

TEXAS STATE VITA

I. Academic/Professional Background

A. Name: Lauren Elizabeth Fuess

Title: Assistant Professor

B. Educational Background

<i>Degree</i>	<i>Year</i>	<i>University</i>	<i>Major</i>	<i>Thesis/Dissertation</i>
Ph. D.	2018	University of Texas at Arlington	Quantitative Biology	Disease in a changing ocean: Ecoimmunological applications to coral reef ecology
B. S.	2012	College of Charleston	Marine Biology	A molecular assay for the cause of bleaching in the temperate Atlantic coral species <i>Occulina arbuscula</i> .

C. University Experience

<i>Position</i>	<i>University</i>	<i>Dates</i>
Assistant Professor	Texas State University, Biology	2020-present
Postdoctoral Research Associate	University of Connecticut, EEB	2018-2020
Graduate Teaching/Research Assistant	University of Texas at Arlington, Biology	2013-2018

D. Relevant Professional Experience

<i>Position</i>	<i>University</i>	<i>Dates</i>
Fulbright Researcher	University of the West Indies, Discovery Bay Marine Laboratory	2012-2013

E. Other Professional Credentials (licensure, certification, etc.)

N/A

II. TEACHING

A. Teaching Honors and Awards:

N/A

B. Courses Taught:

N/A

C. Directed Student Learning (i.e. theses, dissertations, exit committees, etc.):

Undergraduate Students Mentored (9 total)

Sophia Aruna (2020-present)

Mita Kale (2019-present)

Julia Meenan (2019-present)

Gillian McNeil (2019)

Sarah Tsuru (2018-present)- Honors Thesis

Caleb Butler (2016-2018)

Margaret Park (2015)- iEngage Summer Research Program
Kiran Lakhani (2014)
Roberta Freeman (2014)

D. Courses Prepared and Curriculum Development:

N/A

E. Teaching Grants and Contracts

1. Funded External Teaching Grants and Contracts:

N/A

2. Submitted, but not Funded, External Teaching Grants and Contracts:

N/A

3. Funded Internal Teaching Grants and Contracts:

N/A

4. Submitted, but not Funded, Internal Teaching Grants and Contracts:

N/A

F. Other:

Guest Lectures

Evolutionary Medicine (undergraduate), University of Connecticut, 2019
Introduction to Biology (undergraduate; honors), University of Texas at Arlington, 2017
Introduction to Biology (undergraduate), University of Texas at Arlington, 2016
Conservation Biology (graduate), University of Texas at Arlington, 2016
Conservation Biology (graduate), University of Texas at Arlington, 2015

Field Courses

LSAMP REU in Roatan Honduras, Midland College, 2017, Graduate Assistant

G. Teaching Professional Development Activities Attended

N/A

III. SCHOLARLY/CREATIVE

A. Works in Print (including works accepted, forthcoming, in press):

1. Books:

a. Scholarly Monographs:

N/A

b. Textbooks:

N/A

c. Edited Books:

N/A

d. Chapters in Books:

Mydlarz LD, **Fuess LE**, Mann WT, Pinzon JC, and Gochfeld, DJ. 2016. Cnidarian immunity: from genomes to phenomes. In: *The Cnidaria, past, present and future. The world of Medusa and her sisters*. Editors: S. Goffredo and Z. Dubinsky. Springer.

2. Articles (* student co-author)

a. Refereed Journal Articles:

