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**EDUCATION**

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

**ACADEMIC APPOINTMENTS**

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- 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**

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- 2020–2023 NSFDEB-NERC: Collaborative research: A phytochemical "tug-of-war" and its impact on organismal diversification and niche occupancy in Caryophyllales. Lead PI. Co-PIs: Hiroshi Maeda (U of Wisconsin), Samuel Brockington (U of Cambridge), and Stephen Smith (U of Michigan). \$1.4M total, \$482,198 to Yang.
- 2019–2020 NSF Digitization TCN: Collaborative: Digitizing "Endless forms most beautiful and most wonderful": Facilitating Research on Imperiled Plants with Extreme Morphologies. PI for \$27,426 subaward to U of Minnesota. Lead PI: Matthew Pace, New York Botanical Garden.
- 2019 US Army Corp of Engineers (USACE): Multiple Species Inventory and Management Analysis Mississippi Headwaters Project, St. Paul District. Co-PI. Lead PI: Kenneth Kozak, U of Minnesota. \$164,299 total (7% to Yang).
- 2018–2021 Minnesota Environment & Natural Resources Trust Fund (ENRTF): Minnesota Biodiversity Atlas: Phase II Expansion. Co-PI. Lead PI: George Weiblen, U of Minnesota. \$350,000 total (5–10% to Yang).
- 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

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Lab members in bold

2020 and in progress

24. **Morales-Briones, D.F.**, G. Kadereit, D.T. Tefarikis, M.J. Moore, S.A. Smith, S.F. Brockington, A. Timoneda, W.C. Yim, J.C. Cushman, and **Y. Yang**. Disentangling sources of gene tree discordance in phylotranscriptomic datasets: A case study from Amaranthaceae s.l. *In review*.

2019

23. Qiu, Y.-J., C.D. Hirsch, **Y. Yang**, and E. Watkins. Towards improved molecular identification tools in Fine Fescue (*Festuca* L., Poaceae) turfgrasses: Nuclear genome size, ploidy, and chloroplast genome sequencing. *Frontiers in Genetics*.10:1223

22. **Chen L.-Y., D.F. Morales-Briones**, C.N. Passow, and **Yang Y.** Performance of gene expression analyses using de novo assembled transcripts in polyploid species. *Bioinformatics*. 35(21): 4314–4320.

21. Feng T., **Y. Yang**, L. Busta, E.B. Cahoon, H.-C. Wang, and S.-Y. Lu. FAD2 gene radiation and positive selection contributed to polyacetylene metabolism evolution in Campanulids. *Plant Physiology*. 181(2):714–728.

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.C. Majure, U. Eggli and S.A. Smith (2019). Evolution of Portulacineae marked by gene tree conflict and gene family expansion associated with adaptation to harsh environments. *Molecular Biology and Evolution* 36(1): 112–126.

2018

19. **Yang, Y.**, C.W. Morden, M.J. Sporeck-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 C<sub>4</sub> 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

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### University of Minnesota

#### *Instructor*

- Spring 2019 PMB 2022: General Botany (3 credits, 72 students)  
 Spring 2018 BIOL 2022: General Botany (3 credits, 74 students). With John Ward  
 Fall 2017 EEB 8990: 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)

### Instructor for Workshops at Professional Meetings

- 2015– Half-day workshop on transcriptome analyses for non-model plants. This workshop has been offered multiple times:  
 - Society for Systematic Biologists Meeting, Ann Arbor, MI (2015). With Stephen Smith.  
 - Botany, Savannah, GA (2016). With Stephen Smith and James Pease.  
 - Botany, Rochester, MN (2018). With Stephen Smith, James Pease, Diego Morales-Briones, Joe Walker, and Ning Wang.
- 2018 Full-day workshop “Practical considerations for plant phylogenomics”. With Michael Moore and Diego Morales-Briones. Instituto de Biología, Universidad Nacional Autónoma de México.

