

Angela McDonnell, PhD

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SUMMARY

I am a broadly trained plant evolutionary biologist. My research is focused on using genomic techniques to understand evolution and population biology in a variety of flowering plant species including milkweeds, nightshades, and carnations. I aim to become a professor of botany and/or evolutionary biology.

EXPERIENCE

Postdoctoral Fellow, Chicago Botanic Garden; Glencoe, IL — 2019-Present

Wickett Lab; Hawaiian *Schiedea* genome assembly and evolutionary biology, *Castilleja*, *Oenothera*, and angiosperm phylogenomics and evolution

Postdoctoral Fellow, Bucknell University; Lewisburg, PA — 2017-2019

Martine Lab; Australian nightshade phylogenomics, evolution, taxonomy, and rare plant population genomics (*Erigenia*, *Baptisia*)

Graduate Research Assistant, Oklahoma State University; Stillwater, OK — 2011-2017

Fishbein Lab; milkweed phylogenomics, taxonomy

Curatorial Assistant, Oklahoma State University Herbarium; Stillwater, OK — 2011-2016

Specimen curation, databasing, imaging; loan processing; herbarium reorganization

Laboratory Technician, Monsanto; Middleton, WI — 2009-2010

Soy and cotton transformation

AWARDS

George R. Cooley award American Society of Plant Taxonomists best contributed paper in plant systematics, 2017

Best Graduate Paper of Academy Oklahoma Academy of Sciences Technical Meeting, 2016

Otto S. Cox Graduate Fellowship for Genetics Research Oklahoma State University Graduate College, 2015

Robberson Summer Fellowship Oklahoma State University Graduate College, 2013

Distinguished Graduate Fellowship, Oklahoma State University, 2012-2015

EDUCATION

Oklahoma State University, Stillwater, Oklahoma — Plant Science
PhD, 2017

Dissertation:

Edgewood College — Biology B.S., 2007

Minors: Philosophy and Environmental Studies

PUBLICATIONS

Articles submitted or in review

Cooper, B., Moore, M., Douglas, N., Wagner, W., Johnson, M., Overson, R., **McDonnell, A.**, Fant, J., Skogen, K., and Wickett, N. In review, *Systematic Biology*. Target enrichment and extensive population sampling help untangle the recent, rapid radiation of *Oenothera* sect. *Calylophus*. Preprint available on *bioRxiv*: <https://doi.org/10.1101/2021.02.20.432097>

Articles accepted or published

Gagnon, E., Hilgenhof, R., Orejuela, A., **McDonnell, A.**, Sablock, G., Aubriot, X., Giacomini, L., Gouvêa, Y., Bohs, L., Dodsworth, S., Maurin, O., Forest, F., Martine, C., Poczei, P., Knapp, S., and Särkinen, T. Accepted in *American Journal of Botany*. Phylogenomic data reveals hard polytomies across the backbone of the large genus *Solanum* (Solanaceae). Preprint available on *bioRxiv*: <https://www.biorxiv.org/content/10.1101/2021.03.25.436973v2>

Ndem-Galbert, J. R., Hall, J. E., **McDonnell, A. J.**, and Martine, C. T. 2021. Differential reward in “male” versus “female” pollen of functionally dioecious *Solanum*. *American Journal of Botany* 108(11): 2282– 2293. <https://doi.org/10.1002/ajb2.1765>

Wenzell, K., **McDonnell, A.**, Wickett, N., Fant, J., and Skogen, K. 2021. Incomplete reproductive isolation and low genetic differentiation despite floral divergence across varying geographic scales in *Castilleja*. *American Journal of Botany* 108(7). doi:10.1002/ajb2.1700

McDonnell, A., Moore, C., Schuette, S., and Martine, C. 2021. Population genomics of *Erigenia bulbosa* (Apiaceae), a rare plant in Pennsylvania. *International Journal of Plant Sciences* 182(5). doi:10.1086/713917

Moore, C., **McDonnell, A.**, Schuette, S., and Martine, C. 2021. Lepidopteran granivore reduces seed counts in a rare species of riparian scour prairies. *Natural Areas Journal* 41(1). doi:10.3375/043.041.0107

Cantley, J., **McDonnell, A.**, Branson, J., Kobara, J., Long, S., Garnett, W., and Martine, C. 2020. Temperate Eurasian origins of Hawaiian

