

Eric Edsinger, Ph.D.

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CURRENT POSITION

Research Scientist | University of Florida Whitney Laboratory for Marine Biosciences | 2023–Present Independent research position based in the laboratory of Leonid Moroz. Functional biodiversity, comparative genomics, and evolutionary biology of marine invertebrates.

EDUCATION

Degree	Institution	Year
Ph.D. , Evolution and Development	University of Utrecht, Netherlands	2007
B.S. , Botany	University of Washington, Seattle	1999
B.S. , Zoology	University of Washington, Seattle	1999

Note: Began doctoral program (1997) before completing undergraduate degrees; admitted based on exceptional qualifications with master's requirement waived.

RESEARCH POSITIONS

Years	Position	Institution	Advisor
2023–2026	Research Scientist	University of Florida Whitney Laboratory	Leonid Moroz
2019–2022	Research Scientist	Salk Institute for Biological Studies	Sreekanth Chalasani
2015–2019	Vetlesen Fellow & Research Scientist	Marine Biological Laboratory, Woods Hole	Mitchell Sogin
2012–2015	Postdoctoral Fellow	Okinawa Institute of Science and Technology	Sydney Brenner (Nobel Laureate 2002)
2007–2012	Postdoctoral Fellow	University of California, Berkeley	Daniel Rokhsar
1997–2007	Ph.D. Student	University of Utrecht, Netherlands	Jo van den Biggelaar

GRANTS AND FELLOWSHIPS

As Principal Investigator or Co-Principal Investigator

Grant	Role	Amount (DC)	Years
NIH R21 — Identifying novel ultrasound responsive proteins	Co-PI	\$100,000 (to group)	2019–2021
Human Frontier Science Program — How to make a heart beat? Basic principles for novelties and parallel innovations in cephalopods	Co-PI	\$400,000 (to group)	2017–2020
Connecticut Research Fund — Developing genomic, genetic, and imaging tools for neural circuit interrogation in cephalopods	PI	\$45,000	2018
Animal Welfare Institute Refinement Grant — Environmental enrichment to reduce stress in octopus	PI	\$10,000	2017

Fellowships

Fellowship	Institution	Years
Vetlesen Fellowship — Research and salary support (~\$60,000 salary + \$10,000 DC/year × 3 years)	Marine Biological Laboratory	2015–2018
Smithsonian Pre-Doctoral Fellowship	Smithsonian Institution	2001
NSF Minority Predoctoral Fellowship	National Science Foundation	1997–2000
NSF REU Fellowship	Bermuda Biological Station for Research	1996
NSF REU Fellowship	University of Oregon	1996

PUBLICATIONS

Note: Published under Edsinger, Edsinger-Gonzales, and Gonzales

First Author / Corresponding Author Publications

1. **Edsinger E** & Moroz LL (2024). Genomic hotspots: localized chromosome gene expansions identify lineage-specific innovations and putative risk genes for climate change impacts. *Frontiers in Marine Science* 11:1471361.
2. **Edsinger E**, Kieras M, Pirro S (2024). Genome Sequences of 118 Taxonomically Diverse Eukaryotes of the Salish Sea. *Biodiversity Genomes* 2024:e119207.
3. **Edsinger E**, Pnini R, Ono N, Yanagisawa R, Dever K, Miller J (2020). Social tolerance in *Octopus laqueus*—A maximum entropy model. *PLOS ONE* 15(3):e0230626.
4. **Edsinger E** & Dölen G (2018). A conserved role for serotonergic neurotransmission in mediating social behavior in octopus. *Current Biology* 28(19):3136–3142.e4.
5. **Gonzales E**, van der Zee M, Dictus WJAG, van den Biggelaar J (2007). Brefeldin A or monensin inhibits the 3D organizer in gastropod, polyplacophoran, and scaphopod molluscs. *Developmental Genes and Evolution* 217:105–118.
6. **Gonzales E**, van der Zee M, Dictus WJAG, van den Biggelaar J (2007). Brefeldin A and monensin inhibit the D quadrant organizer in the polychaete annelids *Arctonoe vittata* and *Serpula columbiana*. *Evolution & Development* 9:416–431.
7. Hsiao J, Deng LC, Chalasani SH, **Edsinger E** (2021). Numerous expansions in TRP ion channel diversity highlight widespread evolution of molecular sensors in animal diversification. *bioRxiv* doi:10.1101/2021.11.14.466824. [Preprint]

