

# Langerhans Lab

NC STATE UNIVERSITY

## Information for Graduate Students in the Langerhans Lab

**General Information:** I typically anticipate accepting up to one graduate student per year, and competition is strong. While I primarily accept Ph.D. students, I do consider exceptional students wishing to pursue a M.S. If you are interested in joining my lab, please contact me by email ([langerhans@ncsu.edu](mailto:langerhans@ncsu.edu)) with a short description of your research interests and accomplishments, CV (with GPA and GRE scores), and contact information for three references.

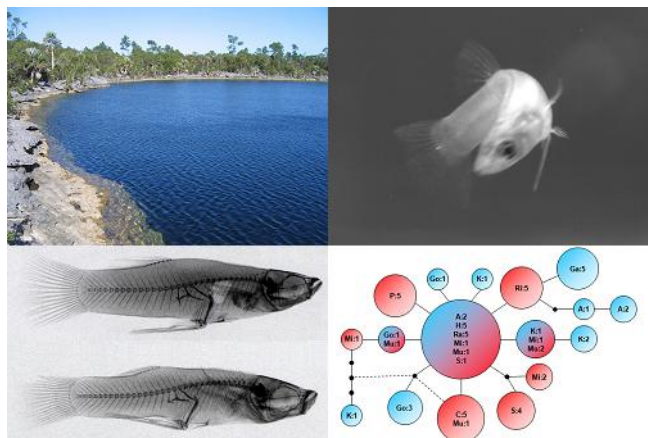
**Application:** To be competitive for acceptance into the program, Ph.D. applicants should generally have a GPA of at least 3.2 and GRE scores of at least 1200 (3.0 and 1000, respectively for M.S. applicants). There is no hard deadline for application, however the earlier the better, ideally applying before January 1 for entry in the fall (or summer). Get detailed information regarding the application process from the department's website:

<http://harvest.cals.ncsu.edu/biology/index.cfm?pageID=951>.

**Timeline:** Plan on 4-6 years to complete the Ph.D. program.

- Year 1: take courses, apply for fellowships, conduct research project, choose committee (advisor + 2 Biology faculty + 1 outside member)
- Year 2: apply for fellowships if applicable, Plan of Work, publish paper
- Year 3: prelims and candidacy, waist deep in research
- Year 4-?: research, write and defend dissertation

**Research Topics:** While the lab centers on studying the evolutionary ecology of fishes, students have great latitude in selecting their research foci. Students are not required to work in my primary systems, but are generally encouraged to develop their own research program centered around a set of core concepts. That said, the lab is optimally suited to serve students interested in empirical work in aquatic systems or lizards, conceptual/statistical questions concerning understanding patterns of phenotypic variation, and evaluating the general predictability of phenotypic evolution. For field work, the lab is best situated for work in local environments, the Caribbean (particularly the Bahamas), and Mexico. Examples of ongoing research interests in the lab include: evolutionary consequences of anthropogenic impacts, ecological speciation, morphological and locomotor evolution, predictability of phenotypic evolution, functional morphology of locomotion, predator-prey coevolution, genital evolution in livebearing fishes, phylogeography, adaptive constraints of gene flow, sensory bias,



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evolution of sexual dimorphism, and links between locomotor, feeding, and life history evolution.

**Teaching Assistantships:** All Ph.D. students in the lab are expected to teach at least two semesters (generally not more than four), and encouraged to teach earlier rather than later (M.S. students expected to teach at least one semester). Often, students in my lab teach lab sections for BIO 181 (Introductory Biology: Ecology, Evolution, and Biodiversity) or BIO 360 (Ecology).

**Research Assistantships:** Pending available funds, students are ideally funded through RAs the majority of their Ph.D. tenure. Students will typically receive a minimum of 1-2 years of RA support during their tenure, deriving from Departmental RAs (ARS RAs), research grants, or external pre-doctoral fellowships/scholarships. All students in the lab are expected to apply for extramural funding, including NSF Graduate Research Fellowship, EPA STAR Fellowship, and others. Exceptional incoming students may be nominated for a NCSU Andrews Fellowship.

**Stipend:** Ph.D. students in my lab will generally receive an annual stipend of approximately \$20-23K annually, a tuition waver, and health insurance (~\$15-18K stipend for M.S. students).

**Research Funds:** Currently, each Ph.D. student in my lab receives access to \$2000 of research funds. Students are also expected to vigorously seek external research funds (many competitive small grants are available), including an NSF Doctoral Dissertation Improvement Grant. Depending on the student's project, the lab will generally provide the vast majority of infrastructure and equipment needed to accomplish the research.

**Coursework:** There is no set of required courses. Coursework will be tailored with the committee to best suit each student. Usually, all coursework will be completed during the first 1-2 years of graduate study. Relevant courses are available in numerous departments, and even other nearby universities, resulting in a large number of options. Students may pursue a minor, with common minors being Statistics and Biomathematics.

**Location:** North Carolina State University is located in Raleigh, North Carolina's state capital. The campus is home to a vibrant research community, with a large number of faculty members studying ecology and evolutionary biology across numerous departments (e.g., Biology, Plant Biology, Genetics, Entomology, Statistics), and multiple integrative research centers (e.g., Keck Center for Behavioral Biology, Bioinformatics Research Center). The university is also conveniently located within a 30-minute drive of UNC Chapel Hill, Duke University, the National Evolutionary Synthesis Center (NESCent), Research Triangle Park, and the North Carolina Museum of Natural Sciences. Raleigh is a culturally diverse city with excellent restaurants, parks, museums, and theaters. The city is conveniently located approximately 2 hours from both the ocean and the mountains.