

CONTACT INFORMATION	Biological Sciences Box 43131 Lubbock, TX 79409	Texas Tech University matt.johnson@ttu.edu website: mossmatters.com
RESEARCH INTERESTS	Genomic approaches to the origin and maintenance of bryophyte biodiversity.	
EDUCATION	Ph.D. Duke University, Durham, NC Dissertation: “Evolution of Mating Systems in <i>Sphagnum</i> peatmosses” B.S. with distinction , Duke University, Durham, NC Honors Thesis: “Genetic relationships within <i>Sphagnum cribrosum</i> Lind. “wave form” and “normal form” in southeastern North Carolina using three anonymous nuclear genes.”	May, 2013 May 2006
PROFESSIONAL APPOINTMENTS	Assistant Professor Biological Sciences Texas Tech University Director E.L. Reed Herbarium Postdoctoral Research Associate Plant Science and Conservation Research Center Chicago Botanic Garden Supervisor: Norman Wickett, Ph.D	September 2017 to present September 2017 to present June 2013 to August 2017
PUBLICATIONS	Journal Articles (16 total, 7 first-author) <ol style="list-style-type: none"> 1. M.G. Johnson, E.M. Gardner, Y. Liu, R. Medina, B. Goffinet, A.J. Shaw, N.J.C. Zerega, and N.J. Wickett. 2016. “HybPiper: Extracting coding sequence and introns for phylogenetics from high-throughput sequencing reads using target enrichment.” <i>Applications in Plant Sciences</i>. 4(7):1600016 doi:10.3732/apps.1600016. 2. E.M. Gardner, M.G. Johnson, D. Ragone, N.J. Wickett, and N.J.C. Zerega. 2016. “Low-coverage, whole-genome sequencing of <i>Artocarpus camansi</i> (Moraceae) for phylogenetic marker development and gene discovery.” <i>Applications in Plant Sciences</i> 4(7):1600017. doi:10.3732/apps.1600017. 3. N. Brandley, M.G. Johnson, and S. Johnsen. 2016. “Aposematic signals in North American black widows are more conspicuous to predators than to prey.” <i>Behavioral Ecology</i>. Published Online 27 February 2016. doi:10.1093/beheco/arw014 4. M.G. Johnson and A.J. Shaw. 2016. “The effects of quantitative fecundity in the haploid stage on reproductive success and diploid fitness in the aquatic peat moss <i>Sphagnum macrophyllum</i>.” <i>Heredity</i>. 116:523-530. doi:10.1038/hdy.2016.13. 5. M.G. Johnson, C. Malley, A.J. Shaw, B. Goffinet, and N.J. Wickett. 2016. “A phylotranscriptomic analysis of gene family expansion and evolution in the largest order of pleurocarpous mosses (Hypnales, Bryophyta).” <i>Molecular Phylogenetics and Evolution</i>. 98:29-40. doi:10.1016/j.ympev.2016.01.008 6. N. Devos, P. Szovenyi, D. Weston, C. Rothfels, M.G. Johnson, and A.J. Shaw. 2016. Analyses of transcriptome sequences reveal multiple ancient large-scale duplication events in the ancestor of Sphagnopsida (Bryophyta). <i>New Phytologist</i> 211(1):300-318. doi:10.1111/nph.13887. 	

