Brooke Byerley Best, Ph.D.
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EDUCATION

PhD, Botany – Colorado State University, Fort Collins, Colorado. Dissertation: Patterns and consequences of floral formula variation in *Phlox* (Polemoniaceae). Advisor: David A. Steingraeber.

BS, Biology – Southwestern University, Georgetown, Texas. Chemistry Minor. Beta Beta Beta Biological Honor Society. Thesis: Reproductive consequences of mixed pollen loads in *Phlox cuspidata* and *Phlox drummondii*. Advisor: Damon E. Waitt.

PROFESSIONAL APPOINTMENTS

Current
Botanist & Editor, BRIT Press
Managing Editor, *Journal of the Botanical Research Institute of Texas*
Editorial Advisory Board, BRIT Press
Education-Research Liaison, BRIT
Living Roof Coordinator, BRIT
Research Associate, Texas Christian University

Previous
Acting Vice President of Research, BRIT, Oct/Nov 2016, Jun 2017
Senior Editor, *Ethnobotany Research and Applications*, 2012–2015
Associate Texas Botanist, BRIT, 2010–2012
Assistant Editor of BRIT Press, BRIT, 2009–2010
Herbarium Data Coordinator, BRIT, 2008–2009
Publications Assistant, BRIT, 2007–2008
Herbarium Technician, BRIT, 2007
Biology Lab Coordinator, Colorado State University, 2005–2007
Research Assistant and Lab Instructor, Colorado State University, 2006
Testing Administrator, Licensing Assessments for Colorado Educators, 2003–2007
Graduate Teaching Assistant, Biology Department, Colorado State University, 2000–2005
Lab Assistant, Biology Department, Southwestern University, 1998–2000

RESEARCH INTERESTS & SPECIALIZATIONS

My research skills center broadly around plant ecology. I am currently interested in studying the ecology of living roofs and living roofs as ecosystems, as well as Texas floristics, particularly edaphic rather than geographic communities. I have specialized research experience in floral morphology & evolution, pollination biology, plant hybridization/reproduction/breeding systems, invasives/competitive theory (e.g., ant-plant interactions), and pollinator systems and behavior.

RESEARCH & PROJECT MANAGEMENT ACTIVITIES

Living Roofs in North Central Texas. Principal investigator. An ongoing project to monitor and document the performance and viability of a biomimicry-based roof design. Conduct research to assess health, monitor volunteer plant species, assess survival and mortality of planted species, compare the roof vegetation composition to native prairies, inventory arthropods. 2010–present.

Flora of Scurry County, Texas. Principal investigator. An ongoing project to catalog subregion vascular flora. 2009–present.

Ferns & Lycophytes of Texas. Project manager. Created digital content to complement *The Ferns and Lycophytes of Texas* (a BRIT Press book product). Managed georeferencing of BRIT fern collection by volunteers and produced a multi-access visual key. www.FernsOfTexas.org. 2011–2016.

Texas Wetlands Project. Co-principal investigator. Collected throughout Texas plants from the US Army Corps of Engineers' National Wetland Plant List. Described wetland plant communities, made vouchers, obtained live

images, and sampled DNA material from members of the Cyperaceae. Collected and inventoried wetland plants in Texas, with a particular concentration on sedges (Cyperaceae) to produce herbarium vouchers with accompanying tissue collections of vouchered individuals and members of the sampled population for future DNA Analysis; collected and analyzed data to describe plant community types2012.

High-Throughput Workflow for Computer-Assisted Human Parsing of Biological Specimen Label Data. Researcher. Coordinated use of herbarium specimen data in project piloting new methods for rapid label digitization. 2009–2010.

Floral Formula Variation in *Phlox* (Polemoniaceae). Principal investigator. Investigated natural and artificial variation, reproductive fitness, and selection relative to floral morphology. 2002–2006.

Myrmecochory and the establishment of invasive weeds in Colorado. Researcher. Conducted field experiments on effects of ant dispersal on native versus invasive thistles. 2005–2006.

Myrmecochory and the displacement of native seed dispersers by invasive Argentine ants. Researcher. Conducted field experiments on effects of native versus invasive ant species on seed dispersal. 2002–2005.

Pollinator behavior and hybridization in *Oxytropis* (Fabaceae). Researcher. Conducted field experiments and observations related to mechanisms of natural hybridization and floral color morphs in *Oxytropis* species. 2001–2002.

