

Jenna T. B. Ekwealor

CURRICULUM VITAE

Department of Biology, Utah State University

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EDUCATION

- 2020 **Ph.D., Integrative Biology**
University of California, Berkeley (UCB)
Dissertation title: Tolerance of desiccation and UV radiation in mosses of the genus *Syntrichia* (Pottiaceae), from genomes to ecology
Advisor: Dr. Brent D. Mishler
- 2020 **Certificate of Remote Instruction**, UCB. Graduate Student Instructor Teaching & Resource Center
- 2015 **M.S., Environmental Science**
California State University, Los Angeles (CSULA)
Advisor: Dr. Kirsten M. Fisher
- 2012 **B.S., Biology** and **B.A., Religious Studies**
Indiana University–Purdue University, Indianapolis (IUPUI)

PROFESSIONAL APPOINTMENTS

- 2024 **Assistant Professor**
Department of Biology, San Francisco State University (SFSU)
- 2023 **Department of Biology Postdoctoral Fellow** (Advisor: Carl J. Rothfels)
Department of Biology, Utah State University (USU)
- 2021–2023 **Biodiversity Genomics Postdoctoral Fellow** (Advisor: Rebecca B. Dikow)
Data Science Lab, Smithsonian Institution (SI)
- 2020 **Part-time Faculty**, Merritt College Dept. of Biology
Natural History & Sustainability Program

PUBLICATIONS (*contributed equally, †undergraduate mentee)

14. Marks, RA, **JTB Ekwealor**, MAS Artur, L Bondi, TC Boothby, OMS Carmo, DC Centeno, KK Coe, HJW Dace, A Hutt, S Porembski, A Thalhammer, L van der Pas, AJ Wood, P Alpert, D Bartels, S Boeynaems, MN Datar, T Giese, W Ibrahim Seidou, SM Kirchner, J Köhler, UGVSS Kumara, J Kyung, R Lyall, BD Mishler, JBV Ndongmo Vouffo Epse Tsopze, MS Otegui, V Reddy, J Rexroth, SM Tebele, R VanBuren, J Verdier, UC Vothknecht, MF Wittenberg, E Zokov, MK Oliver, and SY Rhee. Life on the dry side: A roadmap to understanding desiccation tolerance and accelerating translational applications. Under Review in *Nature*.

13. **Ekwealor, JTB**, and KM Fisher. Reproduction and population dynamics in autonomous gametophytes. *International Journal of Plant Sciences* 185(4):309–320 (2024), DOI: 10.1086/729606.
– 2024 Coulter Review, cover feature
12. Zhang, X*, **JTB Ekwealor***, AT Silva, LA Yu, AK Jones, BD Mishler, A Nelson, and MJ Oliver. *Syntrichia ruralis*: Emerging model moss genome reveals a conserved and previously unknown regulator of desiccation in flowering plants. *New Phytologist* (2024), DOI: 10.1111/nph.19620.
11. Dikow, RB, C DiPietro, M Trizna, H BredenbeckCorp, MG Bursell, **JTB Ekwealor**, R Hodel, N Lopez, WJB Mattingly, J Munro, and R Naples. Developing responsible AI practices at the Smithsonian Institution. *Research Ideas and Outcomes* (2023), DOI: 10.3897/rio.9.e113334.
10. **Ekwealor, JTB**, and S Roy. Sex chromosomes: How to make a hermaphrodite. *Current Biology* (2023), DOI: 10.1016/j.cub.2023.09.038.
9. Dikow, RB, **JTB Ekwealor**, WJB Mattingly, MG Trizna, E Harmon, T Dikow, CF Arias, RGJ Hodel, J Spillane, MTN Tsuchiya, L Villanueva, AE White, MG Bursell, T Curry, C Inema, and K Geronimo-Ancil†. Let the records show: attribution of scientific credit in natural history collections. *International Journal of Plant Sciences* (2023), DOI: 10.1086/724949.
8. **Ekwealor, JTB**, SD Benjamin, JZ Jomsky†, MA Bowker, LR Stark, DN McLetchie, BD Mishler, and KM Fisher. Genotypic confirmation of a biased phenotypic sex ratio in a dryland moss using a novel RFLP technique. *Applications in Plant Sciences* (2022), DOI: 10.1002/aps3.11467.
– Cover feature
7. **Ekwealor, JTB** and BD Mishler. The transcriptomic effects of acute ultraviolet radiation exposure on two *Syntrichia* mosses. *Frontiers in Plant Science* (2021), DOI: 10.3389/fpls.2021.752913.
6. **Ekwealor, JTB**, TA Clark, O Dautermann, A Russell, S Ebrahimi, LR Stark, KK Niyogi, and BD Mishler. Natural ultraviolet radiation exposure alters photosynthetic biology and improves recovery from desiccation in a desert moss. *Journal of Experimental Botany* (2021), DOI: 10.1093/jxb/erab051.
5. Silva, Anderson T., B Gao, KM Fisher, BD Mishler, **JTB Ekwealor**, LR Stark, X Li, D Zhang, MA Bowker, JC Brinda, KK Coe, and MJ Oliver. To dry perchance to live: insights from the genome of the desiccation-tolerant biocrust moss *Syntrichia caninervis*. *The Plant Journal* (2020), DOI: 10.1111/tpj.15116.
4. **Ekwealor, JTB** and KM Fisher. Life under quartz: Hypolithic mosses in the Mojave Desert. *PLOS ONE* 15(7): e0235928 (2020), DOI: 10.1371/journal.pone.0235928. Press & Interviews: [UCB Press Release](#), [Smithsonian Magazine](#), [Scientific American](#), [The Guardian](#), [The New York Times](#): [Trilobites](#), [Science Friday](#), [WTF, Biology?](#), [Scientific American](#), [Scienmag Science Magazine](#), [Phys.org](#), [EurekAlert!](#), [полит Pro Science](#), [Wissenschaft.de](#).
3. **Ekwealor, JTB**, AC Payton, AE Paasch, KM Fisher, and SF McDaniel. Multiple factors influence population sex ratios in the Mojave Desert moss *Syntrichia caninervis*. *American Journal of Botany* 104(5):1–10 (2017), DOI: 10.3732/ajb.1700045.