- Chenopodium* (Amaranthaceae), plus description of a new species endemic to Moloka'i. *Systematic Botany* 45(3). doi:10.1600/036364420X15935294613473
- Hayes, D., Jordon-Thaden, I., **McDonnell, A.**, Cantley, J., & Martine, C. (2019) Integrated Pest Management (IPM) in the academic small greenhouse setting: A case study using *Solanum* spp. (Solanaceae). *Applications in Plant Sciences* 7(8): e11281.
- McDonnell, A.** J., Wetreich, H. B., Cantley, J. T., Jobson, P., & Martine, C. T. (2019). *Solanum plastisexum*, an enigmatic new bush tomato from the Australian Monsoon Tropics exhibiting breeding system fluidity. *PhytoKeys*. doi:10.3897/phytokeys.124.33526
- This paper was highlighted in 19 media outlets world wide, including the NY Times. Altmetric score of 519 as of September 2021.
- Martine, C., Jordon-Thaden, I., **McDonnell, A.**, Cantley, J., Hayes, D., Roche, M., Frawley, E., Gilman, I., and Tank, D. (2019) Phylogeny of the Australian *Solanum dioicum* group using seven nuclear genes, with consideration of Symon's fruit and seed dispersal hypotheses. *PLoS ONE*. doi: https://doi.org/10.1371/journal.pone.0207564
- Fishbein, M., Livshultz, T., Straub, S. C. K., Simões, A. O., Boutte, J., **McDonnell, A.**, & Foote, A. (2018). Evolution on the backbone: Apocynaceae phylogenomics and new perspectives on growth forms, flowers, and fruits. *American Journal of Botany*, 495-513. doi: doi:10.1002/ajb2.1067@10.1002/(ISSN)1537-2197.Tree-of-Life-virtual-issue
- McDonnell, A.**, Parks, M., & Fishbein, M. (2018). Multilocus Phylogenetics of New World Milkweed Vines (Apocynaceae, Asclepiadoideae, Gonolobinae). *Systematic Botany*, 43(1), 77-96. doi:10.1600/036364418X697021
- McDonnell, A.** & Fishbein, M. (2016). *Matelea hirtelliflora* (Apocynaceae), a new species of milkweed vine from Northeast Texas. *Systematic Botany*. 21(3). 781-786.
- McDonnell, A.** & Fishbein, M. (2016). *Polystemma canisferum* (Apocynaceae, Asclepiadoideae): a distinctive new gonloboid milkweed vine from Sonora, Mexico. *Phytotaxa*, 246(1). 78-84.
- McDonnell, A.**, M. Fishbein, M. Quinn, T. Hare, and K. Keith. (2015) *Matelea chihuahuensis* (Apocynaceae): An addition to the flora of the United States and a synopsis of the species. *Journal of the Botanical Research Institute of Texas*, 9(1), 187-194.
- McDonnell, A.** 2014. Non-twining milkweed vines of Oklahoma: an overview of *Matelea biflora* and *Matelea cynanchoides* (Apocynaceae). *Oklahoma Native Plant Record*, 1:67-79.
- Weitemier, K., Straub, S. C. K., Cronn, R. C., Fishbein, M., Schmickl, R., **McDonnell, A.**, & Liston, A. (2014). Hyb-Seq: Combining target

enrichment and genome skimming for plant phylogenomics. *Applications in Plant Sciences*, 2(9), apps.1400042. doi: 10.3732/apps.1400042

➤ This paper was highlighted in 5 news outlets. Altmetric score of 57 as of September 2021.

Articles in preparation

Moore, C., **McDonnell, A.**, Schuette, S., & Martine, C. Conservation genetics of *Baptisia australis* var. *australis*: understanding gene flow in imperiled Pennsylvania populations. Anticipated submission date: Fall 2021 to *Molecular Ecology*.

McDonnell, A., Sakai, A., Weller, S., Moore, M., Skogen, K., and Wickett, N. Hawaiian *Schiedea* transcriptomics, genome duplication, and development of the *Schiedea*1243 probe set. Anticipated submission date: Winter 2021.

McDonnell, A. & Fishbein, M. Phylogenomics and biogeography of American milkweed vines and resurrection of arid-adapted species of *Chthamalia* and Relatives. Anticipated submission date: Spring 2022.

McDonnell, A. & Martine, C. Phylogenomics and breeding system evolution of Australian *Solanum*. Anticipated submission date: Spring 2022 to *American Journal of Botany*.