## MENTORING

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### Post-doctoral Fellows:

- 2017– Diego F. Morales-Briones
- 2017–2019 Lingyun Chen

### Graduate Students:

#### *Doctoral Dissertations Directed*

- 2019– Alexandra Crum (Plant and Microbial Biology)
- 2017– Rebekah Mohn (Plant and Microbial Biology)

#### *Doctoral Committees Served on*

- 2019– Nicole Mihelich (Applied Plant Sciences)
- 2019–2020 Yinjie Qiu (Applied Plant Sciences)
- 2018–2019 Zachary Sperstad (Ecology, Evolution, and Behavior)
- 2017– Zacky Ezedin (Plant and Microbial Biology)

### Visiting Scholars Hosted:

- 2019–2020 Nan Lin (Wuhan Botanical Garden, Chinese Academy of Sciences, 12 months)
- 2018 Delphine Tefarikis (Johannes Gutenberg University Mainz, Germany, 5 weeks)

### Undergraduate Students:

- 2019 Ailin Wang (U of Minnesota) Directed research on plant stress experiments
- 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

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### Invited seminar presentations

- 2020 Bonnie Templeton Lecture, Oregon State University Herbarium (scheduled).
- 2019 Dept. of Biological Sciences, University of Illinois at Chicago, IL.
- 2019 Dept. of Biology, University of Minnesota, Duluth, MN
- 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

- 2020 Society of Systematic Biologists standalone meeting, Gainesville, FL
- 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

## FIELD EXPERIENCE

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- 2019– Ongoing field work in Minnesota
- 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.
- 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

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### Service to the discipline

#### *Review for journals and conference proceedings:*

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

#### *Review for grants:*

- 2016– Society of Systematic Biologists Graduate Student Research Award (2016, 2017, 2020)
- 2016, 2018 Panelist, Division of Environmental Biology, National Science Foundation (NSF DEB).

*Editorial services:*

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

*Conferences and workshops organized*

- 2018 Field trip coordinator, Botany, Rochester, MN
- 2018 Panelist, Job Transparency Workshop, Botany, Rochester, MN

**Service to the Department, College, and the Bell Museum, University of Minnesota**

- 2017–2019 Plant Biological Sciences graduate program steering committee
- 2018 Search Committee for the University of Minnesota Herbarium collection manager
- 2017–2019 Bell Museum Diversity Committee.
- 2017–2019 College of Biological Sciences Conservatory planning committee

**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**

- 2017–now Bell Museum public outreach events: Minnesota State Fair booth, Master Naturalist citizen science workshop, herbarium tours (×many), educator preview (×2), scientific partner luncheon, grand opening Science Sunday events, Botany Bonanza special exhibition.
- 2018 Market Science volunteer, Minneapolis, MN
- 2017 Invited lightning talk, SciSpark Women in Science, St. Paul, MN
- 2016 Panelist, Career in academia, 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 DEVELOPMENT & ADDITIONAL TRAININGS

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- 2016– Participant, campus workshop series offered by the Center for Educational Innovation (CEI), the New Faculty Program, and the Broadening Representation and Equity With Science (BREWS) program.
- 2019 Invited virtual participant, Reintegrating Biology Jumpstart meeting, National Science Foundation.
- 2018 Participant, Faculty Success Program, National Center for Faculty Development & Diversity (NCFDD).
- 2018 Participant, Grant Writing Workshop, Mountain Lake Biological Station, VA.
- 2018 Participant, Strategic Planning for Herbarium short course by Society of Herbarium Curators and NSF iDigBio.
- 2018 Participant, Advancing Digitization of Biodiversity Collections (ADBC) Summit, iDigBio, Gainesville, FL.
- 2017 Invited participant, ForestGEO Genomics Workshop, Smithsonian Tropical Research Institute, Barro Colorado Island, Panama.
- 2016 Invited workshop participant, Plant Systems Cyberinfrastructure Strategic Plan, Rockville, MD.
- 2013–2015 Participant, Prepare Future Faculty conference and workshop series, University of Michigan, Ann Arbor, MI.
- 2009 Trainee, “Fast, Free Phylogenies: HPC for Phylogenetics Tutorial”. National Institute for Mathematical and Biological Synthesis (NIMBioS), Knoxville, KY.
- 2006 Student, Harvard summer school with P. Barry Tomlinson. “Biodiversity of Tropical Plants”. Fairchild Tropical Botanic Garden, Miami, Florida.
- 2005 Trainee in a three-week intensive Graduate Student Instructor training program “Teaching and Classroom Communication”, University of Michigan, Ann Arbor, MI

## AWARDS & FELLOWSHIPS

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- 2012 Peter Buck Postdoctoral Fellowship, Smithsonian National Museum of Natural History (declined to accept a postdoc position at the University of Michigan)

## PROFESSIONAL AFFILIATIONS

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