

Reid S. Brennan (he/him)

Marine Mammal and Turtle Division
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Education and Professional Experience

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| 2024-Present | Research Biologist Southeast Fisheries Science Center, Marine Mammal and Turtle Division National Oceanic and Atmospheric Administration |
| 2024-Present | Affiliated Scientist GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany |
| 2021-2024 | Junior Professor GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany Position equivalent to assistant professor in USA |
| 2017-2021 | Postdoctoral Associate University of Vermont, USA; Advisor: Dr. Melissa Pespeni |
| 2017 | Ph.D., Ecology University of California Davis, USA; Advisor: Dr. Andrew Whitehead |
| 2009 | B.S, Biology University of Dayton, USA |

Grants and Awards

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| 2022-2025 | Principal Investigator, Deutsche Forschungsgemeinschaft (German Research Foundation) Validation of predictions of evolutionary rescue from global change (€231,440) |
| 2022 | Society for Molecular Biology and Evolution Satellite Meeting on Evolutionary Rescue (€30,000) |
| 2020 | Dovetail Genomics Tree of Life Grant (\$15,000) |
| 2017 | Michael Guyer Postdoctoral Fellowship, University of Wisconsin-Madison (\$50,000) Declined to accept postdoc at UVM |
| 2017 | AAAS Science Policy Workshop, Washington, DC. UC Davis selected representative. |
| 2016 | National Science Foundation Doctoral Dissertation Improvement Grant (\$18,040) |
| 2013-2016 | Henry A. Jastro Research Fellowship, UC Davis Graduate Group in Ecology (\$6,970) |
| 2015 | UC Davis Graduate Group in Ecology Fellowship (Tuition and salary, 1 quarter) |
| 2014 | UC Davis Graduate Group in Ecology Fellowship (Tuition and salary, 1 quarter) |
| 2014 | Daphne and Ted Pengelley Award in Evolutionary Biology, UC Davis Center for Population Biology (\$1,500) |
| 2013 | George Maier Foundation Grant (\$1,000) |
| 2010 | Economic Development Assistantship, Louisiana State University (\$100,000) |
| 2009 | John J. Comer Ecological Undergraduate Research Award, University of Dayton |

Publications

Mentees indicated with underlined names

Preprints/In review:

Brennan, R.S., deMayo, J.A., Finiguerra, M., Baumann, H., Dam, H.G. and Pespeni, M.H., Epigenetic and evolutionary mechanisms uniquely contribute to rescue from global change. In review. bioRxiv: <https://doi.org/10.1101/2024.03.20.585843>

Han, K.Y., **Brennan, R.S.**, Monk, C.T., Jentoft, S., Helmerson, C., Dierking, J., Huessy, K., Kokubun, É.E., Fuss, J., Krause-Kyora, B. and Thomsen, T.B., 2024. Genomic Evidence of Fisheries Induced Evolution in Eastern Baltic cod. In review. bioRxiv: <https://doi.org/10.1101/2024.06.27.601002>

deMayo, J.A., **Brennan, R.S.**, Pespeni, M.H., Jaspers, C., Dam, H.G., Varpe, O., Lee, C.E., Limits and costs of adaptation in the Anthropocene. In review.

Nascimento-Schulze, J.C., Vajedsamiei, J., Bean, T.P., Frakholz, L., **Brennan, R.S.**, Melzner, F., Ellis, R.P., Thermal selection shifts genetic diversity and performance in Blue mussel juveniles. In review.

Peer-reviewed:

21. Bentley, B.P., Cheng, B.S., **Brennan, R.S.**, Swenson, J.D., Adkins, J.L., Villeneuve, A.R., Komoroske, L. Adaptation at a snail's pace: No evidence of rapid adaptation to novel thermal environments in invasive Atlantic oyster drills (*Urosalpinx cinerea*). *Accepted. Molecular Ecology*

20. Hahn, A., **Brennan, R.S.**, 2024. Phenotypic plasticity drives seasonal thermal tolerance in a Baltic Sea copepod. *Journal of Experimental Marine Biology and Ecology*. 576, 152014.

19. Kazanavičiūtė, E., Dickey, J., Soto, I., Haubrock, P.J., Kouba, A., **Brennan, R.S.**, Steffen, G., Briski, E., 2024. Seasonal changes in biodiversity of native and non-native amphipod taxa under diverse environmental contexts. *Marine Biology*.

18. deMayo, J.A., **Brennan, R.S.**, Finiguerra, M., Norton, L.; Park, G., Pespini, M.H., Baumann, H., Dam, H., 2023. Simultaneous warming and acidification limit population fitness and reveal phenotype costs for a marine copepod. *Proceedings of the Royal Society B*. 290(no. 2006), 20231033.