Pokorny, L., Johnson, M., Dodsworth, S., **McDonnell, A.**, Maurin, O., Epitawalage, N., Bellot, S., Botigué, L., Brewer, G., Cowan, R., Eiserhardt, M., de la Estrella, M., Hidalgo, O., Kim, J., Larridon, I., Murphy, B., Pellicer, J., de Vos, J., Chase, M., Kersey, P., Wickett, N., Leitch, I., Forest, F., and Baker, W. Phylogenomic insight into the deep knots of flowering plant evolution. Anticipated submission date: Winter 2021 to *Proceedings of the National Academy of Sciences of the United States of America*.

Williams, T., Hayes, J., **McDonnell, A.**, Cantley, J., Jobson, P., and Martine, C. *Solanum scalarium*, a newly-described dioecious bush tomato from Judbarra National Park, Northern Territory, Australia. Anticipated submission date: Spring 2022.

Williams T., Antoine, A., McDonnell, A., Cantley, J., Jobson, P., and Martine, C. Population Genomics of the Australian sandstone escarpment endemic *Templetonia hookeri*. Anticipated submission date: Summer 2022.

Book Chapters

Fishbein, M. and **McDonnell, A.** Treatment of *Matelea*, in *Apocynaceae of New Mexico for the Flora of New Mexico*, to be published in 2021.

- Fishbein, M. and **McDonnell, A.** *In press*. Treatments for *Matelea*, *Pherotrichis*, and *Polystemma* for Flora of North America, to be published in Volume 14.
- Fishbein, M. and **McDonnell, A.** (2018). New Manual of Vascular Plants of Northeastern United States and Adjacent Canada, Apocynaceae treatment. New York Botanical Garden Press. doi: <http://dx.doi.org/10.21135/893275471.071>
- McDonnell, A.** 2015. Key to *Matelea*. In: Tyrl, R.J., S.C. Barber, P. Buck, W.J. Elisens, J.R. Estes, P. Folley, L.K. Magrath, C. L. Murray, B.A. Smith, C.E.S. Taylor, R.A. Thompson, J.B. Walker, and L.E. Watson. *Flora of Oklahoma: Keys and descriptions*. Flora Oklahoma Inc., Noble, Oklahoma.

Non-refereed Articles

- McDonnell, A.**, Baker, W.J., Dodsworth, S., Forest, F. Graham, S.W., Johnson, M.G., Pokorny, L., Tate, J., Wicke, S., and Wickett, N.J. 2021. Exploring Angiosperms353: Developing and applying a universal toolkit for flowering plant phylogenomics. *Applications in Plant Sciences* 9(7):10.1002/aps3.11443. doi:10.1002/aps3.11443.
- Baker, W.J., Dodsworth, S., Forest, F., Graham, S.W., Johnson, M.G., **McDonnell, A.**, Pokorny, L., Tate, J., Wicke, S., and Wickett, N.J. 2021. Exploring Angiosperms353: an open, community toolkit for collaborative phylogenomic research of flowering plants. 08(7):1059-1065. doi: 10.1002/ajb2.1703.
- McDonnell, A.** & Worcester, L. (2014) OSU Herbarium Specimens are Going Digital! *Gaillardia*, the Oklahoma Native Plant Society Newsletter.

TEACHING

Guest lecturer/Instructor, Northwestern University; Evanston, IL — 2020

BIOL SCI 378 guest lecturer in Functional Genomics

PBC 450 taught phylogenomics module of team-taught Field and Lab Methods in Plant Biology and Conservation course

Field Assistant Instructor, Bucknell University; Lewisburg, PA — Fall 2017

BIO 351, field botany

Teaching Assistant, Oklahoma State University; Stillwater, OK — 2010-2017

PBIO 4005/5003, Field Botany

Designed and taught lab course for four semesters; assisted with weekend field trips per; guest lectured on grasslands & interactive keys

PBIO 3114, Plant Taxonomy

Designed and taught 2-hour lab course

PBIO 1404, Plant Biology

Taught two lab sections for two semesters

BIOL 1114, Introductory Biology

Taught two lab sections for two semesters

SCIENCE COMMUNICATION, NONACADEMIC TEACHING

2020, Skype a Scientist

2012-2019, Master Planting Science Team Mentor, PlantingScience

2018, In Defense of Plants podcast, episode 145, Obscure

Apocynaceae Appreciation

2016 Science Club Instructor, "Natural History and Plants" Highland Park Elementary School, Stillwater, Oklahoma

2011, 2012 Instructor, National Lab Day, "Is there DNA in my food?"

SEMINARS & PRESENTATIONS

(presenting author in bold, student collaborators with *)

Invited Conference Symposia Presentations

McDonnell, A. and C. Martine. Phylogenomics informs breeding system evolution in Australian *Solanum* ("S. dioicum group", Solanaceae) Botany 2020 online, Angiosperms 353 Symposium. July 30, 2020.

