



Relationships & Reptiles: World-Traveling Herpetologists Discuss Their Passions

by Cynthia Mwenja, PhD

The two Doctors Grismer at La Sierra University—Lee, professor and Director of Research in the Biology Department (above, left, traveling to Phnom Penh with a dingo puppy), and his son, Jesse, Assistant Professor of Biology (above, right, looking at specimen jars in a museum collection)—seamlessly combine their joy in making connections with people around the globe with their herpetology research focusing on speciation, biogeography, and biogenetics.

Grismers' Research

Their department chair, Lloyd Trueblood, Associate Professor of Biology, says that “It’s like having two Indiana Jones in the department—they’re always up to something, planning something.” They usually spend two to three months each year conducting research in southeast Asian jungles, exploring far-flung areas to discover and describe new species. Additionally, the Grismers focus on conservation genomics, which is “the application of genomic analysis to the preservation of the

viability of populations and the biodiversity of living organisms,” according to Nature Portfolio. Several sources report that Lee, a world-renowned desert biologist, has described more species than any other living biologist. Lee confirms that his lab has identified over 200 species of amphibians and reptiles new to science. According to his friend and colleague Jimmy McGuire, Professor of Integrative Biology at U.C. Berkeley, while some may underestimate the value of such “alpha taxonomy work,” it is “critically important for conservation,”

providing “foundational knowledge” for the field. According to Jimmy, such work stands the test of time and is never replaced with advances in the field, as some other types of research can be.

Another friend and colleague, Evan Quah, Interim Executive Secretary for the International Commission on Zoological Nomenclature (ICZN) with the Lee Kong Chian Natural History Museum, National University of Singapore, as well as Academic Fellow with the School of Biological Sciences, Universiti Sains Malaysia, says that “people may think that the ‘Golden Age of Discovery’ is over, but we are actually still in the ‘Golden Age,’” with hundreds of species left to discover; he goes on to say that “we’re only skimming the surface.” Previously, Evan reports, people could merely use the morphological differences between animals—physical attributes that can be seen by the naked eye—to determine new species. Now researchers like Evan and the Grismers can depend on current technology, including DNA and molecular studies, to develop stronger statistical comparisons, Evan states.



Robert Fisher, Supervisory Research Biologist with the U.S. Geological Survey's Western Ecological Research Center, says that Lee has published milestone herpetology books on Baja and Malaysia. According to Robert, Lee is focused; he wants to understand a system, then explain it to the public. Jesse brings newer science questions and technologies to the cross-generational team; the different viewpoints and methods spark valuable creativity, Robert says. Lee and Jesse also have the distinction of both receiving funding from National Geographic for different projects at the same time; Lee reports that this is a first for two members of the same family.

Relationships and Mentoring

Of course, the relationship that undergirds all of their work is Lee and Jesse's parent-child bond; Lloyd remarks on the "synergy" between the two. As Robert sees it, Lee has been able to build a strong foundation at La Sierra, and now Jesse has joined and will be able to carry it forward. Lee laid the groundwork for their work together early in

Jesse's life, taking Jesse on research trips in a number of Latin American countries "from the time Jesse was in diapers." In those early years, of course, Lee taught Jesse; now, Lee says, he has learned new techniques from Jesse. Merging the two approaches affords them the ability to do deeper analyses, and approach the same questions using different strategies, they say.

The Grismers approach mentoring students in the same supportive, mutually respectful way they work with each other. Jimmy says that both Grismers are "so charismatic" and that this charisma has inspired a bunch of people to join their work. Robert says that Lee has built a strong program at La Sierra, having mentored students over the past twenty-plus years in "not just sight-seeing, but doing science, engaging in actual research." Additionally, Lee works with his students to publish results; they are a part of his team. He reports that their lab generally produces twenty to thirty papers each year. Robert says that few other programs provide this level of student experience and mentorship.