17. Petak, C., Frati, L., **Brennan, R.S.**, Pespeni, M.H., 2023. Whole genome sequencing reveals regulatory and low pleiotropy variants underlie local adaptation to environmental variability in purple sea urchins. *The American Naturalist*. 202(4), 571-586.

16. Dickey, J., Jeschke, J.M., Steffen, G., Kazanavičiūtė, E., **Brennan, R.S.**, Briski, E., 2023. Current temperatures limit the potential impact of a commonly traded predatory gastropod. *Aquatic Invasions*. 18(2), 247-261.

15. **Brennan, R.S.** and Whitehead, A., 2023. Evidence of prezygotic isolation, but not assortative mating, between locally adapted populations of *Fundulus heteroclitus* across a salinity gradient. *Journal of Evolutionary Biology*. 36(4), 687-697.

14. Dickey, J.W., **Brennan, R.S.**, Chung, S.S.W., Jeschke, J.M., Steffen, G.T. and Briski, E., 2023. More than we bargained for: Zebra mussels transported amongst European native freshwater snails. *NeoBiota*, 83, 1-10.

13. **Brennan, R.S.**, deMayo, J.A., Dam, H.G., Finiguerra, M., Baumann, V. Buffalo, H., Pespeni, M.H., 2022. Experimental evolution reveals the synergistic genomic mechanisms of adaptation to ocean warming and acidification in a marine copepod. *Proceedings of the National Academy of Sciences*. 119 (38). doi: 10.1073/pnas.2201521119

12. **Brennan, R.S.**, DeMayo, J.A., Dam, H.G., Finiguerra, M.B., Baumann, H. and Pespeni, M.H., 2022. Loss of transcriptional plasticity but sustained adaptive capacity after adaptation to global change conditions in a marine copepod. *Nature communications*, 13(1), pp.1-13.

11. Dam, H.G., DeMayo, J.A., Park, G., Norton, L., Xuejia, H., Finiguerra, M.B., Baumann H., **Brennan, R.S.**, Pespeni, M.H., 2021. Rapid, but limited, zooplankton adaptation to simultaneous warming and acidification. *Nature Climate Change*. 11: 780–786.

10. Garrett, A.D., **Brennan, R.S.**, Steinhart, A.L., Pelletier, A.M., Pespeni, M.H., 2020. Unique genomic and phenotypic responses to extreme and variable pH conditions in purple urchin larvae. *Integrative and Comparative Biology*. 60(2), 318-331. doi: 10.1093/icb/icaa072

9. **Brennan, R.S.**, Garrett, A.D., Huber, K.E., Hargarten, H. and Pespeni, M.H., 2019. Rare genetic variation and balanced polymorphisms are important for survival in global change conditions. *Proceedings of the Royal Society B*, 286(1904), 20190943. doi: 10.1098/rspb.2019.0943
8. Healy, T.M., **Brennan, R.S.**, Whitehead, A. and Schulte, P.M., 2019. Mitochondria, sex and variation in routine metabolic rate. *Molecular Ecology*. 28(20), 4608-4619. doi: 10.1111/mec.15244
7. McKenzie, J.L., Chung, D.J., Healy, T.M., **Brennan, R.S.**, Bryant, H.J., Whitehead, A. and Schulte, P.M., 2019. Mitochondrial ecophysiology: assessing the evolutionary forces that shape mitochondrial variation. *Integrative and Comparative Biology*. 59(4), 925-937. doi: 10.1093/icb/icz124
6. **Brennan, R.S.**, Healy, T.M., Bryant, H.J., La, M.V., Schulte, P.M., and Whitehead, A. 2018. Integrative population and physiological genomics reveals mechanisms of adaptation in killifish. *Molecular Biology and Evolution*, 35(11), 2639-2653. doi: 10.1093/molbev/msy154
5. Healy, T.M., **Brennan, R.S.**, Whitehead, A. and Schulte, P.M., 2018. Tolerance traits related to climate change resilience are independent and polygenic. *Global Change Biology*, 24(11), 5348-5360. doi: 10.1111/gcb.14386
4. **Brennan, R.S.**, Hwang, R., Tse, M., Fangue, N.A. and Whitehead, A., 2016. Local adaptation to osmotic environment in killifish, *Fundulus heteroclitus*, is supported by divergence in swimming performance but not by differences in excess post-exercise oxygen consumption or aerobic scope. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*, 196, 11-19. doi: 10.1016/j.cbpa.2016.02.006
3. **Brennan, R.S.**, Galvez, F. and Whitehead, A., 2015. Reciprocal osmotic challenges reveal mechanisms of divergence in phenotypic plasticity in the killifish *Fundulus heteroclitus*. *The Journal of Experimental Biology*. 218(8), 1212-1222. doi: 10.1242/jeb.110445
2. Kozak, G.M., **Brennan, R.S.**, Berdan, E.L., Fuller, R.C. and Whitehead, A., 2014. Functional and population genomic divergence within and between two species of killifish adapted to different osmotic niches. *Evolution*. 68(1), 63-80. doi: 10.1111/evo.12265
1. Carstens, B.C., **Brennan, R.S.**, Chua, V., Duffie, C.V., Harvey, M.G., Koch, R.A., McMahan, C.D., Nelson, B.J., Newman, C.E., Satler, J.D. and Seeholzer, G., 2013. Model Selection as a Tool for Phylogeographic Inference: An Example From the Willow *Salix melanopsis*. *Molecular Ecology*. 22(15), 4014-4028. doi: 10.1111/mec.12347

