INSIDE NMSU BIOLOGY

SUMMER 2026

Members of the Shuster Lab working at the University of Washington's marine lab on San Juan Island. Clockwise: Alan Araiza, Priscila Fourzan, and Chinyere Awaogu. Taking advantage of the rich biodiversity of invertebrates in the Pacific Northwest, the Shuster lab studies the regulation of cell division and cell motility during early development, using sea stars and sea urchins as experimental models.

THE DEPARTMENT OF BIOLOGY AT NMSU

Its summertime, although the halls of Foster Hall are quiet, NMSU Biology students and faculty are as busy as ever. Whether out in the field or at the bench, we use summer to conduct research, travel, and present our findings at national and international conferences. For many, it's the most productive time of the year!

Our faculty and students ask new questions about life, from molecules inside cells to ecosystems across our planet – all to better understand the natural world. To address our questions, we use modern genomic, computational, and imaging tools. If you would like to learn more about our department, you can find us online at https://bio.nmsu.edu/. Please reach out if we can help support you in your educational journey. Go Aggies!

STUDYING ELECTRIC FISH IN THE UNGUEZ LAB

Learn about the undergraduate students driving research on electric fish at NMSU (page 2).

BIOLOGY GRADUATES KEEP ON SCIENCING!

Learn more about recent NMSU Biology graduates on pages 3 and 4. Congratulations to all!

ALGAE IN THE DESERT?!

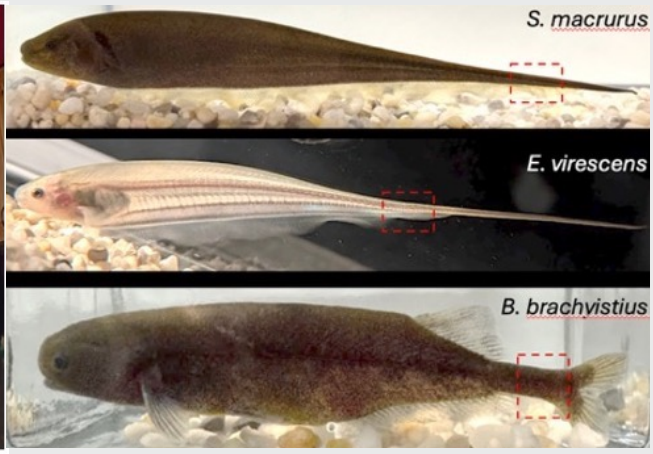
Three undergraduate students are supporting algae research in New Mexico. Check them out (page 4).

SHOCKINGLY GOOD STUDENTS

Freshwater and marine electric fish have a remarkable ability: they can generate electricity to locate prey, communicate, and defend themselves. Electric fields around these fishes are produced by specialized electric organs that evolved from skeletal muscle. In the NMSU Biology Department, Dr. Graciela Unguez studies electric fish to better understand how individual cells develop and maintain their distinct characteristics. Four young scientists in the Unguez laboratory are contributing to this research by studying muscle-derived tissues from three species of electric fish.

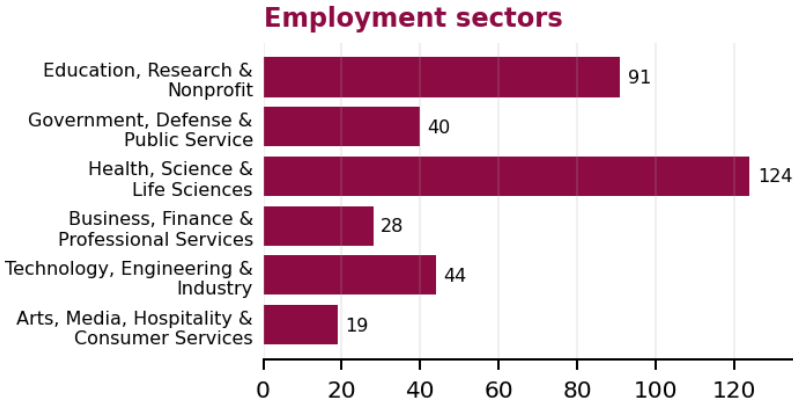
Pictured from left to right, Emily Earnest, Eliha Hernandez, Sandra Rios, and Franchesca Ortega have teamed up to characterize the expression patterns of transcript variants in skeletal muscle and in the muscle-derived, non-contractile, electricity-producing cells of the electric organ. These transcript variants, produced through a process called alternative splicing, can result in different protein compositions that may influence how these specialized tissues develop and are maintained.

