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University of Tennessee – Knoxville

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FIELDS OF EXPERTISE

Evolutionary Developmental Biology, Structure-Function Relationships, Parent-Offspring Conflict, Systematics, Taxonomy, Natural History Collections, Botany, Bryology (mosses), Science Communication.

ACADEMIC APPOINTMENTS

August 2022 - Present: **Associate Professor & Herbarium Director**, Univ. of Tennessee, Knoxville, TN

August 2016 - July 2022: **Assistant Professor & Herbarium Director**, Univ. of Tennessee, Knoxville, TN

June - July 2016: **Research Assistant Professor**, University of Tennessee, Knoxville, TN

POSTDOCTORAL EXPERIENCE

2013 - 2016: **Katherine Esau Postdoctoral Research Fellow**, University of California - Davis

2011 - 2012: **Postdoctoral Researcher**, University of Connecticut, Storrs, CT

EDUCATION

2011 **Ph.D. Ecology and Evolutionary Biology**, University of Connecticut, Storrs, CT

2005 **M.S. Botany**, University of Connecticut, Storrs, CT

2003 **B.S. Botany**, Miami University, Oxford, OH

PUBLICATIONS (¹co-first authors, *undergraduate student collaborator, **graduate student collaborator)

In Preparation

Bendull H*, Lewis RA, **Budke JM**. The State of Herbarium Backlogs: Perspectives from Bryophyte Collections. Submission planned to *Natural History Collections and Museomics*.

Butler J**, **Budke JM**. Aquatic transitions and interspecific relationships in *Fissidens* mosses. Submission planned to *American Journal of Botany*.

Peer Reviewed (36)

2025 Noroozi M, **Budke JM**. Gametophyte and sporophyte morphology are phylogenetically correlated in mosses, indicating coadaptation and parent–offspring conflict. *New Phytologist* 246: 2295–2306.

2025 Patel NR, **Budke JM**, Bainard JD. Distinct patterns of genome size evolution in each bryophyte lineage are not correlated with whole genome duplication. *Annals of Botany* 00: 1–17.

2024 Okafor AN*, **Budke JM**. Moss sporophytes with a higher proportion of leptoids have higher water transport rates. *Evansia* 41: 67–71. (Featured on the cover: Volume 41, Issue 3)

2024 **Budke JM**. Illuminating the role of the calyptra in sporophyte development. *Current Opinion in Plant Biology* 81: 102565.

2024 Shershen E**, Stehn S, **Budke JM**. Environmental determinants of bryophyte community change over time. *Ecosphere* 15: e4924.

- 2024 von Konrat M, Rodriguez Y, Bailey C, Gwilliam III GF, Christian C, Aguero B, Ahn J, Albion Z, Allen JR, Bailey C, Blake E, Blake W, Blake G, Briscoe L, **Budke JM**, Campbell T, Chansler T, Clark D, Delapena R, Denslow M, Ellis S, Ellwood E, Ens B, Evans NM, Fabian A, Gaswick W, Golembiewski K, Grant S, Hansen K, Janney B, Janeen Jones, Kachian Z, Kawasaki L, Leek O, Kellum K, Maier C, Mast A, Martinec JL, Mayer P, Mladek M, Nadhifah A, Neefus C, Nodulman M, Oliver M, Overberg K, Peterson AT, Qazi-Lampert A, Rothfels C, Salm R, Schreiner D, Schreiner M, Tepe EJ, Turcatel M, Vega A, Wade H, Weinand D, Webbink K, Widhelm T, Zwingelberg M. From Spectators to Stewards: Transforming Public Involvement in Natural History Collections. *Natural History Collections and Museomics* 1: 1–33.
- 2024 Ellis LT, Adjie B., Alvarez DJ, Ardiles V, Asthana AK, Atwood JJ, Bakalin VA, Bednarek-Ochyra H, Boiko M, **Budke JM**, Cedrés-Perdomo RD, Cerrato MD, Csiky J, Espinoza-Prieto B, Gabriel R, Gey S, Gil L, Graulich, Hylander K, Kiebach, Konstantinova NA, Kučera J, Kunev G, Larraín J, Lönnell N, Maciel-Silva AS, Mamontov YuS, Mattos GHR, Mir-Rosselló PM, Nadhifah A**, Natcheva R, O’Leary SV, Oliveira MF, Opisso J, Papp B, Peñaloza-Bojacá GF, Polaino-Martín C, Rawat KK, Ribas-Serra A, Rosadziński S, Sahu V, Sipos A, Staniaszek-Kik M, Starzomski BM, Suárez GM, Tucker DBL, Verma A, Zagrodniuk N. New national and regional bryophyte records. *Journal of Bryology* 77: 1–17.
- 2023 Faidiga A**, Oliver MG, **Budke JM**, Kalisz S. Shifts in flowering phenology in response to spring temperatures in eastern Tennessee. *American Journal of Botany* 110: e16203.
- 2023 **Budke JM**¹, Patel NR¹, GoFlag Consortium, Wienhold MD, Bruggeman-Nannenga MA. Exploring systematic relationships and morphological evolution in the moss genus *Fissidens* using molecular data generated from herbarium specimens. *Journal of Systematics and Evolution* 61: 868–889.
- 2022 Lewis RA, **Budke JM**. Bryophyte specimen organization and storage systems: A comparative assessment of staff practices and user preferences. *The Bryologist* 125: 222–247.
- 2022 Harrison GR**, Boggess LM, **Budke JM**, Madritch MD. Rock-climbing shifts cliff-face vegetation community composition based on site characteristics. *Applied Vegetation Science* 25(2): e12667.
- 2022 Oliver MG, Crabtree T, McFarland KD, **Budke JM**. Noteworthy Collections: First documented antheridia on *Palamocladium leskeoides* (Brachytheciaceae) in North America. *Castanea* 87: 75–80.
- 2021 Whitaker KR*, **Budke JM**. Moss sporophyte transpiration rates are higher when calyptrae are removed. *Evansia* 38: 100–108.
- 2020 Benoit AD**, Oliver MG, Vichich RJ*, **Budke JM**. Noteworthy Collections: First record of the non-native plant *Portulaca amilis* (Portulacaceae) in Tennessee. *Castanea* 85: 343–347.
- 2020 Bainard JD, Newmaster SG, **Budke JM**. Genome size and endopolyploidy evolution across the moss phylogeny. *Annals of Botany* 125: 543–555. (Editor’s Choice – Bryophyte Highlight)
- 2019 **Budke JM**. The moss calyptra: A maternal structure influencing offspring development. *The Bryologist* 122: 471–491. (Featured on the cover: Volume 122, Issue 3.)
- 2019 Patel NR, Fawcett S, Sundue MA, **Budke JM**. Evolution of Perine Morphology in Thelypteridaceae. *International Journal of Plant Sciences* 180: 1016–1035.
- 2018 Miller CN**, Brabazon H, Ware IM**, Kingsley NH*, **Budke JM**. Bringing an historic collection into the modern era: curating the J. K. Underwood seed collection at the University of Tennessee Herbarium (TENN). *Collection Forum* 32: 14–30.
- 2018 Korotkin HB, Swenie RA, Miettinen O, **Budke JM**, Chen K, Lutzoni F, Smith ME, Matheny PB. Stable isotope analyses reveal previously unknown trophic mode diversity in the Hymenochaetales. *American Journal of Botany* 105: 1869–1887.