Teaching Experience

Instructor of record:

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| 2022-2024 | Population Genomics M.Sc. Biological Oceanography, GEOMAR Helmholtz Centre for Ocean Research. Course website: rsbrennan.github.io/EvolutionaryGenomics_2024/ |
| 2021-2024 | Current topics in fish ecology and evolution M.Sc. Biological Oceanography, GEOMAR Helmholtz Centre for Ocean Research. |
| 2021-2024 | Practical courses in biological oceanography: Fish barcoding and sustainability M.Sc. Biological Oceanography, GEOMAR Helmholtz Centre for Ocean Research. |

Contributed lectures:

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| 2022-2024 | Marine Genomics, Advanced Studies in Biological Oceanography, M.Sc. Biological Oceanography, GEOMAR Helmholtz Centre for Ocean Research. |
| 2021-2024 | Adaptation, Current Topics in Marine Ecology II M.Sc. Biological Oceanography, GEOMAR Helmholtz Centre for Ocean Research. |
| 2020 | Epigenetics analysis and interpretation Ecological Genomics, University of Vermont |

Graduate level course, four sessions, hands on coding and lecture
 2013-2014 Conservation Genetics, Genetics and Society, University of California-Davis
 Teaching assistant:
 2015-2016 Comparative Genomics BIS181, Department of Microbiology and Molecular Genetics,
 University of California-Davis
 2013-2015 Genetics and Society, Department of Science and Society, University of California-Davis
 2012-2015 Introductory Biology, Dept. of Ecology and Evolution, University of California-Davis

Mentorship

Primary Advisor:

Postdoctoral Scientists (1):

Jennifer Nascimento Schulze, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2023-present

PhD Students (1):

Alexandra Hahn, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2023-present

MSc Students (5):

Georgia Avgerinou, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2022-present

Co-advised with Christopher Monk

Samantha Juber, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2023-2024

Co-advised with Christopher Monk

Gianina Consing, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2021-2024

Sheena Chung, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2021-2024

Alexandra Hahn, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2021-2023

Undergraduate students (8):

Sophia Bach, GEOMAR Helmholtz Centre for Ocean Research Kiel, 2023

Myria Schröder, GEOMAR Helmholtz Centre for Ocean Research Kiel, 2022

Rachael Sniderman, University of California Davis. 2017

Angeliki Ioannidis, University of California-Davis. 2015-2017

Man Van La, University of California Davis. 2015-2017

Michelle Tse, University of California Davis. 2012-2014

Ruth Hwang, University of California Davis. 2012-2014

Walter Guillory, Louisiana State University. 2010-2012

Dissertation and Thesis Committees:

MSc (5):

Tarek Gerhard, MSc, Christian-Albrechts-University, Kiel. 2024

Sarah Santos, MSc, Atlantic Technical University, Cabo Verde, 2023

Nils Newrzella, MSc, Christian-Albrechts-University, Kiel. 2023

Katharina Krüger, MSc, Christian-Albrechts-University, Kiel. 2022

Érika E. Kokubun, MSc, GEOMAR Helmholtz Centre for Ocean Research Kiel. 2022

Ph.D. (7):

Kwi-Young Han PhD., GEOMAR and Christian-Albrechts-Universität, Kiel. 2024

Maral Khosravi PhD., GEOMAR and Christian-Albrechts-Universität, Kiel. 2023

Peggy Weist, PhD., GEOMAR and Christian-Albrechts-Universität, Kiel. 2023

Irena Chemshirova, PhD., GEOMAR and Christian-Albrechts-Universität, Kiel. 2023

Laura Käse, Ph.D., Christian-Albrechts-Universität, Kiel. 2022

Carsten Spisla, Ph.D., GEOMAR and Christian-Albrechts-Universität, Kiel. 2022

Susanne Schäfer, Ph.D., GEOMAR and Christian-Albrechts-Universität, Kiel. 2022

Seminars and Presentations

Invited

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| 2024 | University of California Davis, USA |
| 2023 | Washington State University, School of Biological Sciences, USA |
| 2022 | SMBE Satellite Meeting on Evolutionary Rescue, Kiel, Germany. |
| 2022 | Helmholtz Topic VI Symposium: Marine Life, Kiel, Germany. |
| 2020 | GEOMAR Helmholtz Centre for Ocean Research, Kiel, Germany. |
| 2020 | California State University Monterey Bay, Department of Biology, USA |
| 2019 | Smithsonian Environmental Research Center, USA |
| 2019 | University of Maryland, Behavior, Ecology, Evolution, and Systematics Seminar. USA |
| 2019 | University of Maryland, Department of Entomology. USA |
| 2017 | University of Vermont, Department of Biology. USA |
| 2017 | National Institutes of Health, Human Genome Research Institute. USA |