2. Meijome, Tomás E.*, **JTB Ekwealor***, RA Hooker Y Cheng, WA Ciovacco, SA Balamohan, TL Srinivasan, BR Chitteti, PP Eleniste, MC Horowitz, EF Srouer, A Bruzzaniti, RK Fuchs, and MA Kacena. C-Mpl is expressed on osteoblasts and osteoclasts and is important in regulating skeletal homeostasis. *Journal of Cellular Biochemistry* 117:959–969 (2016), DOI: 10.1002/jcb.25380.
1. Eleniste, Pierre P., V Patel, S Posritong, O Zero, H Largura, Y Cheng, ER Himes, M Hamilton, **JTB Ekwealor**, MA Kacena, and A Bruzzaniti. Pyk2 and megakaryocytes regulate osteoblast differentiation and migration via distinct and overlapping mechanisms. *Journal of Cellular Biochemistry* 9999:1–11 (2015), DOI: 10.1002/jcb.25430.

OTHER PUBLICATIONS

Ekwealor, JTB. 2020. A suntan effect in the Mojave Desert moss *Syntrichia caninervis*. [Mojave National Preserve Science Newsletter](#). December 2020, 15-19.

AWARDS & HONORS

2020	Biodiversity Genomics Postdoctoral Fellowship, Office of the Chief Information Officer, Smithsonian Institution
2020	Graduate Remote Instruction Innovation Fellowship, UCB
2019	A.J. Sharp Award Honorable Mention, Botanical Society of America
2018	Luso-American Education Foundation Scholarship, Luso-American Education Foundation
2018	Trainee Fellowship Travel Award, International Molecular Moss Science Society
2017	Pinto-Fialon Fellowship, UCB
2017	Travel Award, California Botanical Society
2016	Outstanding Graduate Student Instructor, UCB
2016	Registration Award, International Workshop on Biological Soil Crusts
2015	Environment & Society: Data Sciences for the 21 st Century, NSF Research Traineeship, UCB
2015	Berkeley Fellowship, UCB
2015	Best Presentation Award, Completed Research Category, California Botanical Society
2015	Best Student Poster Award, California Native Plant Society
2014	Minority Biomedical Research Support Research Initiative for Scientific Enhancement MS-to-PhD Graduate Research Fellowship, CSULA

GRANT SUPPORT

CONTRIBUTIONS TO ONGOING FUNDED RESEARCH

2016–2022 NSF Division of Environmental Biology #163856
 Title: Collaborative Research: Dimensions: Desiccation and Diversity in Dryland Mosses
 PI: Brent D. Mishler, University of California, Berkeley

RESEARCH FUNDING

2020	Myrtle Wolf Grant , California Native Plant Society – East Bay Chapter	\$1,400
2020	Dissertation Award , Department of Integrative Biology, UCB	\$2,500
2020	Paul Silva Student Research Grant , California Botanical Society	\$580
2019	Summer Grant , Department of Integrative Biology, UCB	\$3,500
2019	Research Grant , California Native Plant Society – Bryophyte Chapter	\$200
2019	Grants-in-Aid-of-Research, Sigma Xi Berkeley Chapter	\$200
2018	Mathias Graduate Student Research Grant , University of California Natural Reserve System	\$2,000
2018	Summer Research Award , Department of Integrative Biology, UCB	\$1,750
2017	Anderson & Crum Field Bryology Award , American Bryological and Lichenological Society	\$750
2017	Summer Research Award , Department of Integrative Biology, UCB	\$1,750
2016–2019	Graduate Student Research Allocations Committee Research Award , Department of Integrative Biology, UCB, total over four years	\$1,200
2014	Evo-Devo-Eco Research Exchange Network Grant , National Science Foundation Research Coordination Network	\$3,000
Total:		\$18,830