- 2016 **Budke JM**, Goffinet B. Comparative cuticle development reveals taller sporophytes are covered by thicker calyptra cuticles in mosses. *Frontiers in Plant Science* 7: 832.
- 2016a Busta L, **Budke JM**, Jetter R. The moss *Funaria hygrometrica* has cuticular wax similar to vascular plants, with distinct composition on leafy gametophyte, calyptra and sporophyte capsule surfaces. *Annals of Botany* 118: 511-522.
- 2016b Busta L, **Budke JM**, Jetter R. Identification of β -hydroxy fatty acid esters and primary, secondary-alkanediol esters in cuticular waxes of the moss *Funaria hygrometrica*. *Phytochemistry* 121: 38-49.
- 2016 Ranjan A¹, **Budke JM**¹, Rowland SD¹, Chitwood DH, Kumar R, Ichihashi Y, Zumstein K, Maloof JN, Sinha NR. eQTL regulating Transcript Levels Associated with Diverse Biological Processes in Tomato. *Plant Physiology* 172: 328-340.
- 2013 **Budke JM**, Goffinet B, Jones CS. Dehydration protection provided by a maternal cuticle improves offspring fitness in the moss *Funaria hygrometrica*. *Annals of Botany* 111: 781-789.
- 2013 Liu Y, Forrest LL, Bainard JD, **Budke JM**, Goffinet B. Organellar genome, nuclear ribosomal DNA repeat unit, and microsatellites isolated from a small-scale of 454 GS FLX sequencing on two mosses. *Molecular Phylogenetics and Evolution* 66: 1089-1094.
- 2012 Wynne MA*, **Budke JM**. Examining the ability of calyptrae to produce protonema in *Funaria hygrometrica*. *Evansia* 29: 61-64.
- 2012 **Budke JM**, Goffinet B, Jones CS. The cuticle on the gametophyte calyptra matures before the sporophyte cuticle in the moss *Funaria hygrometrica* (Funariaceae). *American Journal of Botany* 99: 14-22. (Winner of the 2013 Grady L. Webster Publication Award.)
- 2012 Liu Y, **Budke JM**, Goffinet B. Phylogenetic inference rejects sporophyte based classification of the Funariaceae (Bryophyta): rapid radiation suggests rampant homoplasy in sporophyte evolution. *Molecular Phylogenetics and Evolution* 62: 130-145.
- 2011 **Budke JM**, Goffinet B, Jones CS. A hundred-year-old question: is the moss calyptra covered by a cuticle? A case study of *Funaria hygrometrica*. *Annals of Botany* 107: 1259-1277.
- 2011 Goffinet B, **Budke JM**, Newman LC*. Micromitriaceae: A new family of highly reduced mosses. *Taxon* 60: 1245-1254.
- 2011 Wickett NJ, Forrest LL, **Budke JM**, Shaw B, Goffinet B. Frequent pseudogenization and loss of the plastid-encoded, sulfate transport gene *cysA* throughout the evolution of liverworts. *American Journal of Botany* 98: 1263-1275.
- 2009 Larraín J, Herrera F, **Budke JM**, Goffinet B. Phylogenetic affinities and conservation status of the Chilean endemic *Costesia spongiosa* (Bryophyta: Gigaspermaceae). *The Bryologist* 112: 279-286.
- 2007 **Budke JM**, Jones CS, Goffinet B. Development of the enigmatic peristome of *Timmia megapolitana* (Timmiaceae; Bryophyta). *American Journal of Botany* 94: 460-467.
- 2006 **Budke JM**, Goffinet B. Phylogenetic analysis of Timmiaceae (Bryophyta: Musci) based on nuclear and chloroplast sequence data. *Systematic Botany* 31: 633-641.
- 2005 **Budke JM**, Hickey RJ, Heafner KD. Analysis of morphological and anatomical characteristics of *Isoetes* using *Isoetes tennesseensis*. *Brittonia* 57: 167-182.
- 2003 Luebke NT, **Budke JM**. *Isoëtes tennesseensis* (Isoëtaceae), an Octoploid Quillwort from Tennessee. *American Fern Journal* 93: 184-190.

Invited Reviews

- 2020 Oliver MG, **Budke JM**. Featured Herbarium: University of Tennessee, Knoxville Herbarium – TENN (U.S.A.). *The Vasculum* 15(2):20-27.

- 2018 **Budke JM**, Bernard EC, Gray DJ, Huttunen S, Piechulla B, Trigiano RN. Introduction to the Special Issue on Bryophytes. *Critical Reviews in Plant Sciences* 37:102-112.
- 2013 **Budke JM**. Common Mosses of the Northeast and Appalachians. *Plant Science Bulletin* 59(3): 131-132.

Point of View

- 2023 **Budke JM**. Women in bryology, North America: Jessica Budke (United States of America). *The Bryological Times* 155: 54-56.
- 2015 **Budke JM**. Postdocs: Improving our Visibility in the Research Workforce. *Plant Science Bulletin* 61(2): 40-44.
- 2014 Cain B¹, **Budke JM**¹, Wood KJ, Sweeney NT, Schwessinger B. How postdocs benefit from building a union. *eLife* 3: e05614.