9. **Fuess LE**, Palacio-Castro AM, Butler CC*, Baker AC, Mydlarz LD. *in review*. Increased algal symbiont density reduces host immunity in a threatened Caribbean coral species, *Orbicella faveolata*. *Frontiers in Ecology and Evolution*.
8. **Fuess LE**, Butler CC*, Brandt ME, Mydlarz LD. 2020. Investigating the roles of transforming growth factor-beta on immune response of *Orbicella faveloata*, a scleractinian coral. *Developmental and Comparative Immunology* 107: 103639. DOI: 10.1016/j.dci.2020.103639
7. Dimos B, Mahmud SA, **Fuess LE**, Mydlarz LD, Pellegrino MW. 2019. Uncovering a mitochondrial unfolded protein response in corals and its role in adapting to a changing world. *Proceedings of the Royal Society B: Biological Sciences* 286: 20190470. DOI: 10.1098/rspb.2019.0470
6. Ricci CA, Kamal AMH, Chakrabarty JK, **Fuess LE**, Mann WT, et al. 2019. Proteomic investigation of a diseased gorgonian coral indicated disruption of essential cell function and investment in inflammatory and immune processes. *Integrative and Comparative Biology* icz107. DOI: 10.1093/icb/icz107
5. **Fuess LE**, Mann WT, Jinks LR*, Brinkhuis V, Mydlarz LD. 2018. Transcriptional analyses provide new insight into the late-stage immune response of a diseased Caribbean coral. *Royal Society Open Science* 5: 172062.
4. Williams LM, **Fuess LE**, Brennan JJ, Mansfield KM, Salas-Rodriguez E, et al. 2018. A conserved Toll-like receptor-to-NF- κ B signaling pathway in the endangered coral *Orbicella faveolata*. *Developmental and Comparative Immunology* 79: 128-136.
3. **Fuess LE**, Pinzon JC, Weil E, Ginshpon RD, Mydlarz, LD. 2017. Life or death: Disease-tolerant coral species activate autophagy following immune challenge. *Proceedings of the Royal Society B: Biological Sciences* 284: 20170771. DOI: 10.1098/rspb.2017.0771
2. **Fuess LE**, Pinzon JC, Weil E, Mydlarz, LD. 2016. Associations between transcriptional changes and protein phenotypes provide insights into immune regulation in corals. *Developmental and Comparative Immunology* 62: 17-28.
1. **Fuess LE**, Eisenlord ME, Closek CJ, Tracy AM, Mauntz R, Gignoux-Wolfsohn S, et al. 2015 Up in arms: Immune and nervous system response to sea star wasting disease. *PLoS ONE* 10: e0133053.

b. Non-refereed Articles:

N/A

3. Conference Proceedings:

a. Refereed Conference Proceedings:

N/A

b. Non-refereed:

N/A

4. Abstracts:

1. **Fuess LE**, Ling F, Steinel NC, Weber J, Bolnick D. 2020. Gut microbial composition and expression of host immune-related genes are tightly linked in the model teleost system, *Gasterosteus aculeatus* (three-spined stickleback). *Journal of Immunology*. 204: (1 Supplement) 231.1

5. Reports:

N/A

6. Book Reviews:

N/A

7. Other Works in Print:

N/A

B. Works Not in Print:

1. Presentations at Professional Meetings (T- Talk; P- Poster, *- student co-author):

13. **Fuess LE**, Weber J, Steinel NC, Den Haan S, Bolnick DI. 2020 Transcriptomic analyses of *Gasterosteus aculeatus* parasite response reveal mechanisms of resistance. Society For Integrative And Comparative Biology Annual Meeting; Austin, TX (T)
12. **Fuess LE**, Palacio A, Butler CC*, Brandt ME, Baker AC, Mydlarz LD. 2019. Multiple experiments reveal complex relationships between symbiosis, immunity, and the transforming growth factor-beta pathway in a Caribbean coral, *Orbicella faveolata*. Society For Integrative And Comparative Biology Annual Meeting; Tampa, FL (T)
11. **Fuess LE** & Bolnick DI. 2019. Fibroblast culture and gene editing methods to investigate evolution and cellular mechanisms of parasite resistance in *Gasterosteus aculeatus*. NSF EDGE Grant PI Meeting. Alexandria, VA (P)
10. **Fuess LE**, Webber J, Steinel N, Den Haan S, Bolnick DI. 2019 Transcriptional analysis of the effects of genetic variation on response of *Gasterosteus aculeatus* (three spined stickleback) to a cestode parasite. Evolution; Providence, RI (T)
9. **Fuess LE**, Palacio A, Butler CC*, Brandt ME, Baker AC, Mydlarz LD. 2018. A multi-experiment approach to investigate the relationship between symbiosis, immunity, and the transforming growth factor-beta pathway in a Caribbean coral, *Orbicella faveolata*. International Symbiosis Society Conference; Corvallis, OR (T)
8. **Fuess LE**, Palacio A, Baker AC, Mydlarz LD. 2018. Frenemies: *Symbiodinium* density negatively affects immune response in the Caribbean coral *Orbicella faveolata*. Society For Integrative And Comparative Biology Annual Meeting; San Francisco, CA (T)
7. **Fuess LE**, Pinzon JC, Ricci CA, Weil E, Mydlarz LD. 2017. No free lunch: Implications of symbiotic relationships on the coral immune response via the transforming growth

factor-beta signaling pathway. Biomedical & Comparative Immunology Symposium; Fort Lauderdale, FL (T)

