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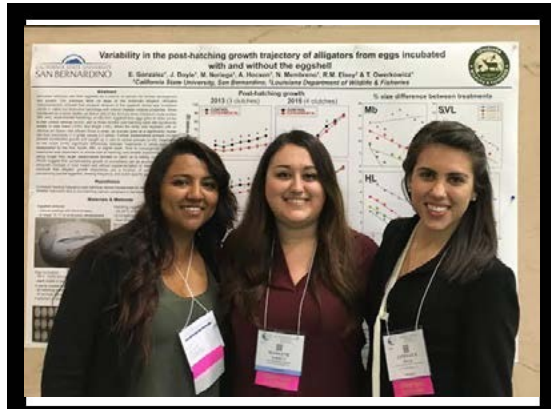
Dr. Owerkowicz and Student Team

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Highlights in Research



Students: Estefania Gonzalez, Janelle Doyle and Marlene Noriega

Faculty Mentor: Tomasz Owerkowicz

Title: Variability in the post-hatching growth trajectory of alligator hatchlings incubated with and without the eggshell

As undergraduates majoring in Biology, Estefania Gonzalez, Janelle Doyle and Marlene Noriega each participated in the 2015 Summer Research program alongside their faculty mentor, Dr. Tomasz Owerkowicz. Their project investigated the importance of two putative roles of the calcareous eggshell in eggs of the American alligator: eggshell as a reservoir of calcium for embryonic development and growth, and eggshell as a barrier to bacterial infection. Using a novel experimental approach – peeling the eggshell and incubating the eggshell-less eggs, tested three hypotheses: (1) alligators without eggshell show reduced skeletal maturity at hatching; (2) inhibition of carbonic anhydrase enzyme has the same effect as peeling the eggshell; and (3) bacterial inoculation results in greater embryonic mortality in the absence of the eggshell. The (preliminary) results suggest that the eggshell is an important source of calcium, but is not required to prevent infection of egg contents. The students were invited to present their research during this year's symposium for their project's originality and quality of presentation