EMILY N. NIXON

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**EDUCATION**

**Scripps Institution of Oceanography (UCSD),** PhD in Marine Biology, 2021 - current

**University of Southern California**, BS in Biological Sciences, 2019, GPA: 3.5

**University of Cape Town** – Fall Semester 2017

**University of Otago, Dunedin** – Spring Semester 2018

**HONORS, AWARDS, GRANTS, AND FELLOWSHIPS**

2021 National Science Foundation Graduate Research Fellowship Program Honorable Mention

2020 Women’s Diver Hall of Fame (WDHOF) Scholarship in Underwater Education ($2,000)

2019 GEF: Green Engagement Fund ($3,000)

2018 USC Provost Fellowship ($1,000)

2018 IRES: NSF International Research Experience for Students ($5,000)

2017 USC Wrigley Field Assistantship ($4,000)

2017 SURF: Student Undergraduate Research Fund ($2,500)

2017 URAP: Undergraduate Research Associates Program Fellowship ($1,000)

2016 REU: NSF Research Experience for Undergraduates ($4,000)

2015-2019 Trojan Scholar Society: Presidential Scholarship ($112,000)

**PUBLICATIONS\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Hays, G. C., J. D.R. Houghton, T. M. Thys, D. H. Adams, A. E. Ahuir-Baraja, J. Alvarez, M. Baptista, H. Batista, N. Baylina, K. E. Bemis, W. E. Bemis, E. J. Caldera, G. Carnevale, C. D. Carson, J. Pedro Correia, P. Reis Costa, O. Daly, J. Davenport, J. Dutton, L. E. Eagling, C. Figueiredo, K. Forsgren, M. Freese, S. García-Barcelona, C. Harrod, A. Hearn, L. Hellenbrecht, E.J. Hilton, M. J. Howard, R.l Kelly, L. Kubicek, C. Lopes, T. Mowatt-Larssen, R. McBride, I. Nakamura, T. Nakatsubo, **E. Nixon**, M. Nyegaard, E. Ostalé-Valriberas, L. Pellegrino, N. D. Phillips, E. C. Pope, I. Potter, J. Raimundo, M. Riis, R. Rosa, J. P. Ryan, E. Sawai, G. Shinohara, D. W. Sims, L.L. Sousa, C. Taura, E. Tholke, K. Tsukamoto, J. C. Tyler, Y. Y. Watanabe, K. C. Weng, J. L. Whitney, Y. Yamanoue and K. S. Ydesen. 2020. Unresolved Questions About Ocean Sunfishes, Molidae: A Family Comprising Some of the World’s Largest Teleosts. pp. 280-296. In: T.M. Thys, G.C. Hays and J.D.R. Houghton [eds.]. The Ocean Sunfishes: Evolution, Biology and Conservation, CRC Press. Boca Raton, FL, USA.

Foley, H. B., Sun, P. Y., Ramirez, R., So, B. K., Venkataraman, Y. R., **Nixon, E. N.** and

Edmands, S. (2019). Sex-specific stress tolerance, proteolysis, and lifespan in the invertebrate *Tigriopus* *californicus*. *Experimental gerontology*, *119*, 146-156.

**POSTERS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Nixon, E.N.,** Loyola, L.C. The effect of point source pollution on the health and resilience of the Southern California kelp forest ecosystem. 2019. USC Undergraduate Symposium. Awarded honorable mention in the life sciences.

**Nixon E.N.,** Jacoby A.M.N., Wallen, M., Miketa, M., Mann, J. 2016. Daily Movement of Wild Bottlenose Dolphins. Georgetown University Summer Symposium.

**RESEARCH EXPERIENCE**

**Coral Innovation Hub Intern, The Nature Conservancy St. Croix, USVI**

*Supervised by Ashlee Lillis, Ph. D., Robin Smith, Ph. D., and Alex Gutting, MS.* January-December 2020

* Designing and running experiments testing the effects of substrate type, care, and symbiont species composition on coral settler growth and survival.
* Scientific night diving: coral spawning monitoring and gamete collection.
* Designing and implementing innovative techniques for asexual and sexual coral propagation.

