UC SANTA BARBARA

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Remote Research Solutions

While the novel coronavirus has put many aspects of life on hold, scientific research continues at UC Santa Barbara, though circumstances have forced many to take creative approaches to their work. With a bit of flexibility and ingenuity the campus's investigative endeavors press on.

Some researchers are pivoting to projects directly related to the disease itself. That includes Diego Acosta-Alvear and colleagues Carolina Arias Gonzalez, Max Wilson and Ken Kosik in the Department of Molecular, Cellular and Developmental Biology. The group is working to develop a new test for COVID-19 that they hope will be faster than existing tests.

"About a month ago we all recognized this was bound to become a public health issue, and it spoke to our sense of social responsibility," said Acosta-Alvear. "That is why we decided to act fast."

The four faculty members have put aside their previous projects to pursue this COVID-19-related work, which is among the only types of research currently happening on campus. Several members of each lab are contributing. "We make sure that no more than two people are in the lab at a time, with a minimal distance of 10 feet between them," said Acosta-Alvear. "All of them have the required training," he added.

Other researchers, such as Jenny Dugan, have shifted the projects they're working on. Dugan's group at the Marine Science Institute was hit pretty hard by the

shutdown. “We are a field work intensive research group and for every day in the field we expect at least a week, and up to a month of time working in the laboratory to process the samples from our surveys,” said the marine biologist.

But all the data the group usually generates also provides an opportunity. “With both the field work and lab work on hold,” Dugan added, “one area our group is currently focusing on is processing hundreds of hours of surf zone fish taken with our baited, remote, underwater video cameras that stretch from Pismo Beach to San Diego.”

With most lab-based projects on hold, many PI’s are switching to literature-based research. “We’re mostly just dusting off old research questions that only require access to the literature,” remarked Professor Susannah Porter, who studies paleobiology in the Earth science department. For the past few years, she and her postdocs have been compiling information on the evolution of mineralized skeletons in eukaryotes. Now that their lab is off limits, the group has taken this project off the back burner, she said.

Still other researchers have responded to the shutdown by preparing for its eventual end. Take Elliot Hawkes, an assistant professor in the mechanical engineering department who works on non-traditional robots. “We are primarily using this time to write up results from previous experiments and grant proposals for future projects,” he said. Both of these tasks can take quite a bit of time and can be done entirely remotely.

Hawkes and his team are also taking this opportunity to work on robot design. “Ideation, as well as analysis of designs, can both be completed without having to physically build anything,” he said. “Once we return, we will have lots of ideas to test out.”

For some, the COVID-19-related research pause is just a minor nuisance — physics graduate student Jared Goldberg, for example, now models supernovae on his home computer. His housemate and fellow graduate student, Jakkarin Limwongyut, on the other hand, faces a greater challenge. Limwongyut is a chemist, and the stay-at-home mandate prevents him from accessing his lab.

“I’m mostly processing data from my previous experiments,” he said, noting he had several new experiments ready to start before all but the most essential on-site research shut down. “There’s nothing we can do at this moment but read papers

and plan experiments to do once the lab reopens.”

If you or your colleagues have come up with creative solutions to staying productive during the shutdown share them with us on Twitter with the hashtag #UCSBRemoteResearch.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.