6. **Fuess LE**, Mann WT, Brinkhuis V, Stacy C*, Mydlarz LD. 2017. Octocorals demonstrate fitness tradeoffs associated with response to a disease outbreak. Society For Integrative And Comparative Biology Annual Meeting; New Orleans, LA (T)
5. **Fuess LE**, Pinzon JC, Ricci CA, Weil E, Mydlarz LD. 2016 No free lunch: Implications of symbiotic relationships on the coral immune response via the transforming growth factor-beta signaling pathway. International Coral Reef Symposium; Honolulu, HI (T)
4. **Fuess LE**, Pinzon JC, Weil E, Mydlarz LD. 2016. Comparison of immune phenotypes and changes in gene expression provides new insight into pathways of coral immunity. Society For Integrative And Comparative Biology Annual Meeting;
3. **Fuess LE**, Eisenlord ME, Closek CJ, Tracy AM, Mauntz R, Gignoux-Wolfsohn S, Mortish MM, Yoshioka R. A* farewell to arms: Sea star transcriptome reveals insights into immune response. Ecology of Infectious Marine Diseases Research Coordination Network Meeting; Friday Harbor, WA (T)
2. **Fuess LE**, Jiang L. 2012. Top down and bottom up regulation of community assembly. Ecological Society of America Annual Meeting; Portland, OR (P)
1. **Fuess LE**, Shedlock AM, Wham FC, Dustan P. 2012. A molecular assay for the cause of bleaching in the temperate Atlantic coral species *Oculina arbuscula*. Society For Integrative And Comparative Biology Annual Meeting; Charleston, SC (P)

2. Invited Talks, Lectures, and Presentations:

Disease in the Seas: Understanding how immunity affects coral reef systems
College of the Holy Cross, Biology Seminar Series, Worcester, MA 2019

*No free lunch: A multi-experiment approach reveals complex connections between symbiosis and immunity in the endangered coral, *Orbicella faveolata**
University of Connecticut, EEB Departmental Seminar Series, Storrs, CT 2018

Big data, bigger questions: Gene expression, coral disease, and reef ecology
St. Edwards University, Biology Seminar Series, Austin, TX 2017

Corals: Masters of microbial symbioses
University of Texas at Arlington Mu Sigma Society Meeting, Arlington, TX 2017

Applications of molecular techniques to the study of invasive species
Discovery Bay Marine Lab Journal Club, University of the West Indies, Jamaica 2013

3. Consultancies:

N/A

4. Workshops:

NSF Reintegrating Biology Jumpstart, Invited Participant, 2019

Ecology of Infectious Marine Disease Research Coordination Network, 2014

5. Other Works not in Print:

- a. Works "submitted" or "under review":
N/A
- b. Works "in progress":
Fuess LE, Palacio A, Butler CC*, Baker AC, Mydlarz LD. Variation in symbiont density adversely affects immunity in a Caribbean coral, *Orbicella faveolata* (*in prep*).
- c. Other Works Not in Print:
N/A

C. Scholarly / Creative Grants and Contracts:

1. Funded External Grants and Contracts:

American Association of Immunologists, Intersect Fellowship
Development of single cell transcriptomic methods to investigate immunity in a model vertebrate-parasite system.

PI(s): D. I. Bolnick & J. Wegrzyn

Role: Funded Postdoctoral Fellow

02/01/2019-01/31/2020

Amount: \$50,000

NSF Graduate Research Fellowship

TGFβ: The missing link between symbiont density and coral immune function?