Book Chapters

1. Hsiao J, Deng LC, Moroz LL, Chalasani SH, **Edsinger E** (2024). Ocean to tree: Leveraging single-molecule RNA-seq to repair genome gene models and improve phylogenomic analysis of gene and species evolution. In: Moroz LL (ed) *Ctenophores: Methods and Protocols*. Methods in Molecular Biology, vol 2757. Humana, New York, NY. pp 461–490. doi:10.1007/978-1-0716-3642-8_19
2. Vidal EAG, Villanueva R, Andrade JP, Gleadall IG, Iglesias J, Koueta N, Rosas C, Segawa S, Grasse B, Franco-Santos RM, Albertin CB, Caamal-Monsreal C, Chimal ME, **Edsinger-Gonzales E**, et al. (2014). Cephalopod culture: current status of main biological models and research priorities. In: Vidal EAG (ed) *Advances in Cephalopod Science: Biology, Ecology, Cultivation and Fisheries*. Advances in Marine Biology, vol 67. Academic Press, Oxford. pp 1–98.

Major Collaborative Publications

1. Albertin CB, Simakov O, Mitros T, Wang ZY, Pungor JR, **Edsinger-Gonzales E**, Brenner S, Ragsdale CW, Rokhsar DS (2015). The octopus genome and the evolution of cephalopod neural and morphological novelties. *Nature* 524:220–224.
2. Simakov O, Marletaz F, Cho SJ, **Edsinger-Gonzales E**, Havlak P, Hellsten U, et al. (2013). Insights into bilaterian evolution from three spiralian genomes. *Nature* 493:526–531.
3. Bredeson JV, Lyons JB, Prochnik SE, Wu GA, Ha CM, **Edsinger-Gonzales E**, et al. (2016). Sequencing wild and cultivated cassava and related species reveals extensive interspecific hybridization and genetic diversity. *Nature Biotechnology* 34:562–570.
4. Raghavan N, Bhalla US, Bhatt T, Bhawe G, Bhayani H, Bhella GS, **Edsinger E**, et al. (2022). Sonogenetic control of mammalian cells using exogenous Transient Receptor Potential A1 channels. *Nature Communications* 13:600.
5. Styfals R, Zolotarov G, Hulselmans G, Spanier KI, Poovathingal S, **Edsinger E**, et al. (2022). Epigenetic machinery is functionally conserved in cephalopods. *BMC Biology* 20:177.
6. Sinigaglia C, Almazan A, Lebel M, Bertin M, **Edsinger E**, et al. (2023). Epithelial wound healing in the model jellyfish *Clytia hemisphaerica*. *Scientific Reports* 13:7931.
7. Emms DM, Moreira FFF, Nong W, Simakov O, So WL, Sun J, **Edsinger E**, et al. (2022). Distinct gene expression dynamics in developing and regenerating limbs. *PNAS* 119(45):e2119297119.
8. Burnett K, **Edsinger E**, Albrecht D (2018). Rapid and gentle hydrogel encapsulation of living organisms enables long-term microscopy over multiple hours. *Communications Biology* 1:73.
9. Zhang X, Xia K, Lin L, Zhang F, Yu Y, St Ange K, Han X, **Edsinger E**, Sohn J, Linhardt RJ (2018). Structural and functional components of the skate sensory organ ampullae of Lorenzini. *ACS Chemical Biology* 13:1677–1685.
10. Mann K & **Edsinger E** (2014). The *Lottia gigantea* shell matrix proteome: re-analysis including MaxQuant iBAQ quantitation and phosphoproteome analysis. *Proteome Science* 12:28.
11. Mann K, **Edsinger-Gonzales E**, Mann M (2012). In-depth proteomic analysis of a mollusc shell: acid-soluble and acid-insoluble matrix of the limpet *Lottia gigantea*. *Proteome Science* 10:28.

REU Student Mentorship Publications (2025)

1. King I & **Edsinger E** (2025). Neural circuits underlying light-guided behavior in the Pacific sand dollar *Dendraster excentricus*. *NSF REU-Blinks Symposium Proceedings, Friday Harbor Laboratories*.
2. Mariscal del Toro M & **Edsinger E** (2025). Thermal tolerance of sand dollar larvae under simulated marine heatwave conditions. *NSF REU-Blinks Symposium Proceedings, Friday Harbor Laboratories*.

