

Luke P. Miller, Ph.D.

Curriculum Vitae

April 2026

Biology Department
San Diego State University
5500 Campanile Dr.
San Diego, CA 92182-4614

luke.miller@sdsu.edu
<http://lukemiller.org>

Appointments

2021–present	Associate Professor	San Diego State University
2022–2026	Interim Director	SDSU Coastal and Marine Institute
2018–2021	Assistant Professor	San Diego State University
2015–2018	Assistant Professor	San José State University

Professional Preparation

2015	Postdoctoral Researcher	Loyola Marymount University
2013–2015	Research Associate	Hopkins Marine Station, Stanford University
2012–2013	Postdoctoral Researcher	Hopkins Marine Station, Stanford University
2008–2011	Postdoctoral Researcher	Marine Science Center, Northeastern University

Education

2008	Ph.D.	Hopkins Marine Station, Stanford University Studied thermal physiology and functional morphology of intertidal organisms, utilizing modeling, field experiments, and laboratory assays. Advisor: Mark Denny
2000	B.Sc.	University of California, Santa Barbara Double major: Aquatic Biology; Ecology and Evolution. Graduated with high honors and distinction in the major.

Publications

40 total. * denotes graduate student coauthor, † denotes undergraduate coauthor

2025	Rangel, R.E., M.E.S. Bracken, K.J. Kroeker, L.P. Miller , & C.J.B. Sorte (2025) Factorial field manipulation reveals CO ₂ and temperature effects on a critical habitat-forming shellfish. <i>Journal of Experimental Biology</i> ; 228 (17): jeb250787 https://doi.org/10.1242/jeb.250787 (open Access)
	McIntire, L.C.* & L.P. Miller (2025) The Role of Mobility in Intertidal Invertebrates' Responses to Thermal Stress. <i>Integrative and Comparative Biology</i> . icaf078 https://doi.org/10.1093/icb/icaf078 (Open Access)

- 2024 Skelton, Z.R., L.R. McCormick, G.T. Kwan, J. Lonthair, C. Neira, S.M. Clements, T.R. Martz, P.J. Bresnahan, U. Send, S.N. Giddings, J.C. Sevdjian, S. Jaeger, A. Feit, B.W. Frable, P.J. Zerofski, M. Torres, J.A. Crooks, J. McCullough, M.L. Carter, E. Ternon, **L.P. Miller**, G.M. Kalbach, D.C. Wheeler, P.E. Parnell, K.M. Swiney, G. Seibert, J.J. Minich, J.R. Hyde, P.A. Hastings, J.E. Smith, L.M. Komoroske, M. Tresguerres, L.A. Levin, N.C. Wegner (2024) Organismal responses to deteriorating water quality during the historic 2020 red tide off Southern California. *Elementa: Science of the Anthropocene* v12 (1), 1-27
<https://doi.org/10.1525/elementa.2023.00067>
- Sanders, R. D., A. K. Obaza, B. C. Grime, M. Lindhart, **L. P. Miller**, K. E. Elsmore, O. C. Carmack, T. K. Ford, & J. J. Leichter (2024). Wave, light, and dissolved oxygen exposures drive novel coastal eelgrass (*Zostera pacifica*) transplant performance. *Frontiers in Marine Science* v11, 1-19
<https://doi.org/10.3389/fmars.2024.1355449>
- 2023 Breaker, L. C. & **L. P. Miller** (2023). One hundred years of daily sea surface temperature from the Hopkins Marine Station in Pacific Grove, California: A review of the history, acquisition, and significance of the record. *Oceanography and Marine Biology - An Annual Review* v61: 3-34
<https://doi.org/10.1201/9781003363873-2>
 Data archive: <https://doi.org/10.5281/zenodo.7041718>
- Elsmore, K. E., K. J. Nickols, **L. P. Miller**, T. Ford, M. W. Denny & B. Gaylord. (2023) Wave damping by giant kelp, *Macrocystis pyrifera*. *Annals of Botany*
<https://doi.org/10.1093/aob/mcad094>
- Sorte, C. J. B., K. J. Kroeker, **L. P. Miller**, & M. E. S. Bracken. (2023) Biological modification of coastal pH depends on community composition and time. *Ecology* 104 (8): e4113
<http://dx.doi.org/10.1002/ecy.4113>
- 2022 **Miller, L. P.** (2022). Monitoring bivalve behavior and physiology in the laboratory and field using open-source tools. *Integrative and Comparative Biology* 62 (4): 1096-1110
<https://doi.org/10.1093/icb/icac046>
- Bracken, M. E. S., **L. P. Miller**, S. E. Mastroni, S. M. Lyra & C. J. B. Sorte. (2022) Accounting for variation in temperature and oxygen availability when quantifying marine ecosystem metabolism. *Scientific Reports* 12: 825
<https://doi.org/10.1038/s41598-021-04685-8>
 Data archive: <https://doi.org/10.7280/D1M39B>
- 2020 Lyman, T.*, K. E. Elsmore*, B. Gaylord, J. E. Byrnes, & **L. P. Miller**. (2020) Open Wave Height Logger: an open source pressure sensor data logger for wave measurement. *Limnology and Oceanography: Methods* 18 (7): 335-345
<http://dx.doi.org/10.1002/lom3.10370>
 Data archive: <http://doi.org/10.5281/zenodo.3679063>
- Elahi, R., **L. P. Miller**, & S. Y. Litvin. (2020) Historical comparisons of body size are sensitive to data availability and ecological context. *Ecology* 101 (9): e03101
<http://dx.doi.org/10.1002/ecy.3101>
 Data archive: <https://purl.stanford.edu/bs528mw1630>
- Pound, R. J.*, **L. P. Miller**, F. A. King*, & J. L. Burnaford. (2020) Temperature affects susceptibility of intertidal limpets to bird predation. *Journal of Experimental Biology* 223: 1-11

