

## Phillip Luke Davidson Curriculum Vitae

Ph.D. Student  
Department of Biology  
Duke University, Durham, NC

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### Education

Ph.D.	Department of Biology, Duke University, Durham, NC Certificate in Developmental and Stem Cell Biology <i>Advisor:</i> Gregory Wray, Ph.D. <i>Thesis:</i> "Genomic basis for a recurrent life history switch in sea urchins"	2016-present
B.S.	Department of Biology, University of Miami, FL <i>Minors:</i> Mathematics, Marine Science Departmental Honors, Cum Laude	2013-2016

### Other Research Positions

Visiting researcher, University of Sydney, NSW, AU <i>Advisor:</i> Maria Byrne, Ph.D.	2017-2020
Ph.D. rotations, Duke University, NC <i>Advisors:</i> Philip Benfey, Ph.D., Nicolas Buchler, Ph.D., Gregory Wray, Ph.D.	2016-2017
Undergraduate Research Assistant, University of Miami, FL <i>Advisor:</i> William Browne, Ph.D. <i>Thesis:</i> "Comparative RNA-seq analysis of two developmental stages during embryogenesis in the ctenophore <i>Mnemiopsis leidyi</i> "	2013-2016

### Publications

- 5) Devens, HR\*, **Davidson, PL\***, Deaker, DJ, Smith, KE, Wray, GA, Byrne, M. Ocean acidification induces distinct transcriptomic responses across life history stages of the sea urchin *Heliocidaris erythrogramma*. **Molecular Ecology**. 29: 4618-4636. <https://doi.org/10.1111/mec.15664>
- 4) Byrne, M, Koop, D, Strbenac, D, Cisternas, Paula, Balogh, R, Yang, JYH, **Davidson, PL**, Wray, GA. (2020) Transcriptomic analysis of sea star development through metamorphosis to the highly derived pentameral body plan with a focus on neural transcription factors. **DNA Research**. 27: dsaa007. <https://doi.org/10.1093/dnares/dsaa007>
- 3) **Davidson, PL\***, Guo, H\*, Wang, L, Berrio, A, Zhang, H, Chang, Y, Soborowski, AL, McClay, DR, Fan, G, Wray, GA. (2020) Chromosomal-Level genome assembly of the sea urchin *Lytechinus variegatus* substantially improves functional genomic analyses. **Genome Biology and Evolution**. 12: 1080–1086. <https://doi.org/10.1093/gbe/evaa101>
- 2) **Davidson, PL**, Thompson, JW, Foster, MW, Moseley, MA, Byrne, M, Wray, GA. (2019) A comparative analysis of egg provisioning using mass spectrometry during rapid life history evolution in sea urchins. **Evolution and Development**. 21: 188-204. <http://dx.doi.org/10.1111/ede.12289>
- 1) **Davidson, PL**, Koch, BJ, Schnitzler, CE, Henry, JQ, Martindale, MQ, Baxeavanis, AD, Browne, WE. (2017) The maternal-zygotic transition and zygotic activation of *Mnemiopsis leidyi* genome occurs within the first three cell cycles. **Molecular Reproduction and Development**. 84: 1218-1229. <http://dx.doi.org/10.1002/mrd.22926>

\*equal contribution

### Conference Presentations

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Developmental Biology of the Sea Urchin XXVI (Woods Hole, MA).	2021-rescheduled
Pan-American Society for Evolutionary Developmental Biology (Coral Gables, FL). Poster	2019
Developmental Biology of the Sea Urchin XXV (Woods Hole, MA).	2018
Undergraduate Research, Creativity, and Innovation Forum (Coral Gables, FL). Poster	2016

### Invited Talks

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University of North Carolina Developmental and Stem Cell Biology Club. Chapel Hill, NC.	2018
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### Teaching

#### *Instructor*

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Marine Research in the Gulf of Mexico, Duke Talent Identification Program, Sarasota, FL.	2019
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#### *Teaching Assistant*

Molecular Biology Lab, Duke University, NC. (3 sections)	2020
Genetics and Evolution Lab, Duke University, NC. (2 sections)	2019
Introduction to Marine Biology, University of Miami, FL. (1 section)	2015

### Fellowship and Grants

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Graduate School Conference Travel Award (\$525.00)	2019
Developmental Biology of the Sea Urchin XXV Travel Award (\$500.00)	2019
Department of Biology Grant-in-Aid Award. Duke University, NC (\$1,000.00)	2018
Center for Computational Science Fellowship. University of Miami, FL (\$500.00)	2015
Beyond the Book Summer Research Scholarship. University of Miami, FL (\$4,000.00)	2015

### Outreach and Leadership

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Biology Graduate Student Steering Committee Co-Chair, Duke University, NC.	2017-2018
Undergraduate Research Mentor, UConnect, University of Miami, FL.	2015

### Educational Support

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NIH Training Program in Developmental and Stem Cell Biology, Duke University, NC.	2016-2018
Gables Scholarship, University of Miami, FL.	2013-2016
President's Scholarship, University of Miami, FL.	2013-2016

### Honors

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Cum laude, University of Miami, FL.	2016
Provost's Honor Roll, University of Miami, FL.	2013-2016
Dean's List, University of Miami, FL.	2013-2016
Foote Fellows Honors Program, University of Miami, FL	2013-2016
President's Honor Roll, University of Miami, FL.	2014