INVITED SEMINARS AND CONFERENCE PRESENTATIONS

ORGANIZED SYMPOSIA AND COLLOQUIA

2023	The ploid thickens: methodological developments, empirical advances, and remaining challenges in polyploid phylogenetics. BOTANY Symposium.
2022	Stress-tolerant mosses: adaptations to life on the edge, from genes to ecosystems. BOTANY Colloquium.

INVITED RESEARCH SEMINARS

2024	University of Middlebury College, Department of Biology
2024	University of California, Berkeley, University and Jepson Herbaria
2024	Lewis & Clark College, Natural History Club Moss Appreciation Week Keynote
2022	San Francisco State University, Department of Biology
2022	Smithsonian Institution, Smithsonian Botanical Symposium
2022	University of Tennessee, Knoxville, Department of Ecology and Evolutionary Biology
2021	University of Colorado, Boulder, Department of Ecology and Evolution
2021	California Botanical Society, Botany Speaker Series
2021	University of Hawai'i at Mānoa, Evoluncheon, Ecology, Evolution and Conservation Biology Group
2021	University of California Botanical Garden, Garden Seminars Program

CONFERENCE PRESENTATIONS (†oral; ‡poster; *award received—see Awards section)

2023	BOTANY†
2022	California Native Plant Society Conference‡
2022	BOTANY†
2021	BL 2021†, Southern California Academy of Sciences†
2020	BOTANY†
2019	BOTANY*†‡, Biocrust4 (The 4 th International Workshop on Biological Soil Crusts)†, International Association of Bryology*†
2018	International Molecular Moss Science Society‡*, American Bryological and Lichenological Society†
2018	Biocrust4 (The 4 th International Workshop on Biological Soil Crusts)†

- 2017 California Botanical Society*†
 2016 BOTANY†, Biocrust3 (The 3rd International Workshop on Biological Soil Crusts)*††
 2015 California Botanical Society*†, California Native Plant Society*†,

TEACHING EXPERIENCE

COURSES

- 2024 Assistant Professor, Plant Ecology (SFSU)
 2024 Assistant Professor, Advanced Biometry (SFSU)
 2024 Assistant Professor, Skills for Scientific Writing (SFSU)
 2020 Instructor, Natural History of the Bay Area: Bryophytes (Merritt College, California)
 2020 Graduate Student Instructor, California Natural History (UCB)
 Graduate Student Instructor, Integrative Human Biology (UCB)
 Graduate Student Instructor, Introduction to California Plant Life (UCB)
 Graduate Student Instructor, Thriving in Academia (UCB)
 2019 Graduate Student Instructor, Ecosystems of California (UCB)
 2015,2016 Graduate Student Instructor, Introductory Biology Laboratory (UCB)
 2015 Teaching Assistant, Plant Biology Laboratory for Non-Majors (CSULA)
 2014, 2015 Teaching Assistant, Ecology Laboratory (CSULA)

WORKSHOPS

- 2023 Co-Instructor, Using deep learning with digitized herbarium specimen image data, BOTANY 2023 Conference.
 2023 Certified Instructor, Collaborating and sharing using GitHub without command line, The Carpentries: Data Carpentry, National Museum of Natural History (SI)
 2021 Co-Instructor, [Wonders of a dryland moss: *Syntrichia* from genomes to ecosystems](#), University & Jepson Herbaria (UCB)
 2021 Certified Instructor, The Unix Shell, The Carpentries: Software Carpentry
 2020, 2021, 2018 Instructor, Biological Sciences Discipline Workshop, Teaching Conference for First-Time GSIs (UCB)
 2019 Co-Instructor, Biocrusts: The Living Skin of the Earth, Expanding Your Horizons Girls' Conference (UCB)
 2018 Helper, Introduction to R, Git, Shell, and Reproducible Analysis in R, The Carpentries: Software Carpentry (UCB)
 2018 Helper, Introduction to Shell, Git, and R, The Carpentries: Data Carpentry (UCB)
 2018 Helper, Genomics Data Wrangling, The Carpentries: Data Carpentry (UCB)

MENTORING

Mentored a total of 19 undergraduate students and 2 high school students.

