CASEY MUELLER Ph.D.

Associate Professor
Department of Biological Sciences
California State University San Marcos
San Marcos, CA 92096 USA
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http://developmentalphysiology.weebly.com

RESEARCH

My research in comparative developmental physiology focuses on the fundamental concepts of phenotypic plasticity and development-environment interactions. I am fascinated by how physiological systems develop, interact and respond to the environment and how developmental physiology influences animals later in life. I work with a range of organisms, including invertebrates, fishes, amphibians, birds, and reptiles, to investigate energetics and respiratory and cardiovascular function in response to different environments across development.

EDUCATION

Doctor of Philosophy 2011 **University of Adelaide, Australia**
Thesis title: Developmental energetics and gas exchange in amphibians and lungfish
Supervisor: Roger S. Seymour

Honours Degree of Bachelor of Science 2006 **University of Adelaide, Australia**
Thesis title: Effects of Spatial Variation on Competition between Ward's Weed, *Carrichtera annua* (L.) Aschers (Brassicaceae), and Native Annuals from Arid South Australia
First class honours Supervisor: José M. Facelli

Bachelor of Science 2005 **University of Adelaide, Australia**
Double Major in Environmental Biology and Botany, Distinction average (*Magna Cum Laude*)

TEACHING AND MENTORING

Classroom Instruction

California State University San Marcos
Introduction to Organismal and Population Biology (lecture and lab)
Comparative Animal Physiology (lecture and lab)
Developmental Physiology (lecture and lab)
Advanced Developmental Physiology (graduate level lecture)
Physiological Ecology (lecture)
Physiology Seminar

McMaster University
Topics in Physiology (Seminar)

University of Adelaide
Ecophysiology of Animals
Zoology

Students Mentored

Graduate student supervisor: Lindsey Korito Fall 2019 – Fall 2021
Christopher Melendez Fall 2017 – Spring 2019

Undergraduate student supervisor: Nicole Poirier Spring 2024 - present
Ciara Valladolid Spring 2024 - present
Cameron St. Onge Spring 2023 - present
Krystal Atherley Spring 2022 – Spring 2023
Natalie Campos Fall 2021 – Fall 2022
Jessica Villar Spring 2021 – Fall 2021
Gabrielle Diaz Fall 2019 – Spring 2021
Marie Ramirez Fall 2019 – Spring 2020
Taryn Broe Spring 2019 – Spring 2020
Itzel Espejo Fall 2018 – Spring 2019
Lindsey Korito, Fall 2017 – Spring 2019
Samantha Manzanares, Fall 2017 – Spring 2019
Sabrina Kazem, Fall 2017 – Spring 2018
John Hiedo, Fall 2017
Christopher Melendez, Fall 2015 – Spring 2017
Morgan Rentschler, Fall 2016 – Summer 2017
Julie Bucsky, Fall 2016 – Spring 2017
Samuel Woldeyohannes, Fall 2016 – Spring 2017
Jonathan Kramer, Fall 2015 – Summer 2016

Graduate student thesis committee member: Arianna Ramirez, 2024
Perla Ochoa, 2024
Madison Conte, 2022
Carlos Caetano Beçak de Paula Leão, 2022
Cassidy Cooper, 2020

Community college shadow student supervisor: Jessica Villar, Spring 2020
Lily Jorrick, Spring 2019
Brianna Valesco, Spring 2019
Janet Solano-Sanchez, Spring 2018

Undergraduate laboratory teaching assistant supervisor: Fall 2018: 1 student
Spring 2018: 1 student
Fall 2017: 2 students
Spring 2017: 3 students
Spring 2016: 3 students
Fall 2015: 3 students

SCHOLARSHIP

Peer-reviewed Publications

undergraduate students *graduate students

30. Mueller, C.A. Beginning with Blaxter – An early summary of embryonic and larval fish development (2023). In: Fish Physiology Vol 40A. Elsevier, Amsterdam. In Press. (doi: 10.1016/bs.fp.2023.08.004) (An introduction to Blaxter, J.H.S., 1969. Development: eggs and larvae. In: Hoar, W.S., Randall, D.J. (Eds.), Fish Physiology. vol. 3. Academic Press, San Diego, pp. 177–252.)