McDonnell, A., Moore, C.*, Schuette, S., and **C. Martine**. A harbinger of good things to come in academic and non-academic partnerships: population genomics and conservation of *Erigenia bulbosa* (Apiaceae) in Pennsylvania. Botany 2019 At the Intersection of Applied and Academic Botany Symposium. Tucson, Arizona. July 31, 2019.

Moore, C.*, McDonnell, A., Schuette, S., and C. Martine. Assessing the conservation status of *Baptisia australis* var. *australis* in Pennsylvania through natural history and metapopulation lenses. Botany 2019 At the Intersection of Applied and Academic Botany Symposium. Tucson, Arizona. July 31, 2019.

Invited Seminars

- McDonnell, A.** and Wickett, N. An overview of molecular techniques used in plant evolutionary and conservation studies. Hawai'i Rare Plant Genetics Workshop. Online. October 25, 2021.
- McDonnell, A.**, Moore, C.*, Schuette, S., and Martine, C. Population genomics & conservation of *Erigenia bulbosa* (Apiaceae), an edge-of-range species in Pennsylvania. Pennsylvania Native Plant Society Annual Meeting. Online. September 12, 2020.
- McDonnell, A.** Phylogenomics of American milkweed vines (*& other evolutionary studies of other plants, too.) Chicago Botanic Garden Science Department Seminar Series. Glencoe, Illinois. January 17, 2020.
- McDonnell, A.** Phylogenomics of New World milkweed vines. Smithsonian Institution National Museum of Natural History, Phylopizza seminar series. Washington, D.C. May 28, 2019.
- McDonnell, A.** You are the expert: Tips for presenting your research and communicating about science. Oklahoma State University, Botany Graduate Student Organization. Stillwater, Oklahoma. October 26, 2018.
- McDonnell, A.** Milkweeds, eggplants, and (phylogenetic) trees: life as a plant evolutionary biologist. East Stroudsburg University. East Stroudsburg, Pennsylvania. April 6, 2018.
- McDonnell, A.** and Fishbein, M. Evolution of New World milkweed vines and delimitation of *Chthamalia*. Bucknell Department of Biology Seminar Series. Lewisburg, Pennsylvania. September 7, 2017.

Conference Oral Presentations

- McDonnell, A.**, Loke, E.*, Moore, M., Sakai, A.K., Weller, S.G., Wagner, W., Skogen, K., Weisenbberger, L., and Wickett, N. New perspectives on the evolution of plant breeding systems in the radiation of Hawaiian *Schiedea* (Caryophyllaceae). Botany 2021. Online. July 23, 2021.
- McDonnell, A.**, Moore, M., Sakai, A.K., Weller, S.G., and Wickett, N.; New perspectives on the evolution of plant breeding systems in the radiation of Hawaiian *Schiedea* (Caryophyllaceae). The Society for Integrative and Comparative Biology (SICB) meeting, special session on the Evolution and Biogeography of Islands: A Session in Honor of Dr. Vicki Funk. Online. February 26, 2021.
- Cantley, J.**, McDonnell, A., Branson, J.*, Kobara, J.*, Long, S.*, Garnett, W., and Martine, C. Temperate Eurasian origins of Hawaiian *Chenopodium* (Amaranthaceae), plus description of a new subspecies endemic to Moloka'i. The Society for Integrative and

Comparative Biology (SICB) meeting, special session on the Evolution and Biogeography of Islands: A Session in Honor of Dr. Vicki Funk. Online. February 26, 2021.

Moore, C.*, McDonnell, A., Schuette, S., and Martine, C. Granivory impacts on the Pennsylvania threatened species *Baptisia australis* var. *australis* (Fabaceae) The Society for Integrative and Comparative Biology (SICB) meeting. Online. January 3, 2021.

Martine, C. and McDonnell, A. “Males” that look “male” and “females” that look like “hermaphrodites”: Evolution of sexual systems in Australian nightshades. The Society for Integrative and Comparative Biology (SICB) meeting. Online. January 2, 2021.

McDonnell, A. and **Martine, C.** Sexual fluidity among the bush tomatoes: Prickly solanums of the Australian monsoon tropics. Solanaceae Genomics Network SOL International Online Meeting (SOLIOM). November 9, 2020.