**Coral Physiology Intern, Smithsonian Marine Station Fort Pierce, FL**

*Supervised by Maggie Johnson, Ph. D.* May-December 2019

* Conducted tank mesocosm assays studying the effect of hypoxia on reef-building corals.
* Scientific dive research and data collection in the FL Keys: monitoring out-planted experimental corals, and Carrie Bow Cay, Belize: coral sampling and mapping, bait assays, coral ID

**Volunteer Field Assistant, Vantuna Research Group Occidental College, CA**

*Supervised by Professor Daniel Pondella and Chelsea Muñoz Williams* Fall 2018

* Arc GIS analysis examining the effect of storm-drain run-off on average invertebrate size.
* Scientific dive research and data collection off Palos Verdes, CA: benthic transects surveys, invertebrate collection and sizing.

**IRES Field Assistant, Shark Bay Dolphin Research Project Shark Bay, Australia**

*Supervised by Professor Janet Mann*  Summer 2018

* Conducted boat-based surveys and focal follows to collect behavioral and ecological data on Indo-pacific bottlenose dolphins, *Tursiops aduncus*.

**USC Wrigley Field Assistant, Steele Lab (CSUN) Catalina Island, CA**

*Supervised by Professor Mark Steele and Casey Benkwitt, Ph. D.* Summer 2017

* Independent *in situ* study examining the effect of simulated fishing on recruitment of the black-eyed goby, *Rhinogobiops nicholsii*.
* Scientific dive research on Catalina Island: experimental reef assay maintenance and live fish collection.

**Undergraduate Research Associate, Edmands Lab University of Southern California, CA**

*Supervised by Professor Suzanne Edmands* Spring 2017

* Independent research project conducting bisphenol-a, BPA, bioassays to determine the LC-50 on varying generations and populations of copepod, *Tigriopus californicus.*

**REU Research Associate, Mann Lab Georgetown University, D.C.**

*Supervised by Professor Janet Mann* Summer 2016

* Independent research project studying the effect of calfs and provisioning on the average movement of female Indo-pacific bottlenose dolphins, *Tursiops aduncus*, in Shark Bay, AUS.
* Updated, cleaned, and processed 34+ years of behavioral data in Microsoft Excel.

**Director of Citizen Science Carmel, CA**

*Supervised by Tierney Thys, Ph. D., Marine Biologist and Explorer for Nat. Geo.* 2012-present

* Processing sighting submissions for the citizen science program **www.oceansunfish.org**, a map database receiving images, news clippings, and videos from all over the world in order to better understand the population dynamics of the fish family *Molidae.*

**VOLUNTEER, OUTREACH, AND EDUCATION**

**Co-founder, Under the Blue Line Project**

* Immersive underwater education program using virtual reality as a tool to increase accessibility to the ocean and the science that goes on within it. Funded by WDHOF.
* Currently shooting and producing underwater VR in St. Croix, USVI, and Los Angeles, CA.

**Director of Scientific Communication and Outreach USC, CA**

USC Underwater Club 2018-2019

* Developed hands-on curriculum and taught marine biology in inner city LA.
* Implemented virtual reality in classrooms using VR headsets. Funded by GEF.
* Managed various fundraising projects and organized field trip for 120 sixth graders.

**Sea Turtle Rehabilitation Intern Cape Town, South Africa**

Two Oceans Aquarium Fall 2017

* Rehabilitated 35 loggerhead hatchlings and 4 sub-adult greens. Maintained tanks, prepared meals, fed, and administered medicine.

**SKILLS AND TECHNIQUES**

**Field:**

*Certifications:*

* AAUS Scientific Diver (>300 logged dives), PADI Advanced, First Aid, O2, Nitrox.

*Boating and Diving:*

* Survey methods: species ID (Caribbean corals and fish, Southern California benthos), mapping, UPC, wheel surveys, PAM fluorometry
* Environmental instrument operation: SONDE, HOBO, light logger
* 3D photogrammetry (e.g. structure from motion image collection)
* Tiller and small boat operation (>400 hours)
* Underwater structure and instrument installation (drilling, anchoring, hammering)

**Laboratory:**

*Dry lab:*

* Genetic and microbial sampling, zooxanthellae extraction (FIS)
* Microscopy (larval settlement scoring, mapping, imaging)
* DNA extraction and PCR
* Lipid extraction and glass rod chromatography

*Wet lab:*

* Mesocosm design and maintenance (plumbing, aquaria, APEX wiring)
* Marine husbandry (larvae, corals, copepods, turtles), seawater chemistry
* Tissue and mucous sampling

**Specialized software knowledge***:*

* Microsoft Excel: statistics, QC/QA of large data sets, data organization, graphing

R Studio: statistics, graphing (box plots, histograms, XY scatter plots)

* ARC GIS: submission level map-making for proposals and reports, time series analyses
* Image analysis: ImageJ, Pix4D