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Lee loves to identify people to mentor. Jimmy describes a “pivot point” in his life when he heard Lee give a talk about his work in Baja California at the San Diego Herpetological Society. Jimmy remembers that he was “spellbound” and offered to volunteer “sometime.” Lee asked, “How about next weekend?” The cold trip, during which they turned volcanic rocks to find geckoes, began five years of fieldwork that Jimmy participated in with Lee, ultimately enticing Jimmy to change his major and study herpetology. Jimmy’s herpetology professor—who, incidentally, had been Lee’s professor, as well—accepted Jimmy as a master’s student. Jimmy points to that first conversation, when Lee invited him on the research trip, as the catalyst for his professional direction and development.

Jesse emulates his father’s talent for inviting people into the study of herpetology. Matt Buehler, currently Graduate Research and Teaching Assistant at Auburn University—met Jesse as an undergrad at the University

of Kansas. Jesse was a doctoral student at the time, and they both worked in the herpetology section of the world-renowned Biodiversity Institute and Natural History Museum at the University of Kansas. Matt says that, in addition to bonding over their shared interests in herpetology, they enjoyed video games, comic books, and *Star Wars*, as well. Jesse even took Matt’s current Zoom cover photo, in which he poses with a sand lizard in Uzbekistan.

Lloyd says that the Grismers offer lifelong mentorship for those they include in their work; “They become family.” Evan echoes that idea, saying that he and Lee “just clicked” when Evan was working on his PhD and Lee became a co-supervisor in his doctoral project. Since then, their relationship has grown into a “real friendship” as they have conducted field research in Myanmar and Cambodia.

Amanda Kaatz, senior Biology major at La Sierra, says that she had been intimidated by Lee’s reputation, but he put her at ease from their first meeting. She really appreciates the

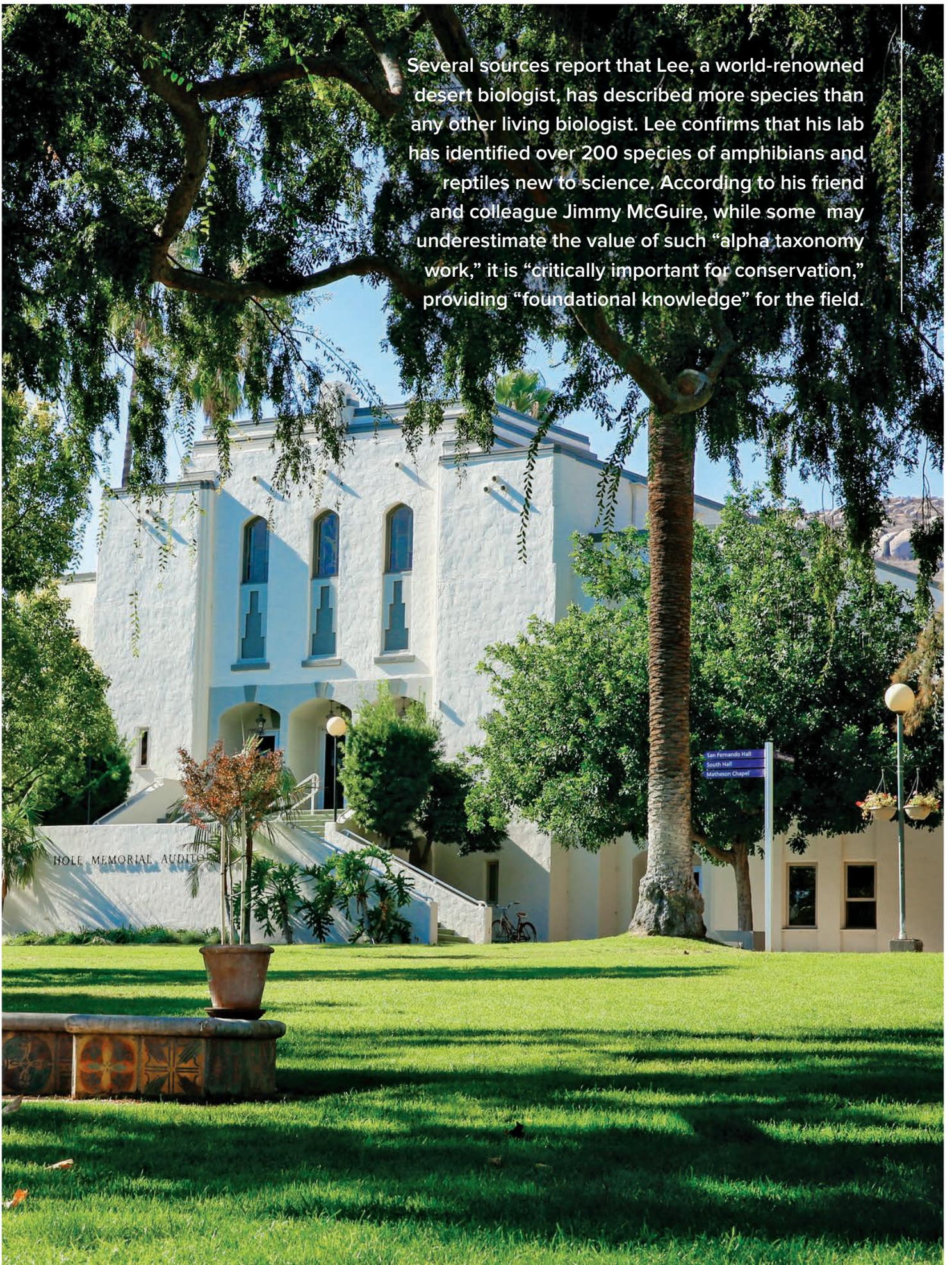
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many opportunities enjoyed by the Grismers' students. Within her first year at La Sierra, she had presented at a global gecko symposium in Israel. She also fulfilled her goal of having field work experience as an undergrad when she traveled to Malaysia for field research with the Grismers. Prior to attending La Sierra, Amanda