29. Burggren WW, Andrewartha SJ, **Mueller CA**, Dubansky B. and Tazawa H. (2023) Acid-base and hematological regulation in chicken embryos during internal progressive hypercapnic hypoxia. Resp Physiol Neurobiol 308 103996 (doi: 10.1016/j.resp.2022.103996)

28. Farrell AP, **Mueller CA** and Seymour RS (2021) Coming up for air. J Exp Biol 224 (17):jeb243101 (doi: 10.1242/jeb.243101)

27. Melendez CL* and **Mueller CA** (2021) Effect of increased embryonic temperature during developmental windows on survival, morphology and oxygen consumption of rainbow trout (*Oncorhynchus mykiss*). Comp Biochem Physiol A, 252, 110834 (doi 10.1016/j.cbpa.2020.110834)

26. Cooper CJ*, **Mueller CA**, Eme J (2019) Temperature Tolerance and Oxygen Consumption of two Amazonian Tetras, *Paracheirodon inessi* and *Hyphessobrycon herbertaxelrodi*. J Therm Biol 86, 102434 (doi 10.1016/j.jtherbio.2019.102434)

25. Mueller CA, Bucsky J, Korito L and Manzanares S (2019) Immediate and persistent effects of temperature on oxygen consumption and thermal tolerance in embryos and larvae of the Baja California chorus frog, *Pseudacris hypochondriaca*. Front Physiol 10:754 (doi 10.3389/fphys.2019.00754)

24. Scheffler ML, Barreto FS, **Mueller CA** (2019) Rapid metabolic compensation in response to temperature change in the intertidal copepod, *Tigriopus californicus*. Comp Biochem Physiol A 230, 131-137 (doi 10.1016/j.cbpa.2019.01.017)

23. Eme J, **Mueller CA**, Lee, AH, Melendez, C, Manzon, RG, Somers, CM, Boreham, DR, Wilson JY (2018) Daily, repeating fluctuations in embryonic incubation temperature alter metabolism and growth of lake whitefish (*Coregonus clupeaformis*). Comp Biochem Physiol A 226 49-56 (doi: 10.1016/j.cbpa.2018.07.027)

22. Mueller CA, Eme J, Tate, KB, Crossley II DA (2018) Chronic captopril treatment reveals the role of ANG II in cardiovascular function of embryonic American alligators (*Alligator mississippiensis*). J Comp Physiol B 188 657-669 (doi: 10.1007/s00360-018-1157-2)

21. Mueller CA, Tazawa H, Burggren WW (2017) Dynamics of acid-base and hematological regulation in day 15 chicken embryos (*Gallus gallus domesticus*) exposed to graded hypercapnia and hypoxia. Resp Physiol Neurobiol 239 55-63 (doi: 10.1016/j.resp.2017.02.001)

20. Mueller CA, Doyle L, Eme J, Manzon RG, Somers CM, Boreham DR, Wilson JY (2017) Lipid content and fatty acid profile during lake whitefish embryonic development at different incubation temperatures. Comp Biochem Physiol A 203 201-209 (doi: 10.1016/j.cbpa.2016.09.018)

19. Lee A, Eme J, **Mueller CA**, Manzon RG, Somers CM, Boreham DR and Wilson JY (2016) The effects of cumulative acute heat shock exposures on morphology and survival of Lake whitefish (*Coregonus clupeaformis*) embryos. J Thermal Biol 57 11-20 (doi: 10.1016/j.jtherbio.2016.01.010)

18. Mueller CA, Willis E, Burggren WW (2016) Salt sensitivity of the morphometry of *Artemia franciscana* during development: A demonstration of 3-D critical windows. J Exp Biol 219 571-581 (doi:10.1242/jeb.125823)

17. Sreetharan S, Thome C*, Mitz C*, Eme J, **Mueller CA**, Hulley EN, Manzon RG, Somers CM, Boreham DR and Wilson JY (2015) Embryonic development of lake whitefish (*Coregonus clupeaformis*): a staging series, analysis of growth and impacts of fixation. J Fish Biol 87 539-558 (doi:10.1111/jfb.12725)