RESEARCH FUNDING (active funding in **bold**)

- 2024-present NSF DBI-2423775, RAPID: Transferring the East Tennessee State University Herbarium to the University of Tennessee. Budke JM. (\$192,730)**
- 2023-present National Park Service, Shenandoah National Park - Inventory of rare bryophytes to inform high-use recreation site management. Budke JM. (\$83,191)**
- 2022 Scholarly and Research Incentive Fund (SARIF), Univ. of Tennessee: *Increasing the storage and research capabilities of the University of Tennessee – Knoxville Herbarium (TENN)*. PI: **Budke JM**. Co-PIs: C Kwit, PB Matheny, MG Oliver, E Schilling. (\$140,000)
- 2022 Faculty Research Assistants Funding, Office of Undergraduate Research & Fellowships, UTK (\$1,750)
- 2021-present NSF CAREER DEB-2046467, Systematics & Biodiversity Sciences - Integrating natural history collections to explore the functional morphology and evolution of the parent-offspring conflict in mosses. Budke JM. (\$1,441,660)**
- 2021 Faculty Research Assistants Funding, Office of Undergraduate Research & Fellowships, UTK (\$3,500)
- 2020-present NSF Digitization TCN DBI-2001500 - Collaborative: Building a global consortium of bryophytes and lichens: keystones of cryptobiotic communities (GLOBAL). Twenty-five collaborating institutions. Lead PI: Budke JM. (\$3,684,610 total, \$609,365 to UTK)**
- 2017 Technology Fee Funding Award for Teaching Microscopes, Univ. of Tennessee (\$49,490)
- 2009 International Association of Bryologists: Stanley Greene Award (\$1,100)
Botanical Society of America: Graduate Student Research Award (\$500)
American Microscopical Society: Graduate Student Research Award (\$700)
Henry N. Andrews Endowment Fund: University of Connecticut EEB (\$1,000)
- 2007 Ronald Bamford Endowment Fund: University of Connecticut EEB (\$800)
- 2006 Ronald Bamford Endowment Fund: University of Connecticut EEB (\$1,100)
- 2004 Ronald Bamford Endowment Fund: University of Connecticut EEB (\$1,275)
- 2002 Academic Challenge Fund: Miami University Botany (\$1,030)
W. S. Turrell Travel Grant: MU Herbarium, #181 co-author C. Craig (\$1,319)
- 2001 W. S. Turrell Travel Grant: MU Herbarium, #179 co-author K. Gustafson (\$695)

FELLOWSHIPS

- 2013 Katherine Esau Postdoctoral Research Fellowship, Univ. of Calif. – Davis (\$151,181)
- 2011 Graduate Summer Research Fellowship, Univ. of Conn. Graduate School (\$2,274)

- 2010 Doctoral Dissertation Fellowship Award, Univ. of Conn. Graduate School (\$2,000)
 2008 East Asia Pacific Summer Institute Fellowship - EAPSI, NSF (\$10,000)
 NIBB, Okazaki, Japan - *Hosts:* Dr. M. Hasebe and Dr. Y. Hiwatashi

AWARDS

- 2022 Undergraduate Research Mentor of the Year, Office of Undergraduate Research & Fellowships, UTK
 2020 Faculty Academic Outreach Teaching Award, College of Arts & Sciences, UTK
 2014 Postdoctoral Scholar Association Travel Award to International Association of Bryology World Conference in Cape Horn Biosphere Reserve, Chile (\$400)
 2013 Grady L. Webster Structural Botany Publication Award - "For the most outstanding paper published in the *American Journal of Botany* in the field of structural and developmental botany over the two-year period prior to the award year." (\$1,000)
 2011 Vernon I. Cheadle Student Travel Award, Botanical Society of America (\$500)
 2010 Katherine Esau Award for the Best Student Paper in Developmental & Structural Botany, Botanical Society of America: *Beneath the calyptra's veil: Exploring cuticle anatomy during moss sporophyte development* (\$500)
 2010 Developmental & Structural Section Student Travel Award, BSA (\$150)
 2007 Conant Botanical Images Student Travel Award: Second Place (\$250)
 2005 Graduate Research Fellowship, National Science Foundation: Honorable Mention
 2003 Young Botanist Award, Botanical Society of America: Special Achievement
 2003 Outstanding Woman Senior in Science, Engineering, and Technology, Miami Valley Association for Women in Science (AWIS)

SCIENTIFIC CONSULTING

Moss Identification for Tennessee Agricultural Crime Unit

Mar - Aug 2020

In collaboration with E. Shershen and M. Oliver, we worked with Special Agent Kuehn to assist with identifying mosses/lichens confiscated as evidence in two cases. We maintained a chain of custody for these specimens, and also wrote witness statements and two reports about the identifications and value of the moss/lichen material. These cases are currently active and Budke has been called upon to testify.

Calyptra - Video Installation by the artist Elitsa Ganeva, from Veliko Tarnovo, Bulgaria.

Shown at the 2017 Nakanojo Biennale art festival in Japan.

<http://www.elitsaganeva.com/calyptranakanojobiennale.html>

STAFF SUPERVISION

Research Technician (NSF CAREER) – Emma Vaughn, B.S.	Jul 2025 – Present
Research Technician – Aspen Mazzatta, B.S.	Jul 2025 – Present
TENN Herbarium Collections Manager - Garrett Billings, M.S.	Oct 2024 – Present
Research Assistant (NSF CAREER) - Amy Okafor, B.S.	Aug 2024 – July 2025
TENN Herbarium Assistant - Tessa Nuchols, B.S.	Jul 2024 – June 2025
Research Technician – Liz Halasz, B.S.	Jan-May 2024; Jun 2025 – Present
Computational Assistant - Julian Broughton, B.S.	Feb 2024 – May 2024
Research Assistant (NSF CAREER) - Blakeney Jordan, B.S.	Jan – Jul 2024
Research Assistant (Shenandoah NP Grant) - Liz Halasz, B.S.	Jan – May 2024
Lead Digitizer (NSF TCN) & Research Specialist - Alex Dowd, B.S.	Dec 2023 – May 2025

Project Manager (NSF TCN) - Miranda Zwingelberg, M.S.**Dec 2020 – Present**

TENN Herbarium Collections Manager - Margaret Oliver, M.S.

Dec 2018 – Jun 2024

TENN Herbarium Collections Manager - Q. Victor Ma, Ph.D.

Jun 2016 – Jun 2018 (retired)

Research Specialist III - Mark D. Wienhold, M.S.

