



Undergraduate Students
Conduct Globally
Impactful Research Using
Customized Dual-Purpose
Percival Chambers

CLIENT STORY

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With scientific interests that “lie squarely in the realm of insect behavioral ecology,” Dr. Alex Olvido’s number one goal is to help his undergraduate students at the University of North Georgia’s Oconee Campus become better scientists — and mealworms are “the hook.”

Olvido, associate professor of biology*, knows how crucial rigorous, hands-on research is for students when competing for national scholarships and graduate school funding. He aims to teach students high-level research methodology that rivals what they would learn at an R1 university and guide them in becoming global citizens.

Exploring Ways to Solve Food Scarcity

Sustainable food production naturally holds high priority among globally-minded students, given the projections that earth’s population will exceed 9 billion people by 2050. Olvido wants his students to think more about where food and water come from instead of taking their availability for granted. Growing up in a lower-income family on the island territory of Guam, Olvido understood food scarcity from a young age. His family moved to California when he was 10 and lived near Skid Row in L.A. Even with government aid, they sometimes had nothing but bread and juice for dinner.

“I think when students begin to understand that the average person on earth lives on \$2 a day, they start thinking about how to change the world so people aren’t struggling to eat,” he says.

Ideal Chambers for Insect Studies

Yellow mealworm beetles are not a new solution to food scarcity, but they make an excellent research subject for a university with minimal resources and space. Olvido knew exactly the research-grade equipment his students would need to perform high-caliber, publishable research with these insects.

As a Ph.D. student at the University of South Carolina, he collected six years of valuable research data using Percival Scientific incubator chambers. His advisor had stumbled upon eight 1960s reach-in models in the university’s surplus inventory. The advisor refilled the refrigerant, plugged them in, and the 30-something-year-old chambers purred away without any problems. Olvido set their controls to rear crickets for a study on their mating calls, which led to a breakthrough discovery he published in 2004.**

“Those chambers worked great and were extremely reliable and intuitive. When it was time to get the right equipment for my students 20 years later, returning to the Percival brand was a no-brainer,” he says.

Customization That Caters to Specialized Research Requests

Thinking that Percival’s chambers came in one design with manual controls like those he had used in graduate school, Olvido was thrilled to learn about the many lines of chambers Percival designs and how far their technology has advanced. A Percival representative recommended the ideal model for his students’ research and explained how it could be customized for interchangeable use between plant growth and insect rearing, saving valuable space. At the end of the bidding process, Percival came in at the best price, and Olvido ordered two chambers for instructional use.

“I am happy to the nth degree with these growth chambers, particularly with their controls that allow exquisitely fine-tuned simulation of seasonal photoperiods and ambient temperatures,” he says. “I also added CO₂ and humidity controls so we can mimic the atmosphere.”

Hands-On Research Gives Students More Success

The Percival chamber control system allows Olvido to synchronize the insect life cycle stages to fit the university’s semester schedule so his students can complete an entire research project in that time. He and one of his students conducted a semester-long project that proved commercial growers could omit water in the form of fruits or vegetables from the mealworm diet and still produce enough harvest for human consumption. Their research was easily scalable for application by producers who want to reduce input costs. They published their findings in the *Journal of Entomology and Zoology Studies* in 2019.***

Olvido wants the success his students are having with hands-on research to spark more interest in his classes. “I hope these chambers will help pave the way for research expansion so more students can get this experience and be more competitive [for scholarships],” he says.

For more information, visit percival-scientific.com, contact us for a [free consultation](#) or call 800.695.2743.



* Dr. Alex Olvido’s views do not represent those of the University of North Georgia. The information in this client story reflects his individual, real-life experience regarding the use of Percival Scientific chambers. Dr. Alex Olvido received no goods, services, or incentives of any kind from Percival Scientific in exchange for information or opinions regarding Percival Scientific products and/or services.

** <https://academic.oup.com/biolinnean/article/83/4/461/2701460>

*** <https://www.entomoljournal.com/archives/?year=2019&vol=7&issue=5&ArticleId=5748>

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