

Rodrigo Zúñiga Mouret

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[LinkedIn](#)

RESEARCH INTERESTS

Behavior and movement ecology of marine creatures, including impacts of climate change and other anthropogenic stressors. Emphasis on research that informs policy and fosters visible, meaningful change.

EDUCATION

B.S. | Biology | Haverford College | *Haverford, PA*

Graduated May 2020

Senior Thesis in Neurobiology of Behavior:

The AP-2 Complex Modulates Flexibility of the Zebrafish Startle Response: More Than Just a Sum of Parts

RESEARCH

Research Assistant II | *Tarrant & Mullineaux Labs / Woods Hole Oceanographic Institution* | *April 2023 – now*

- Support multiple interdisciplinary labs and projects on benthic invertebrate ecology and physiology.
- Establishing behavior video analysis pipelines for deep sea hydrothermal vent gastropods and intertidal anemones using particle tracking and deep learning networks (artificial intelligence).
- Redesigning and streamlining custom High Pressure Plankton Observatory (HiPPO) set-up and operation in preparation for use at sea.
- Training and mentoring undergraduate interns in the WHOI SSF and Woods Hole PEP summer programs.
- Sampling, preparing, and processing copepods for gut content DNA/RNA and fertility in the Gulf of Maine.
- Preparing instrumentation and learning protocols for shipboard and Alvin submersible operations on R/V Atlantis month-long cruise to hydrothermal vents

Research Intern | *Dr. David Ehrlich's Lab / University of Wisconsin – Madison*

October 2020 – April 2022

- First hire for a brand-new zebrafish neurobiology of coordination lab in the Department of Integrative Biology
- Led a research project investigating the development of zebrafish predator evasion behavior.
- Independently refurbished / seeded aquariums and established aquarium maintenance protocols
- Designed and built high speed video behavior recording apparatuses and piloted experimental protocols.
- Troubleshoot and established genotyping protocols.
- Mentored and trained undergraduate researchers and aquarium personnel.
- Ordered essential lab supplies, reagents, and equipment.

Student Researcher / *Dr. Roshan Jain's Lab / Haverford College*

May 2018 – October 2020

- Discovered a novel role for *ap2a1*, a gene encoding the alpha subunit of adapter protein complex 2 (AP2), in habituation and decision-making using a mutant zebrafish model.
- First author of a manuscript currently in preprint and pending publication at iScience (link below).
- Analysis, interpretation, and presentation of large spreadsheets containing behavioral kinematic datasets.
- High throughput behavior mutant screening and genotyping through DNA extraction, purification, PCR, sequencing, fluorescent microscopy and cloning.
- Regular zebrafish husbandry, feeding, health assessment, and aquarium maintenance.

Research Assistant | *Dr. Michael Granato's Lab / University of Pennsylvania*

May – July 2019

- Carried out genetic mapping of uncharacterized zebrafish learning mutants.
- Designed CRISPR gene knockout constructs and microinjected them into live zebrafish embryos.

Independent Study in Plant Genetics | *Dr. David Higgins's Lab / Haverford College* *January – May 2019*

- Constructed a genetic map of a rare abnormal chromosome haplotype responsible for meiotic drive phenomenon in maize.
- Identified single nucleotide repeats as viable PCR markers and calculated recombination frequencies.

TEACHING EXPERIENCE

Educator / Aquarist | *Pennington Marine Science Center / Santa Catalina Island, CA* *June – August 2022*

- Aquarist for a 6,000-gallon saltwater system with a diverse showcase of local island marine species including teleosts, invertebrates (e.g. sea jellies, octopuses, and crustaceans), eels, and elasmobranchs
- Taught week-long courses on topics including: Oceanography, ROV Exploration, and Aquarist Basics to students 11-18 years of age, as well as adults.
- Applied knowledge of marine animal care including health monitoring, acclimation, feeding, & enrichment
- Presented information to the general public through leading aquarium tours
- Collected specimens for display through SCUBA dives, free dives, snorkeling, & fishing
- Developed and applied aquarium maintenance skills such as water testing, cleaning, plumbing, sanitization, and life support system.