16. Burggren WW, **Mueller CA** and Tazawa H (2015) Hypercapnic thresholds for embryonic acid-base metabolic compensation and hematological regulation during CO_2 challenges in layer and broiler chicken strains. Resp Physiol Neurobiol 215 1-12 (doi:10.1016/j.resp.2015.04.008)

15. Mueller CA, Eme J, Burggren WW, Roghair RD and Rundle SD (2015) Challenges and opportunities in developmental integrative physiology. Comp Biochem Physiol A 184 113-124 (doi:10.1016/j.cbpa.2015.02.013)

14. Mueller CA, Eme J, Manzon RG, Somers CM, Boreham DR and Wilson JY (2015) Embryonic critical windows: Changes in incubation temperature alter hatchling phenotype, survival and cost of development in Lake whitefish (*Coregonus clupeaformis*). J Comp Physiol B 185 315-331 (doi:10.1007/s00360-015-0886-8)

13. Burggren WW and **Mueller CA** (2015) Developmental critical windows and sensitive periods as 3-D constructs in time and space. Physiol Biochem Zool 88 91-102 (doi:10.1086/679906)

12. Eme J, **Mueller CA**, Manzon RG, Rogers CM, Boreham DR and Wilson JY (2015) Critical windows in embryonic development: Shifting incubation temperatures alter heart rate and oxygen consumption of Lake Whitefish (*Coregonus clupeaformis*) embryos and hatchlings. Comp Biochem Physiol A 179 71-80 (doi:10.1016/j.cbpa.2014.09.005)

11. Mueller CA, Crossley II DA and Burggren WW (2014) The actions of the renin-angiotensin system on cardiovascular and osmoregulatory function in embryonic chickens (*Gallus gallus domestics*). Comp Biochem Physiol A 178 37-45 (doi:10.1016/j.cbpa.2014.08.004)

10. Mueller CA, Tazawa H and Burggren WW (2014) Dynamics of acid-base metabolic compensation and hematological regulation in response to CO_2 challenges in embryos of the chicken (*Gallus gallus*) J Comp Physiol B 184 641-649 (doi:10.1007/s00360-014-0822-3)

9. Burggren WW, Christoffels VM, Crossley II DA, Enok S, Farrell AP, Hedrick MS, Hicks JW, Jensen B, Moorman AFM, **Mueller CA**, Skovgaard N, Taylor EW and Wang T (2014) Comparative cardiovascular physiology: Future trends, opportunities and challenges. Acta Physiol 210 257-276 (doi:10.1111/apha.12170)

8. Mueller CA, Burggren WW and Crossley II DA (2013) ANG II and baroreflex control of heart rate in embryonic chickens (*Gallus gallus domesticus*). Am J Physiol Reg Int Comp Physiol 305 R855-R863 (doi:10.1152/ajpregu.00298.2013)

7. Mueller CA, Tazawa H and Burggren WW (2013) Dynamics of metabolic compensation and hematological changes in chicken (*Gallus gallus*) embryos exposed to hypercapnia with varying oxygen. Resp Physiol Neurobiol 185 272-280 (doi:10.1016/j.resp.2012.10.002)

6. Mueller CA, Augustine S, Kooijman SALM, Kearney MR and Seymour RS (2012) The trade-off between maturation and growth during accelerated development in frogs. Comp Biochem Physiol A 163 95-102 (doi:10.1016/j.cbpa.2012.05.190)

5. Mueller CA and Seymour RS (2012) Analysis of cutaneous and internal gill gas exchange morphology in early larval amphibians, *Pseudophryne bibronii* and *Crinia georgiana*. J Comp Biochem Physiol B 182 813-820 (doi:10.1007/s00360-012-0667-6)

4. Mueller CA and Seymour RS (2011) The Regulation Index: a new method for assessing the relationship between oxygen consumption and environmental oxygen. Physiol Biochem Zool 84 522-532 (doi:10.1086/661953)

3. Mueller CA, Joss JMP and Seymour RS (2011) Effects of environmental oxygen on development and respiration of Australian lungfish (*Neoceratodus forsteri*) embryos. J Comp Physiol B 181 941-952 (doi:10.1007/s00360-011-0573-3)

