

ANTHONY S. AMEND
UNIVERSITY OF HAWAI'I AT MĀNOA
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UPDATED 10.5.22

PROFESSIONAL APPOINTMENTS

2022-Present

Associate Professor
University of Hawai'i at Mānoa, Pacific Biosciences Research Center

2018-Present

Associate Professor
University of Hawai'i at Mānoa, Marine Biology Program

2016-2022

Associate Professor
University of Hawai'i at Mānoa, Department of Botany

2011-2016

Assistant Professor
University of Hawai'i at Mānoa, Department of Botany

2011-2012

NOAA Post-Doctoral Fellow in Jennifer Hughes Martiny's Microbial Ecology and
Global Change Laboratory, UC Irvine

2008-2010

Post-Doctoral Researcher in Thomas D. Bruns' Fungal Ecology and Evolution
Laboratory, UC Berkeley

EDUCATION

2003-2008

University of Hawai'i at Mānoa
PhD-Department of Botany

1995-1999

Cornell University
BA-College Scholar Program, Mycology Focus
BA-Anthropology (*cum laude*)

PUBLICATIONS

†Post-Doc advisee, *Graduate Student advisee, §Undergraduate Student advisee

My contribution to Synthesis and Writing and my lab's contribution to Research are indicated below.

51) Darcy, J. L.†, **Amend, A. S.**, Swift, S. O., Sommers, P. S., & Lozupone, C. A. (2022). specificity: an R package for analysis of feature specificity to environmental and higher dimensional variables, applied to microbiome species data. *Environmental Microbiome*, 17(1), 1-12.

50) **Amend, A. S.**, Swift, S. O., Darcy, J. L.†, Belcaid, M., Nelson, C. E., Buchanan, J., Cetraro, N., Fraiola, K., Frank, K., Kajihara, K., McDermot, T.G., McFall-Ngai, M., Medeiros, M., Mora, C., Nakayama, K.K., Nguyen, N.H., Rollins, R.L., Sadowski, P., Sparagon, W., Téfit, M.A., Yew, J.Y., Yogi, D., & Hynson, N. A. (2022). A ridge-to-reef ecosystem microbial census reveals environmental reservoirs for animal and plant microbiomes. *Proceedings of the National Academy of Sciences*, **119**(33), e2204146119.

49) Boekhout, T., **Amend, A.S.**, Mittelbach, M., Robert, V., Wang, Q. M., & Yurkov, A. (2021) Trends in yeast diversity discovery. *Fungal Diversity*, **114**, 491-537

48) El Baidouri†, F., Zalar, P., James, T.Y., Gladfelter, A.S. & **Amend, A. S.** (2021) Evolution and Physiology of Amphibious Yeasts. *Annual Review of Microbiology*, 75:16.1-16.21

47) Boraks, A.* & **Amend, A. S.** (2021) Fungi in soil and understory have coupled distribution patterns. *PeerJ* 9, e11915

46) Egan, C. P., Koko, J. H., Muir, C. D., Zahn, G., Swift, S. O., **Amend, A. S.**, & Hynson, N. A. (2021). Restoration of the mycobiome of the endangered Hawaiian mint *Phyllostegia kaalaensis* increases its resistance to a common powdery mildew. *Fungal Ecology*, 52, 101070.

45) Boraks, A.*, Plunkett, G. M., Doro, T. M., Alo, F., Sam, C., Tuiwawa, M., Ticktin, T. & **Amend, A. S.** (2021). Scale-dependent influences of distance and vegetation on the composition of aboveground and belowground tropical fungal communities. *Microbial Ecology*, **81**(4), 874-883.

44) Bernard, J., Wall, C. B., Costantini, M. S., Rollins, R. L., Atkins, M. L., Cabrera, F. P., Cetraro, N.D., Feliciano, C.K., Greene, A.L., Kitamura, P.K., Olmedo-Velarde, A., & **Amend, A. S.** (2021). Plant part and a steep environmental gradient predict plant microbial composition in a tropical watershed. *The ISME Journal*, **15**(4), 999-1009.

43) Tipton, L., Zahn, G. L.†, Darcy, J. L.†, **Amend, A. S.**, & Hynson, N. A. (2021). Hawaiian Fungal Amplicon Sequence Variants Reveal Otherwise Hidden Biogeography. *Microbial Ecology*, 1-10.