Review Articles & White Papers

1. Albertin CB, Bonnaud L, Brown CT, Crookes-Goodson WJ, da Fonseca RR, Di Cristo C, Dilkes BP, **Edsinger-Gonzales E**, et al. (2012). Cephalopod genomics: A plan of strategies and organization. *Standards in Genomic Sciences* 7:175–188.
2. van den Biggelaar JAM, **Edsinger-Gonzales E**, Schram FR (2002). The improbability of dorso-ventral axis inversion during animal evolution, as presumed by Geoffroy Saint Hilaire. *Contributions to Zoology* 71:29–36.

TEACHING EXPERIENCE**Courses Designed and Taught**

Course	Institution	Year	Description
FHL 548 — Advanced Topics in Evolution and Development: Functional Biodiversity	University of Washington Friday Harbor Labs	2024	Designed and co-taught intensive 5-week course; collection, culturing, advanced imaging, genetic tools in 20 species across 11 phyla
FHL 470 — Autumn Marine Studies Research in Marine Biology	University of Washington Friday Harbor Labs	2023	Designed and taught collection, culturing, and imaging methods in marine invertebrate development, anatomy, and behavior
Research Apprenticeship — Marine Biodiversity Through the Lens of Single-Cell Genomics	University of Washington Friday Harbor Labs	2022	Co-designed and co-taught intensive research apprenticeship with 15 undergraduate and graduate students
Marine Biodiversity and Genomics	University of Chicago / Marine Biological Laboratory	2018	Co-designed and taught 2-week intensive undergraduate course; worked directly with 12 of 15 students on research projects

Guest Lectures

- **GRS PS 704: Contemporary Trends in Psychology Neurobiology of Animal Behavior** — Boston University (2019) Guest lecture on pygmy cephalopods, genetic tools, and behavior

STUDENT MENTORING

Undergraduate and Graduate Students Mentored

Student	Institution	Program	Year(s)	Current Status
Isabella King	UW FHL	NSF REU-Blinks Summer Intern	2025	UW undergraduate
Meztli Del Toro Mariscal	UW FHL	Summer Research Intern	2025	—
Adelyn Wu	Salk Institute	Summer Intern	2022	—
Lilli Crossly	Salk Institute	Summer Intern	2022	—
Kirsten Peramba	MBL	Research Assistant I	2017–2019	—
Atreyo Pal	U Chicago	Metcalf Fellow, MBL Summer Intern	2018	University of Chicago senior
Malaika Cordeiro	Roger Williams	MBL Summer Intern	2017, 2018	Roger Williams junior
Peter Newstein	Bowdoin College	MBL Summer Intern	2017, 2018	Bowdoin College post-bac
Jonathan Marvel-Zuccola	Local high school	Summer Intern	2017, 2018	Roger Williams freshman
Ilya Chugunov	Backyard Brains	Remote Summer Intern	2017	UC Berkeley post-bac
Christy Poster	Backyard Brains	Remote Summer Intern	2017	Rice University post-bac
Joy Miao	Local high school	Summer Intern	2017	Dartmouth University freshman
Maurijn van der Zee	Utrecht University	Senior Thesis	2000	Professor, Leiden University

WORKSHOPS ORGANIZED

Workshop	Organization	Year
UW FHL Functional Biodiversity Workshop	University of Washington Friday Harbor Labs	2026
CIAC Workshop on Genetic Tools and Live Imaging in Cephalopods — Designed and ran 2-day workshop	Cephalopod International Advisory Council	2018
AMS Molluscan Genomics Workshop: Sequencing Tools for Organismal Biology — Designed and ran 1-day workshop	American Malacological Society	2010

INVITED TALKS

Venue	Title	Year
9th Aquatic Models of Human Disease Conference	MDMA in human vs octopus: Exceptional sequence conservation predicts conserved pharmacological action	2018
Marine Biological Laboratory Marine Organisms Workshop	Marine organism microbiomes and behavior	2016
University of Florida Whitney Laboratory for Marine BioSciences Seminar Series	Establishing cephalopod model systems for neuroscience	2016
The 21st Meeting of Young Scientists Around the Sea	Human vs Octopus: Post-genomic research needs a cephalopod model	2014
San Francisco Microscopy Society Seminar Series	Developmental imaging data for gastropod and cephalopod genomics	2012
Smithsonian Marine Station at Fort Pierce Seminar Series	Petits Monstres de la Mer: The evolution and development of animal body plans	2002
Smithsonian Institution Symposium on Life Histories of Marine Invertebrates	Worm brawn – worm brain: A supermodel, a sipunculan, and the evolution of animal design	2002
University of Washington Friday Harbor Labs Summer Seminar Series	The little sea monsters revolution: A developmental organizer in animal evolution	2002
University of Gothenburg Kristineberg Marine Station Winter Seminar Series	The Elusive Larvae of Chaetoderma nitidulum: A Valentine Romance of Aplacophoran Love	2000
University of Washington Friday Harbor Labs Summer Seminar Series	Loss and duplication of the 3D organizer in Molluscs	1999