had not known that "doing what Lee does was an option," but now she dreams of having her own lab and continuing the kind of research Lee does. Amanda says that the Grismers are "insanely passionate" about their work, and that this passion gives their students a "love of nature and conservation."

Travel and Human Connections

Jimmy says that the Grismers are motivated by a sense of discovery, and they are willing to go to places that are difficult to access logistically. Lloyd agrees, saying that they are not only willing to go out and do things, but they are also willing to go "beyond what is comfortable, off the beaten path." In fact, they have needed armed military escorts to go deep into remote and war-torn places in Myanmar. Their work in the area has paid off, however; the Burmese government has placed many of the animals the Grismers have identified on the protected list; this protection extends to the environment, as well.

For one of the challenging research trips the Grismers favor, Jesse won a National Geographic grant in 2014 to do field work in the Gobi Desert in Mongolia. Matt traveled with the team for the six-week trip; Jesse showed him the ropes of field work—spending weeks preparing by establishing relationships with collaborators and gathering information. Jesse had researched old Russian literature—similar to the sort of research he and his dad currently engage in—to see what species had already been described. The team ended up traveling 1700 kilometers around the Gobi Desert during the trip, finding new populations, as well as seeing animals that hadn't been seen in decades. Previous surveys had underestimated how much diversity existed in the area.

Even more than the shared work, the Grismers appreciate the bonds they have made with other scientists in their travels, "connecting over shared humanity." They tell their students that if they're just going for the wildlife, they'll miss half of the experience. To better communicate with Malaysian people, Lee even learned to speak Malay. He says that "It's a human experience to connect with another human—to transcend difference."

Matt points out how the Grismers' love of family and "fierce loyalty" extends to their research collaborators: "When they bring people into the field, they become family, as well." According to Matt, both Grismers have a philosophy of "paying it forward," taking time to train and mentor future researchers at all levels, from undergrad, to grad, to young professionals. They connect with local scientists and collaborators in their global field research, too. The Grismers affirm this sentiment, saying that the local scientists "become friends and really family." On one research trip, Lee said of his diverse group of students—Chinese, Black, Latinx—"Yeah, these are all my children!"