Dec 2016 – Aug 2019

FACULTY MENTORING COMMITTEES

Committee Member for Gautam Shirsekar – Assist. Professor, EPP Dept., UTIA

Jan 2025 – Present

Committee Member for Sebastian Stockmaier – Assist. Professor, EEB Dept., UTK

Jan 2023 – Present

POSTDOCTORAL RESEARCHER SUPERVISION & MENTORINGDr. Maryam Noroozarmehri - *Analyzing the morphological evolution of structures integral to the parent-offspring conflict across the moss phylogeny.*

Jan 2023 – Present

Dr. Nikisha R. Patel - *Analyzing spore morphological evolution in ferns and generating preliminary moss physiology data for grant applications.*

Feb – Dec 2018

HESLER VISITING RESEARCHER COLLABORATIONS

Dr. Venuste Nsengimana, Director, Centre of Excellence in Biodiversity and Natural Resource

Management at the University of Rwanda - Effective and Sustainable Management of Natural Collections in Rwanda

Spring 2025

Ainun Nadhifah, Researcher at the National Research and Innovation Agency, Cibodas Botanical Garden
Unlocking hidden biodiversity: a new record of Neolepidozia cuneifolia for western Malesia and Solomon Islands.

Oct – Nov 2022

Nikisha R. Patel, Graduate Student, University of Vermont - *Analyzing spore morphological evolution in ferns.*

May & Sept 2017

GRADUATE STUDENT DISSERTATION/THESIS SUPERVISION & MENTORINGAinun Nadhifah, Ph.D. student – *Systematics of the liverwort genus Neolepidozia*

Aug 2023 – Present

Isabel Hildesheim, Ph.D. student – *Analyzing moss sporophyte resource acquisition.*

Aug 2023 – Present

Vishal Kennedy, Ph.D. student – *Parent-offspring conflict in mosses.*

Aug 2022 – Present

Eric Shershen, Ph.D. student – *Drivers of bryophyte community change across the Appalachians.*

Completed May 2025

Julia Butler, M.S. – *Aquatic transitions and relationships in Fissidens mosses.*

Completed May 2024

Alex Aromin, M.S. – *Examining the influence of calyptra size on sporophyte morphology in Funariaceae mosses.*

Completed May 2021

GRADUATE STUDENT COMMITTEE MEMBER (If not noted, student at UTK)Layla Dishman, M.S. student - *Classification of Lobelia reverchonii*

Nov 2024 – Present

Cassie Edmonds, M.S. student - *Analysis of circinate vernation in ferns*

Nov 2024 – Present

Meredith Woodward, M.S. (U of Tennessee, Chattanooga) – *The State of Herbaria in Tennessee*

Completed Mar 2025

Tonika Birmley, M.S. student - *The effect of ploidy on Galax urceolata pollen.*

Nov 2023 – Present

Dusty Prather, Ph.D. student - *Ecophysiology of Onoclea sensibilis.*

Nov 2023 – Present

Sam Wilhelm, Ph.D. student - *Pollination biology of the cedar glades.*

Jan 2023 – Present

Nicholas Smith, Ph.D. student - <i>Relationships between migratory songbirds and fleshy-fruited plants during fall migration.</i>	May 2022 – Present
Leigha Henson, M.S. (Appalachian State University) - <i>Warming and precipitation effects on several common moss species of the southern Appalachian Mountains.</i>	Completed Aug 2024
Hope Ferguson, Ph.D. student - <i>Chance events & grad. student career intentions.</i>	Apr 2021 – Present
Alex Faidiga, M.S. - <i>Exploring pollination biology in Viola.</i>	Completed Dec 2021
Harmony Yomai, Ph.D. - <i>Breeding systems of flowering plants in Chuuk.</i>	Completed Dec 2021
Margaurete Romero, Ph.D. student - <i>Exploring grad student scientific outreach.</i>	May 2018 – Dec 2019
Hailee Korotkin, M.S. - <i>Stable isotopes, phylogenetics, and experimental data indicate a unique nutritional mode for Rickenella fibula, a bryophyte-associated fungus.</i>	Completed Aug 2017

TENN HERBARIUM GRADUATE RESEARCH ASSISTANT SUPERVISION & MENTORING

Eric Shershen, Budke Lab - <i>Evaluating bryophytes on the TN Rare plant list.</i>	Jan 2024 – May 2024
Nicholas Smith, Kwit Lab - <i>Curating the large fruit, seed, & cone collection.</i>	Jan 2023 – May 2023
Julia Butler, Budke Lab - <i>Transcribing bryophyte specimens for GLOBAL TCN.</i>	Jan 2022 – May 2022
Alex Faidiga, Kalisz Lab - <i>Analyzing plant phenology using specimens.</i>	Jan 2021 – May 2021
Harmony Yomai, Williams Lab - <i>Label-making protocol development.</i>	Jan 2020 – May 2020
Amanda Benoit, Kalisz Lab - <i>Curating the macroalgae collection.</i>	Jan 2019 – May 2019
Chelsea Miller, Kwit Lab - <i>Curating a historic seed collection.</i>	Jan 2018 – May 2018
Ian Ware, Schweitzer/Bailey Labs - <i>Curating a historic seed collection.</i>	Jan 2017 – May 2017

UNDERGRADUATE STUDENT SUPERVISION & MENTORING

University of Tennessee, Knoxville

Budke Laboratory

Analyzing parent offspring relationships in the Pottiaceae

Millie Mancini – Colorado College, Organismal Biology	Jun 2025 – Present
<i>Compiling moss sexual system data from floristic literature</i>	

Kevon Calloway – Major: Information Sciences & Africana Studies	Jun 2025 – Present
<i>Comparative water conducting cell development in Dicranum scoparium</i>	

Emma Vaughn - Major: Biology; Concentration: EEB	Aug 2024 – Jun 2025
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<i>Evaluating bryophyte communities in Pickett State Park</i>	
Aspen Mazzatta - Major: Biology; Concentration: EEB	Feb 2024 – Jun 2025

2025 UTK Eureka Poster Presentation – Award of Excellence

2024 Lynne & Bob Davis Award for Student Natural History Research (\$4,200)

<i>Molecular biology to explore parent-offspring conflict in mosses</i>	
Lily Cooper - Major: Plant Sciences	Oct 2023 – Dec 2024

Shekinah Pobi - Major: Biology; Concentration: BCMB	Aug 2023 – Present
Blakeney Jordan - Major: Biology; Concentration: EEB	Jun – Dec 2023
Angelina Strawn - Major: Biology; Concentration: EEB	Jun – Aug 2023

<i>Trialing protocol for moss chromosome squashes</i>	
Liam Cooley - Major: Biology; Concentration: EEB	Mar – Dec 2023

<i>Culturing Funariaceae moss species</i>	
Sarah Cleveland - Major: Plant Sciences, Public Horticulture	Sept 2022 – May 2023
Jack Kiernon - Major: Forestry; Concentration: Urban Forestry	Sept 2022 – Mar 2024

Identifying moss collections from the GSMNP in collaboration with PhD student Eric Shershen.

