

YA YANG

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[Google Scholar profile](#)

EDUCATION

- 2012 Ph.D. in Ecology and Evolutionary Biology, University of Michigan, Ann Arbor
2005 B.S. in Biology, Peking University

ACADEMIC APPOINTMENTS

- 2016– Assistant Professor, Department of Plant and Microbial Biology, University of Minnesota
2016– Curator, University of Minnesota Herbarium (MIN)
2012–2016 Postdoctoral Fellow, University of Michigan
2006–2011 Graduate Student Teaching, Research, and Curatorial Assistant, University of Michigan

Other academic affiliations at University of Minnesota:

- 2017– Full Member, Microbial and Plant Genomics Institute
2017– Graduate Faculty, Ecology, Evolution, and Behavior Graduate Program
2016– Graduate Faculty, Plant and Microbial Biology Graduate Program

RESEARCH SUPPORT

- 2018–2019 NSF Digitization TCN: Collaborative: Digitizing “Endless forms most beautiful and most wonderful”: Facilitating Research on Imperiled Plants with Extreme Morphologies. \$38,780 subaward to University of Minnesota.

AWARDS & FELLOWSHIPS

- 2012 Peter Buck Postdoctoral Fellowship, Smithsonian National Museum of Natural History (declined to accept the postdoc position at University of Michigan)
2010 McBryde Fellowship, National Tropical Botanical Garden (\$10,000)
2008 Winifred B. Chase Fellowship, University of Michigan (\$1,500)
2006 Rackham Graduate Student Research Grant, University of Michigan (\$1,500)

PUBLICATIONS

Lab members in bold

2018 and forthcoming

22. **Mohn, R.**, N. Garcia, **Y. Yang**, and C.-B. Chen. Atypical centromeres and their impacts on plant chromosome architecture and evolution. In review.
21. **Chen L.-Y.**, **D.F. Morales-Briones**, C.N. Passow, **Yang Y.** Performance of gene expression analyses using de novo assembled transcripts in polyploid species. In review.
20. Wang N., **Y. Yang**, M.J. Moore, S.F. Brockington, J.F. Walker, J.W. Brown, B. Liang, T. Feng, C. Edwards, J. Mikenas, J. Olivieri, V. Hutchison, A. Timoneda, T. Stoughton, R. Puente, L. Majure, Urs Eggli, and S.A. Smith. Evolution of Portulacineae marked by gene tree conflict and gene family expansion associated with adaptation to harsh environments. In revision.
19. Yang, Y., C.W. Morden, M.J. Sporck-Koehler, L. Sack, W.L. Wagner, and P.E. Berry. Repeated range expansion and niche shift in a volcanic hotspot archipelago: radiation of C4 Hawaiian Euphorbia (Euphorbiaceae). *Ecology and Evolution*. doi:10.1002/ece3.4354
18. Walker, J.F., **Y. Yang**, T. Feng, A. Timoneda, J. Mikenas, V. Hutchison, C. Edwards, N. Wang, S. Ahluwalia, J. Olivieri, N. Walker-Hale, L.C. Majure, R. Puente, G. Kadereit, M. Lauterbach, U. Eggli, H. Flores-Olvera, H. Ochoterena, S.F. Brockington, M.J. Moore, and S.A. Smith. From cacti to carnivores: Improved phylotranscriptomic sampling and hierarchical homology inference provides further insight to the evolution of Caryophyllales. *American Journal of Botany*. 105(3):446–462
17. McKain, M.R., M.G. Johnson, S. Uribe-Convers, D. Eaton, and **Y. Yang**. Practical considerations for plant phylogenomics. *Applications in Plant Sciences* 6(3): e1038.
16. Lopez-Nievesa, S., **Y. Yang**, A. Timoneda, M.-M. Wang, T. Feng, S.A. Smith, S.F. Brockington, and H.A. Maeda. 2018. Relaxation of tyrosine pathway regulation underlies the evolution of betalain pigmentation in Caryophyllales. *New Phytologist* 217(2): 896–908.
15. **Yang, Y.**, M.J. Moore, S.F. Brockington, J. Mikenas, J. Olivieri, J.F. Walker, and S.A. Smith. 2018. Improved transcriptome sampling pinpoints 26 ancient and more recent polyploidy events in Caryophyllales, including two allopolyploidy events. *New Phytologist*. 217(2): 855–870.
14. Smith, S.A., J.W. Brown, **Y. Yang**, R. Bruenn, C.P. Drummond, S.F. Brockington, J.F. Walker, N. Last, N.A. Douglas, and M.J. Moore. 2018. Disparity, diversity, and duplications in the Caryophyllales. *New Phytologist* 217(2): 836–854.

