ELI MEYER

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Google Scholar: https://scholar.google.com/citations?user=e_pbAkIAAAAJ&hl=en

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PROFESSIONAL PROFILE

Accomplished marine biologist, educator, and entrepreneur with 20+ years of experience bridging academic research and real-world applications. Proven excellence in undergraduate and graduate teaching with strong student evaluations and innovative curriculum development. Expert in coral biology, genomics, and environmental physiology with over 40 peer-reviewed publications and extensive grant funding success. Demonstrated ability to translate complex research into practical solutions through entrepreneurial leadership of DNA sequencing business serving aquarium and aquaculture industries.

EDUCATION

Ph.D., Biology | *University of Southern California* | 2006
Marine Environmental Biology | Advisor: Donal T. Manahan

B.S., Marine Science | *Southampton College, Long Island University* | 1998

PROFESSIONAL EXPERIENCE

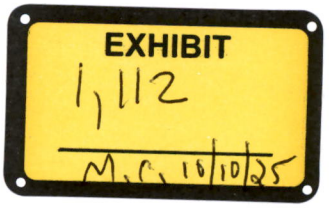
ENTREPRENEURIAL LEADERSHIP

Founder & CEO | *AquaBiomics LLC* | 2019–present

- Founded first DNA sequencing service for aquarium hobby and aquaculture industry
- Developed innovative microbiome and environmental DNA testing protocols
- Built customer base spanning hobbyists to commercial aquaculture facilities
- Maintained scientific rigor while translating complex genomics to diverse audiences
- Continued research collaborations and publications while leading business operations

ACADEMIC POSITIONS

Assistant Professor | *Integrative Biology, Oregon State University* | 2012–2019



- Taught 5 different courses serving 763 students with consistently above-average evaluations
- Secured $450,000+ in research funding as PI or Co-PI
- Supervised 3 graduate students, 32 undergraduate researchers, and 18 thesis committees
- Finalist for Outstanding Teaching Award based on student votes (2015)
- Developed innovative curricula including hands-on genomics workshops

Postdoctoral Research Fellow | *University of Texas - Austin* | 2007–2012

- Section of Integrative Biology | Advisors: Thomas E. Juenger & Mikhail V. Matz
- Pioneered genomic approaches for studying coral thermal tolerance and plant stress responses
- Co-developed 2b-RAD genotyping method (published in *Nature Methods*)

Postdoctoral Research Fellow | *University of Southern California* | 2006–2007

- Marine Environmental Biology | Advisor: Donal T. Manahan

TEACHING EXPERIENCE

University Courses

- **Invertebrate Biology (Z 361)** | Oregon State University | 2012–2019
- **Environmental Physiology (Z 423/523)** | Oregon State University | 2014–2019
- **Grant Writing and Ethics (Z 585)** | Oregon State University | 2016
- **Bioinformatics for Biologists (Z 307)** | Oregon State University | 2013

International Training Workshops

- **Summer Genomics Workshops on Catalina** | Catalina Island, CA | 2014–2018
    - Developed and led intensive 9-day hands-on genomics training workshops
    - Trained 70+ participants from 17 countries in wet-lab and computational methods
    - All participants successfully produced and analyzed millions of DNA sequences

- **Advanced Genomics Workshop** | Manila, Philippines | 2014
- **Conserving Coral Reefs Workshop** | Abu Dhabi, UAE | 2013
- **Pan-Pacific Advanced Study Institute** | Dumaguete, Philippines | 2012

Curriculum Development

- Completely redesigned Environmental Physiology course with new content and active learning strategies
- Supervised major revision of Invertebrate Biology lab course with student-centered experiments
- Developed "InvertsWiki" - student-edited resource integrating field work with molecular data
- Created graduate seminar series in bioinformatics and systems biology

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RESEARCH PUBLICATIONS

41 peer-reviewed publications | h-index: 30 | i10-index: 42 | 5,744+ citations | multiple papers with 100+ citations
Google Scholar Profile: https://scholar.google.com/citations?user=e_pbAkIAAAAJ&hl=en

Complete Publication List

2022

41. Elder H, Weis VM, Montalvo-Proano J, Mocellin VJL, Baird AH, **Meyer E** and Bay LK (2022) Genetic Variation in Heat Tolerance of the Coral *Platygyra Daedalea* Indicates Potential for Adaptation to Ocean Warming. *Front. Mar. Sci.* 9:925845.