Susanna Diamond - Major: Biology; Concentration: EEB Sept 2020 – May 2022

2022 UTK Eureka Poster Presentation – Award of Excellence

2021 Breedlove, Dennis Award for Student Botanical Fieldwork (\$500)

2021 Dr. Clifford Amundsen Ecology Scholarship Endowment Award

Examining maternal-offspring interactions in mosses.

Julian Broughton - Major: Biology; Concentration: BCMB Sept 2020 – Aug 2023

2022 UTK Eureka Poster Presentation – Award of Excellence

Amy Okafor - Major: Biology; Concentration: BCMB Sept 2020 – Aug 2024

2022 UTK Eureka Poster Presentation – Award of Excellence

Haddy Salem - Major: Biology; Concentration: EEB Sept 2020 – May 2022

Abygale Dixon - Major: Biology; Concentration: Microbiology Sept 2020 – May 2021

Nathan Pace - Major: Biology; Concentration: EEB Sept 2019 – May 2021

2021 College of Arts & Sciences, Volunteer of Distinction, Professional Promise Award

2020 Breedlove, Dennis Award for Student Botanical Fieldwork (\$500)

2020 Awarded Summer Undergraduate Research Internship Program funding

Katherine Whitaker - Major: Biology; Concentration: EEB Aug 2018 – May 2021

2021 College of Arts & Sciences, Volunteer of Distinction, Academic Achievement Award

2021 EEB Outstanding Undergraduate Research Award

Using herbarium specimens for molecular phylogenetic analyses of Fissidentaceae mosses.

Daniel Kirk - Major: Biology; Concentration: BCMB Jan 2018 – May 2019

Victoria Beard - Major: Biology; Concentration: Microbiology Sept 2017 – Dec 2018

Chelsea Carr - Major: Art History May 2018 – Aug 2018

Nathan Kingsley - Major: Biology; Concentration: EEB Jan 2017 – Jan 2018

Sarah Wike - B.S. Catawaba College, Post-bac in EEB at UTK Jan 2017 – Apr 2017

TENN Herbarium Curation Technicians & Interns

64 students trained in databasing & curating plant biodiversity specimens. Fall 2016 – Present

Spring 2018 - Team of nine students curated Dr. Marie Hicks Liverwort collection.

Spring 2017 - Team of six students reorganized moss collection of 150,000 specimens.

Award Winning Curation Technicians

Dana Frankenstein - 2024 UTK Volunteer of Distinction Award, Outstanding Postgraduate

Emma Kruse - 2022 UTK Volunteer of Distinction Award for Professional Promise

Madison Dyer - 2022 UTK Volunteer of Distinction Award for Professional Promise

Ashley Fish - 2022 UTK Volunteer of Distinction Award for Professional Promise

Ryan Vichich - 2021 UTK Volunteer of Distinction Award for Professional Promise

Helen Law - 2020 UTK Chancellor's Award for Extraordinary Professional Promise

Vanessa Harpe - 2019 UTK Chancellor's Award for Extraordinary Professional Promise

University of California, Davis

4 students trained in molecular & developmental biology of mosses. Feb 2013 – Dec 2015

PLANTS Program - Botanical Society of America (Preparing Leaders and Nurturing Tomorrow's

Scientists: Enhancing Diversity in Plant Science), Junior Mentor – 2012

University of Connecticut

7 students trained in molecular systematics, microscopy, and sterile culture. Jan 2008 – Dec 2012

INVITED PRESENTATIONS

- 2024 Seminar – Department of Ecology and Evolutionary Biology, University of Connecticut
- 2024 Seminar – Friedrich Schiller University Jena, Jena, Germany
- 2022 Seminar – Manipal Centre for Natural Sciences, Manipal, India (Virtual)
- 2020 Seminar – Department of Plant Sciences, Univ. of Tennessee
- 2019 Paul Burton Seminar Series – Department of Biology, Western Carolina University
- 2018 Seminar – Department of Biology, University of Florida
- 2016 Ronneberg Lecture Series Seminar – Department of Biology, Denison University
- 2016 Seminar – Department of Plant Biology, University of Minnesota
- 2016 Seminar – Department of Ecology and Evolutionary Biology, Univ. of Tennessee
- 2016 Seminar – Department of Biology, University of West Georgia
- 2015 Lester Newman Seminar Series – Department of Biology, Portland State University
- 2013 Postdoctoral Research Seminar Series – University of California, Davis

CONFERENCE PRESENTATIONS (Oral presentation unless noted. Presenting author underlined.)

- 2024 Noroozarmehri M, **Budke JM**. The conflict between gametophyte parents and sporophyte offspring: examining morphological evolution across moss species with different sexual systems. BOTANY conference.
- 2024 Shershen E, **Budke JM**. Examining bryophyte community changes in the southern Appalachians using herbarium records. American Bryological and Lichenological Society Annual Meeting.
- 2024 Hildesheim J, **Budke JM**. Examining the relationship between sporophyte morphology and resource transport rates in mosses. American Bryological and Lichenological Society Annual Meeting.
- 2024 Kennedy VN, **Budke JM**. Unraveling the Tug of War: Investigating Parent-Offspring Conflict in Mosses. American Bryological and Lichenological Society Annual Meeting.
- 2024 Butler JR, **Budke JM**. Aquatic transitions and interspecific relationships in *Fissidens* mosses. American Bryological and Lichenological Society Annual Meeting.
- 2024 Butler JR, **Budke JM**. Untangling Interspecific Relationships Between Aquatic Taxa in the Moss Genus *Fissidens*. Association of Southeastern Biologists Annual Meeting.
- 2024 Okafor AN, **Budke JM**. Differences in sporophyte conducting cell anatomy between two moss species. Association of Southeastern Biologists Annual Meeting. **Poster presentation.**
- 2024 Oliver MG, Shershen E, **Budke JM**. Determining the spatial distribution of vascular plants in Knox County, Tennessee using digitized herbarium specimens. Association of Southeastern Biologists Annual Meeting. **Poster presentation.**
- 2023 **Budke JM**. The conflict between gametophyte parents and sporophyte offspring: examining morphological evolution across moss species with different sexual systems. BOTANY conference. **Invited colloquium speaker.**
- 2023 Bendull H, Lewis R, **Budke JM**. The State of Herbarium Backlogs: Perspectives from Bryophyte Collections. BOTANY conference. **Invited symposium speaker.**
- 2023 Butler J, **Budke JM**. Untangling Aquatic Transitions and Interspecific Relationships in the Moss Genus *Fissidens*. BOTANY conference.
- 2023 Bendull H, Lewis R, **Budke JM**. The State of Herbarium Backlogs: Perspectives from Bryophyte Collections. Association of SE Biologists Annual Meeting. **Invited symposium speaker.**
- 2022 **Budke JM**. Building a global consortium of bryophytes and lichens: keystones of cryptobiotic communities (GLOBAL). (BioDigiCon)
- 2022 Shershen E, Stehn S, **Budke JM**. Bryophyte communities change over a 12-year period along an elevational gradient in the Great Smoky Mountains National Park. BOTANY conference.
- 2021 **Budke JM**, von Konrat M. Building a global consortium of bryophytes and lichens: keystones of cryptobiotic communities (GLOBAL). (Virtual ADBC Summit)