2. Mueller CA and Seymour RS (2011) The importance of perivitelline fluid convection to oxygen uptake of *Pseudophryne bibronii* eggs. Physiol Biochem Zool 84 299-305 (doi:10.1086/659650)

1. Mueller CA, Joss JMP and Seymour RS (2011) The energy cost of embryonic development in fishes and amphibians, with emphasis on new data from the Australian lungfish, *Neoceratodus forsteri*. J Comp Physiol B 181 43-52 (doi:10.1007/s00360-010-0501-y)

Peer-reviewed Book Chapters

4. Mueller CA, Burggren WW, and Tazawa H (2022) The Physiology of the Avian Embryo. In: Sturkie's Avian Physiology 7e (C. Scanes and S. Dridi Eds.), Elsevier, Amsterdam, p 995-1026.

3. Mueller CA (2018) Critical windows in animal development: interactions between environment, phenotype and time. In: Development, Physiology and Environment: A Synthesis (Burggren WW and Dubansky B, Eds.), Springer, New York, p 60-91.

2. Mueller CA (2015) Developmental Physiology of the Australian Lungfish, *Neoceratodus forsteri*. In: Phylogeny, Anatomy and Physiology of Ancient Fishes (G. Zaccone, K. Dabrowski, M.S. Hedrick, J.M.O. Fernandes & J.M. Icardo, Eds.), CRC Press, Boca Raton, Florida, p 57-80.

1. Mueller CA, Burggren WW, and Tazawa H (2015) The Physiology of the Avian Embryo. In: Sturkie's Avian Physiology 6e (C. Scanes, Ed.), Elsevier, Amsterdam, p 739-766.

Presentations

27. St. Onge C, and **Mueller CA** (2024) Inter-individual variability in developmental traits in tadpoles of the Baja California chorus frog (*Pseudacris hypochondriaca*) in response to temperature. American Physiological Society Summit. Long Beach, USA.

26. Ramirez M, Manzanares S, **Mueller CA** (2020) Effect of temperature fluctuations on larval function of the Baja California chorus frog, *Pseudacris hypochondriaca*. Experimental Biology. San Diego, USA. *abstract accepted, conference cancelled

25. Mueller CA (2019). Thermal Physiology: Exploring themes of development and variability in different animal models. University of Southern California, California, USA. (Invited seminar).

24. Korito L, Barreto FS, **Mueller CA** (2019) Effects of developmental temperature in different populations of the copepod *Tigriopus californicus*. West Coast Biological Sciences Undergraduate Research Conference. San Diego, California, USA.

23. Mueller CA (2019). Physiological consequences of interactions between development and the thermal environment. Scripps Institute of Oceanography, California, USA. (Invited seminar).

22. Melendez C*, Kazem S, Solano-Sanchez J and **Mueller CA** (2018) Critical windows in rainbow trout embryos: Effects of thermal shifts on survival, growth and oxygen consumption. Southwest Regional Meeting of Organismal Biologists. San Marcos, California, USA. (oral presentation)

21. Korito L, Barreto FS, **Mueller CA** (2018) Analysis of latitudinal variation in developmental responses to temperature in four populations of the copepod *Tigriopus californicus*. Southwest Regional Meeting of Organismal Biologists. San Marcos, California, USA.

20. Melendez C*, Kazem S, Solano-Sanchez J and **Mueller CA** (2018) Critical windows in rainbow trout embryos: Effects of thermal shifts on survival, growth and oxygen consumption. Intersociety Meeting Comparative Physiology: Complexity and Integration. New Orleans, Louisiana, USA. (oral presentation)

19. Mueller CA (2018) Exploring thermal physiology: Effects of environmental temperature in embryonic to larval frogs and juvenile to adult copepods. Intersociety Meeting Comparative Physiology: Complexity and Integration. New Orleans, Louisiana, USA. (Invited Speaker)

18. Korito L, Manzanares S, Bucsky J and **Mueller CA** (2018) Exploring the Developmental Thermal Biology of an Abundant Native Amphibian in Southern California, the Baja California Chorus Frog. Experimental Biology. San Diego, USA.

17. Melendez C* and **Mueller CA** (2018) Effect of Incubation Temperature on Survival, Growth and Oxygen Consumption of Developing Brine shrimp (*Artemia franciscana*). Experimental Biology. San Diego, USA.