2021

40. Durland, E., De Wit, P., **Meyer, E.**, & Langdon, C. (2021). Larval development in the Pacific oyster and the impacts of ocean acidification: Differential genetic effects in wild and domesticated stocks. *Evolutionary Applications*, 14(9), 2258-2272.
39. Howells, E. J., Abrego, D., Liew, Y. J., Burt, J. A., **Meyer, E.**, & Aranda, M. (2021). Enhancing the heat tolerance of reef-building corals to future warming. *Science Advances*, 7(34).

38. Mostow, R. S., Barreto, F., Biel, R., **Meyer, E.**, and Hacker, S. D. (2021) Discovery of a dune-building hybrid beachgrass (*Ammophila arenaria* × *A. breviligulata*) in the U.S. Pacific Northwest. *Ecosphere* 12(3):e03501.

2020

37. Alama-Bermejo, G., **Meyer, E.**, Atkinson, S. D., Holzer, A. S., Wiśniewska, M. M., Kolísko, M., & Bartholomew, J. L. (2020). Transcriptome-wide comparisons and virulence gene polymorphisms of host-associated genotypes of the cnidarian parasite *Ceratonova shasta* in salmonids. *Genome Biology and Evolution*, 12(8), 1258-1276.

2019

36. Havird, J. C., **Meyer, E.**, Fujita, Y., Vaught, R. C., Henry, R. P., & Santos, S. R. (2019). Disparate responses to salinity across species and organizational levels in anchialine shrimps. *Journal of Experimental Biology*, 222(24).

35. Dziedzic K, Elder H, Tavalire H, **Meyer E** (2019) Heritable variation in bleaching responses and its functional genomic basis in reef-building corals (*Orbicella faveolata*). *Molecular Ecology*, 28(9), 2238-2253.

2018

34. Kirk NL, Howells EJ, Abrego D, Burt JA, **Meyer E** (2018) Genomic and transcriptomic signals of thermal tolerance in heat-tolerant corals (*Platygyra daedalea*) of the Arabian/Persian Gulf. *Molecular Ecology* 27(24):5180-94.

2017

33. Matthews J, Crowder C, Oakley C, Lutz A, Roessner U, **Meyer E**, Grossman A, Weis VW, Davy SK (2017) Optimal nutrient exchange and immune responses operate in partner specificity in the cnidarian-dinoflagellate symbiosis. *Proceedings of the National Academy of Sciences* 114(50) 13194-13199.

32. Crowder C, **Meyer E**, Fan TY, Weis VM (2017) Impacts of temperature and lunar day on gene expression profiles during a monthly reproductive cycle in the brooding coral *Pocillopora damicornis*. *Molecular Ecology* 26(15): 3913–3925.

2016

31. Koenig K, Sun P, **Meyer E**, Gross J (2016). Eye Development and Photoreceptor Differentiation in the Cephalopod *Doryteuthis pealeii*. *Development*.

30. Bhattacharya D, Agrawal S, Aranda M, Baumgarten S, Belcaid M, Drake JL, Erwin D, Foret S, Gates RD, Gruber DF, Kamel B, Lesser MP, Levy O, Liew YJ, MacManes M, Mass T,

Medina M, Mehr S, **Meyer E**, Price DC, Putnam HM, Qiu H, Shinzato C, Shoguchi E, Stokes AJ, Tambutte S, Tchernov D, Voolstra CR, Wagner N, Walker CW, Weber AP, Weis V, Zelzion E, Zoccola D, Falkowski PG (2016). Comparative genomics explains the evolutionary success of reef-forming corals. *eLife* 5(2016): e13288.