2017

13. Walker, J.F., **Y. Yang**, M.J. Moore, J. Mikenas, A. Timoneda, S.F. Brockington, and S.A. Smith. Widespread paleopolyploidy, gene tree conflict, and recalcitrant relationships among the carnivorous Caryophyllales. *American Journal of Botany*. 104(6): 858–867
12. **Yang, Y.**, M.J. Moore, S.F. Brockington, A. Timoneda, T. Feng, H.E. Marx, J.F. Walker, and S.A. Smith. An efficient field and laboratory workflow for plant phylotranscriptomic projects. *Applications in Plant Sciences* 5(3):1600128.

2016 and earlier (before arriving at University of Minnesota)

11. Smith, S.A., M.J. Moore, J.W. Brown, and **Y. Yang**. 2015. Analysis of phylogenomic datasets reveals conflict, concordance, and gene duplications with examples from animals and plants. *BMC Evolutionary Biology*. 15:150. doi:10.1186/s12862-015-0423-0. *Highly accessed
10. Brockington S.F.*, **Y. Yang***, F. Gandia-Herrero, S. Covshoff, J.M. Hibberd, R.F. Sage, G.K.-S. Wong, M.J. Moore, and S.A. Smith. 2015. Lineage-specific gene radiations underlie the evolution of novel betalain pigmentation in Caryophyllales. *New Phytologist*. 207(4) 1170–1180 *Co-first author. Highlighted in New Phytologist by David L. Des Marais
9. **Yang, Y.**, M.J. Moore, S.F. Brockington, D.E. Soltis, G.K.-S. Wong, E.J. Carpenter, Y. Zhang, L. Chen, Z.-X. Yan, Y.-L. Xie, R.F. Sage, S. Covshoff, J.M. Hibberd, M.N. Nelson, and S.A. Smith. 2015. Dissecting molecular evolution in the highly diverse plant clade Caryophyllales using transcriptome sequencing. *Molecular Biology and Evolution* 32(8): 2001–2014.
8. **Yang, Y.** and S.A. Smith. 2014. Orthology inference in non-model organisms using transcriptomes and low-coverage genomes: improving accuracy and matrix occupancy for phylogenomics. *Molecular Biology and Evolution* 31(11):3081–3092.
7. Horn, J.W., Z.-X. Xi, R. Riina, J.A. Peirson, **Y. Yang**, B.L. Dorsey, P.E. Berry, C.C. Davis, and K.J. Wurdack. 2014. Evolutionary bursts in the *Euphorbia* (Euphorbiaceae) are linked with photosynthetic pathway. *Evolution*. 68(12):3485–3504
6. Yang, X.-X, **Y. Yang**, C.-J. Ji, T. Feng, Y. Shi, L. Lin, J.-J. Ma, and J.-S. He. 2014. Large-scale patterns of stomatal traits in Tibetan and Mongolian grassland species. *Basic and Applied Ecology* 15(2):122–132
5. **Yang, Y.** and S.A. Smith. 2013. Optimizing de novo assembly of short-read RNA-seq data for phylogenomics. *BMC Genomics* 14:328. doi:10.1186/1471-2164-14-328. *Highly accessed
4. **Yang, Y.**, R. Riina, J.J. Morawetz, T. Haevermans, X. Aubriot, and P.E. Berry. 2012. Molecular phylogenetics and classification of *Euphorbia* subgenus *Chamaesyce*. *Taxon* 61(4): 764–789
3. **Yang, Y.** and P.E. Berry. 2011. Phylogenetics of the Chamaesyce clade (*Euphorbia*, Euphorbiaceae): reticulate evolution and long-distance dispersal in a prominent C₄ lineage. *American Journal of Botany* 98(9):1486–1503
2. Berry, P.E., V.W. Steinmann, and **Y. Yang**. 2011. Proposal to conserve the name *Euphorbia acuta* Engelm. against *Euphorbia acuta* Bellardi ex Colla (Euphorbiaceae). *Taxon* 60 (2):603–604
1. Hendry, T.A., B. Wang, **Y. Yang**, E.C. Davis, J.E. Braggins, R.M. Schuster, and Y.-L. Qiu. 2007. Evaluating phylogenetic positions of four liverworts from New Zealand, *Neogrollea notabilis*, *Jackiella curvata*, *Goebelobryum unguiculatum* and *Herzogianthus vaginatus*, using three chloroplast genes. *The Bryologist* 110:738–751

