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CSU Dominguez Hills Redesigns Science Lab Courses

(Carson, CA) – California State University, Dominguez Hills has received a \$200,000 grant from the W. M. Keck Foundation to support a unique chemistry lab model aimed at addressing barriers to the sciences for part-time, working students.

For nontraditional students who work and/or commute long distances to campus, spending hours in a lab each week can be daunting and is often a deterrent in the pursuit of a degree in science, mathematics, engineering and technology (STEM) fields. Recognizing the large population of part-time, working students, as well as students underrepresented in the sciences, attending CSU Dominguez Hills, the Department of Chemistry and Biochemistry sought a more flexible model for students completing lab requirements.

“Since the lab was the bottleneck, we needed to re-conceptualize the way we teach the lab in order to offer something convenient to students,” said Dr. H. Leonardo Martinez, professor of chemistry who is the principal investigator on the Keck grant. “We believe this is an approach to lab curricula that has not been done before. We are very confident it will work and that it will attract more students into chemistry and STEM.”

In conjunction with the Keck Foundation grant, chemistry lab instruction will be redesigned, separating skills acquisition, which requires physical time in the lab, from concept reinforcement and experimental analysis, which can be accomplished remotely with the use of the cyber-enabled mass spectrometer, funded by the Keck Foundation. This redesign will reduce the amount of time students are required to be on campus while at the same time develop skills that reflect current real-world science practices. Martinez pointed out that with the advent of cyber-enabled instruments, today’s scientists frequently conduct experiments and access instruments in partnership with colleagues anywhere in the world.

“Thanks to this grant from the Keck Foundation and the innovative approach by CSU Dominguez Hills faculty to redesign science lab curriculum, more students now have opportunities to successfully complete STEM courses and degrees and gain educational experiences previously inaccessible to them,” CSU Dominguez Hills Interim President Willie J. Hagan said. “The significance of this approach in supporting the success of CSU Dominguez Hills students cannot be overstated.”

The university plans to partner with El Camino College’s chemistry department to offer access to the university’s mass spectrometer and other cyber-enabled instruments. The new equipment also expands opportunities for CSU Dominguez Hills faculty to conduct research.