29. Howells EJ, Abrego D, **Meyer E**, Kirk NL, Burt JA (2016). Host adaptation and unexpected symbiont partners enable reef-building corals to tolerate extreme temperatures. *Global Change Biology* 22: 2702-2714.

2015

28. Dixon GB, Davies SW, Aglyamova GA, **Meyer E**, Bay LK, Matz MV (2015). Genomic determinants of coral heat tolerance across latitudes. ***Science*** 348(6242):1460-1462. *[400+ citations]*

27. Kitchen SA, Crowder CM, Poole AZ, Weis VM, **Meyer E** (2015) De Novo Assembly and Characterization of Four Anthozoan (Phylum Cnidaria) Transcriptomes. *G3: Genes| Genomes| Genetics* 5(11):2441-2452.

26. Wright RM, Aglyamova GV, **Meyer E**, Matz MV (2015) Gene expression associated with white syndromes in a reef building coral, *Acropora hyacinthus*. *BMC Genomics* 16(1):371.

25. Lowry DB, Hernandez K, Taylor SH, **Meyer E**, Logan TL, Barry KW, Chapman JA, Rokhsar DS, Schmutz J, Juenger TE (2015) The genetics of divergence and reproductive isolation between ecotypes of *Panicum hallii*. *New Phytologist* 205(1):402-414.

2014

24. Davies SW, **Meyer E**, Guermond SM, Matz MV (2014) A cross-ocean comparison of responses to settlement cues in reef-building corals. *PeerJ* 2:e333.

23. **Meyer E**, Michael AJ, Lowry DB, Palacio-Mejía JD, Logan TL, Fay PA, Juenger TE (2014). Integrating transcriptional, metabolomic, and physiological responses to drought stress and recovery in switchgrass (*Panicum virgatum* L.). *BMC Genomics* 15:527.

22. Willette DA, Allendorf FW, Barber PH, Barshis DJ, Carpenter KE, Crandall ED, Cresko WA, Fernandez-Silva I, Matz MV, **Meyer E**, Santos MD, Seeb LW, Seeb JE (2014) So, you want to use next-generation sequencing in marine systems? Insight from the Pan-Pacific Advanced Studies Institute. *Bulletin of Marine Science* 90(1):79-122.

2013

21. Fletcher RS, Mullen JL, Yoder S, Bauerle WL, Reuning G, Sen S, **Meyer E**, Juenger TE, McKay JK (2013). Development of a next-generation NIL library in *Arabidopsis thaliana* for dissecting complex traits. *BMC Genomics* 14(1):655.

20. Kenkel CD, **Meyer E**, Matz MV (2013). Gene expression under chronic heat stress in populations of the mustard hill coral (*Porites astreoides*) from different thermal environments. *Molecular Ecology*, 22(16), 4322-4334.

19. Davies SW, Rahman M, **Meyer E**, Green EA, Buschiazzo E, Medina M, Matz MV (2013) Novel polymorphic microsatellite markers for population genetics of the endangered Caribbean star coral, *Montastraea faveolata*. *Marine Biodiversity* 43(2): 167-172.

2012

18. **Meyer E**, Weis VM (2012) Study of Cnidarian-algal symbiosis in the "omics" age. *Biological Bulletin* 223:44-65.

17. **Meyer E**, Logan TL, Juenger TE (2012). Transcriptome analysis and gene expression atlas for *Panicum hallii* var. *filipes*, a diploid model for biofuel research. *The Plant Journal* 70:879-90.

16. Wang S, **Meyer E** [equal contributions], McKay JK, Matz MV (2012) 2b-RAD: a simple and flexible method for genome-wide genotyping. ***Nature Methods*** 9:808-810. *[200+ citations]*

15. Lowry DB, Purmal CT, **Meyer E**, Juenger TE (2012). Microsatellite markers for the native Texas perennial grass, *Panicum hallii* (Poaceae). *American Journal of Botany* 99:e114:e116.