Book chapter

- Berry, P.E., J.A. Peirson, J.J. Morawetz, V.W. Steinmann, R. Riina, **Y. Yang**, D. Geltman, & N.I. Cacho. *Euphorbia*. 2016. Flora of North America Editorial Committee, eds. *Flora of North America North of Mexico*. Vol. 12. 240–324. New York and Oxford.

TEACHING

University of Minnesota*Instructor*

Spring 2018 BIOL 2022: General Botany (3 credits, 74 students). With John Ward

Fall 2017 EEB 8990, section 002: Introduction to Phylogenetics: Building and Using Trees (1 credit, 8 students). With Keith Barker.

Collaborative Efforts and Activities

2017 Guest lecture in BIOL 1020 Biology Colloquium

University of Michigan

2006–2011 Graduate Student Instructor

BIO 305 Genetics (discussion, ×1)

BIO 230 Plant Biology (lab, discussion and field trips, ×2)

BIO 162/171/173 Introductory Biology (lab and discussion, ×4)

Training in Pedagogy

2005 Trainee in a three-week intensive Graduate Student Instructor training program “Teaching and Classroom Communication”, University of Michigan

MENTORING

Post-doctoral Fellows:

2017– Diego Morales-Briones

2017– Lingyun Chen

Graduate Students:*Doctoral Dissertations Directed*

2017– Rebekah Mohn (Plant and Microbial Biology)

Doctoral Committees Served on

2017– Zacky Ezedin (Plant and Microbial Biology)

Undergraduate Students:

2015–2016 Sonia Ahluwalia (U of Michigan) Gene family evolution in plant carnivory

2015 Julia Olivieri (Oberlin College) Transcriptome lab techniques

2007 Rebecca Povilus (U of Michigan) Field collection in Texas

PRESENTATIONS

Invited seminar presentations

- 2017 Dept. of Biology, University of Idaho, Boise, ID
- 2017 Dept. of Horticultural Science, University of Minnesota, Twin Cities, MN
- 2017 Wuhan Botanical Garden, Chinese Academy of Sciences, Wuhan, China
- 2017 Microbial and Plant Genome Institute, University of Minnesota, Twin Cities, MN
- 2017 Dept. of Ecology, Evolution, and Behavior, University of Minnesota, Twin Cities, MN
- 2016 Dept. of Plant Biology, University of Minnesota, Twin Cities, MN
- 2016 Dept. of Biological Sciences, University of Alabama, Tuscaloosa, AL
- 2016 Dept. of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN
- 2015 National Center for Integrative Biomedical Informatics Tools and Technology seminar series, Ann Arbor, MI

Invited conference presentations

- 2018 Botany, Rochester, MN
- 2018 Plant & Animal Genome Conference (PAG) XXVI, San Diego, CA
- 2017 XIX International Botanical Congress, Shenzhen, China
- 2015 Botany, Edmonton, Alberta, Canada
- 2014 Botany, Boise, ID

Contributed conference oral presentations

- 2018 Caryophyllales 2018, Mexico City, Mexico
- 2017 Society of Systematic Biologists standalone meeting, Baton Rouge, LA
- 2016 Botany, Savanna, GA
- 2016 Evolution, Austin, TX
- 2014 Evolution, Raleigh, NC
- 2013 Society for Molecular Biology and Evolution, Chicago, IL
- 2011 XVIII International Botanical Congress, Melbourne, Australia
- 2011 Evolution, Norman, OK
- 2009 Botany and Mycology, Snowbird, UT
- 2008 Botany, Vancouver, British Columbia, Canada
- 2007 Botany and Plant Biology, Chicago, IL

Contributed conference poster presentations

- 2015 Joint Fall Symposium of Donald Danforth Plant Science Center & Missouri Botanical Garden, St. Louis, MO
- 2013 Mcubed Symposium, Ann Arbor, MI

