Marie Strader, PhD

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PROFESSIONAL APPOINTMENTS

2017-present **Postdoctoral Fellow** *University of California, Santa Barbara*
Mentor: Prof. Gretchen Hofmann

EDUCATION

2012-2017 **PhD. Integrative Biology** *University of Texas at Austin*
Advisor: Prof. Mikhail V. Matz

2010 **B. Sc. Biology, minor in Chemistry** *University of Oregon*
Graduated *Cum Laude*

RESEARCH GRANTS AND AWARDS

2017 Postdoctoral Fellowship ***Zuckerman STEM Leadership Program***, $100,000 (declined)

2016 "Characterizing shifts in coral mucus composition after bleaching" ***PADI Foundation*** **Research Award**, $5,000

2014-16 "Dissertation Research: The Ecological Role of Fluorescence in Reef-building Corals" ***National Science Foundation*****, Doctoral Dissertation Improvement Grant (NSF DDIG),** $20,124

2014 & 2016 "Dissertation Research: The Ecological Role of Fluorescence in Reef-building Corals" **Graduate Program in Ecology, Evolution and Behavior**, *The University of Texas at Austin*, Doctoral Dissertation Improvement Grant (EEB DDIG), TOTAL: $8,000

2012 "Role of cyan fluorescent protein in the establishment of coral-*Symbiodinium* symbiosis" **Graduate Program in Ecology, Evolution and Behavior**, *The University of Texas at Austin*, Start-up Grant, $2,000

2016 Travel awards **Graduate School and EEB Department** *University of Texas at Austin.* TOTAL: $1400

2013 **Best Poster,** *University of Texas at Austin*, Annual Brain, Behavior and Evolution Symposium

PUBLICATIONS

Cleves, PA*, **Strader ME***, Bay LK, Pringle, JR, Matz MV (*In review*) CRISPR/Cas9–mediated genome editing in the reef-building coral *Acropora millepora.*
*Co-first author

Quigley KM* & **Strader ME*** (*In preparation*) *Acropora millepora* juvenile fluorescence is associated with uptake of divergent *Symbiodinium* communities and types. *Co-first author

Strader ME, Aglyamova GV & Matz MV (2018) Molecular characterization of larval development from fertilization to metamorphosis in a reef-building coral. *BMC Genomics* **19**:1 doi:10.1186/s12864-017-4392-0

Davies SW,* **Strader ME***, Kool JT, Kenkel CD, Matz MV (2017) Coral life history differences determine the refugium potential of a remote Caribbean reef. *Coral Reefs* doi: 10.1101/062869
*Co-first author

Strader ME, Aglyamova GV &Matz MV. (2016) Red Fluorescence in coral larvae is associated with a diapause-like state. *Molecular Ecology* **25**:2 559-569 doi: 10.1111/mec.13488

Strader ME, Davies SW, Matz M V (2015) Differential responses of coral larvae to the colour of ambient light guide them to suitable settlement microhabitat. *Royal Society Open Science*, **2**. doi:10.1098/rsos.150358

Manning L, Heckscher ES, Purice MD, Roberts J, Bennett AL, Kroll JR, Pollard JL, **Strader ME** *et al*. (2012) A Resource for manipulating gene expression and analyzing cis-regulatory modules in the *Drosophila* CNS. *Cell Reports* **2**: 1-12.

INVITED SEMINARS & PRESENTATIONS

2017 **Unraveling the molecular mechanisms of larval competence, a complex trait that determines dispersal in the sea. (Poster)**
Society for Molecular Biology and Evolution (SMBE) meeting – Austin, TX, USA

2017 **Revealing gene function in reef-building corals: novel gene manipulation techniques in *Acropora millepora* (Poster)**
Society of Integrative and Comparative Biology (SICB) meeting- New Orleans LA, USA

2016 **Developmental gene expression in a reef-building coral reveals key pathways involved in larval competency**
Invited Seminar at the Australian Institute of Marine Science (AIMS), Townsville, Australia

2016 **RNA-seq and manipulative experiments identify key receptors involved in larval competency (Poster)**
International Coral Reef Symposium (ICRS)- Honolulu HI, USA

2016 **The role of larval traits on dispersal patterns of two dominant reef-building coral species from remote Gulf of Mexico reefs**

Society of Integrative and Comparative Biology (SICB) meeting- Portland OR, USA

2015 **Dispersal and fluorescence of reef-building coral larvae**
Invited seminar at the Australian Institute of Marine Science (AIMS), Townsville, Australia.