Martine, C., McDonnell, A., Cantley, J., Jordon-Thaden, I., Gilman, I.*, and Jobson, P. Are leaky males the key to understanding breeding system transitions in Australian *Solanum*? Three Rivers Evolution Event (TREE). Pittsburgh, Pennsylvania. September 22, 2018.

McDonnell, A., Cantley, J., Jobson, P., and Martine, C. Population genomics of an edaphic radiation: andromonoecious *Solanum* in the Australian Monsoon Tropics. Botany 2018 Annual Meeting. Rochester, Minnesota. July 25, 2018.

Martine, C., McDonnell, A., Cantley, J., Jordon-Thaden, I., Gilman, I.*, and Jobson, P. Are leaky males the key to understanding breeding system transitions in Australian *Solanum*? Botany 2018 Annual Meeting. Rochester, Minnesota. July 25, 2018.

McDonnell, A. and Fishbein, M. Phylogenomics of New World milkweed vines (Apocynaceae, Gonolobinae). Three Rivers Evolution Event (TREE). Pittsburgh, Pennsylvania. September 9, 2017.

Martine, C., Cantley, J., McDonnell, A., Hayes, D.*, Diaz, N.*, Jobson, P., Frawley, E.*, and Lacey, M.* Biogeography, evolution, and diversification of the Australian monsoon tropics flora. Three Rivers Evolution Event (TREE). Pittsburgh, Pennsylvania. September 9, 2017.

McDonnell, A. and Fishbein, M. Phylogenomics of New World milkweed vines and resurrection of *Chthamalia*: a genome skimming and targeted enrichment approach. Botany 2017 Annual Meeting. Fort Worth, Texas. June 26, 2017.

*This presentation was awarded the American Society of Plant Taxonomists' **Cooley Award for best paper in plant systematics** at the annual meeting*

McDonnell, A. and Fishbein, M. A new spinypod from Northeast Texas, *Matelea hirtelliflora*, and a synopsis of its relatives. Oklahoma Academy of Sciences Technical Meeting. Tulsa, Oklahoma. November 4, 2016.

*This presentation was awarded the Oklahoma Academy of Sciences **Award for best paper presentation by a graduate student** at the annual meeting.*

McDonnell, A. and Fishbein, M. Phylogeny and evolution of the enigmatic flat milkweeds of *Matelea* subgenus *Chthamalia* (Asclepiadoideae, Gonolobinae). Botany 2016 Annual Meeting. Savannah, Georgia. August 1, 2016.

McDonnell, A. and Fishbein, M. Phylogeny and evolution of New World milkweed vines (Asclepiadoideae, Gonolobinae); a genome skimming approach. Botany 2016 Annual Meeting. Savannah, Georgia. August 1, 2016.

McDonnell, A. and Fishbein, M. Systematics & Evolution of New World milkweed vines. Oklahoma State University Research Week. Stillwater, Oklahoma. February 15, 2016.

McDonnell, A. and Fishbein, M. What's New in Gonolobinae? Systematics of American Milkweed Vines. Botany 2015 Annual Meeting. Edmonton, Alberta. July 27, 2015.

McDonnell, A. Turning Vines into (Phylogenetic) Trees: Evolution and Adaptation in Milkweed Vines. Oklahoma State University 3MT Competition. Stillwater, Oklahoma. February 28, 2015.

McDonnell, A. Non-twining Milkweed Vines of Oklahoma: An Overview of *Matelea biflora* and *Matelea cynanchoides* (Apocynaceae). Oklahoma Academy of Sciences Technical Meeting. Broken Arrow, Oklahoma. November 7, 2014.

McDonnell, A. and Fishbein, M. Evolution and Systematics of American Milkweed Vines. Botany 2014 Annual Meeting. Boise, Idaho. July 30, 2014.

McDonnell, A. and Fishbein, M. Turning Vines into Trees: Phylogenetic Assessment of American Milkweed Vines. Oklahoma State University Research Week. Stillwater, Oklahoma. February 20, 2014.

McDonnell, A. Turning Vines into Trees: Evolution and Systematics of the Enigmatic Milkweeds in *Matelea* subgenus *Chthamalia* (Apocynaceae). Oklahoma State University Department of Botany Fall Seminar Series. Stillwater, Oklahoma. November 14, 2012.