- 42) Chock, M. K. *, Hoyt, B.§, & **Amend, A. S.** (2021). Mycobiome transplant increases resistance to *Austropuccinia psidii* in an endangered Hawaiian plant. *Phytobiomes Journal*, 5(3), 326-334.
- 41) Darcy, J. L.†, Swift, S., Cobian, G.*, Zahn, G.†, Perry, B. A., & **Amend, A. S.** (2020). Fungal communities living within leaves of native Hawaiian dicots are structured by landscape-scale variables as well as by host plants. *Molecular Ecology* 29(16), 3102-3115.
- 40) Boraks, A.*, Plunkett, G. M., Doro, T., Alo, F., Chanel, S., Tuiwawa, M., Ticktin, T., & **Amend, A. S.** (2020). Scale-dependent influences of distance and vegetation on the composition of aboveground and belowground tropical fungal communities. *Microbial Ecology*, 1-10
- 39) Tipton, L., Zahn, G.†, Datlof, E., Kivlin, S. N., Sheridan, P., **Amend, A. S.**, & Hynson, N. A. (2019). Fungal aerobiota are not affected by time nor environment over a 13-y time series at the Mauna Loa Observatory. *Proceedings of the National Academy of Sciences*, 116(51), 25728–25733.
- 38) Vargas-Gastélum, L.*, Chong-Robles, J., Lago-Lestón, A., Darcy, J. L.†, **Amend, A. S.**, & Riquelme, M. (2019). Targeted ITS1 sequencing unravels the mycodiversity of deep-sea sediments from the Gulf of Mexico. *Environmental Microbiology*, 21(11), 4046–4061.
- 37) Cobian, G. M.*, Egan, C. P., & **Amend, A. S.** (2019). Plant–microbe specificity varies as a function of elevation. *The ISME Journal*, 13(11), 2778–2788.
- 36) **Amend, A. S.**, Cobian, G. M.*, Laruson, A. J., Remple, K., Tucker, S. J., Poff, K. E., Antaky, C., Boraks, A.*, Jones, C. A., & Kuehu, D. (2019). Phytobiomes are compositionally nested from the ground up. *PeerJ*, 7, e6609.
- 35) Zahn, Geoffrey†, & **Amend, A. S.** (2019). Foliar fungi alter reproductive timing and allocation in *Arabidopsis* under normal and water-stressed conditions. *Fungal Ecology*, 41, 101–106.
- 34) Gladfelter, A. S., James, T. Y., & **Amend, A. S.** (2019). Marine fungi. *Current Biology*, 29(6), R191–R195
- 33) **Amend, A. S.**, Burgaud, G., Cunliffe, M., Edgcomb, V., Ettinger, C., Gutiérrez, M., Heitman, J., Hom, E., Ianiri, G., & Jones, A. (2019). Fungi in the marine environment: open questions and unsolved problems. *mBio*, 10: e01189-18.