- 2024 Andre Tran
 2024 Daniel Lee
 2024 Emory Adelman
 2024 Nathaline Aquino
 2024 Wendy Ko
 2024 Willow Larsen

2024	Katrina McCullough
2024	Jason Tate
2024	Frey Rogers
2024	Ashley Meinke
2022	Kayla Geronimo-Anctil
2021	Dalila Lara
2018–2021	Dean Berkowitz
2018–2021	Jordan Jomsky
2019	José Adame Medina (high school researcher)
2019	Angela Sacramento (high school researcher)
2018	Shloka Reddy
2017–2018	Heloise Carion
2017–2018	Easha Sagar
2015	Brittanie Rodriguez
2014	Katelyn Millette

FIELDWORK EXPERIENCE

Lead in fieldwork on San Bruno Mountain (summer 2024)

Lead and contributor in fieldwork in the deserts of SW Utah (spring 2023)

Lead and contributor in fieldwork in the Mojave Desert, California (multiple field trips, 2014–2020)

- experience in remote environments with extreme desert conditions
- collaborative and multidisciplinary fieldwork with non-profits (Blueprint Earth)

SERVICE AND SYNERGISTIC ACTIVITIES

UNIVERSITY SERVICE

- 2022 Top 100 Outstanding Students Judge, Office of Alumni Relations (IUPUI)
- 2018–2021 Graduate Student Representative, Department of Integrative Biology Diversity, Equity, & Inclusion Faculty Committee (UCB)
- 2018–2020 Graduate Student Representative, Department of Integrative Biology Curriculum Faculty Committee (UCB)
- 2018–2019 Graduate Student Representative, Department of Integrative Biology Graduate Student Orientation Committee (UCB)
- 2016–2019 Women in Science at Cal Organization Planning Committee (UCB)

PROFESSIONAL SOCIETY LEADERSHIP

- 2024– President-Elect, California Native Plant Society, Bryophyte Chapter
- 2018– Student/Post-doc Representative, International Molecular Moss Science Society
- 2018–2020 Social Media Chair, California Native Plant Society, Bryophyte Chapter

SOCIETY MEMBERSHIP

Botanical Society of America, American Bryological and Lichenological Society, International Association of Bryologists, International Molecular Moss Science Society, California Native Plant Society, California Botanical Society

PEER-REVIEW FOR ACADEMIC JOURNALS

Functional Ecology, American Journal of Botany, Plant and Soil, Annals of Botany, The Bryologist, Plant Biology, Microbial Ecology

PUBLIC OUTREACH

PRESS AND INTERVIEWS

- 2021 [WTF. Biology? \(podcast\)](#)
 “Living under a rock has its merits with Dr. Jenna Ekwealor.” May 19, 2021.
- 2020 [Science Friday](#) (WNYC Studios radio, carried on >400 public radio stations)
 “These moss are living their best life–under rocks.” September 11, 2020.
- 2020 [The New York Times \(newspaper article\)](#)
 “This moss uses quartz as a parasol.” July 29, 2020.
- 2020 [Berkeley News: Research, Science & Environment](#) (press release)
 “Desert mosses use quartz rocks as sun shades.” July 23, 2020.
 Several news articles were published based on this press release, including those published by: [The Guardian](#), [Smithsonian Magazine](#), [Scientific American](#), [Scienmag Science Magazine](#), [Phys.org](#), [EurekAlert!](#), and was also translated into Russian for [полит Pro Science](#) and into German for [Wissenschaft.de](#).

K-16 OUTREACH

- 2020 **Invited speaker**, “10 Coolest Bryophyte Facts,” Speculative Fiction, Bronx Arena High School. I gave an overview presentation of what I deem to be the coolest things about bryophytes and then had a conversation with students about ideas the presentation sparked. Students were later assigned to imagine a speculative world based on the presentation. Inspired by desiccation tolerance of mosses, one student designed with Sleeper Pods where humans could go into suspended animation to wait out the effects of climate change.
- 2020 **Networking Guest**, “Success Suits You!”, Biotech Partners, Berkeley High School. I met with high school juniors and seniors interested in biotechnology to discuss their goals for internships and college.
- 2019 **Invited speaker**, Bay Area Science Festival: Celebrating Nature, University & Jepson Herbaria. I led a tour through the Herbaria and presented my research with example specimens from the collections.
- 2019 **Invited speaker**, “Introduction to Bryophytes,” Plant Systematics, Department of Integrative Biology (UCB)
- 2019 **Supervisory scientist**, Mission Mojave Educational Field Expedition, Blueprint Earth. I led a team of undergraduate researchers on a field plant survey.
- 2016 **Scientist mentor**, “Be a Scientist,” Community Resources for Science, Willard Middle School, Berkeley, California. I led a group of four seventh graders through their own independent research projects over a period of six weeks.
- 2016 **Logistics volunteer**, Expanding Your Horizons Conference (UCB). I helped guide middle school girls through a full-day STEM conference.

OTHER

- 2016, 2018, 2019 **Cal Day**, University & Jepson Herbaria (UCB)
- 2016-2018 **Interview Day panel member**, Department of Integrative Biology (UCB)