- <https://doi.org/10.1242/jeb.213595>
Data archive: <http://doi.org/10.5281/zenodo.3731787>
- 2019 **Miller, L. P.** & W. W. Dowd. (2019) Repeatable patterns of small-scale spatial variation in intertidal mussel beds and their implications for responses to climate change. *Comparative Biochemistry and Physiology - Part A* 236: 1-11
<https://doi.org/10.1016/j.cbpa.2019.06.016>
Data archive: <https://doi.org/10.5061/dryad.5270k42>
- Miller, L. P.** & W. W. Dowd. (2019) Dynamic measurements of black oystercatcher (*Haematopus bachmani*) predation on mussels (*Mytilus californianus*). *Invertebrate Biology* 138 (1): 67-73
<http://doi.org/10.1111/ivb.12240>
Data archive: <https://doi.org/10.5061/dryad.jp33n5f>
- 2017 **Miller, L. P.** & W. W. Dowd. (2017) Multimodal *in situ* datalogging quantifies inter-individual variation in thermal experience and persistent origin effects on gaping behavior among intertidal mussels (*Mytilus californianus*). *Journal of Experimental Biology* 220: 4305-4319
<http://doi.org/10.1242/jeb.164020>
Data archive: <https://doi.org/10.5061/dryad.2sd19>
- Gleason L. U., **L. P. Miller**, J. R. Winnikoff*, G. N. Somero, P. H. Yancey, D. Bratz[†], & W. W. Dowd. (2017) Thermal history and gape of individual *Mytilus californianus* correlate with oxidative damage and thermoprotective osmolytes. *Journal of Experimental Biology* 220: 4292-4304
<http://doi.org/10.1242/jeb.168450>
- 2016 Helmuth, B., F. Choi, A. Matzelle, J. L. Torossian, S. L. Morello, K. A. S. Mislan, L. Yamane, D. Strickland, P. L. Szathmary, S. E. Gilman, A. Tockstein, T. J. Hilbish, M. T. Burrows, A. M. Power, E. Gosling, N. Mieszkowska, C. D. G. Harley, M. Nishizaki, E. Carrington, B. Menge, L. Petes, M. M. Foley, A. Johnson, M. Poole, M. M. Noble, E. L. Richmond, M. Robart, J. Robinson, J. Sapp, J. Sones, B. R. Broitman, M. W. Denny, K. J. Mach, **L. P. Miller**, M. O'Donnell, P. Ross, G. E. Hofmann, M. Zippay, C. Blanchette, J. A. Macfarlan, E. Carpizo-Ituarte, B. Ruttenberg, C. E. Peña Mejía, C. D. McQuaid, J. Lathlean, C. J. Monaco, K. R. Nicastro, & G. Zardi (2016). Long-term, high frequency *in situ* measurements of intertidal mussel bed temperatures using biomimetic sensors. *Scientific Data* 3: 1-11
<http://doi.org/10.1038/sdata.2016.87>
- Early, R., B. A. Bradley, J. S. Dukes, J. J. Lawler, J. D. Olden, D. M. Blumenthal, P. Gonzalez, E. D. Grosholz, I. Ibáñez, **L. P. Miller**, C. J. B. Sorte, & A. J. Tatem (2016). Global threats from invasive alien species in the twenty-first century and national response capacities. *Nature Communications* 7: 1-9
<http://doi.org/10.1038/ncomms12485>
- LaScala-Gruenewald, D. E.*, **L. P. Miller**, M. E. S. Bracken, B. J. Allen & M. W. Denny (2016). Quantifying the top-down effects of grazers on a rocky shore: selective grazing and the potential for competition. *Marine Ecology Progress Series* 533: 49-66
<http://doi.org/10.3354/meps11774>
- 2015 **Miller, L. P.** & J. D. Long (2015). A tide prediction and tide height control system for laboratory mesocosms. *PeerJ* 3:e1442
<https://doi.org/10.7717/peerj.1442>