- 32) Hynson, N. A., Frank, K. L., Alegado, R. A., **Amend, A. S.**, Arif, M., Bennett, G. M., Jani, A. J., Medeiros, M. C., Mileyko, Y., & Nelson, C. E. (2018). Synergy among microbiota and their Hosts: Leveraging the Hawaiian archipelago and local collaborative networks to address pressing questions in microbiome research. *Msystems*, **3**(2).
- 31) Wainwright, B.J.†, Zahn, G.L. †, Arlyza, I.S. and **Amend, A.S.** (2018) Seagrass-associated fungal communities follow Wallace's line, but host genotype does not structure fungal community. *Journal of Biogeography*, **45**(4), 762-770
- 30) Zahn, G.†, & **Amend, A. S.** (2017) Foliar microbiome transplants confer disease resistance in a critically-endangered plant. *PeerJ*, **5**, e4020.
- 29) Datlof, E.M., **Amend, A.S.**, Earl, K. *, Hayward, J., Morden, C.W., Wade, R., Zahn, G. † and Hynson, N.A., (2017) Uncovering unseen fungal diversity from plant DNA banks. *PeerJ*, **5**, e3730
- 28) Wainwright, B.J†, G. Zahn†, H. Spadling, A. Sherwood, C. Smith **A.S. Amend** (2017) Fungi Associated with mesophotic macroalgae from the 'Au'au Channel, west Maui are differentiated by host and overlap terrestrial communities. *PeerJ*, **5**, e3532
- 27) O'Rorke, R.†, B.S. Holland, G.M. Cobian*, K. Gaughen§, **A.S. Amend** (2017) Not just browsing; an animal that grazes microbes facilitates community invasions and instability. *ISME Journal*, **11**, 1788-1798
- 26) Price M.R., R. O'Rorke†, **A.S. Amend**, M.G. Hadfield (2016) Diet selection at three scales: implications for conservation of an endangered Hawaiian tree snail. *Biotropica*, **49**(1) 130-136
- 25) O'Rorke, R†, B.S. Holland, G.M. Cobian*, K. Gaughen§, **A.S. Amend** (2016) Dietary preferences of Hawaiian tree snails to inform culture for conservation. *Biological Conservation*, **198** 177-182
- 24) Tishhammer K*, G.M. Cobian* and **A.S. Amend** (2015) Global Biogeography of Marine Fungi is Shaped by Environmental Determinates. *Fungal Ecology*, **19** 39-46
- 23) **Amend A.S.**, A. Martiny, S. Allison, R. Berlemont, M. Goulden, Y. Lu, K.K. Treseder, C. Weihe and J.B.H. Martiny (2015) Microbial response to simulated global change is phylogenetically conserved and linked with functional potential, *ISME Journal*. **10** 109-118
- 22) Matulich K.L., C. Weihe, S.D. Allison, **A.S. Amend**, R. Berlemont, M.L. Goulden, S. Kimball, A.C. Martiny, J.B.H. Martiny (2015) Temporal variation overshadows the response of leaf litter microbial communities to simulated global change. *ISME Journal*, **9** 2477-2489

- 21) **Amend A.S.**, K. Matulich and J. Martiny (2015) Nitrogen addition, not initial phylogenetic diversity, increases litter decomposition by fungal communities. *Frontiers in microbiology*, **6** 109.
- 20) O'Rorke, R.†, G.M. Cobian*, B.S. Holland, M.R. Price, V. Costello and **A.S. Amend** (2015) Dining local: the microbial diet of a snail that grazes microbial communities is geographically structured. *Environmental Microbiology*, **17**(5) 1753-1764
- 19) **Amend, A.S.** (2014) From dandruff to deep sea vents: *Malassezia*-like fungi are ecologically hyper-diverse. *PLoS Pathogens*, **10**(8):e1004277
- 18) Visagie, C.M., Y. Hirooka, J.B. Tanney, E. Whitfield, K. Mwange, M. Meijer, **A.S. Amend**, K.A. Seifert, and R.A. Samson (2014) *Aspergillus*, *Penicillium* and *Talaromyces* isolated from house dust samples collected around the world. *Studies in Mycology*, **78** 63-139
- 17) Mouginit C., R. Kiwamura, K. Matulich, R. Berlemont, S.D. Allison, **A.S. Amend**, A.C. Martiny, (2014) Elemental stoichiometry of Fungi and Bacteria strains from grassland leaf litter. *Soil Biology and Biochemistry*, **76** 278-285
- 16) Adams RI, **A.S. Amend**, J.W. Taylor, T.D. Bruns (2013) A Unique Signal Distorts the Perception of Species Richness and Composition in High-Throughput Sequencing Surveys of Microbial Communities: a Case Study of Fungi in Indoor Dust. *Microbial Ecology*, **66**(4) 735-741
- 15) Bengtsson-Palme, J., M. Ryberg, M. Hartmann, S. Branco, Z. Wang, A. Godhe, P. DeWit, M. Sanchez-Garcia, I. Ebersberger, F. Sousa, **A.S. Amend**, A. Jumpponen, M. Unterseher, E. Kristiansson, K. Abarenkov, Y.J.K. Bertrand, K. Sanli, K. M. Eriksson, U. Vik, V. Veldre and R. H. Nilsson (2013) Improved software detection and extraction of internal transcribed spacer (ITS)1 and ITS2 from ribosomal ITS sequences of fungi and other eukaryotes for analysis of environmental sequencing data. *Methods in Ecology and Evolution*, **4**(10) 914-919
- 14) Kerekes, J., M. Kaspari, B. Stevenson, R. Henrik Nilsson, M. Hartmann, **A.S. Amend**, and T.D. Bruns (2013) Nutrient enrichment increased species richness of leaf litter fungal assemblages in a tropical forest. *Molecular Ecology*, **22**(10) 2827-2838
- 13) Salick, J., R. K. Moseley and contributing authors: **A.S. Amend**, D. Anderson, A. Byg, W. Law, Ma J., N.J. Ross, Y. Yongping (2012) Khawa Karpo conservation research. In: Salick, J., R. K. Moseley (Eds.) Khawa Karpo: Tibetan traditional knowledge and biodiversity conservation. *Missouri Botanical Garden Press*, St. Louis, USA.
- 12) **Amend, A.S.**, T.A. Oliver, L.A. Amaral-Zettler, A. Boetius, J.A. Fuhrman, M.C. Horner-Devine, S.M. Huse, D.B.M. Welch, A.C. Martiny, A. Ramette, L. Zinger, M.L.