- 2021 **Budke JM**, Wienhold MD, Patel NR. Exploring relationships in the moss genus *Fissidens* using molecular data generated from herbarium specimens. 'Bryophytes, lichens, and northern ecosystems in a changing world' (BL2021). **Invited symposium speaker.**
- 2021 **Budke JM**, von Konrat M, et al. (55 additional coauthors) Building a global consortium of bryophytes and lichens: keystones of cryptobiotic communities (GLOBAL). 'Bryophytes, lichens, and northern ecosystems in a changing world' (BL2021).
- 2020 Whitaker K, **Budke JM**. Exploring sporophyte transpiration rates in mosses. Botanical Society of America (BSA) Annual Meeting. **Honorable Mention for A.J. Sharp Award.**
- 2020 **Budke JM**, Oliver MG. TENN Herbarium Excursions to Evaluate Historic Populations of Seedless Plants. Tennessee Plant Conservation Alliance Annual Meeting.
- 2019 **Budke JM**, Patel NR, Wienhold MD. Exploring relationships in the moss genus *Fissidens* using molecular data generated from herbarium specimens. BOTANY conference. **Invited colloquium speaker.**
- 2018 **Budke JM**, Wienhold MD. Exploring relationships in the moss genus *Fissidens* using molecular data generated from herbarium specimens. American Bryological and Lichenological Society (ABLS) Annual Meeting
- 2018 Patel NR, Fawcett S, Sundue MA, **Budke JM**. A Phylogenetic Perspective on Perispore Morphology of Thelypteridaceae. BOTANY conference.
- 2016 Medina R, Johnson M, Liu Y, **Budke JM**, Wilding N, Hedderson T, Wickett N, Goffinet B. Zooming in on the rapid radiation of the Funariaceae. BSA Annual Meeting
- 2015 **Budke JM**. Comparative cuticle development in morphologically divergent mosses of the Funariaceae. BOTANY conference.
- 2015 Busta L, **Budke JM**, Jetter R. Cuticular waxes from the gametophyte, sporophyte, and calyptra of the moss *Funaria hygrometrica*. BOTANY conference.
- 2015 **Budke JM**, Busta L, Jones CS, Goffinet B. Beneath the veil of the calyptra: exploring cuticle anatomy during moss sporophyte development in the Funariaceae. International Association of Bryologists Conference
- 2013 Busta L, **Budke JM**, Jetter R. Cuticular Waxes from the Gametophyte, Sporophyte, and Calyptra of the Moss *Funaria hygrometrica*. Phytochemical Society of North America Annual Meeting (**Awarded Best Student Presentation**)
- 2013 Liu Y, Medina R, Wilding N, **Budke JM**, Hedderson T, Goffinet B. The evolutionary history of *Physcomitrella patens*: phylogenetic inferences from 4 loci within the Funariidae. BOTANY conference.
- 2012 **Budke JM**, Jones CS, Goffinet B. Sporophyte development and calyptra cuticle function in *Funaria hygrometrica*. MOSS 2012
- 2012 Goffinet B, Liu Y, Wilding N, **Budke JM**. Phylogenetic inferences in the Funariaceae: inferences from 10 versus 4 loci. 3rd International Symposium on Molecular Systematics of Bryophytes
- 2011 **Budke JM**, Goffinet B, Jones CS. Experimental manipulation of the moss calyptra: The effect of cuticle removal and desiccation on sporophyte development in *Funaria hygrometrica*. BOTANY conference.
- 2011 Liu Y, **Budke JM**, Goffinet B. Phylogenetic inference rejects sporophyte-based classification of the Funariaceae (Bryophyta): a rapid radiation suggests rampant homoplasy in sporophyte evolution. BOTANY conference.
- 2011 Liu Y, **Budke JM**, Goffinet B. Phylogenetic inference suggests rampant homoplasy in sporophyte evolution in the Funariaceae. MOSS 2011
- 2010 **Budke JM**. Examining the gametophytic calyptra and its role in moss sporophyte development using the cord moss (*Funaria hygrometrica*). Society for Integrative and Comparative Biology Annual Meeting

- 2010 **Budke JM**, Goffinet B, Jones CS. Beneath the calyptra's veil: Exploring cuticle anatomy during moss sporophyte development. BOTANY conference.
- 2010 Liu Y, **Budke JM**, Goffinet B. Phylogenetic relationships of *Physcomitrella* and other Funariaceae based on inferences from 10 genes. BOTANY conference.
- 2007 **Budke JM**, Wickett NJ, Goffinet B. Multiple losses of the *cysA* gene from the chloroplast genome of liverworts (Marchantiophyta). BOTANY conference.
- 2006 **Budke JM**, Goffinet B. Phylogenetic analyses of Timmiaceae (Bryophyta: Musci) inferred from nuclear and chloroplast sequence data. BOTANY conference.
- 2005 **Budke JM**, Jones CS, Goffinet B. Peristome development in *Timmia megapolitana* in relation to systematics and evolution of the Bryophyta. BOTANY conference.
- 2004 **Budke JM**. Peristome development in *Timmia megapolitana*. Northeast Ecology and Evolution Conference
- 2003 **Budke JM**, Hickey RJ, Heafner KD. Morphological characterization of North America's first octoploid *Isoetes*. BOTANY conference.
- 2003 Hickey RJ, **Budke JM**. 2003. The sella and its derivatives in *Isoetes*. BOTANY conference.
- 2002 **Budke JM**, Hickey RJ, Heafner KD. Morphological characterization of North America's first octoploid quillwort. Association of Southeastern Biologists Annual Meeting