- Miller, L. P.**, B. J. Allen, F. A. King*, D. Chilin[†], V. Reynoso[†], & M. W. Denny (2015). Warm microhabitats drive both increased respiration and growth rates of intertidal consumers. *Marine Ecology Progress Series* 522: 127-143
<http://doi.org/10.3354/meps11117>
Data archive: <http://purl.stanford.edu/mz343tz6255>
- 2014 **Miller, L. P.**, C. M. Matassa*, & G. C. Trussell (2014). Climate change enhances the negative effects of predation risk on an intermediate consumer. *Global Change Biology* 20: 3834-3844
<http://doi.org/10.1111/gcb.12639>
- Chu, N. D.*, **L. P. Miller**, S. T. Kaluziak*, G. C. Trussell, & S. V. Vollmer (2014). Thermal stress and predation risk trigger distinct transcriptomic responses in the intertidal snail *Nucella lapillus*. *Molecular Ecology* 29(3): 397-421
<http://doi.org/10.1111/mec.12994>
- Ibáñez, I., J. M. Diez, **L. P. Miller**, J. D. Olden, C. J. B. Sorte, D. M. Blumenthal, B. A. Bradley, C. M. D'Antonio, J. S. Dukes, R. I. Early, E. D. Grosholz, & J. J. Lawler (2014). Integrated assessment of biological invasions. *Ecological Applications* 24(1): 25-37
<http://doi.org/10.1890/13-0776.1>
- 2013 Sorte, C. J. B., I. Ibáñez, D. M. Blumenthal, N. A. Molinari, **L. P. Miller**, E. D. Grosholz, J. M. Diez, C. M. D'Antonio, J. D. Olden, S. J. Jones, & J. S. Dukes (2013). Poised to prosper? A cross-system comparison of climate change effects on native and non-native species performance. *Ecology Letters* 16(2): 261-270
<http://doi.org/10.1111/ele.12017>
- Miller, L. P.** (2013). The effect of water temperature on drilling and ingestion rates of the dogwhelk *Nucella lapillus* feeding on *Mytilus edulis* mussels in the laboratory. *Marine Biology* 160: 1489-1496
<http://doi.org/10.1007/s00227-013-2202-z>
- 2012 Diez, J. M., C. M. D'Antonio, J. S. Dukes, E. D. Grosholz, J. D. Olden, C. J. B. Sorte, D. M. Blumenthal, B. A. Bradley, R. Early, I. Ibáñez, S. J. Jones, J. J. Lawler, & **L. P. Miller** (2012). Will extreme climatic events facilitate biological invasions? *Frontiers in Ecology and the Environment* 10(5): 249-257
<http://doi.org/10.1890/110137>
- Bradley, B. A., D. M. Blumenthal, R. Early, E. D. Grosholz, J. J. Lawler, **L. P. Miller**, C. J. B. Sorte, C. M. D'Antonio, J. M. Diez, J. S. Dukes, I. Ibáñez & J. D. Olden (2012). Global change, global trade, and the next wave of plant invasions. *Frontiers in Ecology and the Environment* 10(1): 20-28
<http://doi.org/10.1890/110145>
- 2011 Sorte, C. J. B., S. J. Jones, & **L. P. Miller** (2011). Geographic variation in temperature tolerance as an indicator of potential population responses to climate change. *Journal of Experimental Marine Biology and Ecology* 400(1): 209-217
<http://doi.org/10.1016/j.jembe.2011.02.009>
- Miller L. P.** & M. W. Denny. (2011) Importance of behavior and morphological traits for controlling body temperature in littorinid snails. *The Biological Bulletin* 220(3): 209-223

- <https://doi.org/10.1086/BBLv220n3p209>
- 2009 **Miller, L. P.**, C. D. G. Harley, & M. W. Denny. (2009) The role of temperature and desiccation stress in limiting the local-scale distribution of the owl limpet, *Lottia gigantea*. *Functional Ecology* 23(4): 756-767
<http://doi.org/10.1111/j.1365-2435.2009.01567.x>
- Denny, M. W., L. J. H. Hunt, **L. P. Miller**, & C. D. G. Harley. (2009) On the prediction of extreme ecological events. *Ecological Monographs* 79(3): 397-421
<http://doi.org/10.1890/08-0579.1>
- Harley, C. D. G., M. W. Denny, K. Mach, & **L. P. Miller**. (2009) Thermal stress and morphological adaptations in limpets. *Functional Ecology* 23(2): 292-301
<http://doi.org/10.1111/j.1365-2435.2008.01496.x>
- 2008 Dong, Y., **L. P. Miller**, J. G. Sanders, & G. N. Somero. (2008) Heat-shock protein 70 (Hsp70) expression in four limpets of the Genus *Lottia*: interspecific variation in constitutive and inducible synthesis reflects in situ exposure to heat stress. *The Biological Bulletin*, 215, pgs. 173-181
<https://doi.org/10.2307/25470698>
- 2007 **Miller, L. P.** (2007) Feeding in extreme flows: behavior compensates for mechanical constraints in barnacle cirri. *Marine Ecology Progress Series*, 349, pgs. 227-234
<http://doi.org/10.3354/meps07099>
- Miller, L. P.** & B. Gaylord. (2007) Barriers to flow: the effects of experimental cage structures on water velocities in high-energy subtidal and intertidal environments. *Journal of Experimental Marine Biology and Ecology*, 344, pgs. 215-228
<http://doi.org/10.1016/j.jembe.2007.01.005>
- Miller, L. P.**, M. J. O'Donnell, & K. J. Mach. (2007) Dislodged but not dead: survivorship of a high intertidal snail following wave dislodgement. *Journal of the Marine Biological Association of the United Kingdom*, 87, pgs. 735-739
<http://doi.org/10.1017/S0025315407055221>
- 2006 Denny, M. & **L. Miller** (2006). Jet propulsion in the cold: mechanics of swimming in the Antarctic scallop *Adamussium colbecki*. *Journal of Experimental Biology* 209: pgs. 4503-4514
<http://doi.org/10.1242/jeb.02538>
- Denny, M. W., **L. P. Miller**, & C. D. G. Harley. (2006). Thermal stress on intertidal limpets: long-term hindcasts and lethal limits. *Journal of Experimental Biology* 209: pgs. 2420-2431
<http://doi.org/10.1242/jeb.02258>
- 2003 Denny, M. W., **L. P. Miller**, M. D. Stokes, L. J. H. Hunt, & B. S. T. Helmuth (2003) Extreme water velocities: Topographical amplification of wave-induced flow in the surf zone of rocky shores. *Limnology and Oceanography* 48(1): pgs. 1-8.
<http://www.jstor.org/stable/3597974>

