistant professor of management Elizabeth Lyons, who studies innovation and entrepreneurship. The Canadian-born scholar grew up on the ice rinks of Ottawa, playing hockey primarily in boys' leagues to keep her competitive edge, and applies this same boundary-breaking mentality to her research.

Lyons sets out to answer questions such as, are innovators born or can they be created? And under what conditions does someone decide to leave their current employment to pursue entrepreneurship?

Inspired by her father, an electrical engineer who has founded several companies based on his inventions, Lyons in essence studies the science of work: how to increase efficiency in companies and firms, as well as worker productivity.

“My dad often spoke about the importance of applying his unique skill sets to bring life improving products to market, and he thrived in the highly uncertain and demanding role of a firm founder,” Lyons said. “His consuming passion for his work was fascinating and mysterious to me, and both led me to want to understand how anyone could enjoy the stress of entrepreneurship and to find a job that I was equally passionate about. My mom was an economist in the Canadian Government’s Department of Finance, so I think I kind of borrowed from both of their passions in figuring out my own.”

A trailblazer in the field

Lyons also is no stranger to risk. She studies management primarily through field studies and is one of the first researchers to use such experiments to address strategic management questions.

These studies have shed new light on organizational economics and how innovation, technology and globalization are changing how firms manage and how employees work. A snapshot of her research findings have revealed how telecommuting can be more effectively managed, how volunteer organizations can increase productivity by more targeted recruiting and how start-ups with defined leadership roles have a higher chance of success.

“Studying managerial decisions is challenging because they are made with the best interest of the firm in mind. Even if a given decision is followed by poor firm performance, that doesn’t imply it was a bad decision because we can’t observe firm performance under different decisions,” Lyons explained. “The benefit of field experiments for studying managerial and worker decisions is that by randomly offering groups different sets of decisions to make, you can control these unobservable differences and causally link specific decisions to specific outcomes. This makes it much easier to provide clear implications on what works and what doesn’t.”

One of her advisors, Joshua Graff Zivin, who holds joint appointments with GPS and the department of economics, praises Lyons for this unique approach to the field of management.

“She brings cutting-edge experimental approaches to study fundamental issues in management and innovation,” Graff Zivin said. “The hallmark of her work is her ability to embed these experiments in real work environments to ensure the best possible representation of workplace decision making.”

Innovators aren't simply born, they can be made

Lyons has done fieldwork all over the world, but one of her most intriguing experiments took place right here, at UC San Diego. She collaborated with Graff Zivin on a study which challenged existing theories that largely assume innovation is an ingrained quality of the individual. Their field study with undergraduates showed that students who were incentivized to innovate were just as talented as self-motivated ones.

The study was conducted through a mobile application contest created by Lyons and Graff Zivin. The contest was advertised through various mediums on campus and initially attracted around 100 students. In order to differentiate between self-selected innovators and "induced" innovators, a random subset of eligible students who did not sign up by the contest deadline were offered a monetary incentive of \$100 to participate. In total, 190 UC San Diego students signed up.

Submissions between the two groups were evaluated by technology industry participants who acted as judges for the contest and who had no knowledge of which group the proposals came from. Though induced participants were less likely to be drawn from majors that provide the most relevant skills for the competition, such as electrical engineering and computer science, and had lower cumulative GPAs, the likelihood they completed and submitted a project for the contest was statistically indistinguishable from those that were innately drawn to the competition.

Whether innovators can be created, and how they fare relative to those who self-select into innovative activities, also has important implications for public and private policy.

"Understanding the conditions under which productivity enhancing innovation occurs is critical for economic development and can provide novel insights into the rise of new inventions," Lyons said.

The dangers of giving politicians a raise

In addition to cutting-edge experimental field research, Lyons' survey-based studies have provided answers to pressing questions and made headlines. She co-authored a study revealing that higher salaries for state legislators in the U.S. are associated with policymakers spending more time fundraising for themselves, and less time on legislative business.

"Moreover, we found that regardless of party, higher salaries are not associated with legislators spending more time on constituent services," Lyons said.

She and her co-author Mitch Hoffman of the University of Toronto used two sets of anonymous surveys of 6,300 participating politicians covering several years. The lawmakers were asked to rate how much time they spent on various activities on a five-point scale where one meant "Hardly Any" and five meant "A Great Deal." Though the elected officials had the opportunity to not answer the

surveys truthfully, it stands to reason that they would exaggerate the time they spent on legislative business, rather than fundraising. Thus, the time shift could actually be more pronounced than the study found.

Lyons and Hoffman concluded that higher salaries led to more time spent raising money because politicians have greater incentive to get re-elected as the value of serving in office is greater.

Fitting in among non-conformists

Though UC San Diego's sun-soaked setting attracts scholars from around the world, Lyons never dreamed her academic career would take her to Southern California.

Prior to visiting GPS, she had a couple of offers from universities in the Northeast U.S. that she considered.

"I actually like cold weather," said Lyons, who had to retire her hockey skates at age 18 because of injuries. "I was really unfamiliar with how work gets done when it's warm and sunny all the time. However, I was blown away by UC San Diego and its faculty—there are so many brilliant people from across disciplines who co-exist here."

Though a school of international relations may seem like an odd fit for a professor of management, Lyons' non-traditional approach to the study of business, which has implications for firms and public policy, compliments GPS's faculty and mission.

"Professor Lyons work epitomizes the strategy component of GPS' teaching and research," said School of Global Policy and Strategy Dean Peter F. Cowhey. "It crosses gracefully between the realms of policy and markets."

The school's curriculum—which has always integrated business, economics and security issues in a global context—is being recognized throughout [GPS's 30th Anniversary](#).

"GPS gives me the freedom to straddle these disciplinary boundaries, and speak both to policymakers and CEOs," Lyons said. "Faculty at GPS appreciate and convey to our students that understanding private sector incentives is critical for smart policymaking, and that effective management matters in all sectors, including the nonprofit and public sectors."

She added, "My colleagues have always made me feel very much as though I belong at the school and that having management classes is a critical part of an international relations and public policy program."

For more information about Lyons' research, go to Elizabeth Lyons website.

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