TEACHING

Assistant & Associate Professor: *University of Tennessee – Knoxville*

EEB 330/602 – Field Botany	Falls, 2017-2021 (Online 2020), 2023
EEB 496/607 – Natural History Collections Research	Falls, 2018-2021 (Hybrid 2020), 2023
EEB 466 – Immersion in Collections Research	May Mini-term, 2023, 2025

Adjunct Lecturer: *University of California - Davis*

Everybody Eats: Investigating Biological Threats to your Favorite Foods Fall 2014 & Spring 2015
Designed and taught an original course as instructor of record for ACCESS-R. UC Davis program to improve retention of first-generation to college and students from underrepresented groups in the sciences. Team-taught with Dr. H. Atamian, Spring 2015. Awarded a \$500 mini-grant for supplies, both quarters.

Guest Lectures

University of Tennessee – Knoxville

Introductory Botany – Topic: Bryophyte Diversity & Evolution	Spring 2025
Natural History Collections Research – Topic: Herbarium Research	Fall 2022
Career & Professional Development – Topic: Careers in Biology Collections	Spring 2021
Theory & Methods in EEB – Topic: Analyzing Scientific Research	Springs 2020 & 2022
Introductory Plant Biology – Topic: Plant Biodiversity Collections	Fall 2016 & 2017
Wildlife, Vegetation, and Habitat – Topic: Plant Biodiversity Collections	Fall 2016
Field Botany – Topic: Plant Biodiversity Collections	Fall 2016

University of California - Davis

Graduate Seminar – Topic: Preparing for the NSF GRFP	Fall 2014 & 2015
Graduate Course in Plant Development – Topic: Moss Developmental Genetics	Winter 2015
iAMSTEM summer orientation program – Topic: Science Communication	Summer 2014

Western Connecticut State University, Biological and Environmental Sciences

Genetics – Topic: Transformation of Non-Model Species	Spring 2014
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University of Connecticut, Cooperative Extension Center, Master Gardener Program

Biology and Identification of Mosses and Liverworts	Oct 2012
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University of Connecticut, Ecology and Evolutionary Biology

The Summer Flora – Topic: Bryophytes, Summer 2011; Plant Anatomy – Topic: Shoot apical meristems, Fall 2010; Bryology and Lichenology – Topic: Morphogenesis, Spring 2006.

TRAINING IN EDUCATION & CONFLICT RESOLUTION

ROOT & SHOOT Bystander Intervention Training, Summer 2023

Botanical Society of America, facilitated by the ADVANCEGeo Partnership

Virtual Vol Bootcamp, Online Education Workshop Summer 2020

University of Tennessee – Knoxville, Teaching & Learning Innovation & the Office of the Provost

“Mobile” Summer Institutes (MoSI) on Undergrad STEM Education Workshop May 13-16, 2019

University of Tennessee – Knoxville, Division of Biology, Biological Sciences Teaching and Learning

College Teaching Seminar Winter 2014

University of California - Davis, Center for Excellence in Teaching and Learning

TEACHING MATERIALS

Peer reviewed brochure to teach plant biology concepts to students using mosses.

Swanson J, Budke JM, and Goffinet B. 2012. A visit to the miniature forest: insights into the biology and evolution of bryophytes in Northeastern Connecticut. Available through the *PlantED Digital Library*.

Peer reviewed laboratory exercises to teach the concept of chemical competition in plants.

Swanson J, Budke JM, and Goffinet B. 2012. Chemical competition in plants using the moss *Sphagnum*. *PlantED Digital Library*. <http://planted.botany.org/> Featured in the *Plant Science Bulletin* 60(4): 198, 2014.

Moss Culturing Protocol for high school teacher workshop at MOSS 2012 conference.

Mosses and the Plant Life Cycle by LE Parker*, JM Budke, and B Goffinet. (* undergraduate collaborator)

Biology Textbook Image - Invited

Scanning electron micrograph of moss peristome teeth by JM Budke, in *Introduction to Plant Biology*, 4th-6th editions by JD Mauseth, non-vascular plants chapter.

FIELD BOTANY EXPERIENCE

Botanical Outreach

Spring Wildflower Pilgrimage Springs 2016-2019, 2022-2025

Great Smoky Mountains National Park: Fern and Moss Walk Leader

Naturalist Club Oct 2023 & Nov 2024

Leading/Co-leading hikes focusing on plants at Norris Dam State Park

Outdoor Presentations on Mosses (12 total) and Ferns (1) Summers 2005 – 2012

Leading botanical explorations at local nature centers and state parks in Connecticut.

Connecticut Bioblitz Summers 2005, 2007, 2009

24-hour biological survey of a park with scientists, students, and the public.

All Taxa Biodiversity Inventory (ATBI) Summers 2001 – 2003

Great Smoky Mountains National Park: Fern Foray Participant

Bryology Forays

Blomquist Bryological Foray

Aiken Gopher Tortoise Heritage Preserve, Savannah River Bluffs Heritage Preserve,

& Greystone Preserve, South Carolina

March 7-9, 2025

Crowders Mountain State Park, NC & King's Mountain State Park, SC

March 15-17, 2024

Andrew's Bryological Foray, Kings Gap State Park, Carlisle, Pennsylvania

Sept 22-24, 2023

SoBeFree: Spring Outing; Botanical Excursion; Foray, Retreat, & Escape to the Environment