Book Chapters

- 2022 Stael, S., **L. P. Miller**, Á. Fernández-Fernández, & F. Van Breusegem. Detection of damage-activated metacaspase activity by Western blot in plants. In Klemenčič M., Stael S., Huesgen P.F. (eds) *Plant Proteases and Plant Cell Death: Methods and Protocols*, v2447. Humana, New York, NY
https://doi.org/10.1007/978-1-0716-2079-3_11
- 2016 Blanchette, C. A., M. W. Denny, J. M. Engle, B. S. T. Helmuth, **L. P. Miller**, K. J. Nielsen, & J. Smith. *Ecosystems of California: Intertidal* in *Ecosystems of California*. H. Mooney and E. Zavaleta eds. University of California Press ISBN-13: 978-0520278806

Software packages for R

- 2024 Thorley, J. & **L. Miller** `rtide`: Tide Heights. v0.0.11
<https://CRAN.R-project.org/package=rtide>
- 2021 **Miller, L. P.** & U. Neumeier `oceanwaves`: Summary statistics for ocean waves.
<https://CRAN.R-project.org/package=oceanwaves>
- 2020 **Miller, L. P.** `owh1R`: Open Wave Height Logger Data Processing In R
<https://github.com/millerlp/owh1R>

Dissertation

- 2008 Miller, L. P. “Life on the edge: morphological and behavioral adaptations for survival on wave-swept shores.” Stanford University, 205 pp.
http://www.lukemiller.org/pubs/Miller_Luke_Thesis_2008.pdf

Funding

- 2026-2029 Collaborative research: Thermal refuge or cascading extinctions: evaluating the capacity of coastal foundation species to mitigate impacts of intensifying heat waves. In collaboration with M.E. Bracken & C.B.J. Sorte at UC Irvine. Grant Agency: National Science Foundation Division of Ocean Sciences, Biological Oceanography 4/15/2026 - 3/31/2029, \$209,305
- 2024-2026 Using novel coastal armoring methods to support greater intertidal community productivity and resilience against climate warming impacts. PI - Luke Miller. Grant agency: University of Southern California Sea Grant, Duration: 2/1/2024 - 1/31/2026, \$85,998
- 2023-2024 A near-peer mentoring cascade to promote inclusive research training at the Coastal and Marine Institute Laboratory. Co-PI Luke Miller, in collaboration with Brian Hentschel (PI), Gena Sbeglia (Co-PI), Paul Detwiler (Co-PI). Grant agency: California Sea Grant and California State University Council on Ocean Affairs, Science, and Technology. Duration: 2/1/2023 - 1/31/2024, \$93,750
- 2021-2024 Habitat heartbeats: Incorporating bivalve biosensors into estuary monitoring infrastructure to inform water quality monitoring and management decisions, PI - Luke Miller, Co-PIs Kristen Goodrich, Sarah Giddings. Grant Agency: NOAA National Estuarine Research Reserve System Science Collaborative. Duration: 10/2021 - 9/2024, no-cost extension to 3/2025, \$591,349 total
- 2021-2023 Development of Cost-effective Metrics for Monitoring Living Shorelines. D. Zacherl, C. Whitcraft, K. Nichols, J. Carlin, L. P. Miller. California State University Council on Ocean Affairs, Science & Technology: State Science Information Needs Program. Duration: 30 months, \$390,165 total, \$78,284 to SDSU.

- 2018-2021 Collaborative Research: Effects of multiple aspects of climate change on marine biodiversity and ecosystem functioning. C. B. J. Sorte, M. E. Bracken, K. J. Kroeker, L. P. Miller. National Science Foundation Biological Oceanography Proposal 1756216. Duration: 36 months, \$99,965.
- 2017-2020 Collaborative Research: Context-dependency of top-down vs. bottom-up effects of herbivores on marine primary producers. M. E. Bracken, A. C. Martiny, & L. P. Miller. National Science Foundation Biological Oceanography Proposal 1737065. Duration: 36 months, \$123,567

Teaching

- San Diego State University**
- 2026 Marine Conservation Biology (BIOL 677) (graduate)
Analysis of Biological Data (BIOL 606) (graduate)
- 2025 Animal Physiology (BIOL 560)
Animal Behavior (BIOL 527)
Analysis of Biological Data (BIOL 606) (graduate)
- 2024 Theory and Principles of Ecology (BIOL 645) (graduate)
- 2023 Animal Physiology (BIOL 560)
Analysis of Biological Data (BIOL 606) (graduate)
Biostatistics (BIOL 215)
- 2022 Animal Physiology (BIOL 560)
Theory and Principles of Ecology (BIOL 645) (graduate)
Analysis of Biological Data (BIOL 606) (graduate)
Ecology (BIOL 354)
- 2021 Animal Physiology (BIOL 560)
Theory and Principles of Ecology (BIOL 645) (graduate)
Analysis of Biological Data (BIOL 606) (graduate)
- 2020 Biostatistics (BIOL 215)
Zoology (BIOL 496)
- 2019 Analysis of Biological Data (BIOL 606) (graduate)
- San José State University**
- 2018 Ecological Sampling Design and Analyses (BIOL 156)
Hypothesis Testing, Biostatistics and Experimental Design (BIOL 55 & 155)
- 2017 Hypothesis Testing, Biostatistics and Experimental Design (BIOL 55 & 155)
Ecological Field Methods (BIOL 164)
Advanced Topics: Practical Computing for Research Biologists (BIOL 255E) (graduate)
Functional Morphology (BIOL 114)
Ecological Biology Lab (BIOL 20)
- 2016 Hypothesis Testing, Biostatistics and Experimental Design (BIOL 55 & 155)
Physiological Ecology (BIOL 106)
Principles of Biology I Lab (BIOL 30)
- 2015 Hypothesis Testing, Biostatistics and Experimental Design (BIOL 55 & 155)
Functional Morphology (BIOL 114)
- Marine Science Center, Northeastern University**
- 2009–2011 *Instructor* – Invertebrate Zoology (BIOL 5503)
- 2008 *Guest Lecturer* – Marine Ecology
- Hopkins Marine Station, Stanford University**