- McDonnell, A.** and Fishbein, M. Turning Vines into Trees; Phylogenetic Assessment of Gonolobinae (Apocynaceae). Oklahoma Academy of Sciences 2012 Technical Meeting. Edmond, Oklahoma. November 9, 2012.
- McDonnell, A.** and Fishbein, M. Turning Vines into Trees: A Phylogenetic Assessment of Generic Circumscription in Gonolobinae (Apocynaceae). Botany 2012 Annual Meeting. Columbus, Ohio. July 11, 2012.
- McDonnell, A.** and Fishbein, M. A Phylogenetic Analysis of American Milkweed Vines (Apocynaceae, Gonolobinae) Using Cloned Nuclear Conserved Orthologous Set II (COSII) Markers. Oklahoma State University 2012 Research Week Symposium. Stillwater, OK. February 22, 2012.
- McDonnell, A.** and Fishbein, M. Utility of COSII Markers for Phylogenetic Analysis of North American Milkweed Vines (Apocynaceae, Gonolobinae). Oklahoma State University BMBGSA Graduate Research Symposium. Stillwater, OK. September 23, 2011.
- McDonnell, A.** Non-twining milkweed vines: Evolution and Systematics of *Matelea* subgenus *Chthamalia* (Apocynaceae, Gonolobinae). Oklahoma State University Department of Botany Spring Seminar Series. Stillwater, OK. April 12, 2011.
- McDonnell, A.** and Fishbein, M. Utility of COSII Markers for Phylogenetic Analysis of North American Milkweed Vines (Apocynaceae, Gonolobinae) Botany 2011 Meeting. St. Louis, Missouri. July 9-13, 2011.

Conference Poster Presentations

- Hayes, J.***, Williams, T., McDonnell, A., Goad, R., Schuette, S., and Martine, C. Genetic diversity and connectivity of *Chasmanthium latifolium* (Poaceae) in Pennsylvania: the effect on conservation status. The Society for Integrative and Comparative Biology (SICB) meeting. Online. January 2, 2021.
- Davis, J.***, Moore, C.*, McDonnell, A., Schuette, S., and Martine, C.. What lies in the dark: cutting open *Baptisia australis* fruits in search of seed predators. Botany 2019. Tucson, Arizona. July 29, 2019.
- McDonnell, A.** and Fishbein, M. Phylogenomics and biogeography of New World milkweed vines (Apocynaceae, Gonolobinae) Evolution 2019. Providence, Rhode Island. June 23, 2019
- Moore, C.***, Schuette, S., McDonnell, A., and Martine, C. Status of *Baptisia australis* (Fabaceae) in Pennsylvania and the potential impact of escaped cultivated genotypes: preliminary

- observations. Three Rivers Evolution Event (TREE). Pittsburgh, Pennsylvania. September 22, 2018.
- Long, S.***, McDonnell, A., Cantley, J., and Martine, C. Molecular evidence for distinctiveness of two forms of the Hawaiian endemic *Chenopodium oahuense* (Amaranthaceae). Three Rivers Evolution Event (TREE). Pittsburgh, Pennsylvania. September 22, 2018.
- Ndem, J. Hall*, J. **McDonnell, A.**, and Martine, C. Differential reward in “male” versus “female” pollen of functionally dioecious *Solanum*. Botany 2018 Annual Meeting. Rochester, Minnesota. July 23, 2018.
- Long, S.***, McDonnell, A., Cantley, J., and Martine, C. Molecular evidence for distinctiveness of two forms of the Hawaiian endemic *Chenopodium oahuense* (Amaranthaceae). Botany 2018 Annual Meeting. Rochester, Minnesota. July 25, 2018.
- Hayes, D.***, McDonnell, A., Cantley, J., and Martine, C. Evolutionary significance of hybridization in Australian spiny *Solanum*: Evidence from interspecific greenhouse crossing studies. Botany 2018 Annual Meeting. Rochester, Minnesota. July 25, 2018.
- Moore, C.***, Scheutte, S., McDonnell, A., and Martine, C. Status of *Baptisia australis* (Fabaceae) in Pennsylvania and the potential impact of escaped cultivated genotypes: preliminary observations. Botany 2018 Annual Meeting. Rochester, Minnesota. July 25, 2018.
- Hayes, D.***, McDonnell A., Cantley, J., and Martine, C. Interspecies crossing rates infer importance of geographic barriers in Australian *Solanum* speciation. Three Rivers Evolution Event (TREE). Pittsburgh, Pennsylvania. September 9, 2017. (poster)
- Martine, C.**, Cantley, J., Jobson, P., McDonnell, A., Diaz, N.*, Frawley, E.*, Hayes, D.*, and Lacey, M.* Biogeography in the Australian Monsoon Tropics: Distribution and diversification of andromonoecious *Solanum* and other sympatric lineages. XIX International Botanical Congress. Shenzhen, China. July 27, 2017.
- McDonnell A.** and Fishbein, M. Phylogeny and evolution of New World milkweed vines (Asclepiadoideae, Gonolobinae: a genome skimming approach. Evolution 2016 Annual Meeting. Austin, Texas. June 18, 2016.
- McDonnell, A.** and Fishbein, M. Turning Vines into Trees: Phylogenetic Analysis of Milkweed Vines (Apocynaceae, Gonolobinae). Botany 2013 Annual Meeting. New Orleans, Louisiana. July 29, 2013.