16. Scheffler ML, Barreto, FS and **Mueller CA** (2017) Effect of temperature on the metabolism of different populations of *Tigriopus californicus*, an intertidal copepod. Southern California Conferences for Undergraduate Research. Pomona, USA.

15. Mueller CA (2016) Effects of increased temperature during critical windows of development on embryonic and hatching lake whitefish phenotypes. Society for Experimental Biology. Brighton, UK. (Invited Speaker)

14. Mueller CA, Eme J, Manzon RG, Somers CM, Boreham DR and Wilson JY (2016) Hatchling phenotype of Lake whitefish incubated at increased temperature during critical windows of development. Experimental Biology. San Diego, USA.

13. Eme J, **Mueller CA**, Melendez C, Manzon RG, Somers CM, Boreham DR and Wilson JY (2016) Daily, incremental changes in incubation temperature alter metabolism and hatchling phenotype of developing lake whitefish. Experimental Biology. San Diego, USA.

12. Mueller CA, Eme J, Manzon RG, Somers CM, Boreham DR and Wilson JY (2015) Effects of increased temperature during critical windows of development on the hatchling phenotype of Lake whitefish (*Coregonus clupeaformis*). Canadian Society of Zoologists. Calgary, Canada. (oral presentation)

11. Eme J, **Mueller CA**, Boreham DR, Manzon RG, Somers CM and Wilson JY (2015) Effects of daily, incremental changes in incubation temperature on the metabolism of Lake Whitefish embryos and hatchlings. Canadian Society of Zoologists. Calgary, Canada.

10. Mueller CA (2014) Critical windows in animal development: Stressor dose, effect size and experimental design. APS Intersociety Meeting: Comparative Approaches to Grand Challenges in Physiology. San Diego, USA. (Invited speaker)

9. Eme J, **Mueller CA**, Boreham DR, Manzon RG, Somers CM and Wilson JY (2014) Shifting incubation temperatures alter heart rate and oxygen consumption of Lake Whitefish embryos and hatchlings. APS Intersociety Meeting: Comparative Approaches to Grand Challenges in Physiology. San Diego, USA.

8. Mueller CA, Eme J, Boreham DR, Manzon RG, Somers CM and Wilson JY (2014) Critical windows in embryonic development: Metabolic effects of shifting temperatures in whitefish embryos (*Coregonus clupeaformis*). Canadian Society of Zoologists. Montreal, Canada.

7. Eme J, **Mueller CA**, Boreham DR, Manzon RG, Somers CM and Wilson JY (2014) Critical windows in embryonic development: Cardiac and survival effects of shifting temperatures in whitefish embryos (*Coregonus clupeaformis*). Canadian Society of Zoologists. Montreal, Canada.

6. Mueller CA, Crossley II DA and Burggren WW (2013) Angiotensin II and developmental cardiovascular-renal interactions in embryonic chickens. Experimental Biology. Boston, USA. (oral presentation and poster)

5. Mueller CA, Burggren WW and Tazawa H (2013) Avian embryos tolerate severe hypoxic/hypercapnic gas challenges and submersion in water – evidence for acid-base and haematological regulation. UNT – UAEM Ecophysiology Workshop. Malinalco, Mexico. (oral presentation).

4. Mueller CA, Augustine S, Kooijman SALM, Kearney MR and Seymour RS (2012) The trade-off between maturation and growth during accelerated development in vertebrates. Experimental Biology. San Diego, USA. (poster)

3. Mueller CA, Joss JMP and Seymour RS (2010) The low developmental cost of the Australian lungfish compared to other fishes and amphibians. Australian and New Zealand Society for Comparative Physiology and Biochemistry. Australian National University, Canberra, Australia (oral presentation)

2. Mueller CA, Joss JMP and Seymour RS (2010) The low developmental cost of the Australian lungfish compared to other fishes and amphibians. Society for Experimental Biology. Prague, Czech Republic. (oral presentation)

1. Mueller CA (2008) Oxygen consumption in embryos and larvae: examining the critical point. Australian and New Zealand Society for Comparative Physiology and Biochemistry. University of Sydney, Sydney, Australia. (oral presentation)