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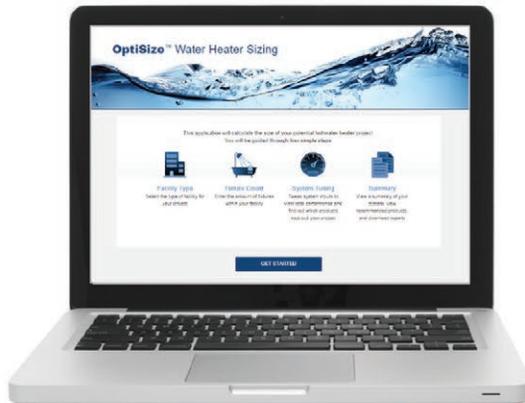


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The Grismers' research friendships intertwine with one another. As Lee finished his book, *Amphibians and Reptiles of Baja California, Including Its Pacific Islands and the Islands in the Sea of Cortés*, Jimmy was focusing on flying lizards in southeast Asia for his doctoral research. Lee joined Jimmy for two research trips and began his own far-ranging research across the area, in countries including Malaysia, Myanmar, Vietnam, Mongolia, and Cambodia. Since Lee had played such a big part in the development of Jimmy's career, Jimmy was happy to play a small role in initiating Lee's next area of research.

In another example of the interconnection between researchers in their circle, Lee and Robert met in grad school, but Robert has been on a research trip with Jesse, spending four or five weeks on a boat in 2011. Similarly, Robert's son attends La Sierra and has been on a research trip with Lee. Even though they have known each other since grad school, Lee and Robert have only just begun collaborating on publications, having published one paper on central Pacific lizards and started working on another.



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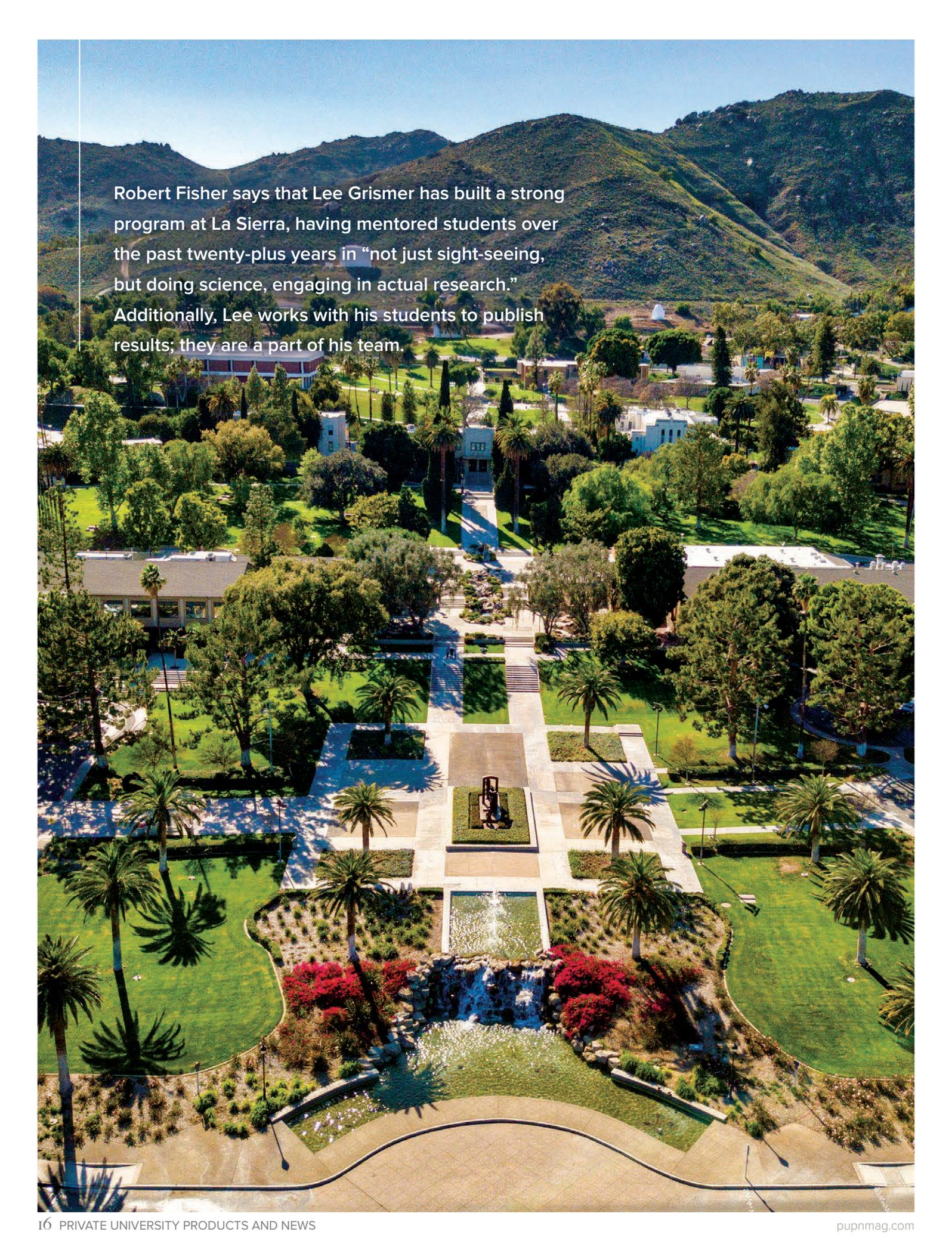
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An aerial photograph of a university campus. In the foreground, a large, paved courtyard features a central fountain with water cascading over rocks into a pool. The courtyard is flanked by green lawns and numerous palm trees. In the middle ground, several university buildings are visible, interspersed with more trees. The background shows a range of green, hilly mountains under a clear blue sky.

