

MATTHEW R. WALSH

Curriculum Vitae

Department of Biology
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I. APPOINTMENTS

UNIVERSITY OF TEXAS ARLINGTON, Arlington TX
Assistant Professor of Biology, August 2012 – present

YALE UNIVERSITY, New Haven CT
Gaylord Donnelley Postdoctoral Fellow, July 2009 – July 2012
Advisor: David M. Post

II. EDUCATION

UNIVERSITY OF CALIFORNIA RIVERSIDE, Riverside CA
Doctor of Philosophy in Evolution, Ecology, and Organismal Biology, June 2009
Advisor: David N. Reznick

STONY BROOK UNIVERSITY, Stony Brook NY
Master of Science in Marine and Atmospheric Sciences, August 2003
Advisor: David O. Conover

UNIVERSITY OF VIRGINIA, Charlottesville VA
Bachelor of Arts in Environmental Sciences, May 2000

III. PUBLICATIONS (24 total, 16 as first or corresponding author) (* - Graduate student author, [§] - Undergraduate student author)

In Review Walsh, M.R., T.A. Castoe, J. Holmes*, M. Packer*, K. Biles[§], M.J. Walsh, D.M. Post, & S.B. Munch. Local adaptation in transgenerational responses to predators. *Proceedings of the Royal Society B*

Walsh, M.R., & M. Packer*. Density dependent feedbacks reverses the pathway from evolution to ecology in locally adapted populations. *Ecology*

- In Press** *Whittington, D., & **M. R. Walsh**. Divergent phenotypic responses to predators and cyanobacteria in *Daphnia lumholtzi*. ***Freshwater Biology***
- DeLong, J.P. & **M.R Walsh**. The interplay between resource supply and demand determines the influence of predation on prey body size. ***Canadian Journal of Fisheries and Aquatic Sciences***
- Schild, D.R., **M.R. Walsh**, D.C. Card, A.L. Andrew, R.H. Adams, and T.A. Castoe. EpiRADseq: scalable analysis of genome-wide patterns of methylation using next generation sequencing. ***Methods in Ecology and Evolution***
- 2015** **Walsh, M. R.**, F. Cooley[§], K., Biles[§], & S. B. Munch. Predator-induced phenotypic plasticity within- and across-generations: a challenge for theory? ***Proceedings of the Royal Society B*** 282: 20142205.
- 2014** **Walsh, M.R.**, D. Whittington*, and M J. Walsh. Does variation in the intensity and severity of predation drive evolutionary changes in reproductive life span and senescence? ***Journal of Animal Ecology*** 83: 1279-1288
- Walsh, M.R.**, D. Whittington*, and C. Funkhouser*. Thermal transgenerational plasticity in natural populations of *Daphnia*. ***Integrative and Comparative Biology*** 54: 822-829
- Walsh, M. R.**, K. J. La Pierre, and D. M. Post. Phytoplankton composition modifies predator-driven life history evolution in *Daphnia*. ***Evolutionary Ecology*** 28: 397-411
- 2013** **Walsh, M. R.** The evolutionary consequences of indirect effects. ***Trends in Ecology and Evolution*** 28: 23-29
- Walsh, M. R.** The link between environmental variation and evolutionary shifts in dormancy in zooplankton. ***Integrative and Comparative Biology*** 54: 713-722
- 2012** **Walsh, M. R.**, J. DeLong, T. Hanley, and D. M. Post. A cascade of evolution alters consumer-resource dynamics and ecosystem function. ***Proceedings of the Royal Society B*** 279: 3184-3192
- Walsh, M. R.**, and D. M. Post. The impact of intraspecific variation in a fish predator on the evolution of phenotypic plasticity and investment in sex in *Daphnia*. ***Journal of Evolutionary Biology*** 25: 80-89
- Furness, A. I., **M. R. Walsh**, and D. N. Reznick. Convergence of life history phenotypes in a Trinidadian killifish (*Rivulus hartii*). ***Evolution*** 66: 1245-1254
- El-Sabaawi, R., T. Kohler, E. Zandona, J. Travis, M. C. Marshall, S. Thomas, D. N. Reznick, **M. R. Walsh**, J. F. Gilliam, C. Pringle, A. S. Flecker. Environmental and

organismal predictors of intraspecific variation in the stoichiometry in a freshwater neotropical fish. *PLoS ONE* 7(3): e32713. doi:10.1371/journal.pone.0032713

2011 Walsh, M. R., and D. M. Post. Interpopulation variation in a fish predator drives evolutionary divergence in prey in lakes. *Proceedings of the Royal Society B* 278: 2628-2637

Walsh, M. R. and D. N. Reznick. Experimentally induced life history evolution in a killifish in response to the introduction of guppies. *Evolution* 65: 1021-1036

#Walsh, M. R., D. F. Fraser, R. D. Bassar, and D. N. Reznick. The direct and indirect effects of guppies (*Poecilia reticulata*): implications for life history evolution in *Rivulus hartii*. *Functional Ecology* 25: 227-237.