RECENTLY EDITED WORKS

*provided editorial guidance that includes any or all of the following: botanical editing, technical editing, line editing, copy editing, figure processing and production, and page layout

2017. Plantas y animales únicos de las islas del Pacifico de Baja California - Unique plants and animals of the Baja California Pacific Islands. S. Vanderplank, A.P. García, J.H. Valdez Villavicencio, C.A. de la Rosa. 978-1-889878-51-5

2017. A Systematic Vademecum to the Vascular Plants of Sint Eustatius. F.S. Axelrod. 978-1-889878-57-7

2017. Historia del Jardín Botánico de Lancetilla, Honduras / The History of Lancetilla Botanical Garden, Honduras. D.L. Hazlett. 978-1-889878-53-9

2016. Guide to the Vascular Plants of Kitty Hawk Woods, Dare County, North Carolina. R.K. Clark, A. Krings, J.M. Stucky, H.J. Kleiss. 978-1-889878-50-8

2016. Arroyo la Junta: Una joya de biodiversidad en la Reserva de la Biosfera Sierra La Laguna / A biodiversity jewel in the Sierra La Laguna Biosphere Reserve. S. Vanderplank, B.T. Wilder, E. Ezcurra. 978-1-889878-48-5

2015. Flora of Colorado. J. Ackerfield. 978-1-889878-45-4

2015. Flora of Oregon. Volume 1: Pteridophytes, Gymnosperms, and Monocots. S.C. Meyers, T. Jaster, K.E. Mitchell, L.K. Hardison. 978-1-889878-46-1

2015. Plant Guide: Maritime Succulent Scrub Region, Northwest Baja California, Mexico. J. Riley, J. Rebman, S. Vanderplank. 978-1-889878-44-7

2015. Guide to the Vascular Plants of Howell Woods, Johnston County, North Carolina, U.S.A. K.M. Hines, A. Krings, J.M. Stucky. 978-1-889878-47-8

PUBLICATIONS (peer reviewed)

Delang, C.O., X. Weiyi, **B. Byerley,** and K.P. Chun. 2016. The effect of fallow period length on the abundance and diversity of usable plant assemblages in shifting cultivation systems (swidden agriculture) in northern Laos. Polish Journal of Ecology. 64:350–356. http://dx.doi.org/10.3161/15052249PJE2016.64.3.005

Byerley Best, B., R.K. Swadek, and T.L. Burgess. 2015. Soil-based green roofs. Pp. 139–174 in Green Roof Ecosystems. Edited by R.K. Sutton. Springer, New York, U.S.A. http://dx.doi.org/10.1007/978-3-319-14983-7_6

Dvorak, B., **M.B. Byerley,** and A. Volder. 2013. Plant species survival on three water conserving green roofs in a hot humid subtropical climate. Journal of Living Architecture 1(1):39–53. https://goo.gl/BJrfMh

Dvorak, B., **M.B. Byerley,** and A. Volder. 2012. Plant species findings from three water conserving green roofs in Texas. Proceedings of CitiesAlive 2012, 10th Annual Green Roof and Wall Conference. 17–20 October, Chicago, Illinois, U.S.A.

Swadek, R.K. and **M.B. Byerley.** 2012. Prairie glades and barrens as ecological models for living roof systems: A case study. Contributed Oral Papers: Annual meeting of Ecological Society of America. 6–11 Aug, Portland, Oregon. https://goo.gl/tHZkNo

Diggs, G.M. Jr., B.L. Lipscomb, and **M.B. Byerley.** 2011. Ferns and lycophytes of Texas: a 55-year update. Abstract for poster presentation. Botany 2011. Annual meeting of the Botanical Society of America. 9–13 Jul, St. Louis, Missouri.

Neill, A.K., J.H. Best, J.P. Janovec, M.A. Tobler, W.E. Moen, T.F. Franklin, & **M.B. Byerley.** 2009. Recording and sharing annotations during two stages of museum specimen digitization: Apiary and Atrium. In Proceedings of TDWG 2009, 9–13 Nov, Montpellier, France. www.tdwg.org/fileadmin/2009conference/documents/PreProceedings2009.pdf.

Halward, T.M., D.A. Steingraeber, and **M.B. Byerley.** 2007. Principles of Plant Biology: A lab manual, 2nd ed., Thompson Brooks/Cole.

Halward, T.M., D. Weedman, and **M.B. Byerley.** 2007. Biology of Organisms: A lab manual, 3rd ed., Thompson Brooks/Cole.

Byerley, M.B. 2006. Patterns and consequences of floral formula variation in *Phlox* (Polemoniaceae). PhD Dissertation. Colorado State University, Fort Collins, Colorado, USA. http://goo.gl/bJ5stq

Carney, S.E., **M.B. Byerley,** and D.A. Holway. 2003. Invasive Argentine ants (*Linepithema humile*) do not replace native ants as seed dispersers of *Dendromecon rigida* (Papaveraceae) in California, USA. Oecologia 135:576–582. http://dx.doi.org/10.1007/s00442-003-1200-0

PUBLICATIONS (popular)

2017. B. Byerley Best. Book Review: Montana's Pioneer Botanists. J. Bot. Res. Inst. Texas 11(2):288.

2017. B. Byerley Best. Recycling Rocks! Phytophilia: Blog of the Botanical Research Institute of Texas. 14 Apr. http://brit.org/phytophilia/recycling-rocks

2016. B. Byerley Best. Best. Paper. Ever. Phytophilia: Blog of the Botanical Research Institute of Texas. 05 May. http://brit.org/phytophilia/best-paper-ever