Sogin, J.H. Martiny (2012) Macroecology of marine bacteria on a global scale. *Journal of Biogeography*, **40**(4) 800-811.

11) **Amend, A.S.**, D.J., Barshis, T.A. Oliver (2011) Community Structure, Transcriptomics and Phylogenetics of Symbiotic Coral-Associated Fungi Indicate Novel Nutritional Roles and Deep-Branching Lineages. *ISME Journal*, **6**(7) 1291-1301

10) Hynson, N.A., S. Mambelli, **A.S. Amend**, T.E. Dawson (2011) Measuring carbon gains from fungal networks in understory plants from the tribe Pyroleae (Ericaceae): a field manipulation and stable isotope approach. *Oecologia*, **169**(2) 307-317

9) **Amend, A.S.**, K.A. Seifert, R. Samson, T. D. Bruns (2010) Indoor Fungal Assemblages are Geographically Patterned and More Diverse in Temperate Zones than the Tropics. *Proceedings of the National Academy of Sciences USA*, **107**(31) 13748-13753

8) **Amend, A. S.**, K.A. Seifert, T. D. Bruns (2010) Quantifying Microbial Communities with 454 Pyrosequencing: Does Read Abundance Count? *Molecular Ecology*, **19**(24) 5555-5565

7) Nilsson, R.H., Veldre, V., Hartmann, M., Unterseher, M., **Amend, A.S.**, Bergsten, J., Kristiansson, E., Ryberg, M., Jumpponen, A. & Abarenkov, K (2010) An Open Source Software Package for Rapid, Automated Extraction of *ITS1* and *ITS2* from Fungal *ITS* Sequences for use in High-Throughput Community Assays and Molecular Ecology. *Fungal Ecology*, **3**(4) 284-287

6) **Amend, A.S.**, Z. Fang, W. McClatchey (2010) Local Perceptions of Matsutake Mushroom Management, in NW Yunnan China. *Biological Conservation*, **143**(1) 165-172

5) **Amend, A.S.**, M. Garbelotto, Z. Fang, S. Keeley (2010) Isolation by Landscape in Populations of the Prized Edible Mushroom *Tricholoma matsutake*. *Conservation Genetics*, **11**(3) 795-802

4) **Amend, A.S.**, S. Keeley, M. Garbelotto (2009) Forest Age Correlates with Fine-Scale Spatial Structure of Matsutake Mycorrhizas. *Mycological Research*, **113**(5) 541-550

3) Salick, J., **A.S. Amend**, D. Anderson, B. Gunn, Z. Fang (2007) Tibetan Sacred Sites Conserve Old Growth Forests and Cover in the Eastern Himalayas. *Biodiversity and Conservation*, **16**(3) 693-706

2) Salick, J., A. Byg, **A.S. Amend**, B. Gunn, H. Schmidt (2006) Tibetan Medicine Plurality. *Economic Botany*, **60**(3) 227-253

1) Salick, J., Yang Y. P., **A.S. Amend** (2005) Tibetan land use and change near Khawa Karpo, Eastern Himalayas. *Economic Botany*, **59**(4) 312-325

GRANTS

2022-2027

Using Machine Learning and a Model Watershed to Understand how Microbes Govern Food Web Architecture and Efficiency. **National Science Foundation**, ENG EFMA.