McDonnell, A. and Fishbein, M. Turning Vines into Trees: Phylogenetic Analysis of Milkweed Vines (Apocynaceae, Gonolobinae). Evolution 2013 Annual Meeting. Snowbird, Utah. June 22, 2013.

McDonnell, A. and Fishbein, M. Utility of COSII Markers for Phylogenetic Analysis of American Milkweed Vines (Apocynaceae, Gonolobinae). Oklahoma State University 2011 Research Symposium. Stillwater, OK. February 23, 2011.

RESEARCH GRANTS

Society of Systematic Biologists, Mini-ARTS (Advancing Revisionary Taxonomy and Systematics) Grant, 2014 (\$2,500)

Botanical Society of America Graduate Student Research Grant, 2013 (\$500)

National Science Foundation Doctoral Dissertation Improvement Grant, 2013 (\$13,000)

American Society of Plant Taxonomists W. Hardy Eshbaugh Graduate Student Research Grant, 2013 (\$1,000)

McPherson Fund Travel Grant, Oklahoma State University Botany Department, 2013 (\$500)

Society of Herbarium Curators Student Research Grant (\$500)

The Systematics Association/Linnaean Society, Systematics Research Fund, 2011 (\$2,545)

Society of Systematic Biologists, Graduate Student Research Award, 2011 (\$1,700)

McPherson Fund Fieldwork Grant, Oklahoma State University Botany Department, 2011 (\$500)

SERVICE

2018-2020, American Society of Plant Taxonomists Public Relations Committee, Chair

2018-2020, International Code of Nomenclature for algae, fungi, and plants (ICN) special-purpose committee on DNA sequences as types, member

2017 Three Rivers Evolution Event (TREE) meeting poster judge.

2014-2018, Botanical Society of America Investments Committee, Member

2014-2018, American Society of Plant Taxonomists Public Relations Committee, Member & Diversity Liaison

2015-2016 Representative, Oklahoma State University Graduate and Professional Student Government Association

2014-2016 Student Representative, Botanical Society of America Board of Directors

2014-2015 Secretary, Oklahoma State University Botany Graduate Student Organization

2013-2015 Treasurer, Oklahoma State University Botanical Society
2012 PLANTS Mentor, Botanical Society of America
2011, 2012 Vice President, Oklahoma State University Botanical Society
2011, 2012 Organizer, Botany Department Graduate Student Writing Group
2011-2012 Student Representative, Botany Department Faculty Meetings

MENTORING

Chicago Botanic Garden

Elena Loke, current NU MS student
MS thesis committee member
Targeted enrichment and species-level phylogeny of *Schiedea*
Nora Gavin-Smyth, current NU PhD student
Bioinformatics of *Impatiens*
Katie Wenzell, NU PhD, '21
Population genomics and morphology of *Castilleja*

Bucknell University

Cheyenne Moore, Bucknell, '20
M.S. committee member, Thesis:
Baptisia australis var. *australis* in Pennsylvania: A survey of granivory and population genomics
Jon Hayes, Bucknell '21
Chasmanthium population genomics
Heather Wetreich, Bucknell '21
New species description
Ariel Antoine, Bucknell '20
Population genomics of *Templetonia*
Jenny Davis, Bucknell '20
Seed predation of *Baptisia*
Jenna Hosker, Bucknell '20
Lab skills, DNA extraction
Charlie Scales, Bucknell '20
Lab skills, DNA extraction
Stephanie Harper, Bucknell '19
Lab skills, DNA extraction, PCR
Raphy Valera, Bucknell '19
Lab skills, DNA extraction
Daniel Hayes, Bucknell '18
Honor's thesis committee member, Thesis: Ex situ interspecies crossing rates infer importance of geographic barriers in

speciation among closely related *Solanum* species of the Australian monsoon tropics