2007	<i>Guest Lecturer, Teaching Assistant</i> – Biomechanics and Ecological Physiology of Intertidal Communities
2003, 2005	<i>Teaching Assistant</i> – Intertidal Biomechanics and Ecophysiology
2003	<i>Teaching Assistant</i> – Biostatistics
2002	<i>Teaching Assistant</i> – Introductory Biology Lab
	McMurdo Station, Antarctica
2006	<i>Teaching Assistant</i> – NSF Antarctic Biology Course
	University of California, Santa Barbara
1999, 2000	<i>Teaching Assistant</i> – Introductory Biology Lab, Ecology and Evolution section
	Monterey Bay Aquarium
2006–2008	<i>Feeding Show Diver & Narrator</i> – Fed fish while explaining kelp forest natural history to the public, diving on surface-supplied air.

Conference presentations

* denotes graduate student coauthor, † denotes undergraduate coauthor

2026	Codding A.*, L.P. Miller , M.W. Denny, C. Lachnit*, B.J. Allen (2026). Species diversity and the maintenance of ecosystem function in an increasingly variable world. Benthic Ecology Meeting, March 2026 (oral presentation)
	Pooni, J.†, Ghannadian, M.†, Al-Jasim, Z.†, McIntire, L.*, Miller, L.P. (2026) Greening the Grey: The Capability of Novel Coastal Armoring Units to Buffer Abiotic Stressors. San Diego State University Student Symposium (S3), February 2026 (poster presentation)
	Mendez N.M.†, L.P. Miller , M.J. Klopp*, S.N. Giddings, K.A. Goodrich, J.A. Crooks (2026) Physiological Response of <i>Mytilus galloprovincialis</i> to Estuary Water Quality Changes. San Diego State University Student Symposium (S3), February 2026 (poster presentation)
2025	Pooni J.†, M. Ghannadian†, L.C. McIntire*, & L.P. Miller (2025). Greening the grey: evaluating the ability of novel coastal armoring installations to buffer abiotic stressors. Western Society of Naturalists Annual Meeting, November 2025 (poster presentation)
	Klopp, M.J.*, J.A. Crooks, S.N. Giddings, K.A. Goodrich, & L.P. Miller (2025). Keep calm and beat on: physiological responses of <i>Mytilus galloprovincialis</i> from San Diego estuaries to hypoxia and low salinity stress. Western Society of Naturalists Annual Meeting, November 2025 (oral presentation)
	McKernan B.R.* & L.P. Miller (2025). Behavioral and Physiological Response of the Mediterranean Mussel (<i>Mytilus galloprovincialis</i>) to Acute Hypoxia and Food Supply. Western Society of Naturalists Annual Meeting, November 2025 (poster presentation)
	McIntire L.C.*, & L.P. Miller (2025). Fight or flight: examining the behavioral and physiological trade-offs of intertidal ectotherms under stressful temperatures. Western Society of Naturalists Annual Meeting, November 2025 (oral presentation)
	Klopp, M.J.* & L.P. Miller (2025). Effects of acute dissolved oxygen stress on <i>Mytilus galloprovincialis</i> gaping behavior and cardiac activity. California Estuarine Research Society Annual Meeting, April 2025. (poster presentation) (Awarded Best Student Poster)

