

MISTY R. RIDDLE, PhD

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PROFESSIONAL EXPERIENCE

2021-Present Assistant Professor, Biology Department, University of Nevada, Reno
2014-2020 Postdoctoral Fellow, Harvard Medical School
 Advisor: Dr. Clifford Tabin
2013-2014 Postdoctoral Fellow, University of California, Santa Barbara
 Advisor: Dr. Joel Rothman
2008-2013 Graduate Student, University of California, Santa Barbara
 Advisor: Dr. Joel Rothman

EDUCATION

June 2013 Embryology: Concepts and Techniques in Modern Developmental Biology,
 Woods Hole, Marine Biological Laboratory
 Directors: Drs. Alejandro Sánchez Alvarado and Richard Behringer
2008-2013 **PhD in Molecular, Cellular, and Developmental Biology**
 University of California, Santa Barbara
 Advisor: Dr. Joel Rothman
 Committee: Drs. Kathleen Foltz, William Smith, and Anthony De Tomaso
 Lancaster Dissertation Award for Biological and Life Sciences
2004-2008 **Bachelor of Science in Biology, minor in Chemistry**
 Westminster College, Salt Lake City, UT
 Independent Research Advisors: Drs. Bonnie Baxter and Brian Avery
 Summa cum laude, 3.88 GPA

CURRENT FUNDING

2021-present Start-up funds from University of Nevada, Reno

PAST FUNDING

2021-2022 COBRE Integrative Neuroscience Pilot Project Award

SUBMITTED BUT NOT FUNDED

2022 NIH NIDDK R21 (Feb 2022, Impact Score: 52)

MISTY R. RIDDLE, PhD

PUBLICATIONS

Manuscripts from my independent lab

1. **Riddle MR**, Hu CK. (2021). Fish Models for Investigating Nutritional Regulation of Embryonic Development. *Developmental Biology*. 26 (46):101-111.

Manuscripts from my postdoctoral research

1. **Riddle MR**, Aspiras A, Damen F, McGaugh S, Tabin, JA, Tabin CJ. (2021). Genetic mapping of metabolic traits in blind Mexican cavefish reveals sex-dependent quantitative trait loci associated with cave adaptation. *BMC Ecology and Evolution*. 21 (1): 94.
2. Warren WC, Boggs TE, Borowsky R, Carlson BM, Ferrufino E, Gross JB, Hillier L, Hu Z, Keene AC, Kenzior A, Kowalko JE, Tomlinson C, Kremitzki M, Lemieux ME, Graves-Lindsay T, McGaugh SE, Miller JT, Mommersteeg MTM, Moran RL, Peuß R, Rice ES, **Riddle MR**, Sifuentes-Romero I, Stanhope BA, Tabin CJ, Thakur S, Yamamoto Y, Rohner N. (2021). A chromosome-level genome of *Astyanax mexicanus* surface fish for comparing population-specific genetic differences contributing to trait evolution. *Nature Communications*, 4;12(1):1447.
3. **Riddle MR**, Aspiras A, Damen F, Tabin J, Hutchinson J, Chinnapen D, Tabin C. (2020) Genetic architecture underlying changes in carotenoid accumulation during the evolution of the Blind Mexican cavefish, *Astyanax mexicanus*. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*, 334 (7-8): 405-422.
4. **Riddle MR**, Boesmans W, Caballero O, Kazwiny Y, Tabin CJ. (2018). Morphogenesis and Motility of the *Astyanax mexicanus* Gastrointestinal Tract. *Developmental Biology*, 441 (2): 285-296.
5. **Riddle MR**, Martineu B, Peavey M, Tabin CJ. (2018). Raising the Mexican tetra, *Astyanax mexicanus*, for analysis of post-larval phenotypes and whole-mount immunohistochemistry. *Journal of Visualized Experiments (JoVE)*, 28;(142).
6. **Riddle MR**, Tabin CJ (2019). *Editorial*. Little fish, big questions: a collection of modern techniques for Mexican tetra research. *Journal of Visualized Experiments (JoVE)*. (156):10.3791/60592.
7. Tabin JA, Aspiras A, Martineau B, Haro A, **Riddle MR**, Kowalko J, Borowsky R, Rohner N, Tabin CJ. (2018). Temperature Preferences of Cave and Surface Populations of *Astyanax mexicanus*. *Developmental Biology*, 441(2): 338-344.
8. **Riddle MR**, Aspiras A*, Gaudenz K, Peuß R, Sung J, Martineau B, Peavey M, Box A, Tabin JA, McGaugh S, Borowsky R, Tabin CJ, Rohner N. (2018). *Cover article*. Insulin Resistance in Cavefish as an Adaptation to a Nutrient-limited Environment. *Nature*, 555 (7698): 647-651.
*Contributed equally
9. Walton K, Mishkind D, **Riddle MR**, Tabin CJ, Gumucio D. (2018). Blueprint for an Intestinal Villus: Species-specific Assembly Required. *WIREs Developmental Biology*, 7(4):e317.