\$2,499,432

Role: Principal investigator

2021

Marine Fungal Genomes Sequencing Project. **Undisclosed**, Principal Investigator: \$22,000

Role: Principal investigator

2020-2023

Establishing *Malassezia* as a Model Marine Microbial Symbiont. **Gordon and Betty Moore Foundation**

\$325,000

Role: Principal Investigator

Sequencing Supplement: \$25,000

Workshop Supplement: \$15,000

2018-2023

Integrative Center for Environmental Microbiomes and Human Health. **COBRE, NIH/NIGMS**

\$10,838,382

Role: Principal Investigator*

*I became PI in 4/2022

2018-2021

Establishing a Hawaiian Watershed as a Model Microbiome Mesocosm **WM Keck Foundation**.

\$1,00,000

Role: Co-Principal investigator:

2016-2022

Collaborative Research: Plant and Fungal Diversity of Tafea Province, Vanuatu, a Threatened Pacific Hotspot. **National Science Foundation**, BIO DEB.

\$212,624 to UH

Role: Principal investigator

Additional RELS supplement: \$43,672

2016

Stabilization of *Phylostegia kaalensis* using fungal foliar endophytes. **US Army Natural Resources Program**.

\$40,055

Role: Principal Investigator

2015

Does the introduction of tree snails cause community level succession in the phyllosphere? A short-term longitudinal study, **DLNR DOFAW**.

\$4,400

Role: Principal Investigator

2012-2016

Collaborative Research: Evolution and diversity of foliar fungal endophytes in native Hawaiian plants. **National Science Foundation**, BIO DEB.

\$449,997 to UH

Role: Principal Investigator

2012-2016

Molecular detection of the fungal diet of the critically endangered Hawaiian tree snail *Achatinella mustelina*. **US Army Natural Resources Program**.

\$301,599

Role: Principal Investigator

COURSES TAUGHT (SINCE PROMOTION)

Botany 107, People Plants and Culture, Fall 2016, 2017, 2018, 2019, 2020

Botany 430/L, Biology of Fungi, Spring 2020, 2022

Botany 662, Microbiome Bootcamp, Spring 2017, 2019

Botany 612, The Ecology of Microbial Symbiosis, Spring 2021

Botany 399, Directed Research, Fall 2016, 2017, Spring 2017

Botany 401, Teaching Experience, Fall 2016

Botany 499, Directed Research, Fall 2016, 2017, 2019, 2020, Spring 2017, 2018, 2019, 2021

Botany 699, Dissertation Research, Fall 2016, 2017, 2019

Botany 700, Dissertation Research, Fall 2018, Spring 2019

Botany 800, Dissertation Research, Fall 2017, Spring 2018

Marine Biology 699, Dissertation Research, Fall 2019, 2020, 2022, Spring 2021,

ADVISING AND STUDENT COMMITTEES

Undergraduates (399/499 Research Credit, UROP, REU, Hourly Pay)

Katie Lund, Benjamin Hoyt, Alysha Meno, Lauren Calkins, Megan Gonsalves, Daniel Trupp, Ronja Steinbach, Comet Enos, Kapono Gaughen, Max Gatlin, Chloe Twitchell, Tyler Stynes, Jolie Tosten, Tyler Nardon, Quinn Moon, Giulia Di Marengo, Reese Tsubota, Kayani Singh, Brooke Sedlymayr

MS Advisees

Kamala Earl, Mason Kamalani Chock, Joani Viliunas

PhD Advisees

Andre Boraks, Gerry Cobian, Syrena Whitner

Postdoc Trainees

Benjamin Wainwright, Jack Darcy, Richard O'Rorke, Fouad El Baidouri, Geoff Zahn

PhD Committees

Rachel Wade, Shayle Matsuda, Priscilla Seaborn, Lluvia Vargas-Castellón, Silvia Moriano Gutierrez, Maria Constantini, Randi Rollins, Christina Remple, Noelle Vissner, Christopher Wall, Nipuni Sirimalwatta, Emily Johnson, Jerry Koko, Mathew Bond

MS Committees

Danya Weber, Erin Datlof, Leah Thompson

SELECTED PRESENTATIONS (SINCE PROMOTION; *INVITED)