Contributed

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| 2023 | ASLO Aquatic Sciences Meeting, Mallorca, Spain |
| 2023 | SMBE Everywhere, Epigenomics in Evolution, Virtual. |
| 2022 | International Conference on Copepoda, Virtual. |
| 2021 | Society for the Study of Evolution. Virtual. |
| 2019 | Society for the Study of Evolution. Providence, RI. USA |
| 2018 | University of Vermont, Ecology, Evolution, and Environment Biology Seminar. USA |
| 2017 | University of Vermont, Biolunch Seminar Series. USA |
| 2016 | Society for the Study of Evolution, Austin, TX. USA |
| 2014 | American Physiological Society Comparative Approaches to Grand Challenges in Physiology. San Diego, CA. USA |
| 2013 | University of California Davis, Center for Population Biology Seminar Series. USA |

Outreach and Training

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| 2024 | Mentor, NOAA Young Changemakers. |
| 2024 | Training: Indigenous Knowledge is Not a Myth. NOAA Tribal Training |
| 2024 | Project Biodiversify: Organized and attended a workshop to diversify and decolonize biology curriculum |
| 2024 | Workshop: Embracing Diversity: Unconscious Biases and Inclusive Practices. Training to understand unconscious bias, explore characteristics of an inclusive and equitable workplace, and develop action plans to achieve performance goals in alignment with DEIA principles |
| 2022-2024 | GEOMAR Staff for Diversity; Committee to improve diversity efforts and activities. Task leader: Developing on actions to increase the diversity of early career scientists |
| 2024 | Co-organizer of GEOMAR Diversity Day |
| 2024 | Participant in the workshop “Critical Whiteness”; Developing tools to increase inclusivity |
| 2023 | Postdoc to PI Discussion Panel Speaker: Discussion to help prepare early career scientists for the transition to group leader. |
| 2022 | Participant in Helmholtz Leadership Academy: Leading your group. Four-part workshop, 12 total days of training focused on developing mentoring skills in science. |
| 2021 | Participant in a two-part Anti-racism in Biology workshop and book discussion at UVM led by Dr. Brandon Ogbunugafor and organized by Dr. Brent Lockwood |
| 2019 | UVM Representative, Diversity Committee, Geno2Pheno NSF EPSCoR project |
| 2012-2017 | UC Davis picnic day: outreach event to build connection between the university and the surrounding community |
| 2015-2016 | Graduate Academic Achievement and Advocacy Program Mentor program to support underrepresented undergraduate students interested |

in attending graduate school
 2013-2014 EnvironMentors: Mentoring program for underrepresented high school students.

Academic Service

2024-Present Lead Organizer, NOAA Fisheries Omics Bioinformatics Group
 2022-Present Member, Linnaeus Centre for Marine Evolutionary Biology
 2021-Present Member, Kiel Evolution Center
 2018-Present Member, NSF Research Coordination Network, Evolution in Changing Seas
 2023-2024 Member, International Max Planck Research School for Evolutionary Biology
 2022-2024 Admissions Committee, Biological Oceanography M.S. program. GEOMAR.
 2022-2024 Organizer, GEOMAR Marine Evolutionary Ecology Seminar Series
 2023 Symposium Organizer, Mechanisms and Costs of Adaptation to Global Change in Aquatic Systems, ASLO Aquatic Sciences Meeting
 2022 Organizer, SMBE Satellite Meeting on Evolutionary Rescue, Kiel, Germany
 2016-2019 Contributing writer, The Molecular Ecologist Blog
 2015 Organizational Committee, UC Davis Center for Population Biology Workshop: Questions and methods in ecological genetics
 2014 Student Representative: Ecology Graduate Group Admission Committee

Journal Reviews: BMC Genomics, Conservation Physiology, Ecology and Evolution, Evolution, Evolutionary Applications, Frontiers Marine Science, Genome Biology and Evolution, Heredity, Journal of Fish Biology, Molecular Biology and Evolution, Molecular Ecology, Molecular Ecology Resources, Oikos, Physiological and Biochemical Zoology, Proceedings of the National Academy of Sciences, Royal Society Open Science

Society Memberships: Society for the Study of Evolution; Society for Molecular Biology and Evolution; World Association of Copepodologists; Association for the Sciences of Limnology and Oceanography