#Runner-up for the Haldane Young Investigator's Prize, which is awarded each year to the best paper in Functional Ecology by a young author at the start of their research career.

Oufiero, C. E., M. R. Walsh, D. N. Reznick, and T. Garland. Swimming performance trade-offs across a gradient in community composition in *Rivulus hartii*. *Ecology* 92:170-179.

2010 Walsh, M. R. and D. N. Reznick. Influence of the indirect effects of guppies on life history evolution in *Rivulus hartii*. *Evolution* 64: 1583-1593.

Bassar, R.D., D. N. Reznick, A. López-Sepulcre, M. R. Walsh, M. Turcotte, and M. Torres-Mejia. Bridging the gap between ecology and evolution: Integrating density regulation and life history evolution. *Ann. N.Y. Acad. Sci* 1206 (2010) 17-34.

2009 Walsh, M. R., and D. N. Reznick. Phenotypic diversification across an environmental gradient: a role for predation and resource availability on the evolution of life histories. *Evolution* 63: 3201-3213.

2008 Walsh, M. R., and D. N. Reznick. Interactions between the direct and indirect effects of predators determine life history evolution in a killifish. *Proceedings of the National Academy of Sciences USA* 105: 594-599.

2006 Walsh, M. R., S. B. Munch, S. Chiba, and D. O. Conover. Maladaptive changes in multiple traits caused by fishing: Impediments to population recovery. *Ecology Letters* 9: 142-148.

2005 Conover, D.O., S. A. Arnott, M.R. Walsh, and S.B. Munch. Darwinian fishery science: lessons from the Atlantic silverside. *Canadian Journal of Fisheries and Aquatic Sciences* 62: 730-737.

Munch, S. B., M.R. Walsh, and D.O. Conover. Harvest selection, genetic correlations,

and evolutionary changes in recruitment: one less thing to worry about. *Canadian Journal of Fisheries and Aquatic Sciences* 62: 802-810.

In Preparation

Funkhouser, C.*, & **M. R. Walsh**. Predator driven evolution of prey body shape: genetic versus environmental differences.

IV. GRANTS (Total amount received since 2012: \$344,652)

Active

2015 National Science Foundation: Testing the influence of long-term ecological change on evolutionary responses in zooplankton. PI – Matt Walsh. Amount: \$219,750. Duration: 2015-2017

2014 Research Enhancement Program (UTA): The extended influence of predators on prey. PI – Matt Walsh, Co-PI – Todd Castoe. Amount: \$20,000. Duration: 2014-2015

2014 Luminant Energy Inc. Environmental Program: The influence of heated thermal effluent on life history evolution in mosquitofish. PI – Matt Walsh. Amount: \$105,522. Duration: 2014-2016.

Pending

2015 National Science Foundation: CAREER: The evolution of anti-predator behavior: experimental tests of theory in nature. PI – Matt Walsh. Amount: \$750,422. Duration: 2016-2021.

Grants obtained by my graduate students

2015 Phi Sigma Research Grant. PI – Collin Funkhouser. Amount: \$1500

2015 Phi Sigma Research Grant. PI – Shannon Beston. Amount: \$1500

Previous support

2008 National Science Foundation Doctoral Dissertation Improvement Grant (\$11965)

2007 Dean's Dissertation Research Grant, University of California Riverside (\$1000)
Exploration Fund Award, Explorers Club (\$1200)

V. FELLOWSHIPS AND AWARDS

- 2012 Jasper Loftus-Hills Young Investigator Award (\$1250)
 - 2009 Gaylord Donnelley Environmental Postdoctoral Fellowship (\$88000)
 - 2008 Distinguished Fellowship in Biology, University of California Riverside (\$7500)
Dean's Dissertation Fellowship, University of California Riverside (\$20000)
 - 2006 Research Assistance Award, American Institute of Fishery Research Biologists (\$500)
Dean's Fellowship, University of California, Riverside, CA (\$12000)
 - 2005 Department of Education GAANN Fellowship, UC Riverside (\$20000)
 - 2003 Sea Grant Scholar, New York Sea Grant, MSRC, Stony Brook University (\$15000)
Thesis Completion Award, New York Sea Grant, Stony Brook University (\$4500)
 - 2002 Best Poster Honorable Mention, American Fisheries Society Annual Meeting
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VI. INVITED SEMINARS

- 2015 University of California at Santa Cruz
 - 2014 University of Alabama
University of Missouri
 - 2012 University of Toronto Mississauga
University of Texas Arlington
University of Waterloo
 - 2011 University of Glasgow
Rice University
University of Texas Austin
University of Nevada Reno
University of Massachusetts Amherst
 - 2009 Yale University
University of California Riverside
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VII. INVITED CONFERENCE PRESENTATIONS