2021

Moore FDN Symbiosis Model Systems Gathering, Palo Alto, CA (online)*
University of Illinois PEEC seminar series, Urbana-Champaign IL (online)*

2020

International Meeting on *Malassezia*, Seoul, S. Korea (online)*

2019

Ecological Society of America, Louisville, KY*
Hawaii Conservation Congress, Honolulu, HI*
Gordon Conference on Animal Microbe Symbiosis, Hannover, NH
Hanauma Bay Education Program, Honolulu, HI*
University of Hawai'i at Hilo TCES seminar series, Hilo, HI*

2018

Phytobiome Symposium, Honolulu, HI*
Marine Fungi Meeting, Woods Hole, MA*
Plant Science Symposium, UH Mānoa*

2017

Department of Ecology and Evolutionary Biology, Boulder, CO*
Fungal Genetics, Asilomar, CA*

2016

Mycological Association of America, Berkeley, CA
Oahu Army Natural Resources Staff meeting, Honolulu, HI*

2015

Oahu Army Natural Resources Program Information Transfer Meeting. Honolulu, HI*
Mycological Society of America/Botanical Society of America. Edmonton, Canada

2014

Oahu Army Natural Resources Program Information Transfer Meeting. Honolulu, HI*

2013

Hawaii Ecosystems Meeting. Hilo, HI

SERVICE AND SYNERGISTIC ACTIVITIES

Editorial Duties

2021-Present: Executive Editor, *Mycologia* (Publication of the Mycological Society of America)

2015-Present: Editor at *PeerJ*

Service to Professional Societies

2020

Ecology Chair Gordon Conference on Fungal Physiology (Cancelled)

Organizer Marine Mycology Meeting (Cancelled)

2018

Co-Organizer Marine Mycology Meeting

2016

Chair, Mycological Society of America Ecology Committee

BioBlitz foray leader Hawaii Volcanoes National Park

2012-2015

Member, Mycological Society of America Ecology Committee

2012

Judge, student presentation awards committee Mycological Society of America

Grants Reviewer (Panels)

2022, NSF EFMA

2013, NSF DEB

Grants Reviewer (ad hoc)

National Science Foundation, Alfred P. Sloan Foundation, Graduate Women in Science, Austrian Science Fund, National Research Foundation South Africa, Canada Research Chairs

Publications Reviewed

American Journal of Botany, Biological Conservation, Botanica Marina, Deep Sea Research, Economic Botany, FEMS Microbial Ecology, Fungal Ecology, Herbalgram, ISME Journal, Journal of Biogeography, Limnology and Oceanography, Marine Biology, Microbial Ecology, Microbiology, Molecular Ecology, mSystems, Mycologia, Nature Reviews Microbiology, PLoS ONE, Proceedings of the National Academy of Sciences, Science, The New Phytologist

Departmental Service

2022

Committee Member, Funding and Fellowships

Committee Member, Diversity, Equity and Inclusion

2021

Committee Member, Funding and Fellowships

Committee Member, Diversity, Equity and Inclusion

2020

Committee Member, Funding and Fellowships

2019

Chair, Faculty Search (Plant Genomes)

Chair, Faculty Search (Global Change)

Committee Member, Funding and Fellowships

2018

SoLS Graduate Curriculum Working Group

Organizer Botany Departmental Seminar

Committee Member, Funding and Fellowships

2017

Organizer Botany Departmental Seminar
C-MĀIKI Coordinator

2016

Organizer Botany Departmental Seminar
Committee Member, Funding and Fellowships

2015

Member, Wilder Chair faculty search committee
Committee Member, Funding and Fellowships

2014

Member, graduate admissions committee

2013

Member, graduate admissions committee

2012

Member, graduate admissions committee

University Service

2019

Reviewer, Edmonson Student Grant

2018

Graduate Women in Science, Publishing Workshop Panelist
Reviewer, Edmonson Student Grant
External Member, Faculty Search Committee, Microbiology

2017

C-MĀIKI Coordinator
Reviewer, Edmonson Student Grant

2016

Reviewer, New Faculty Applications EECB
Panelist, CTE New Faculty Orientation

2015

Panelist, CTE New Faculty Orientation