2015 **Dispersal and fluorescence of reef-building coral larvae**
Invited seminar at the University of North Carolina at Chapel Hill, Department of Marine Sciences

2015 **Coral larval fluorescence as an indicator of dispersal potential (Poster)**
Society of Integrative and Comparative Biology (SICB) meeting- West Palm Beach, FL USA

2014 **Understanding coral fluorescence using experimental biology and genomics**
Brain Behavior and Evolution Seminar series Department of Integrative Biology, Austin TX USA

2014 **Gene co-expression networks associated with fluorescence phenotype and response to light stimuli in coral larvae (*Acropora millepora*) (Poster)**
Society of Integrative and Comparative Biology (SICB) meeting, Austin, TX USA

2013 **Functions of coral fluorescence: a story of light and settlement (Poster)**
Annual Brain, Behavior and Evolution Symposium, Austin, TX USA

2013 **Color vision in coral larvae? Insights into settlement behavior and possible function of fluorescent proteins**
Society of Integrative and Comparative Biology (SICB) meeting, San Francisco, CA USA

TECHING/MENTORING EXPERIENCE

2013-2017 **Teaching Assistant** *University of Texas at Austin College of Natural Sciences*
Served as the teaching assistant for undergraduate courses "Laboratory Experience in Genetics" for 7 semesters and "Invertebrate Zoology" for 1 semester. I was responsible for leading all laboratory activities for both courses including designing and implementing assessments.

2015 **Assistant Instructor** *Mote Tropical Research Lab*
Methods in Ecological Genomics (MEGA) workshops
Organized, designed experiments and lead laboratory activities for courses: "Whole genome genotyping with 2bRAD" and "Global gene expression profiling with tag-based RNAseq"

2014-2015 **GK-12 fellow** *University of Texas at Austin*
Held a prestigious teaching fellowship from the Environmental Science Institute. This fellowship supported my salary for 2 long semesters and

involved co-teaching a 12th grade aquatic biology course at a local high school.

2015 & 2014 **Teaching Assistant** *University of Texas at Austin*
Center for Computational Biology and Bioinformatics
Served as the teaching assistant for the "Introduction for RNAseq" course for the Summer School for Big Data in Biology

PROFESSIONAL DEVELOPMENT AND SKILLS

2016-17 **Concentration in Teaching in Mentoring** *University of Texas at Austin*
Three semester professional development series

2015 **'Teaching Climate Change'** *University of Texas at Austin*
Professional Development workshop

2014 **'Teaching Evolution'** *University of Texas at Austin*
Professional Development workshop

2014 **Introduction to ArcGIS** *University of Texas at Austin*
Semester long course: Department of Geological Sciences

2013-17 **AAUS Scientific Diver** *University of Texas at Austin*

OUTREACH

Undergraduate Education

- Invited presentation: University of Texas Marine Science Club, 2015
- Graduate School Panel for the 'University of Texas Women in Science', 2012
- Undergraduate student mentoring: Patrick Mears, Rebecca Burkhalter, Eryn Pynes

K-12 Education

- GK12 fellowship: designing aquatic biology lessons in a 12th grade capstone course for an entire school year, 2014-15
- Taught coral reef ecology lessons at Lamar and Burnet Middle Schools, 2015
- Science day for homeschoolers, 2013
- Science club presentation at Serene Hills Elementary School, 2013
- Girl Scouts of Central Texas STEM festival, 2012

Science Communication

- Volunteer organizer and presenter at 'Science Under the Stars', a gradate student run public lecture series, 2014-present
- Presentation on coral reef ecology, Hood River, Oregon Rotary Club, 2016
- Interactive science fair booths at 'Hot Science Cool Talks' public lecture series, 'Darwin Day' events and 'Women in Science' events in Austin, TX
- Scientific images won 3rd place in 'Focus in Biology' image contest and featured in 'Visualizing Science' magazine at UT Austin