

Mechanical Engineering Senior Spotlight: Lily Li Receives Tirrell Research Award

☒ Lily Lijuan Li, a graduating senior in [Mechanical Engineering](#), has been honored with the Tirrell Award for Distinction in Undergraduate Research, in recognition of her excellent research contributions in MEMS and vibrational energy harvesting.

Li has participated in multiple research experiences during her studies at UCSB. Most recently, Li conducted research with Professor Kimberly Turner on microelectromechanical systems, also known as MEMS. In her work, she investigated phase noise in oscillators, including frequency accuracy, phase noise, and jitter and determined the effect each has on oscillator performance. This important study provided key information which allowed other researchers to focus their experimental studies in a more effective way. Li's work will be published in the near future.

"The presentation Lily gave to our research group following the completion of her project was the best presentation I have EVER seen by an undergraduate. Lily was confident and secure and answered questions better than most graduate students defending their Ph.D. Dissertations," said Turner, who is also the Chair of the Mechanical Engineering Department.

Video interview with Lily Li on "Why choose UCSB?"

In addition, Li has worked with Professors Jeffrey Moehlis and Robert McMeeking studying vibrational energy harvesting. Most vibrational energy harvesters are based on linear mechanical principles, which limits their usefulness in environments with a broadband or time-varying vibration spectrum, such as an automobile. Li's research exploited nonlinearities in order to improve the responsiveness of the device to broad set of inputs. This work holds great promise for the improvement of the efficiency of systems such as automobiles and trains, and could also lead to supplemental power sources for autonomous power sources and sensor networks.

Li has excelled academically at UCSB since she joined UCSB as a transfer student. After graduation, Li will continue on at UCSB to earn her doctorate in mechanical engineering.

"I am very happy with the quality of education I received here and I believe UCSB is a good choice for grad school. I look forward to the challenges the PhD program has to offer," commented Li. "I will be working for Professor Turner. She's a great professor and very inspiring. She has a strong team and I look forward to working with them."

On behalf of everyone at the College of Engineering, we congratulate Lily Li on her achievements.

The Tirrell Award for Distinction in Undergraduate Research is made annually by the College of Engineering

in honor of Matthew Tirrell, former Dean of the College, to recognize graduating seniors who have shown excellence and promise as a researcher during their academic career.

Images



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