PI: L. E. Fuess

06/01/2015-05/31/2018

Amount: \$138,000

Fulbright Full Grant- Jamaica

PI: L. E. Fuess

08/2012-06/2013

Amount: \$20,000

2. Submitted, but not Funded, External Grants and Contracts:

NightSea KEY Award

PI: L. E. Fuess

Submitted: 5/2020

Life Science Research Foundation Postdoctoral Fellowship

PIs: L. E. Fuess, D. I. Bolnick

Submitted: 10/2019

Ford Foundation Postdoctoral Fellowship

PIs: L. E. Fuess, D. I. Bolnick

Submitted: 11/2019

NSF Postdoctoral Research Fellowship- Biology
PIs: L. E. Fuess, D. I. Bolnick
Submitted: 11/2018

NSF Postdoctoral Research Fellowship- Biology
PIs: L. E. Fuess, T. Gilmore
Submitted: 11/2017

3. Funded Internal Grants and Contracts:

Research Grant, Beta Phi Chapter of the Phi Sigma Biological Honor Society
*Investigating the effects of transforming growth factor beta and immune challenge on host gene expression in the Caribbean coral *Orbicella faveolata*.*

PI: L. E. Fuess
2016
Amount: \$3000

Research Grant, Beta Phi Chapter of the Phi Sigma Biological Honor Society
*Investigating the effects of symbiont variation and immune challenge on host gene expression in the Caribbean coral *Orbicella faveolata**

PI: L. E. Fuess
2015
Amount: \$5000

Research Grant, Beta Phi Chapter of the Phi Sigma Biological Honor Society
*Investigating the transforming growth factor β (*TGF β*) pathway in the coral *Orbicella faveolata*: Trade-offs between symbiont density and immune performance*

PI: L. E. Fuess
2014
Amount: \$1500

4. Submitted, but not Funded, Internal Grants and Contracts:

N/A

D. Scholarly / Creative Fellowships, Awards, Honors:

SICB DEE Huey Award for Best Student Presentation, Finalist, 2018
UTA Biology Department, Outstanding Graduate Research Award, 2016
University of Texas Arlington Dean's Award for Best Oral Presentation, 2016
NSF Graduate Research Fellowship, Honorable Mention, 2014

E. Scholarly / Creative Professional Development Activities Attended:

N/A

F. Media Recognition:

Ma, M. (October 7, 2015). Student collaboration leads to first results describing sick sea star immune response. UW Today.

Martin, J. (August 11, 2015). Mysterious disease melts millions of sea stars into goo. KERA News Dallas

Griffin, C. (July 29, 2015). Mysterious wasting disease in starfish examined with immune response. Science World Report.

Lewis, B. (July 28, 2015). UT Arlington-led research reveals new details about the immunity of sea stars dying along the West Coast. UT Arlington News Center.

Pederson, G. P. (2015, April 28, 2015). 3 COS students earn NSF Graduate Research Fellowships. COS News.

IV. SERVICE

A. Institutional

1. University:

N/A

2. College:

N/A

4. Department/School:

Beta Phi Chapter of the Phi Sigma Biological Honor Society, President, 2015-2017

B. Professional:

Manuscript Review

eLife

Marine Biology

Scientific Reports

Molecular Ecology

Coral Reefs;

Proceedings of the Royal Society B: Biological Sciences

Journal of Experimental Biology

C. Community:

Letters to a Pre-Scientist (2019-present)

EEB mentor Match (2019-present)

Skype a Scientist (2019-present)

SICB DIZ & DEE Student Presentation Judge (2019)

Earth Day Texas – Coral Reef Exhibit (2015; 2017-2018)

Fort Worth Regional Science Fair Judge (2014; 2017)

ACES Poster Judge (2014; 2017)

Classical Conversations Science Fair Judge (2015)

Arlington EcoFest- Coral Reef Exhibit (2015)

Rainforest Seafood Festival Lionfish Project Outreach (2013)

Discovery Bay Marine Lab School Outreach (2012-2013)

D. Organization Memberships:

Professional:

American Association of Immunologists: 2019- present

Society for Integrative and Comparative Biology: 2015-present

Beta Phi Chapter of the Phi Sigma Biological Honors Society: 2013- present

Research Coordination Networks

Evolving Seas Research Coordination Network: 2019-present

E. Service Honors and Awards:

N/A

F. Service Grants and Contracts:

1. Funded External Service Grants and Contracts:

N/A

2. Submitted, but not Funded, External Service Grants and Contracts:

N/A

3. Funded Internal Service Grants and Contracts:

N/A

4. Submitted, but not Funded, Internal Service Grants and Contracts:

N/A

G. Service Professional Development Activities Attended:

N/A