Multiple sites across California

2014, 2015, & 2016

A. Leroy Andrews Foray, Woodstock Valley, Connecticut

Sept 18-20, 2009

Blomquist Foray, Haywood County, North Carolina

Oct 4-6, 2002

PUBLIC AND COMMUNITY OUTREACH

- Plant Sciences Club - UTK** March 3, 2025
Invited Speaker – Topic: Bryophyte Diversity & Evolution
- In Defense of Plants – Ep. 514 Parent/Offspring Conflicts in Moss** Feb 23, 2025
<https://www.indefenseofplants.com/podcast/2025/2/17/ep-514-parentoffspring-conflicts-in-moss>
- What the Moss – Easy as Play's Creative Director, Kashina Hickson** Summer 2023 – Present
Developed a moss field guide & exploration pack for local libraries.
- Darwin Day at the McClung Museum of Natural History** Feb 2024, 2025
Introduced families to moss substrates and spore dispersal through hands-on activities.
- Worldwide Engagement for Digitizing Biocollections (WeDigBio)** Oct 2021, 2022 & Apr 2022, 2023
Leader for NSF GLOBAL TCN virtual natural history collection transcription event.
At each event ~100 community scientists & UTK undergrads transcribed thousands of specimen labels.
- SciComm Celebration Day at Botany 2020** July 27, 2020
Featured science communicator for Moss Plants and More blog and @UTKHerbarium outreach.
- Outside/In – A Podcast from New Hampshire Public Radio** May 21, 2020
Featured guest expert for *Mold and Moss* episode - <http://outsideinradio.org/shows/moldandmoss>
- Knoxville Botanical Garden – Presentation on Mysterious Mosses** 2019 – 2024
Once to twice annual evening talk to the public about moss plant biology.
- Expanding Your Horizons STEM Activity Day** Nov 9, 2019
Plant specimen mounting activity at the TENN Herbarium for ~45, 5th-8th grade girls.
- Moss Plants and More: Commentary on All Things Bryological** Oct 2007 – May 2016
Monthly updated online bryology blog. Communicating science to the public.
<http://mossplants.fieldofscience.com>
Featured in Plant Cuttings: News in Botany. *Annals of Botany* 10: iv-vi, 2012.
- University of Tennessee Science Forum** Sept 30, 2016
Talking to the public about biodiversity collections and herbaria.
- University of California – Davis, Biodiversity Museum Day** Feb 13, 2016
In collaboration with four undergraduate students, we led members of the public through four hands-on activities exploring mosses using herbarium specimens.
- Kindergarten class at American Lakes School, Sacramento, California** Apr 10, 2014
In collaboration with S. Komar, we designed and led students through two hands-on classroom activities exploring the relationships between plant structures & functions.
- Discovery Museum Science & Space Center – Volunteer with AWIS** Feb 22, 2014
Helping families navigate activities about dinosaurs, fossils, rocks, and crystals.

PROFESSIONAL SERVICE

Manuscript Reviewer: *American Fern Journal*, *American Journal of Botany*, *Annals of Botany*, *AoB Plants*, *Biological Invasions*, *Botanical Journal of the Linnean Society*, *Castanea*, *Cryptogamie-Bryologie*, *Ecology and Evolution*, *Frontiers in Plant Science*, *Herzogia*, *Journal of Biogeography*, *Journal of Bryology*, *Nature Communications*, *New Phytologist*, *Plant Biology*, *Plant Cell*, *Plant Physiology*, *Plant Science Bulletin*, *Protoplasma*, *Rodriguésia*, *The Bryologist*.

Guest Editor: *Bryophyte Diversity and Evolution* - Special issue honoring Dr. Jeff Duckett - 2022

Panel Discussion Participant:

Society for Future Women in Medicine: How to Get Involved in Research	Oct 17, 2024
Association for Women in Science (AWIS) – Knoxville: Lunch and Learn	Oct 11, 2024
Postdoctoral Fellowship Writing: Learning from Colleagues	Feb 25, 2014
<i>Sponsored by the postdoc union (UAW 5810) at the University of California – Davis</i>	

Departmental Service:

2023 - Present	UTK EEB Graduate Student Affairs Committee Member
2022	UTK EEB Plant Ecophysiology Search Committee, Chair
2022	UTK EEB Head Search Committee, Member
2016 - Present	UTK EEB Collections Committee, Chair , Awards approximately \$30K funds annually to faculty, visiting researchers, and undergrads, and grad students from the Hesler Herbarium, Breedlove Dennis Botanical Fieldwork, Holton, and Hochman Funds.
2016	UTK EEB Field Station Committee, Member

University of Tennessee Service:

2022 - Present	UTK Plant Research Center Board Member: Co-Director 2026 - Present
2022	Judging Committee - Cokkinias-Fite Awards from the Division of Biology
2021	NSF CAREER Writing Institute, Office of Research & Engagement: Panel Participant

Regional Service:

2023 - Present	Southern Appalachian Botanical Society: Membership Coordinator
2021 - 2023	Southern Appalachian Botanical Society: Member-at-Large
2021 - Present	Tennessee Plant Conservation Alliance: Steering Committee Member
2018 - Present	Tennessee Rare Plant Scientific Advisory Committee: Voting Member

National & International Service:

2023 - Present	American Bryological and Lichenological Society: President-Elect
2023 - Present	Society of Herbarium Curators: Membership Committee: Chair (2024-Present)
2023 - Present	Society of Herbarium Curators, Southeast Chapter: Membership Committee
2022 - Present	Judging Committee - D.R. Kaplan Dissertation Award in Comparative Morphology
2022	Judging Committee - Association of Southeastern Biologists Student Awards
2022	Judging Committee - Southern Appalachian Botanical Society Student Awards
2021 - Present	International Association of Bryologists: Council Member
2021 - 2023	Botanical Society of America, Cheadle Award Committee: Chair
2020 - 2023	Botanical Society of America, Developmental and Structural Section: Chair
2020	Social Media Team Member for the SPNHC/NATHIST Virtual Conference
2021 - 2023	Society of Herbarium Curators: Social Media & Promotions Committee: Chair
2019 - 2022	Society of Herbarium Curators: Member-at-Large
2019 - 2022	Judging Committee - ASPT Graduate Student Awards
2017 - Present	Proposal Reviewer (panel and ad hoc): National Science Foundation
2017 - 2022	Proposal Reviewer American Society of Plant Taxonomists (Grad Student Awards)
2017	Prince Claus Fund for Culture and Development in the Netherlands, Reviewer
2016 & 2018	Judging Committee - A.J. Sharp Award, Am. Bryological and Lichenological Society
2015	Judging Committee - Grady L. Webster Award, Botanical Society of America
2013 - 2019	American Bryological and Lichenological Society: Member-at-Large
2013 - 2015	Judging Committee - Esau Award (Chair in 2015), BSA Conference

2013 Judging Committee - Triarch Student Botanical Image Award

Member: *Association for Women in Science, Association of Southeastern Biologists, American Bryological and Lichenological Society, Botanical Society of America, International Association of Bryologists, Society for the Preservation of Natural History Collections, Society of Herbarium Curators, Southern Appalachian Botanical Society, Tennessee Native Plant Society.*