Awarded External Grants

2019 CSU Council on Ocean Affairs, Science & Technology (COAST) Grant Development Program Grant, $20,000

2016 Society for Experimental Biology Newly Appointed Academics Travel Grant, £1000

2016 Society for Experimental Biology Annual Meeting Travel Grant, £180

2015 Canadian Society of Zoologists Conference Travel Grant, CA$250

2014 American Physiological Society, Intersociety Meeting in Comparative Physiology, San Diego. Symposium chair/Organizer of 'Challenges from the Very Beginning: Developmental Physiology, Epigenetics, and Critical Windows', US$2000

2014 Journal symposium sponsorship (Comparative Biochemistry and Physiology), American Physiological Society Intersociety Meeting in Comparative Physiology, US$1000

2008 Australian Geographic Society Research Grant for PhD research, AU$1000

2006 Research Scholarship from the Cooperative Research Centre for Australian Weed Management for Honours research, AU$4000

Awarded Internal Grants

2022 "Effects of the Thermal Environment on Chorus Frog Developmental Physiology." CSUSM Research, Scholarship, and Creative Activity (RSCA) Grant $6468

2018 Participant in Summer Grant Writing Bootcamp. CSUSM Office of Graduate Studies and Research $4500

2018 "Presenting research collaborations with undergraduates at Experimental Biology 2018." CSUSM Faculty Center Professional Development Grant $700

2016 "Presentation at Experimental Biology 2016 Conference." CSUSM Faculty Center Professional Development Grant $500

SERVICE

CSUSM Service

Physiology Search Committee Chair	Fall 2023
Physiology Search Committee Chair	Fall 2021 – Spring 2022
Physiology Search Committee Member	Fall 2019 – Spring 2020
College of Science and Mathematics Curriculum Committee Chair	Fall 2019 – Spring 2020
Department of Biological Sciences Curriculum Committee Chair	Spring 2019 – Spring 2020
College of Science and Mathematics Curriculum Committee	Spring 2018 – Spring 2020
Academic Senate, CSM Senator	Fall 2016 – Fall 2018
CSU Council on Ocean Affairs and Technology (COAST) San Marcos Campus Representative	Fall 2016 – present
Faculty Mentoring Program (3 students)	Spring 2016 – present
2017/2018 Long-range Academic Master Plan (LAMP) Task Force Member	2017/18 AY
Bridges Open House Lab Tour	Fall 2016, Fall 2017, Fall 2018, Fall 2019, Fall 2021
Biological Sciences Department Change of Major Committee	Spring 2017
New Faculty Institute Panel Speaker ‘ What I know now that I wish I knew then’	Fall 2016
Office for Training, Research and Education in the Sciences (OTRES) Seminar	Fall 2016
Summer Scholars Poster Showcase Judge	Summer 2016
Symposium on Student Research, Creative Activity and Innovation Judge	Spring 2016

Professional Service and Membership

PhD Dissertation External Examiner, Plymouth University	Spring 2023
Associate Editor, Physiological and Biochemical Zoology	2022 – present
Associate Editor, Developmental Physiology, Frontiers in Physiology	2021 – 2024
Comparative and Evolutionary Physiology Section Steering Committee Member, American Physiological Society	2019 – 2022
International Committee Member, American Physiological Society	2018 – 2020
Trainee Poster Judge, American Physiological Society Intersociety Comparative Physiology Conference	2018
National Science Foundation Division of Integrative Organismal Systems (Physiological and Structural Systems Cluster) Review Panelist	Fall 2017
Scholander Undergraduate Poster Judge, Comparative and Evolutionary Physiology Section, American Physiological Society, Experimental Biology Conference	2016
Peer reviewer for CSU Council on Ocean Affairs and Technology (COAST) Graduate Student Research Award Program	2016, 2019
Peer reviewer for CSU Council on Ocean Affairs and Technology (COAST) Grant Development Program	2016