Manuscripts from my graduate research

MISTY R. RIDDLE, PhD

1. **Riddle MR**, Spickard EA, Jevince A, Nguyen KC, Hall DH, Joshi PM, Rothman JH. (2016). Transorganogenesis and Transdifferentiation in *C. elegans* are Dependent on Differentiated Cell Identity. *Developmental Biology*, 420(1): 136-147.
2. **Riddle MR**, Weintraub A, Nguyen KCQ, Hall DH, Rothman JH. (2013). Transdifferentiation and Remodeling of Post-Embryonic *C. elegans* Cells by a Single Transcription Factor. *Development*, 140(24):4844-4849.
3. Joshi PM, **Riddle MR**, Djabrayan NJV, and Rothman JH. (2010). *C. elegans* as a Model for Stem Cell Biology. *Developmental Dynamics*, 239(5):1539-54.
Cover article, selected as a "Highlights in DD" article, second most downloaded article of 2010

Manuscripts from undergraduate research

1. **Riddle MR**, Baxter BK, Avery BJ. (2013). Molecular Identification of the Microbes Associated with the Brine Shrimp *Artemia franciscana*. *Aquatic Biosystems*, 9(1):7.
2. Baxter BK, Eddington B, **Riddle MR**, Webster TN and Avery BJ: Great Salt Lake Halophilic Microorganisms as Models for Astrobiology: Evidence for Desiccation Tolerance and Ultraviolet Radiation Resistance. **Instruments, Methods, and Missions for Astrobiology**, edited by Richard B. Hoover, Gilbert V. Levin, Alexei Y. Rozanov, Paul C. W. Davies, Proceedings of SPIE Vol. 6694 (SPIE, Bellingham, WA, 2007) Article CID Number: 669415

AWARDS

2019	Genetic Innovations to Address Climate Change Harvard Consortium for Space Genetics
2018	Best Poster, Harvard Medical School Genetics Department Retreat
2016	Ruth L. Kirschstein Research Award (NRSA) NIH NIDDK
2013	Lancaster Dissertation Award for Biological Sciences
2013	Marine Biological Laboratory Scholarship for Embryology Course
2013	Best Student Talk, Society for Developmental Biology
2013	Best Poster, UCSB Departmental Retreat
2009	Training Grant, California Institute of Regenerative Medicine
2008	Outstanding Student in Biology, Westminster College

COMMUNITY SERVICE -INTERNAL

2022	Host	Carole Hyacinthe, EECB Seminar Series
2022	Host	James Gagnon, Molecular Biosciences Seminar Series
2021	Judge	3-minute Thesis Competition
2021	Host	Rosa Uribe, Integrative Neuroscience Seminar Series
2021	Interviewer	MCB Graduate Program
2021	Interviewer	Integrative Neuroscience Graduate Program
2021	Interviewer	EECB Graduate Program
2021	Speaker	Gradventure, Integrative Neuroscience Graduate Program
2021	Panelist	Neuroscience Graduate Course

MISTY R. RIDDLE, PhD

COMMUNITY SERVICE – EXTERNAL

2022	Judge	Society for Developmental Biology Poster Session
2022	Judge	Pan American Evo Devo Postdoc Researcher Session
2020	Session chair	Keystone Symposia on Tissue Plasticity
2020	Session chair	Society for Developmental Biology Annual Meeting
2018	Guest Editor	Journal of Visualized Experiments issue on Mexican tetra
2016-2019	Organizer	Gut Journal Club, Harvard Medical School

IACUC APPROVED ANIMAL PROTOCOLS

2021	2021-01-1124	Genetic studies in Mexican tetra
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PROFESSIONAL SOCIETIES

Society for Developmental Biology
Society for the Study of Evolution
Genetics Society of America

TEACHING

2022	BIOL 315	Cell Biology
2022	BIOL 450/650	Stem Cell Biology

POSTDOCTORAL TRAINEES

2021-present Dr. Kaitlyn Webster
Co-advised by Clifford Tabin at Harvard Medical School
Awards: Nevada INBRE Scientific Core Service Award

GRADUATE STUDENT TRAINEES

2022-Present	Maeve Nave	Cell and Molecular Biosciences
2022-Present	Bethany Ponte	Integrative Neuroscience
2021-Present	David Perez Guerra	Ecology, Evolution, Conservation Bio
2021-Present	Pavani Perera Ponnimaduge	Cell and Molecular Biosciences

OTHER TRAINING

2021-Present	Heather Woodson-Gammon	Aquatics Technician
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DISSERTATION COMMITTEES

2022-present	Guillermo Costoya	Ecology, Evolution, Conservation Bio PhD
2022-present	Pearson McIntire	Integrative Neuroscience PhD
2021-present	Jennifer Heppner	Ecology, Evolution, Conservation Bio PhD
2021-2022	Irene Richardson	Nutrition Masters

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JOURNAL REFEREE

2022 BMC Biology
2021 Elife
2020 Diversity
2018 Developmental Biology

INVITED OR SELECTED SEMINARS -EXTERNAL

2022 Joint Society for Developmental Biology / EvoDevo PanAm Meeting
2022 Belgian Week of Gastroenterology
2022 *Astyanax* International Meeting
2019 *Astyanax* International Meeting
2019 Society for Developmental Biology Annual Meeting
Hilde Mangold Postdoctoral Symposium
2019 Genetics Symposium on Climate Change, Harvard Medical School
2018 *Astyanax* International Meeting
2018 University of Miami, Biology Department Seminar Series
2018 Harvard EvoDevo Seminar Series
2018 Boston College “Science on Tap”
2017 Society for Developmental Biology Annual Meeting
2017 UMASS Amherst Biology Department Seminar Series
2017 *Astyanax* International Meeting
2017 Society for Integrative and Comparative Biology

INVITED SEMINARS -INTERNAL

2022 Cell and Molecular Bioscience Seminar Series
2021 Society for Neuroscience Annual Symposium – Sierra Nevada Chapter
2020 Neuroscience Graduate Course

IN THE PRESS

2019 To wild depths for new models (Nature Lab Animal)
2018 The healthy diabetic cavefish conundrum (Nature News and Views)
2018 Blind cavefish may hold the secret to treating diabetes (National Geographic)
Blind fish that should have diabetes, but somehow doesn't (The Atlantic)
2018 Cavefish blood sugar (AAAS science update podcast)