2010. M.B. Byerley. Book Review—Chicle: The Chewing Gum of the Americas, From the Ancient Maya to William Wrigley. J. Bot. Res. Inst. Texas 4(1):496. https://biodiversitylibrary.org/page/48586555

2009. M.B. Byerley. Insert Clever Title Here. Iridos 20(2):18. http://www.brit.org/sites/default/files/public/Iridos/Iridos_20_2.pdf

2008. M.B. Byerley. Book Review—Natural Remedies of Arabia. J. Bot. Res. Inst. Texas 2(1):432. https://biodiversitylibrary.org/page/41650440

2007. M.B. Byerley. Book Review—Invasive Plants: Guide to Identification and Impacts and Control of Common North American Species. J. Bot. Res. Inst. Texas 1(2):846. https://biodiversitylibrary.org/page/34483122

INVITED PRESENTATIONS & WORKSHOPS

2017. Up There in the Air: Research Findings from BRIT's Living Roof. Bartlett Winter Client Workshop. Grapevine, Texas.

2017. Green Roofs in North Central Texas. Native Plant Society of Texas. Prairie Rose Chapter. Glen Rose, Texas.

2017. Notebooks, Journals, and Logs: Field Observations in the Modern World. Annual Texas Master Naturalist Conference. Corpus Christi, Texas.

2016. Introduction to Field Botany and Plant Taxonomy. Everman ISD 9th Grade Saturday School. Everman, Texas.

2012. Plant Species Findings from Three Water Conserving Green Roofs in Texas. CitiesAlive Green Roof and Wall Conference. Chicago, Illinois.

2010, 2011. Forensic Botany: Not as Gross as Maggots. Expanding Your Horizons. Annual regional science and mathematics conference for 7th and 8th grade girls. Texas Wesleyan University. With Tiana Franklin and Keri McNew. Fort Worth, Texas.

2008. Protecting Plants: Dung in the Jungle. Expanding Your Horizons. Annual regional science and mathematics conference for 7th and 8th grade girls. Texas Wesleyan University. With Tiana Franklin and Keri McNew. Fort Worth, Texas.

TEACHING EXPERIENCE

Public/Adult Education

- From Ooze to Orchid: The Evolution of Plants. Spring 2010. Texas Christian University Continuing Education Program.
- Botany 101: An Overview of Botany. Spring 2009, 2012, 2013. Texas Christian University Continuing Education Program.
- How to Collect, Press, and Mount Plants. Fall 2009. Texas Christian University Continuing Education Program.
- Spring Wildflowers 101. Spring 2017. BRIT Public Engagement Program.
- Notebooks, Journals, and Logs: Field Observations in the Modern World. Winter 2017. BRIT Public Engagement Program.

Undergraduate Education: Laboratory courses independently taught:

- Basic Concepts of Plant Life (non-majors)
- Principles of Plant Biology (majors)
- Biology of Organisms
- Developmental Biology
- Comparative Morphology of Vascular Plants
- Plant Identification

Undergraduate Education: Laboratory courses managed/coordinated:

- Attributes of Living Systems
- Cell Biology
- Principles of Animal Biology
- Plant Physiology

STUDENT MENTORING

Parker Boyce, Summer 2016, All Saints Episcopal School. Videography and editing of research presentations.

Sydney Jackson, Summer 2017, Austin College. Arthropods of BRIT Pocket Prairie: ground vs roof. Sample processing.

Kyle McBride, Fall 2012, El Centro College. Georeferencing of the BRIT Herbarium Fern Collection.

Haley Rylander, Fall 2016, Texas Christian University. Arthropod Diversity: In situ prairie versus prairie-style green roof. Sample processing and data analysis. http://brit.org/webfm_send/1457

Devin Spencer, Fall 2012, Texas Christian University. Arthropod Diversity: In situ prairie versus prairie-style green roof. Experimental setup and field sampling. http://brit.org/webfm_send/1457

Adam Ulissey, Summer 2012-Summer 2013, El Centro College. Arthropod Diversity of a Biomimicry-Based Extensive Green Roof. Experimental setup, field sampling, sample processing, data analysis. http://brit.org/webfm_send/1456

SOCIETY MEMBERSHIPS

Botanical Society of America, Council of Science Editors, Native Plant Society of Texas, Native Prairies Association of Texas, Society for the Preservation of Natural History Collections

COMMUNITY INVOLVEMENT

4-H / FFA Wildlife Management Contest, Fort Worth Stock Show and Rodeo; 4-H / FFA Range and Pasture Plant Identification Competition, Fort Worth Stock Show and Rodeo; Cross Timbers Urban Forestry Council; Fort Worth Pollinators Ambassadors; Fort Worth Regional Science and Engineering Fair; LLND Group (Living Laboratory Network Development); Planting Science classroom mentorship program; Texas Master Composters

JOURNAL REVIEWER

Journal of the Botanical Research Institute of Texas, Urban Naturalist