- Anidjar, N.*, S.N. Giddings, **L.P. Miller**, C. Neira, L. McCormick, L. Levin, K. Goodrich, J. Crooks, J. McCullough, D. Wheeler (2025). Oyster valve dynamics and behavioral response to ecological conditions in an intermittently closed estuary. California Estuarine Research Society Annual Meeting, April 2025 (oral presentation)
- Miller, L.P.**, M.J. Klopp*, N. Anidjar*, S.N. Giddings, K.A. Goodrich, J.A. Crooks (2025) Impacts of ongoing daily anoxia events on bivalve behavior in the Tijuana River Estuary. California Estuarine Research Society Annual Meeting, April 2025 (oral presentation)
- Mendez, N.M.[†], **L.P. Miller**, M.J. Klopp*, S.N. Giddings, K.A. Goodrich, J.A. Crooks (2025) Heart rate and valve-gaping response of *Crassostrea* [Magallana] gigas to estuary water quality changes. (Poster presentation) San Diego State University Student Symposium (S3), February 2025
- Dial, A.[†], M.J. Klopp*, **L.P. Miller** (2025) *Mytilus galloprovincialis* heart rate and valve-gaping behavior in response to acute dissolved oxygen stress. (Poster presentation) San Diego State University Student Symposium (S3), February 2025
- Ghannadian, M.[†], J. Pooni[†], L.M. McIntire*, and **L.P. Miller** (2025) Riprap reinforcements: how do photosynthesis and respiration affect the dissolved oxygen in a novel coastal armoring technology? (Poster presentation) San Diego State University Student Symposium (S3), February 2025
- 2024 **Miller L.P.**, M.J. Klopp*, S.N. Giddings, K.A. Goodrich, J.A. Crooks (2024). Oyster and mussel gaping behavior in response to changing water conditions in the Tijuana River estuary. Western Society of Naturalists conference, November 2024 (poster presentation)
- Ghannadian, M.[†], J. Pooni[†], L.C. McIntire*, **L.P. Miller** (2024). Riprap reinforcements: How do photosynthesis and respiration affect the abiotic environment in a new coastal armoring technology? Western Society of Naturalists conference, November 2024 (poster presentation)
- Klopp, M.J.* & **L.P. Miller** (2024). Heart rate and valve-gaping behavior of *Mytilus galloprovincialis* in response to acute hypoxia. Western Society of Naturalists conference, November 2024 (oral presentation)
- McIntire, L.C.* & **L.P. Miller** (2024). Fight or flight: Does relying on behavior exacerbate or buffer the effects of climate change for the line shore crab? Western Society of Naturalists conference, November 2024 (oral presentation).
(**Awarded Best Student Talk**)
- Murie, K.* & **L.P. Miller**, E. Carrington (2024). Mussels in motion: How flow and density shape behavior and seawater chemistry in *Mytilus* aggregations. Western Society of Naturalists conference, November 2024 (oral presentation)
- Rangel, R.E., K. Kroeker, M. Bracken, **L.P. Miller**, C.J.B. Sorte (2024). Characterizing drivers of marine community calcification under ocean warming and acidification. Western Society of Naturalists conference, November 2024 (oral presentation)
- Miller L.P.**, S.N. Giddings, K.A. Goodrich, J.A. Crooks (2024). Habitat heartbeats: Tracking behavioral and physiological responses of oysters and mussels to water quality conditions in San Diego estuaries. California Ocean Observing meeting, May 2024 (poster presentation)
- Ghannadian M.[†], M. Klopp*, **L.P. Miller** (2024). *Mytilus galloprovincialis* heart rate and valve-gaping behavior in response to acute salinity stress. SDSU Student Symposium (S3), March 2024 (poster presentation)

- 2023 Anidjar, N.*, S.N. Giddings, **L.P. Miller**, G.N. Kalbach*, J. Crooks, J. McCullough, D. Wheeler* (2023). Oyster valve gape behavior with respect to environmental conditions in an intermittently closed estuary. Coastal and Estuarine Research Foundation conference, November 2023 (poster presentation)
- Klopp, M.*, M. Ghannadian[†], **L.P. Miller** (2023). “*Mytilus galloprovincialis* heart rate and valve-gaping behavior in response to acute salinity stress. Western Society of Naturalists conference, November 2023 (poster presentation)
- Strope, L.*, D. Zacherl, C. Whitcraft, J. Carlin, C. Arre, **L.P. Miller** (2023). Effects of seagrass and abiotic factors on oyster physiology.” Western Society of Naturalists conference, November 2023 (poster presentation)
- Kalbach, G.* & **L.P. Miller** (2023). “When they go low, we go high: A tidal height comparison of oyster cardiac and gape activity.” Western Society of Naturalists conference, November 2023 (oral presentation)
- McIntire, L.*, J. Griffin*, A. Dubord*, G. Sbeglia, P. Detwiler, **L.P. Miller**, B. Hentschel (2023). “A peer-mentoring cascade to promote inclusive research training at the Coastal and Marine Institute Laboratory.” Western Society of Naturalists conference, November 2023 (poster presentation)
- Rangel, R., M.E. Bracken, K.J. Kroeker, **L.P. Miller**, C.J.B. Sorte (2023). “Factorial field manipulation reveals multi-stressor effects on a critical habitat-forming shellfish.” Western Society of Naturalists conference. November 2023 (oral presentation)
- Sorte, C.J.B., K.J. Kroeker, **L.P. Miller**, R. Rangel*, M.E. Bracken (2023). “Impacts of temperature and CO₂ on rocky shore ecosystems: results of a factorial field experiment.” Ecological Society of America conference. August 2023 (oral presentation)
- Miller, L.P.**, G. Kalbach*, J. Crooks, *D. Wheeler, C. Neira, S. Giddings (2023). “Tracking behavioral and physiological responses of oysters and mussels to changing water quality conditions in Southern California low-inflow estuaries.” California Estuarine Research Society Conference, April 21 2023 (oral presentation)
- Strope, L.*, D. Zacherl, C. Whitcraft, J. Carlin, C. Arre, **L.P. Miller** (2023). “Physiological responses of Olympia oysters associated with eelgrass and fluctuating environmental conditions.” California Estuarine Research Society Conference, April 21 2023 (oral presentation)
- Kalbach, G.M.* & **L.P. Miller** (2023). “Nonnative oyster responses to laboratory and field conditions in South San Diego Bay salt marsh.” California Estuarine Research Society Conference, April 21 2023 (poster presentation)
- Rangel, R.*, K. Kroeker, M.E. Bracken, **L.P. Miller**, C.J.B. Sorte (2023). “Climate Change Impacts on the Shell Structure of an Ecologically Important Shellfish.” American Physiological Society Annual Meeting, April 2023 (poster presentation)
- Rangel, R.*, K. Kroeker, M.E. Bracken, **L.P. Miller**, C.J.B. Sorte (2023). “Climate Change Impacts on the Shell Structure of an Ecologically Important Shellfish.” Society for Integrative and Comparative Biology conference, January 2023 (oral presentation)
- 2022 Miller, L. P. (2022). “Monitoring bivalves and environmental conditions in the field.” *Society for Integrative and Comparative Biology*
- 2021 Kalbach, G. M.* & L. P. Miller (2021). “Does history of exposure to aerial stress impact intertidal mussels’ recovery period?” *Western Society of Naturalists*