Oklahoma State University

Kayleigh Crane, OSU '19

Lab skills, DNA extraction, Illumina library preparation

Julia Sealock, OSU '17

Lab skills, DNA extraction, Illumina library preparation

Jeremy Schallner OSU '16

Lab skills, DNA extraction, cloning

Ben Haack, OSU '13

Lab skills, DNA extraction, cloning

Zoe Dinges OSU '13

Lab skills, DNA extraction, cloning

MANUSCRIPT & GRANT PROPOSAL REVIEWS

Molecular Ecology Resources, 2022

Guest Editor, Applications in Plant Sciences special issue: Exploring the Potential of Angiosperms353, a Universal Toolkit for Flowering Plant Phylogenomics, 2020-2021 (1)

Guest Editor, American Journal of Botany special issue: Exploring the Potential of Angiosperms353, a Universal Toolkit for Flowering Plant Phylogenomics, 2020-2021 (2)

Society of Herbarium Curators Graduate Student Research Awards, 2019

Journal of Systematics and Evolution, 2019 (1)

Frontiers in Plant Sciences, Review Editor in Plant Systematics and Evolution, 2018, 2019 (4), 2021, 2022

American Society of Plant Taxonomists Graduate Student Research Awards, 2017, 2018, 2019

American Journal of Botany, 2018 (2)

Applications in Plant Sciences, 2017 (1), 2018 (1)

Systematic Botany, 2017 (1)

NSF Division of Environmental Biology, ad hoc reviewer, 2017 (1)

Phytotaxa, 2015 (1), 2016 (1)

Neotropical Biodiversity, 2016 (1)

FIELD EXPERIENCES

- June 2018: Ohio, USA; *Baptisia*
- September 2018: Pennsylvania, Maryland, and West Virginia, USA; *Matelea*
- May & June 2018: Northern Territory, Australia; *Solanum*, *Grevillea*, *Templetonia*, and other taxa

- Throughout 2016: Texas, USA; *Matelea*, *Chthamalia*
- Throughout 2015: Texas, USA; *Matelea*, *Chthamalia*
- August 2014: Chihuahua and Sonora, Mexico; *Matelea*, *Chthamalia*, *Pherotrichis*
- Throughout 2014: Texas and Oklahoma, USA; *Matelea*, *Chthamalia*
- Throughout 2013: Kansas, Louisiana, Texas, Utah, and Oklahoma, USA; *Asclepias*, *Matelea*, *Chthamalia*
- July & August 2012: Michoacán, Jalisco, Aguascalientes, and Durango, Mexico; *Matelea*, *Chthamalia*, *Pherotrichis*
- Throughout 2011: Oklahoma and Texas, USA; *Matelea*, *Chthamalia*
- Throughout 2008: Wisconsin, USA; Vegetation surveys
- January 2005: Bluefields, Nicaragua; Vegetation surveys
- January & February 2004: Florida, USA; General surveys

WORKSHOPS ATTENDED

Grasses of the Mid-Atlantic Workshop at Pennsylvania Botany meeting in State College, PA. November 2 2018.

Data Carpentry Workshop at Oklahoma State University in Stillwater, OK. December 10-11 2015.

R Basics Workshop at Missouri Botanical Garden in St. Louis, MO. May 18-20, 2015.

Software Carpentry Workshop at Oklahoma State University in Stillwater, OK. May 27-28, 2015.

University of Texas at Austin Symposium and Workshop on New Methods for Phylogenomics and Metagenomics in Austin, TX. February 2013.

Bioinformatics of Entangled Genomes Workshop at Oklahoma State University in Stillwater, OK. August 2012.

TORCH Specify Databasing Workshop held by the Texas/Oklahoma Regional Consortium of Herbaria at the University of Oklahoma Biological Station in Kingston, OK. May 2012

TORCH Herbarium Digitization Workshop held by the Texas/Oklahoma Regional Consortium of Herbaria in Junction, TX. April 2011.

PROFESSIONAL MEMBERSHIPS

- American Society of Plant Taxonomists
- Botanical Society of America
- Society of Herbarium Curators
- Society of Systematic Biologists
- Society for the Study of Evolution
- Society for Conservation Biology
- American Society of Naturalists

- International Association of Plant Taxonomists

OTHER SKILLS

Adobe Illustrator and Photoshop: intermediate

R: intermediate

bash: intermediate

python: beginner

REFERENCES

Norm Wickett — 847-835-8280 — nwickett@chicagobotanic.org

Chris Martine — 570-577-1135 — ctm015@bucknell.edu

Mark Fishbein — 405-744-4757 — mark.fishbein@okstate.edu

Linda Watson — 405-744-5559 — linda.watson10@okstate.edu