14. Hunt ME, Modi CK, Aglyamova GV, Ravikant DV, **Meyer E**, Matz MV (2012) Multi-domain GFP-like proteins from two species of marine hydrozoans. *Photochemical & Photobiological Sciences* 11:637-644.

2011

13. **Meyer E**, Aglyamova GV, Matz MV (2011) Profiling gene expression responses of coral larvae (*Acropora millepora*) to elevated temperature and settlement inducers using a novel RNA-Seq procedure. *Molecular Ecology* 20: 3599-3616.

12. Ishak HD, Plowes R, Sen R, Kellner K, **Meyer E**, Estrada DA, Dowd SE, Mueller UG (2011) Bacterial Diversity in *Solenopsis invicta* and *Solenopsis geminata* Ant Colonies Characterized by 16S amplicon 454 Pyrosequencing. *Microbial Ecology* 61: 821-831.

11. Ishak HD, Miller JL, Sen R, Dowd SE, **Meyer E**, Mueller UG (2011) Microbiomes of ant castes implicate new microbial roles in the fungus-growing ant *Trachymyrmex septentrionalis*. *Scientific Reports* 1:204.

2010

10. **Meyer E**, Manahan DT (2010) Gene expression profiling of genetically determined growth variation in bivalve larvae (*Crassostrea gigas*). *Journal of Experimental Biology* 213:749-758.

9. Wang S, Zhang L, **Meyer E**, Bao Z (2010) Genome-wide analysis of transposable elements and tandem repeats in the compact placozoan genome. *Biology Direct* 5:18.

8. Wang S, Zhang L, **Meyer E**, Matz MV (2010) Characterization of a group of MITEs with unusual features from two coral genomes. *PLoS One* 5:e10700.

7. Curole JP, **Meyer E**, Manahan DT, Hedgecock D (2010) Unequal and genotype-dependent expression of mitochondrial genes in larvae of the Pacific oyster *Crassostrea gigas*. *Biological Bulletin* 218:122-131.

2009

6. **Meyer E**, Aglyamova G, Wang S, Buchanan-Carter J, Abrego D, Colbourne J, Willis B, Matz M (2009) Sequencing and de novo analysis of a coral larval transcriptome using 454 GS-Flx. *BMC Genomics* 10:219.

5. **Meyer E**, Davies S, Wang S, Willis BL, Abrego D, Juenger TE, Matz MV (2009) Genetic variation in responses to a settlement cue and elevated temperature in the reef-building coral *Acropora millepora*. *Marine Ecology Progress Series* 392:81-92.

4. Wang S, Zhang L, **Meyer E** and Matz MV (2009) Construction of a high-resolution genetic linkage map and comparative genome analysis for a reef-building coral *Acropora millepora*. *Genome Biology* 10:R126.

3. **Meyer E**, Manahan DT (2009) Nutrient uptake by marine invertebrates: cloning and functional analysis of amino acid transporter genes in developing sea urchins (*Strongylocentrotus purpuratus*). *Biological Bulletin* 217: 6-24.

2007

2. **Meyer E**, Green AJ, Moore M, Manahan DT (2007) Food availability and physiological state of sea urchin larvae (*Strongylocentrotus purpuratus*). *Marine Biology* 152:179-191.

1. Hedgecock D, Lin JZ, DeCola S, Haudenschild CD, **Meyer E**, Manahan DT, Bowen B (2007) Transcriptomic analysis of growth heterosis in larval Pacific oysters (*Crassostrea gigas*). *Proceedings of the National Academy of Sciences* 104:2313-2318.