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Covid

While the Grismers previously took two or three research trips each year, Covid travel limitations have offered the researchers time to “get back to the data and publish,” Evan says. Even with this unexpected bright spot in the ongoing pandemic, he is looking forward to getting back into the field with his friends, with a “good day of work and a nice supper together afterward.” Likewise, Amanda says that the Covid break has given her more time to work on a publication with Lee and Jesse focusing on bent-toed geckoes and their habitat preferences.

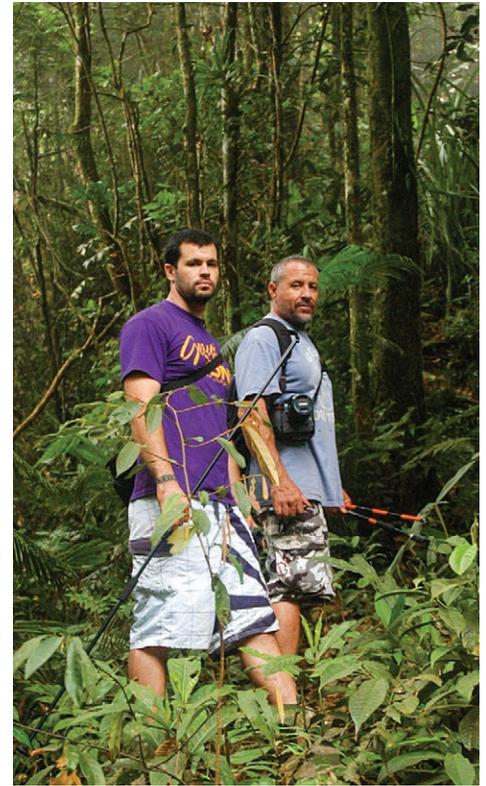
Lloyd says that Covid travel limitations show why the “Grismers just keep killing it”: because they couldn’t do an overseas research trip, they started working in a canyon near Long Beach and found a species that had not ever been recorded in that area; no one had looked in that canyon, and the particular species was not expected to be there. La Sierra has also invested in a supercomputer for their lab, so have been able to conduct genomics research more easily during this time of suspended travel.

While Covid has shut down their usual research trips, they have felt most keenly the postponement of a trip to help Uzbekistani collaborators set up a national park. Plans for the trip have continually been considered, then put on hold. Additionally, news reports about violence in areas they have visited are unnerving; they say such news “takes the wind out of our sails” because they don’t know if some of their collaborators are safe. While their current work in southern California has helped distract them, they say that Asia “gets under your skin”; they miss those experiences.

Both Lee and Jesse provide a model for researchers and professors in many fields to emulate. As Lloyd says, the two are “fun to have in the department, and they bring super-positive energy for both faculty and students.” He goes on to say that they are “incredibly productive but also genuinely nice people. They’re down to earth, care about students, and are awesome at science.” ■



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