

# Jackie E. Shay

University of California, Merced | School of Natural Sciences

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## | EDUCATION |

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- In progress*     **Doctor of Philosophy Candidate**, Quantitative and Systems Biology  
University of California, Merced; Advised by Carolin Frank & Jason Sexton  
Dissertation title: Endophyte ecology, evolution, and taxonomy of native monkeyflowers (*Erythranthe laciniata*)
- 2016     **Master of Science**, Ecology, Evolution, and Conservation Biology  
San Francisco State University; Advised by Dennis Desjardin  
Thesis title: Biodiversity and phylogeny of *Marasmius* (Basidiomycota, Agaricales) from Madagascar
- 2009     **Bachelor of Science**, Biological Sciences in Molecular and Cellular Biology  
University of California, Merced (GPA 3.3)

## | RESEARCH & PROFESSIONAL EXPERIENCE |

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- 2016–present     **Graduate Student Researcher and Teaching Assistant, Co-Instructor**  
University of California, Merced
- Investigating the endophytic communities of native endemic flowering plants in light of drought from climate change using molecular, bioinformatic, and field-based techniques
  - Facilitating engaging active learning strategies in microbiology and general biology classes
  - Co-creating course learning outcomes and curriculum for flipped/hybrid course environments
  - Responsible for lab safety as dual lab safety coordinator
- 2012–2016     **Graduate Student Researcher and Teaching Assistant**  
**Harry D. Thiers Herbarium Assistant Curator**  
San Francisco State University
- Studied systematics and phylogeny of wood-decomposing fungi from tropics using molecular, morphological, and field-based techniques
  - Performed herbarium curating duties including accessioning, labeling, digitizing, organizing, and confirming stored specimens
  - Taught botany, biology, and active learning strategies with mostly first and second year students
- 2010–2012     **Youth Development and Health Educator**  
Peace Corps, Morocco
- Built peer health education program with local nurses and teachers
  - Established and maintained volunteer support network
  - Created and demonstrated engaging hygiene education course for local schools
- 2005–2009     **Undergraduate Teaching Assistant for Evolution and Tutor**  
University of California, Merced
- Facilitated small group discussions in anatomy, genetics, evolution, and general biology
  - Co-authored student tutor teaching manual with learning staff
  - Developed course curriculum and materials with faculty advisors

**| PUBLICATIONS |**

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- 2017 Frank AC, Saldierna Guzmán JP, **Shay JE** (2017). Transmission of Bacterial Endophytes. *Microorganisms* 5(4), 70. doi:10.3390/microorganisms5040070
- 2017 Desjardin DE, Perry BA, **Shay JE**, Newman DS, Randrianjohany E (2017) The Type species of *Tetrapyrgos* and *Campanella* (Basidiomycota, Agaricales) are redescribed and epitypified. *Mycosphere* 8(8): 977–985. doi 10.5943/mycosphere/8/8/1
- 2017 Sexton JP, Montiel J, **Shay J**, Stephens M, & Slatyer R (2017). Evolution of Ecological Niche Breadth. *Annual Review of Ecology, Evolution, and Systematics* 48(1).
- 2017 **Shay JE**, Desjardin DE, Grace CL, Perry BA, Grace CL, Newman DS “Biodiversity and Phylogeny of *Marasmius* (Basidiomycota, Agaricales) from Madagascar.” *Phytotaxa* 292(2): 101–149. doi.org/10.11646/phytotaxa.292.2.1

**| FUNDING |**

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- 2019 Southern California Edison Fellowship (\$13,065)
- 2018 Sonoma County Mycological Society Graduate Scholarship (\$2500)
- 2018 Mycological Society of America Translational Research Award (\$1250)
- 2018 California Native Plant Society Bristlecone Chapter Mary DeDecker Grant (\$1000)
- 2016 UC Merced Quantitative and Systems Biology Recruitment Award (\$20,106)
- 2015 Sonoma County Mycological Association Graduate Scholarship (\$2500)
- 2014 Mycological Society of San Francisco Graduate Scholarship (\$1,000)
- 2014 SFSU College of Science and Engineering Scholarship (\$2,500)
- 2013 Robert W. Maxwell Scholarship (\$4,000)

**| HONORS | AWARDS |**

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- 2019 First place in Northern California Botanist Symposium Poster Competition (\$200)
- 2016 UC Merced School of Natural Sciences Dean’s Relocation Award (\$400)
- 2009 UC Merced Distinguished Leadership Award
- 2007 UC Merced Distinguished Student Volunteer Award

**| PRESENTATIONS | POSTERS | INVITED TALKS |**

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- 2019 Shay, J.E., Brooks, L., Kaze, M., Frank, C.A., Sexton, J.P., Siström, M. “Endophytes shift in response to drought in monkeyflowers (*Erythranthe laciniata*) from native soil” *Northern California Botanists Symposium, Chico, CA*
- 2018 Shay, J.E., Pennington, L., Toews, D., Sexton, J.P. “Climate adaptation and fitness variation is greatest near the leading edge of a species range” Climate Change: Ranges and Phenology, *Ecological Society of America, New Orleans, LA*
- 2017 Shay, J.E., Newman, D.S., Grace, C., Perry, B.A., Desjardins, D. “Biodiversity and Phylogeny of *Marasmius* (Basidiomycota, Agaricales) from Madagascar” *Marin County Mycological Society, CA*
- 2017 Shay, J.E., Newman, D.S., Grace, C., Perry, B.A., Desjardins, D. “Biodiversity and Phylogeny of *Marasmius* (Basidiomycota, Agaricales) from Madagascar” *Mycological Society of San Francisco, CA*
- 2017 Shay, J.E., Newman, D.S., Grace, C., Perry, B.A., Desjardins, D. “Biodiversity and Phylogeny of *Marasmius* (Basidiomycota, Agaricales) from Madagascar” *Fungal Genetics, Asilomar, Pacific Grove, CA*
- 2016 Shay, J.E. “Do microbiomes influence host evolution?” Quantitative and Systems Biology Topics Final Project. *University of California Merced*