SELECTED CONFERENCE PRESENTATIONS

Conference	Title	Year
HHMI Janelia New Genetic Tools for Non-model Organisms Meeting	Pygmy cephalopods	2019
Society for Comparative and Integrative Biology Meeting (<i>Session Chair</i>)	Imaging the neuromuscular systems of cephalopod arms and suckers	2019
TONMOCON: The Biennial Cephalopod Conference	Octocams: A simple scalable system for behavior monitoring in aquaria	2018
Society for Comparative and Integrative Biology Meeting	Why are cephalopod eggs so big? Testing viscosity and jet propulsion in pygmy squid hatchlings	2018
HHMI Janelia Crustacean Models in Cross-Disciplinary Biological Research Conference	Pygmy squid: Establishing a zebrafish for cephalopods	2017
Society for Comparative and Integrative Biology Meeting	Ciliogenesis, neurogenesis, and larval swimming behaviors in <i>Lottia gigantea</i>	2013
Cephalopod International Advisory Council Meeting	The CephSeq Consortium and new cephalopod models in functional genomics	2012
Cold Spring Harbor Laboratory Genomics Meeting	Little sea monsters and the evolution of disparity in animal design	2004

PROFESSIONAL DEVELOPMENT

Workshops and Courses Attended

Course/Workshop	Institution	Year
Hydra Workshop	Marine Biological Laboratory	2023
Neural Systems and Behavior Course	Marine Biological Laboratory	2019
Grant Writing Coaching Group	National Research Mentoring Network / Northwestern University	2018
Tissue Clearing Workshop	Harvard Center for Biological Imaging	2017
<i>Xenopus</i> Genome Editing Workshop	Marine Biological Laboratory	2016
STAMPS (Strategies and Techniques for Analyzing Microbial Population Structures)	Marine Biological Laboratory	2016
Science Writing Workshop	Marine Biological Laboratory	2016
Communicating Science Workshop	Alan Alda Center for Communicating Science	2016
Light Sheet Microscope Training	HHMI Janelia Advanced Imaging Center	2015
Light Sheet Microscopy Workshop	EMBO / Max Planck Institute of Molecular Cell Biology and Genetics	2014
Practical Workshop on High-Throughput Sequencing Data Analysis	OIST	2014
Workshop on Molecular Evolution	Marine Biological Laboratory	2013
Advances in Genome Technology and Bioinformatics	Marine Biological Laboratory	2003

INVITED PARTICIPATION

Event	Year
NESCent Catalysis Group Meeting: Paths to Cephalopod Genomics — Invitation-only roundtable on emerging cephalopod genomics community	2011

OUTREACH AND PUBLIC ENGAGEMENT

Project	Description	Year
Instagram.com/edsingerlab	Public outreach documenting daily lab research	2018–Present
Octocam.io	Public outreach on octopus culturing and behavior	2017
Octosquid.io	Documenting cephalopod diversity in Okinawa, Japan	2014

SELECT MEDIA COVERAGE

The "octopus MDMA" study (Edsinger & Dölen, *Current Biology* 2018) received extensive media attention:

- **TIME Magazine** — "Giving Ecstasy to Octopuses Taught Researchers Something Important About the Brain" (Sep 21, 2018)
 - **New York Times** — "On Ecstasy, Octopuses Reached Out for a Hug" (Sep 20, 2018)
 - **Washington Post** — "This is what happens to a shy octopus on ecstasy" (Sep 20, 2018)
 - **NPR Morning Edition** — "Octopuses Get Strangely Cuddly On The Mood Drug Ecstasy" (Sep 20, 2018)
 - **People Magazine** — "If You Give an Octopus Ecstasy, He'll Probably Want a Hug to Go With It, Says Science" (Sep 21, 2018)
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PROFESSIONAL ASSOCIATIONS

- Society for Advancing Chicanos/Hispanics and Native Americans in Science (SACNAS)
 - Society for Comparative and Integrative Biology (SICB)
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CV Updated: January 2026