UC Irvine hosts Chemistry Academy – Summer STEM Summit

The academy saw students from Orange County and elsewhere visit the university to learn what it’s like to be a scientist.

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Lucas Van Wyk Joel
UCI Physical Sciences Communications



Visiting students donned lab coats and learned about lab safety as they prepared to make their own cosmetics in a UC Irvine chemistry laboratory, with supervision by UCI Chemistry’s Senior Stockroom Manager Melanie Nguyen.

Picture Credit:

UCI Physical Sciences

The UC Irvine Department of Chemistry recently hosted Chemistry Academy – Summer STEM Summit, which saw students from middle schools and high schools visit the campus to partake in different science laboratory activities.

The academy is the brainchild of UCI Chemistry's Senior Stockroom Manager Melanie Nguyen, who devised the idea not long before the coronavirus pandemic hit. "It was on hold during the pandemic, but I never forgot about it," said Nguyen.

33 students attended three different courses between June and July.

The courses included "Cosmetic Chemistry," which, spearheaded by undergraduate students Michelle Joemon and Sonia Park from the Cosmetic Chemistry Society (CCS) at UCI, introduced students to the field of Cosmetic Chemistry through the lens of a chemist. Students formulated cosmetic products like lip balm and skin care products using basic, natural ingredients and tested the products using analytical techniques such as Ultraviolet-Visible light spectroscopy and pH testing.

Another course, "Design, Build, and Fly," saw students apply rapid sketching techniques and quick-build methods to design, construct and test their own model airplanes with the help of John Anderson, a retired US Army combat engineer specialist and a pilot.

And in Forensic Science, lead by writer and environmental educator Curt Abdouch, students honed their crime solving techniques by learning how to extract and analyze plant DNA samples, lift latent fingerprints from surfaces and create facial reconstructions using models of skulls and plaster.

The academy took advantage of some of the Department of Chemistry's newly-renovated teaching laboratories, which, designed by Nguyen's team and teaching professors Renée Link and Kim Edwards, have layouts intended to promote creative problem solving and collaboration.

One big motivation behind creating the academy, Nguyen explained, was to introduce chemistry to students who come from school districts where access to expensive laboratory spaces may not be possible.

That's why, at the start of "Cosmetic Chemistry," students got a tour of the chemistry teaching laboratories and the undergraduates running the event

emphasized safety culture by providing a presentation on how to appropriately put on and remove personal protective equipment (PPE).

“We show them how to wear a lab coat,” said Nguyen. “Not a lot of school districts invest in a well-equipped chemistry facility.”

Another aim of the program was to give students the chance to picture themselves as future scientists and, perhaps, chemists – a chance they may not have otherwise had.

“Our whole space is about supporting and nurturing people to reach their full potential,” said Nguyen, who used her own contacts and resources to make the academy a reality. “This has never been done in the Chemistry Department or in the School of Physical Sciences.”

More than half of the students who came participated received a partial or full scholarship.

“I hope that the Chemistry Academy can bring together members of the scientific and academic community to provide unique engaging and educational experiences for young students in the years to come,” Nguyen said, “I’d like to thank everyone who's indulged and supported my ideas, especially Kim Edwards, Renée Link, Steve Mang and Cynthia Dennis. Let’s continue to nurture today’s youth to be tomorrow’s leaders.”

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