7. **M.G. Johnson**, K. Lang, P. Manos, G.H. Golet, and K.A. Schierenbeck. 2016. "Evidence for genetic pollution of a California native tree, *Platanus racemosa*, via recent, ongoing introgressive hybridization with an introduced ornamental species." *Conservation Genetics*. 17(3):593-602. doi:10.1007/s10592-015-0808-z.
 8. **M.G. Johnson** and A.J. Shaw. 2015. "Genetic diversity, sexual condition, and microhabitat preference determine mating patterns in *Sphagnum* (Sphagnaceae) peat-mosses." *Biological Journal of the Linnean Society*. 115(1):96-113. doi:10.1111/bij.12497
 9. **M.G. Johnson**, G. Granath, T. Tahvanainen, R. Pouliot, H. Stenoien, L. Rochefort, H. Rydin, and A.J. Shaw. 2015. "Evolution of niche preference in *Sphagnum* peat mosses" *Evolution*. 69(1) 90-103. doi:10.1111/evo.12547
 10. E. Mikulaskova, M. Hajek, A. Veleba, **M.G. Johnson**, T. Tomas, and A.J. Shaw. 2015. "Local adaptations in bryophytes revisited: the genetic structure of the calcium-tolerant peatmoss *Sphagnum warnstorffii* along geographic and pH gradients." *Ecology and Evolution*. 5(1) 229-242. doi:10.1002/ece3.1351
 11. A.J. Shaw, B. Shaw, **M.G. Johnson**, N. Devos, H. Stenoien, K.I. Flatberg, and B.E. Carter. 2015. "Phylogenetic structure and biogeography of the Pacific Rim clade of *Sphagnum* subgen. *Subsecunda*: haploid and allopolyploid taxa." *Biological Journal of the Linnean Society*. 116(2): 295-311. doi:10.1111/bij.12586
 12. A.J. Shaw, B. Shaw, **M.G. Johnson**, M. Higuchi, T. Arikawa, Y. Hirayama, and N. Devos. 2013. "Origins, genetic structure, and systematics of the narrow endemic peatmosses (*Sphagnum*): *S. triseriporum* and *S. calymmatophyllum* (Sphagnaceae)". *American Journal of Botany*. 100(6) 1202-1220. doi:10.3732/ajb.1200630
 13. **M.G. Johnson**, B. Shaw, P. Zhou, and A.J. Shaw. 2012. "Genetic analysis of the peatmoss *Sphagnum cribrosum* indicates indepent origins of an extreme infra-specific morphology shift." *Biological Journal of the Linnean Society*. 106(1):137-153. doi:10.1111/j.1095-8312.2012.01842.x
 14. A.J. Shaw, K.I. Flatberg, P. Szovenyi, M. Ricca, **M.G. Johnson**, H. Stenoiein, and B. Shaw. 2012. "Systematics of the *Sphagnum fimbriatum* complex: phylogenetic relationships, morphological variation, and allopolyploidy." *Systematic Botany*. 37:36-50. doi:10.1600/036364412X616585
 15. M. Ricca, P. Szovenyi, E. Temsch, **M.G. Johnson**, and A.J. Shaw. 2011. "Interploidal hybridization and mating patterns in *Sphagnum subsecundum* complex. *Molecular Ecology*. 20(15): 3202-3218. doi:10.1111/j.1365-294X.2011.05170.x
 16. M. Ramaliya*, **M.G. Johnson**, J. Heinrichs, J. Hentschel, M. von Konrat, P. Davison, B. Shaw, and A.J. Shaw. 2010. "Morphologically cryptic biological species within the liverwort *Frullania asagrayana*." *American Journal of Botany*. 97:1707-1718. doi:10.3732/ajb.1000171
- (*Undergraduate Student)

AWARDS

Academic Awards

Harold Sanford Perry Prize (\$5,500)	May 2013
– Annual departmental cash award for the best dissertation in Plant Sciences.	
– Students are nominated and selected by Duke Biology faculty.	
Duke Biology Department Grant-in-Aid of Research (\$500)	June 2012
E. Bayard Halsted Scholarship (\$19,836)	August 2010
Sigma Xi Grant-in-Aid of Research (\$1,000)	December 2009

PRESENTATIONS **Invited Seminars**

Phylotranscriptomic analysis reveals widespread gene duplication associated with the radiation of pleurocarpous mosses
XIX International Botanical Congress, Shenzhen, China July 2017

Building a better tree and using it wisely: Phylogenomic approaches in non-model organisms
Chicago Plant Science Symposium, Field Museum April 2017