Manuscript Peer Reviewer

Journal of Comparative Physiology B, Behavioral Ecology & Sociobiology	2023
Journal of Experimental Biology, Frontiers in Physiology	2022
Frontiers in Physiology, Physiological & Biochemical Zoology, Journal of Experimental Biology, Journal of Experimental Marine Biology and Ecology	2021
Proceedings of the Royal Society B, Comparative Biochemistry and Physiology A, Journal of Experimental Zoology A	2020
OIKOS, Animal Biology	2019
Journal of Comparative Physiology B, Journal of Experimental Zoology A, Limnology & Oceanography	2018

Journal of Experimental Biology, Comparative Biochemistry and Physiology A, Conservation Physiology, Journal of Fish Biology	2017
Functional Ecology, Journal of Experimental Zoology A, PLoS ONE, Physiological & Biochemical Zoology (2)	2016
Journal of Applied Physiology, Australian Journal of Zoology, Animal Biology	2015
Planta Medica	2014
Copeia	2013
Respiratory Physiology & Neurobiology, Functional Ecology, ITB Journal of Science	2012
Current Zoology	2011

Society Membership

American Physiological Society	2011 – present
Society for Experimental Biology	2010 – 2021
Canadian Society of Zoologists	2014 – 2015

Professional Development Activities

Transforming STEM Teaching at CSUSM Faculty Learning Community	Spring 2019 – Fall 2019
Office of Graduate Studies and Research Summer Grant Writing Bootcamp	Summer 2018
PULSE (Partnership for Undergraduate Life Sciences Education) Institute	Spring 2018
AVID Teaching Workshop, 3 days (18 hours)	Spring 2016
Faculty Center Connections	Fall 2015 – Spring 2017

Awards

2016 New Investigator Award, Comparative and Evolutionary Physiology Section, American Physiological Society, US$1400

2013 Research Recognition Award, Comparative and Evolutionary Physiology Section, American Physiological Society, US$825

2010 Best student presentation, Australian and New Zealand Society for Comparative Physiology and Biochemistry Annual Conference, Canberra, AU$200

2006 University Medal for Outstanding Academic Performance for a Bachelor's Degree with Honours (4 years total) University of Adelaide. Only 18 medals awarded university wide (25,000 students) annually

2006 John Bagot Medal for the best Honours thesis in Botany, University of Adelaide

2005 The Ernest Ayers Scholarship to undertake Honours in Botany, University of Adelaide, AU$750

2005 J.G. Wood Memorial Prize for Undergraduate Botany, University of Adelaide, AU$300

2004 Reed New Holland Book Prize for Undergraduate Zoology, University of Adelaide

Professional History

Assistant Professor Aug 2015 – July 2020 **California State University San Marcos, USA**
Department of Biological Sciences

Postdoctoral Fellow Aug 2013 – July 2015 **McMaster University, Canada**
Department of Biology
Supervisors: Dr. Joanna Wilson and Dr. Doug Boreham, Primary Investigators
Embryonic metabolism and energetics of lake whitefish under different thermal regimes
Mentorship of 3 Ph.D., 1 Masters and 2 undergraduate students

Sessional Faculty Jan 2015 – April 2015 **McMaster University, Canada**
Department of Biology
BIO 3ZZ3 (Topics in Physiology) Fall/Winter 2014/2015 (third year seminar course)

Postdoctoral Research Associate Sept 2011 – July 2013 **University of North Texas, USA**
Developmental Integrative Biology, Department of Biological Sciences
Supervisor: Dr. Warren W. Burggren, Primary Investigator
Cardiovascular, renal and acid-base physiology of avian and reptilian embryos
Lab managerial tasks and mentorship of 2 Ph.D., 4 Masters and 4 undergraduate students

Laboratory Instructor 2008 – 2011 **University of Adelaide, Australia**
Department of Ecology and Evolutionary Biology
ENV BIOL 3003 (Ecophysiology of Animals III) Spring 2010 (Thermoregulation, Respiration, Circulation, Osmoregulation, Allometry), ENV BIOL 2000 (Zoology II) Autumn 2008 (Ecophysiology, Vertebrate Functional Morphology), Autumn 2011 (Vertebrate Functional Morphology, Vertebrate Evolution)

Research Assistant 2008 **University of Adelaide, Australia**
Department of Ecology and Evolutionary Biology
Comparative Physiology laboratory, Supervisor: Professor Roger Seymour
Experimental setup, data collection, literature searching and summaries