AVID Bilingual Tutor | *Madison West High School / Madison, WI*

November 2022 – March 2023

- Facilitated in-class, student-led tutorial groups for first-years and sophomores in high school.
- Modeled and support development of inquisitive learning and critical thinking skills.
- Evaluated the quality of student thinking by grading student work.

Teaching Assistant | *Advanced Lab in Biology (“Superlab”) | Haverford College* *January – May 2020*

- Assisted professors in preparing third year biology students for future senior thesis work.
- Helped students with developing independent projects, refining hypothesis-driven thinking, and improving laboratory techniques and scientific writing.
- Aided in the transition to online class during the COVID-19 pandemic by hosting biweekly TA digital office hours

VOLUNTEERING

Escalera Tutor / *Centro Hispano of Dane County | Madison, WI* *November 2022 – March 2023*

- Weekly after school academic support for Spanish speaking and bilingual high school students.

Field Research Volunteer | *LLELA | University of North Texas* *June – September 2020*

- Worked with a M.S. student on the Three-Toed Box Turtle Reintroduction Program.
- Tagged & tracked terrestrial turtles through forested areas using radio telemetry to collect movement pattern and microenvironment preference data.

Water Quality Monitor | *Clean Lakes Alliance | Lake Mendota | Madison, WI* *May – August 2021*

- Observed, measured, and recorded water quality data at a local lake’s nearshore site.

Officer of Athletics / *Students’ Council | Haverford College* *April 2019 – May 2020*

- Elected by the Haverford College student body to meet with fellow students, affinity groups, coaches, faculty, & administration to bridge social divisions between athletes and non-athletes on campus.
- Organized and ran mandated school-wide events, conducted interviews for leadership positions, and allocated college funds.

Residence Advisor (Customs Person) | *Customs Program | Haverford College* *September 2017 – May 2018*

- Supported 15 first-years through their transition into college as an on-the-hall role model and resource.
- Facilitated weekly discussions on social issues such as race, class, sexual misconduct, and gender as they pertain to campus life.

PREPRINTS & CONFERENCE POSTER PRESENTATIONS

Zúñiga Mouret et al. | BioRxiv | [Link](#) *May 2022*

“The Adaptor Protein 2 (AP2) complex modulates habituation and behavioral selection across multiple pathways and time windows”

Philadelphia Chapter of the Society for Neuroscience | Remote *July 2020*

Mid-Atlantic Regional Zebrafish Meeting (MARZ) | Philadelphia, PA *December 2018*

SACNAS National Diversity in STEM Conference | San Antonio, TX *October 2018*

KINSC Summer Research Symposium | Haverford, PA *September 2018*

AWARDS AND HONORS

Irving Finger Prize in Biology <i>Department of Biology / Haverford College</i>	<i>May 2020</i>
Awarded to a graduating senior for outstanding growth and accomplishment in the major.	
Best Technician Poster Award <i>Philadelphia Chapter of the Society for Neuroscience</i>	<i>July 2020</i>
Centennial Conference Academic Honor Roll <i>Centennial Conference Athletics</i>	<i>November 2019</i>
SACNAS Travel Scholarship Recipient <i>SACNAS National Diversity in STEM Conference</i>	<i>October 2018</i>

SKILLS / HOBBIES

SCUBA: PADI® Advanced Open Water Diver	<i>cert. May 2022</i>
Spanish: Bilingual / Native Speaker (Mexico)	-
Coding Languages: Matlab, R	-
Art: www.instagram.com/rodrigozuniga_art/	-
Men's Varsity Soccer Team <i>NCAA DIII / Haverford College</i>	<i>August 2016 – November 2020</i>

REFERENCES

Dr. Lauren Mullineaux – Senior Scientist, Biology Department, Woods Hole Oceanographic Institution
Phone: (508) 289 - 2898
Email: lmullineaux@whoi.edu

Dr. David Ehrlich – Assistant Professor, Department of Integrative Biology, University of Wisconsin- Madison
Phone: (215) 850 - 1889
Email: dehrlich@wisc.edu

Dr. Roshan Jain – Associate Professor of Biology, Haverford College
Work Phone: (610) 896 - 4907
Email: rjain1@haverford.edu

Dr. Ann Tarrant – Senior Scientist, Biology Department, Woods Hole Oceanographic Institution
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