- Miller, L. P. (2021). "Bivalve responses to environmental conditions in low-inflow southern California estuaries." *CSU Council on Ocean Affairs, Science & Technology*
- Bracken, M. E. S., L. P. Miller, S. E. Mastroni*, S. M. Lira*, & C. J. B. Sorte. "Temperature and oxygen availability are key drivers of marine ecosystem metabolism and must be accounted for in estimating community production and respiration." *Ecological Society of America*
- 2020 Kalbach, G. M.* & L. P. Miller. "Spies in the tides: application of novel technology for monitoring cardiac activity in bivalves." *Western Society of Naturalists*
- Bracken, M. E. S., K. J. Kroeker, **L. P. Miller**, & C. J. B. Sorte "Realistic field manipulations to simulate future climate conditions modify seaweed photosynthetic performance." Western Society of Naturalists annual meeting, November 2020. (oral presentation)
- Lees, L. E.*, M. L. Brock, A. L. Martiny, L. P. Miller, & M. E. Bracken. "Influences of herbivores, temperature, and nutrient availability on marine microbial assemblages: Results of an in-situ field experiment." *Ocean Sciences Meeting* (poster presentation)
- 2019 Miller, L. P. & W. W. Dowd "Repeatable patterns of small-scale spatial variation in intertidal mussel beds and implications for responses to climate change." *Western Society of Naturalists*
- Elsmore, K. E., B. Gaylord, K. J. Nickols, **L. P. Miller**, M. W. Denny, & T. Ford. "Potential for kelp forests to attenuate coastal wave stress." *Phycological Society of America / International Society of Protistologists* (poster presentation)
- 2018 Miller, L. P., M. Ponce de Leon Cerqueda, L. S. Cunningham, A. Thomasdotter, K. M. Gong, N. Patel, & M. W. Denny "Establishment of internal body temperature gradients in *Mytilus californianus* during emersion." *Western Society of Naturalists*
- Miller, L. P. & W. W. Dowd, "A multi-modal sensor system for monitoring individual mussels in rocky intertidal habitats." *Society for Integrative and Comparative Biology*
- 2017 Miller, L. P. & W. W. Dowd, "Valve gaping behavior and movement patterns of mussels on wave-swept rocky shores." *Society for Integrative and Comparative Biology*
- Miller, L. P. & W. W. Dowd. "Biologging on the wave-swept shore: a monitoring system for mussel behavior and body temperature." *Western Society of Naturalists*
- Ponce de Leon Cerqueda M.†, L. S. Cunningham†, A. O. Thomasdotter†, K. M. Gong†, N. Patel†, **L. P. Miller** (2017). "Internal temperature gradients during aerial emersion in the California sea mussel (*Mytilus californianus*)." *Western Society of Naturalists* (poster presentation)
- 2016 Miller, L. P. & W. W. Dowd. "Prying into private lives of mussels: Field measurements of valve gape and body posture changes in the wave-swept intertidal zone." *Western Society of Naturalists*
- Pulido A. A.†, E. A. Dereschuk†, H. S. Kaur†, J. B. Lane†, M. W. Denny, B. J. Allen, & **L. P. Miller** (2016) "Validating a digital photogrammetric method for non-invasive estimates of limpet growth in the field." *Western Society of Naturalists* (poster presentation)
- Miller, L. P. & W. W. Dowd. "Field-based measurements of behavioral and biophysical contributions to body temperature variation among intertidal mussels." *Society for Integrative and Comparative Biology*

- 2015 Miller, L. P., B. J. Allen, & M. W. Denny. "Increased low tide temperature variation drives increased growth rates of intertidal consumers." *Society for Integrative and Comparative Biology*
- 2014 Miller, L. P., B. J. Allen, & M. W. Denny. "Warmer weather while waiting for waves lets limpets live large." *Western Society of Naturalists*
 Miller, L. P., B. J. Allen, & M. W. Denny. "Consequences of changing environmental variability on rocky shores: Effects of thermal variation on growth rates and energy flow" *Ecological Society of America*
 Miller, L. P., B. J. Allen, & M. W. Denny. "Changing environmental variability in a changing climate: the effects of thermal variation on growth rates and energy flow through an intertidal community." *Society for Integrative and Comparative Biology*
- 2013 Miller L. P., B. J. Allen, & M. W. Denny. "Changing environmental variability in a changing climate: effects of thermal variation on growth rates in an intertidal community." *Western Society of Naturalists*
- 2012 Miller L. P., M. W. Denny, M. J. O'Donnell, M. L. Boller, & A. V. Staaf. "Sensors on the seashore: measuring air and sea conditions on a wave-swept shoreline." *U.S. International Association of Landscape Ecology*
- 2010 Miller, L. P. "Behavior, morphology, and a warming climate: Thermal stress in high intertidal grazers" *Benthic Ecology Meeting*
- 2009 Miller, L. P., M. W. Denny, & C. D. G. Harley. "Long-term reconstructions of limpet body temperatures: stress events and small-scale limpet distributions on a rocky shore." *Society for Integrative and Comparative Biology*
- 2008 Miller, L. P. "The quandary of color and the significance of shape: temperature relations in littorine snails." *Western Society of Naturalists*
 Miller, L. P. "Morphological and behavioral adaptations for control of body temperature during aerial emersion in northeastern Pacific Littorina: a mechanistic test." *Western Society of Malacologists*
 Miller, L. P., M. W. Denny & C. D. G. Harley. "Ecomechanics meets ecophysiology: predicting the frequency of lethal and sublethal stress events for a dominant competitor for primary space in the intertidal zone, *Lottia gigantea*." *Benthic Ecology Meeting*
- 2007 Miller, L. P., M. W. Denny, & C. D. G. Harley. "Ecomechanics meets ecophysiology: predicting the frequency of lethal and sublethal stress events for a mid-shore limpet, *Lottia gigantea*." *Western Society of Naturalists*
- 2006 Miller, L. P. "Feeding is a drag: cautious cirripedes curtail cirral casting when waves wash wildly". Mini-symposium honoring Dr. Steven Vogel, *Integrative and Comparative Biology*
 Miller, L. P. "Feeding in flow: in situ measurement of barnacle feeding under breaking waves". *International Temperate Reefs Symposium*
- 2005 Miller L. P. "Pondering the purpose of precarious postures: The effect of littorine snail shell orientation on body temperature". *Western Society of Malacologists*
- 2004 Miller, L. P. "The effects of high temperature and desiccation stress on the survival of the giant owl limpet, *Lottia gigantea*." *Integrative and Comparative Biology* v 44(6): 606.
- 2003 Miller, L. P. "Functional significance of littorine snail "standing off" behavior for control of body temperature during aerial exposure." *Integrative and Comparative Biology* v 43(6): 995
 O'Donnell, M. J. & L. P. Miller. "Field measurements of mussel feeding time in the surf zone." *Integrative and Comparative Biology* v 43(6): 993