Building a better tree and using it wisely: Phylogenomic approaches in non-model organisms
University of Connecticut Biology Forum March 2017

Targeted Exon Sequencing in Non-Model Organisms: Best Practices for Probe Design and Data Analysis with HybPiper
PAG XXV, MycroArray Session January 2017

Introns, Paralogs, and Ditching the Bootstrap: Targeted Sequencing with HybPiper
University of Florida PopBio Seminar Series September 2016

Phylotranscriptomic insights into the radiation of mosses
2nd International Symposium on Pleurocarpous Mosses. Bonn, Germany June 2016

Evolution of niche preferences in *Sphagnum*
New Phytologist *Sphagnum* genomics meeting, invited participant April 2016

Ecological genomics in peatlands: the rise of *Sphagnum* as a model system
University of Chicago *Darwin's Weekly* Seminar Series February 2016

Reconstructing the ancestral gene set of bryophytes from comparative transcriptomes
PAG XXIV, Non-Seed Plant Section, San Diego, CA January 2016

Another abominable mystery: using phylogenomics to explore the radiation of mosses
University of Wisconsin Biology Colloquium March 2015

Scaling evolution from genomes to ecosystem in peatmosses (*Sphagnum*)
NESCent Catalysis Meeting, invited participant October 2014

What can phylogenetics teach us about peatland ecology?
Symposium: The evolution and ecology of aquatic bryophytes.
American Bryological and Lichenological Society Botany Conference, July 2014

Scientific Meetings

Botanical Society of America, Savannah, GA July 2016
Colloquium Presentation: A re-evaluation of ancient horizontal transfer in bryophytes using comparative transcriptome data.

Botanical Society of America, Edmonton, AB July 2015
Oral Paper: Phylotranscriptomic insights into the radiation of pleurocarpous mosses.

Botanical Society of America, Boise, ID July 2014
Oral Paper: Constructing phylogenetic datasets with bait-capture data without a genome: strategies and challenges.

Botanical Society of America, New Orleans, LA July 2013
Oral Paper: The relationship between mating patterns, sexual condition, and microhabitat preference in *Sphagnum*

American Society of Human Genetics, San Francisco, CA November 2012
Poster: Comparison of phylogenetic and haplotype methods for the study of genotype-phenotype association in genome-wide studies.

TEACHING EXPERIENCE

Guest Lectures

“Introduction to R” October 2012
Practical Bioinformatics (BIO 313, Duke University)
 Carrie Olson-Manning, Instructor

Teaching Assistant, Duke University Biology Department
 BIO 212L Microbiology Spring 2009, Fall 2012, Spring 2013
 BIO 26L Organismal Diversity Summer 2010

MENTORING

- Claire Malley, Northwestern University M.S. 2015
- Colby Witherup, Northwestern University Ph.D. Student

Students Mentored

SERVICE

Organizer, HybSeqWorkshop, Royal Botanical Gardens, Kew May 2017

- Invited workshop on wet lab and dry lab approaches in targeted sequencing.
- Tutorials and presentations freely available:
<http://github.com/mossmatters/KewHybSeqWorkshop>

Organizer, Seed-Free Plants at the Genomic Scale July 2016
– Colloquium focusing on the applications of genomic data in non-model plant systems, with an emphasis on work of early-career scientists.

- Sponsored by the American Bryological and Lichenological Society and the American Fern Society at Botany 2016.

Organizer, Species Tree Discussion Group Fall 2012 and Spring 2014
– Prepared literature list, annotated bibliography, and software demonstrations.
– Held at Duke University (2012) and Chicago Botanic Garden (2014).

- *Annals of Botany, American Journal of Botany, Biological Journal of the Linnean Society, The Bryologist, Heredity, International Journal of Plant Sciences, Molecular Phylogenetics and Evolution, Organismal Diversity and Evolution, Taxon.*

- American Bryological and Lichenological Society, American Society of Naturalists, Botanical Society of America