Franchesca Ortega leads the team and is currently working toward submitting a manuscript detailing their findings. Their research contributes to a broader understanding of how electric organ cells maintain morphologies, functions, and nervous system activation that differ so dramatically from those of the muscle cells from which they evolved.



WHERE CAN A BIOLOGY DEGREE TAKE YOU?

It turns out, an awful lot of places! A recent analysis of nearly 500 NMSU Biology alumni who graduated between 2010 and 2025 shows just how versatile a biology degree can be. Our alumni are working across the public and private sectors, with nearly half pursuing careers in STEM fields. NMSU Biology graduates have gone on to become doctors, dentists, pharmacists, teachers, nurses, wildlife biologists, researchers, and professionals in many other fields. From healthcare and education to government, technology, and industry, our alumni are putting their degrees to work across a range of careers.



A Biology degree doesn't lead to just one career path -- it opens the door to many!

Master's student John Agbetsi has had an outstanding year, receiving both the 2026 Community Engagement for Leadership Award and the Biology Graduate Excellence in Research Award. These honors recognize John's contributions to the community as well as his achievements as a graduate researcher. John's research was published in *Insects* last April, and he successfully defended his master's thesis the same month. His research required some especially delicate experimental techniques…John became something of a "mosquito surgeon," learning to microscopically ablate mosquito antennae and maxillary palps as part of his work. From mastering mosquito microsurgery to publishing his research and successfully defending his thesis, John has accomplished a great deal during his graduate studies. Congratulations, John, on these well-deserved achievements!

NMSU Biology Graduate John Agbetsi

NMSU GRADUATES KEEP ON SCIENCING!

Mike Lopez (left) received his BS in Bioinformatics from NMSU while working in the Bailey lab through the NIH U-RISE program. Mike investigated patterns of DNA methylation following whole-genome duplication events in plants. He is currently a program analyst at the National Human Genome Research Institute in Bethesda, MD, where he focuses on pre- and post-award activities across NHGRI's computational genomics and data science programs. Kitti Denson (right) received her BS in Biology from NMSU while working in the Bailey lab through the NIH U-RISE program. Kitti investigated patterns of chromatin configuration following whole-genome duplication events in plants. She recently completed her MS in Biotechnology and Business and has been working as a Research Associate on the Genomic Assays Team at Tessera Therapeutics. It is wonderful to see Mike and Kitti build on their undergraduate research experiences at NMSU as they pursue exciting careers in genomics, biotechnology, and data science. Although Mike and Kitti worked with the same model system, *Leucaena* (middle), during their time in the Bailey lab, their experiences have taken them in different and exciting directions, highlighting the many paths that can grow from undergraduate research.

Congratulations to Maya Clausen! Maya graduated in May with a BS in Biology with minors in Chemistry, Conservation Ecology, and Wildlife Sciences, and was awarded the Outstanding Undergraduate Award in this May's commencement ceremony. Working in Dr Adriana Romero-Olivares' lab, she explored how different species, and strains within species, of desert fungi respond to different global change drivers. She also worked on an independent project investigating the biodiversity and spatial heterogeneity of ground-dwelling biocrusts at the Jornada LTER. This fall, she'll start her PhD at UC Riverside in the Evolution, Ecology, and Organismal Biology Department, working in stream restoration monitoring along the Santa Ana watershed. We are excited to see where your journey takes you Maya!

NMSU Graduate Maya Clausen

"I have had so much fun this summer and learned so much everyone in the lab."

-Emma Balsiger, first-year undergraduate student

STUDENT SPOTLIGHT

This stellar team of undergraduates rocked algae research in the Biology Department at NMSU this summer. The team consisted of first year student Emma Balsiger (left), final year student Brynn Mora (middle), and Dona Ana Community College (DACC) student Diego Barria. We are out of room – literally – to share their stories, but more to come on these budding scientists in later editions!