- 2016 Shay, J.E., Newman, D.S., Grace, C., Perry, B.A., Desjardins, D. “Biodiversity and Phylogeny of *Marasmius* (Basidiomycota, Agaricales) from Madagascar” M.Sc. Thesis Defense. *San Francisco State University*
- 2015 Shay, J.E., Newman, D.S., Desjardin, D. “A preliminary monograph of *Marasmius* (Basidiomycota, Agaricales) from Madagascar.” Conference Research Poster. *BOTANY 2015, Edmonton, Alberta, Canada*
- 2015 Shay, J.E. “A Mushroom Adventure Collecting in Madagascar.” *Mycological Society of San Francisco*
- 2013 Shay, J.E. “Termitomyces and Macrotermitinae: Masters of Efficiency, an Exploration of Fungal Symbioses.” *San Francisco State University*
- 2013 Shay, J.E. “The Understory Story: Mycoheterotrophy of Ericacea.” *San Francisco State University*

### | TEACHING EXPERIENCE |

Semester	Course	% Effort	Enrollment	Institution
S 2019	BIO 120D – General Microbiology	50	90	UC Merced
F 2018	BIO 120D – General Microbiology	50	90	UC Merced
F 2017	BIO 001D – Contemporary Biology	50	72	UC Merced
S 2017	BIO/ESS 133 L – Flora of California	50	30	UC Merced
F 2016	BIO 001D – Contemporary Biology	50	90	UC Merced
F 2015	BIO 220 – General Botany	15	30	College of San Mateo
F 2014	BIO 240D – Introduction to Biology II	50	75	San Francisco State
F 2014	BIO 240S – Introduction to Biology II	25	30	San Francisco State
S 2014	BIO 240D – Introduction to Biology II	50	75	San Francisco State
S 2014	BIO 240S – Introduction to Biology II	25	30	San Francisco State
F 2013	BIO 150D – World of Plants	50	30	San Francisco State
S 2013	BIO 150D – World of Plants	50	30	San Francisco State
F 2012	BIO 150D – World of Plants	50	30	San Francisco State

### | TECHNICAL SKILLS & WORKSHOPS |

- 2019 Illumina Metagenomic Sequencing Workshop
- 2018 Introduction to Computation Workshop
- 2018 Botanical Illustration Workshop
- 2017 NSF Interdisciplinary Computational Graduate Education Program
- 2017 Joint Genome Institute Summer Internship Program
- 2015 Science Education Partnership and Assessment Laboratory (SEPAL) Summer Institute
- 2015 Macro nature photography summer course

### | SERVICE & SYNERGISTIC EXPERIENCE |

- 2018 Graduate Student Representative, Search Committee for the Executive Vice Chancellor and Provost, UC Merced
- 2017–present Vice President of RadioBio, a graduate student-led biology-themed podcast aimed at enhancing scientific literacy and engagement in the community, UC Merced
- 2017–present Teaching Intern, Center for Engaged Teaching and Learning, UC Merced
- 2017–present Graduate Student Representative, Executive Committee of Quantitative and System Biology Group, UC Merced
- 2017–present Graduate Student Representative, Research Week Committee, UC Merced
- 2017–2018 Mentor to 4 underrepresented undergraduate student women in science

- 2017 Graduate Student Representative, Search Committee for Dean of the School Natural Sciences, UC Merced
- 2017 Graduate Student Representative, Review Board for the Office of the Vice Chancellor for Student Affairs, UC Merced
- 2016–present W-STEM Member and Mentorship Program Participant, UC Merced
- 2012–present Vice President and Board Member, UC Merced Alumni Association, UC Merced
- 2016–2017 Founder and lead writer of “The Academic Quadrant” in *Mycena News*, a monthly bay area fungal newsletter, Mycological Society of San Francisco
- 2014–2017 Vice President, Chair of 3 consecutive Annual Fungus Fairs, and Speaker Coordinator for 2017 Fungus Fair of the Mycological Society of San Francisco
- 2010–2012 Peace Corps Volunteer for Youth Development and Health, Morocco

**| PROFESSIONAL MEMBERSHIPS |**

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- 2018 Ecological Society of America
- 2018 Society for the Study of Evolution
- 2017 Botanical Society of America
- 2017 Genetics Society of America
- 2015 Mycological Society of America
- 2013 California Native Plant Society
- 2013 American Association for the Advancement of Science
- 2012 California Academy of Sciences
- 2012 Mycological Society of San Francisco

**| RESEARCH INTERESTS |**

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Biodiversity | Phylogenetics | Fungi | Microbiome | Ecology | Evolution | Taxonomy | Genetics  
Bioinformatics | Plant-Microbe Interactions | Endophytes | Climate Change | Herbaria | Ranges