- 2014 Joint Aquatic Sciences Meeting – Symposia on eco-evolutionary dynamics in aquatic systems, Portland, OR (declined)
 - 2014 Society of Integrative and Comparative Biology – Symposia on adaptation and developmental constraint, Austin TX
 - 2013 Society of Integrative and Comparative Biology – Symposia on phenotypic plasticity and gender roles, San Francisco, CA
 - 2012 Evolution 2012 – Joint Awards Symposia, Ottawa, Canada
 - 2011 5th International Symposium of the Biodiversity & Evolution Global COE, Kyoto Japan
(Keynote lecture on Eco-evolutionary interactions)
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VIII. CONTRIBUTED PRESENTATIONS

Presentations given by MR Walsh:

- 2016 American Society of Naturalists, Asilomar, CA (scheduled)
- 2014 Evolution 2014, Raleigh, NC
- 2011 Evolution 2011, Norman, OK
- 2010 Evolution 2010, Portland OR
- 2009 Evolution 2009, Moscow ID
European Society for the Study of Evolutionary Biology, Turin, Italy
- 2008 Evolution 2008, Minneapolis MN
Western Evolutionary Biologists Annual Meeting, Irvine CA
Society of Integrative and Comparative Biology, San Antonio TX
- 2006 Evolution 2006, Stony Brook NY
- 2003 American Fisheries Society, Quebec City
- 2002 American Fisheries Society, Baltimore MD
William R. and Lenore Mote International Symposium in Fisheries Ecology, Sarasota FL

Presentations given by lab personnel:

- 2016 Funkhouser, C, Society of Integrative and Comparative Biology, Portland OR
- 2015 Funkhouser, C, ACES UTA (oral presentation)
- 2015 Beston, S, Society for Freshwater Science, Milwaukee, WI (poster)
- 2014 Boyles, A (MS student), American Fisheries Society, Quebec City, Canada (poster)
- 2014 Biles, K (undergraduate), Annual Celebration of Excellence by Students, UTA (poster)

IX. TEACHING ACTIVITIES

Courses taught

- 2015 Experimental Design and Analysis (graduate course)
- 2015 General Ecology (96 students)
- 2014 Ecology and Evolution (180 students)
- 2014 General Ecology (48 students)
- 2013 Aquatic Biology (Graduate course)
- 2013 Experimental Design and Analysis (Graduate course)

X. MENTORING EXPERIENCE

(A) Graduate students supervised

- Michelle Packer (PhD, 2015-present)
- Shannon Beston (PhD, 2014-present)
- Mike Gillis (PhD, 2014-present)

Collin Funkhouser (PhD, 2014-present)
Julian Holmes (MS, 2014-present)
Deirdre Whittington (MS, 2014)
Amanda Boyles (MS, 2013-present)

(B) Undergraduate students supervised (19 total, 9 for >1 year)

Bolded names are undergraduate coauthors

§LSAMP Scholar from TCC

#students who completed senior thesis in my lab

Kelsey Hester, UTA (2013-15)

Jessica Stevens, UTA (2013-14)

Yomna Farooqui, UTA (2013-14)

#Jennifer Nguyen, UTA (2013-15)

#Ishrat Durdana, UTA (2013-15)

Jessica Majid, UTA (2013)

§**Frank Cooley IV, UTA (2013-present)**

#Mina Tricomi-Peugh, UTA (2013-15)

Fouzia Rahman, UTA (2013-15)

Tiffanie Liang, UTA (2014-present)

Michelle Packer, UTA (2014-15)

Jorge Garcia, UTA (2015-present)

Weffa Akrawi, UTA (2015-present)

Lizzette Partida, UTA (2015-present)

§Merari Garcia, UTA (2015)

Kaitlyn Howell, UTA (2015-present)

Rosemary Nigo, UTA (2015-present)

#Whitnee Tucher, UTA (2015-present)

Elxy Martinez, UTA (2015-present)

XI. SERVICE ACTIVITIES

(A) Reviewer

Evolution (5), Ecology Letters (7), Ecology (2), Journal of Ecology, Proceedings of the Royal Society B (3), American Naturalist (2), Molecular Ecology, Ecosphere, Evolutionary Ecology (3), Journal of Evolutionary Biology, Journal of Experimental Biology, Functional Ecology, Journal of Fish Biology, Oecologia, Population Ecology, Biological Journal of the Linnean Society (2), Integrative and Comparative Biology, Journal of Sea Research, PLoS One (3), Axios, Hydrobiologia, Population Ecology

(B) WORKSHOP PARTICIPANT

- 2015: Organizer for symposium on the evolution of phenotypic plasticity at the 2015 Congress for the European Society of Evolutionary Biology (Lausanne, Switzerland)
 - 2015: Priorities for long-term ecological research (NSF funded), Michigan State University
 - 2013: Rapid evolution and sustainability at the Mathematical Biosciences Institute, Ohio State University
 - 2011: Eco-evolutionary dynamics, Quebec Centre for Biodiversity Science
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