RESEARCH FUNDING

Funded Grants (Total: $450,000+)

Coral Adaptation Challenge | Coral Reef Alliance | 2017–2018 | $18,000 (PI)
Coral adaptation by 2100: A trait-based, evolutionary approach

Ocean Acidification and Hypoxia Effects | Oregon Sea Grant | 2016–2018 | $229,720 (Co-PI)
Indexing vulnerability and adaptive capacity of marine shellfish

Thermal Acclimation in Corals | OSU CGRB Illumina Sequencing Grant | 2016–2017 | $6,000 (PI)

Pacific Oyster Climate Resistance | Oregon Sea Grant | 2014–2016 | $179,998 (Co-PI)

Anemone Systems Biology Model | Oregon Sea Grant Program Development | 2014–2016 | $9,998 (PI)

Climate Change Research Program | Oregon Sea Grant Program Development | 2014–2016 | $9,998 (Co-PI)

Genomic Resources Development | OSU General Research Fund | 2014–2015 | $9,789 (PI)

MENTORING AND ADVISING

Graduate Students

- **Primary Advisor:** 3 PhD students (2013–2019)
- **Thesis Committee Member:** 18 graduate students across multiple departments

Undergraduate Research

- **Volunteer Research Assistants:** 32 students over 7 years
- **Honors College Thesis Supervision:** 3 students
- **Funded Undergraduate Research:** 5 students (URSA-Engage, SURE, STEM Leaders programs)

Postdoctoral Supervision

- **Nathan Kirk** | Postdoctoral Research Fellow | 2013–2014

AWARDS AND HONORS

2015 | Finalist, Loyd E. Carter Award for Outstanding and Inspirational Teaching in Science *(student-nominated)*

2006 | Thurlow C. Nelson Award for Best Student Oral Presentation, National Shellfisheries Association

2004–2006 | USC Wrigley Institute of Environmental Studies-Rose Hills Fellowship

2001 | Outstanding Teaching Assistant, Biochemistry, USC

2000 | Outstanding Teaching Assistant, Introduction to Biology - Honors, USC

1999 | Outstanding Teaching Assistant, Introduction to Biology, USC

PROFESSIONAL SERVICE

Editorial and Review Service

- **Peer Review:** 50+ manuscripts for 15+ journals including *Molecular Ecology*, *BMC Genomics*, *PLoS ONE*, *Coral Reefs*, *Biological Bulletin* (2009–present)

Professional Organizations

- **Symposium Organizer:** Physiological Genomics, National Shellfisheries Association, Seattle, WA (2012)

University Service *(Oregon State University, 2012–2019)*

- Chair, Departmental Seminar Committee (2015–2016)
- Graduate Studies Committee (2014–2015, 2016–2017)
- Faculty Search Committees: BPP Ecology & Evolution, IB Marine Evolutionary Systems Biology
- MCB Graduate Admissions Committee (2012–2013, 2014–2015)
- Strategic Planning Committee (2012–2013)

PRESENTATIONS

Invited Seminars

- OSU CGRB Seminar Series (2014)
- Georgia College, Biological and Environmental Sciences (2013)
- Auburn University, Department of Biological Sciences (2013)
- Willamette University, Department of Biology (2013)
- Colorado State University, Bioagricultural Sciences (2011)

Conference Presentations

- International Coral Reef Symposium, Honolulu, HI (2016)
- Society for Integrative and Comparative Biology, Portland, OR (2016)
- Coral Reefs of Arabia, NYU Abu Dhabi Institute, UAE (2015)
- International Coral Reef Symposium, Cairns, Australia (2012)
- Joint Genome Institute User Meeting, Walnut Creek, CA (2010)

PROFESSIONAL DEVELOPMENT

Open Science and Data Sharing

- **Genomic Databases:** Developed and maintained searchable databases for 8+ non-model species
- **GitHub Repository:** Publicly available bioinformatics tools and tutorials
- **Web Analytics:** 46,483+ pageviews from 10,848+ unique visitors in 45+ countries (2012–2019)

Business and Entrepreneurship

- **Technology Transfer:** Successfully commercialized academic research methodologies
- **Science Communication:** Developed expertise in translating complex genomics for diverse audiences

- **Product Development:** Created novel DNA testing protocols for aquarium and aquaculture applications

Last Updated: July 2025