

Phillip Luke Davidson Curriculum Vitae

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

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Education

- 2016-present Ph.D. candidate, Department of Biology, Duke University
Certificate in Developmental and Stem Cell Biology
Thesis: “Cis-regulatory evolution during a developmental life history switch in sea urchins”
Advisor: Gregory Wray, Ph.D.
- 2013-2016 B.S. Biology with Honors, University of Miami, FL.
Minors: Mathematics, Marine Science
Thesis: “Comparative RNA-seq analysis of two developmental stages during embryogenesis in the ctenophore *Mnemiopsis leidyi*”
Advisor: William Browne, Ph.D.

Other Research Positions

- 2017-Present **Visiting researcher**, University of Sydney, NSW, AU. Supervisor: Maria Byrne, Ph.D.
- 2016-2017 **Ph.D. rotations**: 1) Evolution and function of a hybrid animal-fungal cell cycle network in the chytrid *Spizellomyces punctatus*. Advisor: Nicolas Buchler, Ph.D. 2) Natural variation in anchor root development across *Arabidopsis thaliana* ecotypes. Advisor: Philip Benfey, Ph.D. 3) Lipidomic and proteomic mass spectrometry analysis of lecithotrophic and planktotrophic sea urchin development. Advisor: Gregory Wray, Ph.D. Duke University, NC, USA.
- 2013-2016 **Undergraduate**: Evolution and development of Ctenophora: gene networking and differential expression during embryogenesis in *Mnemiopsis leidyi*. Advisor: William Browne, Ph.D. University of Miami, FL, USA.

Publications

- 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**. Accepted, in press.
- 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>

Conference Talks

- 2018 Embryonic cis-regulatory modifications during a life history switch in sea urchins. Developmental Biology of the Sea Urchin XXV, Woods Hole, MA, USA.

Invited Talks

- 2018 University of North Carolina Developmental and Stem Cell Biology Club
Speaker. Chapel Hill, NC, USA.

Poster Presentations

- 2015 Development of rapid gene expression profiling during embryogenesis in the ctenophore *Mnemiopsis leidyi*. Undergraduate Research, Creativity, and Innovation Forum. Poster presentation delivered at University of Miami, 2015.

Teaching

- 2019 BIO202L: Genetics and Evolution Lab, Duke University. Teaching Assistant.
2015 MSC230: Introduction to Marine Biology, University of Miami. Teaching Assistant

Grants and Awards

- 2018 Department of Biology Grant-in-Aid Award. Duke University, NC.
Amount: \$1,000.00
2015-2016 Center for Computational Science Fellowship. University of Miami, FL.
Amount: \$500.00
2015 Beyond the Book Summer Research Scholarship. University of Miami, FL.
Amount: \$4,000.00

Outreach and Leadership Experience

- 2017-2018 Biology Graduate Student Steering Committee Member, Duke University, NC.
2015-2016 SCUBA Club Officer, University of Miami, FL.
2015 Undergraduate Research Mentor, UConnect, University of Miami, FL.
2014 Conservation Volunteer, Galápagos Tortoise Breeding Center (Centro de Crianza Arnaldo Tupiza), Puerto Villamil, Galápagos Islands, Ecuador.

Educational Support

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

Honors

- 2013-2016 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.
2014 President's Honor Roll, University of Miami, FL.

Professional Development Workshops

- 2017 Strategies for Metabolomics Data Collection, Analysis & Interpretation, Duke University, Durham, NC.
2017 Experimental Design: Get the most out of your proteome, Duke University, Durham, NC.

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| 2016 | Gene Expression Analysis in Python, Duke University, Durham, NC. |
| 2016 | Genomics in R, Data Carpentry Workshop, Miami, FL. |