- 2000 Miller, L. P. "Quantifying cage effects on water flow and wave forces in the rocky intertidal zone" *Western Society of Naturalists*
- 2000 Miller, L. P. "Whelk predation and the potential effects on mussel species distributions around Point Conception." *Western Society of Naturalists*

Invited Seminars

- 2026 National Estuarine Research Reserve Science Collaborative webinar series <https://youtu.be/rHytn6h7k6M>
- 2024 Cabrillo Marine Aquarium Discovery Lecture Series, San Pedro, CA, Dec 2024 <https://youtu.be/D-ZvHKCK1Ps?si=BG97Mf69USYQ9Eu->
- 2023 California State University Long Beach
- 2023 Tijuana River National Estuarine Research Reserve
- 2022 Scripps Institution of Oceanography
- 2018 San Diego State University
- 2017 Moss Landing Marine Laboratories
U.C. Davis Bodega Marine Laboratory
Humboldt State University
California State University, Northridge
- 2016 Sonoma State University
Moss Landing Marine Laboratories
- 2015 San José State University
- 2014 Hopkins Marine Station, Stanford University
- 2013 California State University, Monterey Bay
- 2013 Cal Poly San Luis Obispo
- 2012 San Francisco State University, Romberg Tiburon Center
- 2011 University of New England
- 2010 University of Delaware
- 2010 Mt. Holyoke College
- 2009 Northeastern University, Marine Science Center

Professional Skills

- **Programming languages**

- R statistical language, C, C++, MATLAB, LabVIEW, Python

- **Technical Skills**

- Design and construction of instrumentation, sensor arrays, seawater systems, process control
- Microcontroller and datalogger development, including temperature, hall effect, accelerometer, magnetometer, force, and wave height sensors
- Machine shop skills including CNC mill, lathe, welding (GMAW, GTAW, & SMAW)

- **Open Source Projects**

- Open Wave Height Logger (OWHL) – a datalogger to sample ocean wave heights (via pressure sensor) for long duration deployments. With Dr. Jarrett Byrnes, U Mass Boston. <https://github.com/millerlp/OWHL>
- Tide Height Control system – a self-contained tide height calculator and system to smoothly raise and lower water levels in aquaria with the changing tide. With Dr. Jeremy Long, San Diego State University. https://github.com/millerlp/Tide_calculator
https://github.com/millerlp/Tide_controller

- Mussel Tracker – a datalogger system to log feeding behavior, orientation, and temperature data for mussels in the rocky intertidal zone. With Dr. W. Wesley Dowd, Loyola Marymount University.

<https://github.com/millerlp/MusselTracker>

Professional Experience

AAUS Scientific Diver – certified 2004

Faculty Representative – Diving Control Board, San Diego State University (2022–2026)

Delegate to the National Association of Marine Labs (2022–2026)

National Association of Marine Labs Audit Committee (2025–2026)

Student Representative – Diving Control Board, Stanford University (2005–2007)

Professional Memberships

Western Society of Naturalists

California Estuarine Research Society

Ecological Society of America

Society for Integrative and Comparative Biology

Professional Service

Reviewer for: *American Malacological Bulletin, Animal Behaviour, Aquatic Biology, Basic and Applied Ecology, Biogeography, Biological Bulletin, Biological Invasions, Biology Letters, Conservation Physiology, Ecological Informatics, Ecological Modelling, Ecology, Ecology and Evolution, Estuaries and Coasts, Frontiers in Zoology, Functional Ecology, Global Ecology and Biogeography, HardwareX, Helgoland Marine Research, Hydrobiologia, ICES Journal of Marine Science, Integrative Zoology, Invertebrate Biology, Journal of Experimental Biology, Journal of Experimental Marine Biology and Ecology, Journal of the Marine Biological Association of the United Kingdom, Journal of Molluscan Studies, Journal of Phycology, Journal of Thermal Biology, Journal of Visualized Experiments, Limnology and Oceanography, Marine Biology, Marine Biology Research, Marine Ecology Progress Series, Marine Environmental Research, Methods in Ecology and Evolution, Oecologia, Oikos, PeerJ, PLoS One, Polar Research*

References

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