FIELD EXPERIENCE

- 2015 Southwestern USA (3.5 weeks). Collecting Caryophyllales with Michael Moore, Helga Ochoterena, Hilda Flores-Olvera and Tommy Stoughton
- 2014 Northern Mexico (2 weeks). Collecting Caryophyllales with Michael Moore, Helga Ochoterena, Hilda Flores-Olvera and Angelica Vazquez
- 2009 Hawaiian Islands, USA (1.5 weeks). Radiation of *Euphorbia* on Hawaiian Islands with Clifford Morden, Christian Torres-Santana and Ken Wood
- 2008 Southern Florida, USA (1.5 weeks). Collecting *Euphorbia* with Paul Berry
- 2008 Baja California Sur, Mexico (1 week). Collecting *Euphorbia* with Victor Steinmann and Yocupitzia Ramírez-Amezcu
- 2007 Central Mexico (1 week). Collecting *Euphorbia* with Victor Steinmann and Yocupitzia Ramírez-Amezcu
- 2007 Western Texas, USA (2 weeks). Collecting *Euphorbia* with Becky Povilus.
- 2006 Miami, Florida, USA. Harvard summer school with P. Barry Tomlinson. “Biodiversity of Tropical Plants”
- 2003 Guangxi, China (4 weeks). Field assistant in behavior studies and conservation of *Trachypithecus leucocephalus* (White-headed langur) with Wen-Shi Pan.

SERVICE AND OUTREACH

Service to the discipline

Review for journals and conference proceedings:

American Journal of Botany	Molecular Phylogenetics and Evolution
Bioinformatics	New Phytologist
BMC Bioinformatics	Pacific Science
BMC Biology	PeerJ
Botanical Journal of the Linnean Society	Plant Physiology
Evolution	Phytotaxa
Genome Biology and Evolution	PloS One
Integrative and Comparative Biology	Pacific Symposium on Biocomputing
Journal of Ecology	Scientific Reports
Journal of Systematics and Evolution	Systematic Botany
Molecular Biology and Evolution	Systematic Biology
Molecular Ecology Resources	

Review for grants:

2016–2017 Society of Systematic Biologists Graduate Student Research Award
 2016, 2018 National Science Foundation

Editorial services:

2018– Associate editor, Applications in Plant Sciences
 2017 Guest editor, Tree of Life special issue, Applications in Plant Sciences

Workshops organized

2018 Panelist, Job Transparency Workshop, Botany Meeting, Rochester, MN
 2018 Co-instructor for a half-day workshop “Transcriptome analyses for non-model plants: phylogenomics and more”, Botany Meeting, Rochester, MN
 2016 Co-instructor for a half-day workshop “Transcriptome analyses for non-model plants: phylogenomics and more”, Botany Meeting, Savannah, GA
 2015 Co-instructor for a half-day workshop “Interrogating transcriptomic data from processing to analysis” Society for Systematic Biologists Standalone Meeting, Ann Arbor, MI

Conference organizers

2018 Field trip coordinator for the Botany conference in Rochester, MN

Service to the Department of Plant and Microbial Biology

2017–2019 Plant Biological Sciences graduate program steering committee

Service to the Bell Museum

2018 Search Committee for herbarium collection manager

2017– Bell Museum Diversity Committee.

Service to the College of Biological Sciences, University of Minnesota

2017–2018 CBS Conservatory planning committee
2017 Research lab and herbarium tour for incoming undergraduate students

Service to the Department of Ecology and Evolutionary Biology, University of Michigan

2012–2013 Organizer for EEB postdoc career development monthly events
2012 Judge for “EEB Outstanding Graduate Student Paper”
2012 Organization committee, Early Career Scientist Symposium “Biodiversity Informatics”
2009–2010 EEB Seminar Committee

Public service

2018 Bell Museum grand opening public outreach activities: educator preview, scientific partner luncheon, and grand opening Science Sunday
2018 Market Science volunteer, Minneapolis, MN
2017 Bell Museum public outreach events: Minnesota State Fair booth, helping with Master Naturalist citizen science workshop and leading herbarium tours
2017 Invited lightening talk, SciSpark Women in Science, St. Paul, MN
2016 Career development panelist, Peking University Alumni BIO-Net Symposium, San Francisco, CA
2014 Teaching assistant for a one-day high school teacher workshop “Genes and Genomes”. Ann Arbor, MI

PROFESSIONAL AFFILIATIONS

American Society of Plant Taxonomists (ASPT)
Botanical Society of America (BSA)
Society of Systematic Biologists (SSB)
Society for Molecular Biology and Evolution (SMBE)