

Fay-Wei Li

Boyce Thompson Institute & Cornell University

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Education and Appointments

- 2017- Assistant professor, Boyce Thompson Institute
 2017- Adjunct assistant professor, Plant Biology Section, Cornell University
 2016-17 Forschungskredit postdoc, University of Zurich
 2015-16 Postdoctoral researcher, UC-Berkeley and Duke University
 2010-15 Ph.D., Department of Biology, Duke University
 2005-09 B.S., Department of Life Science, National Taiwan University

Publications (lab members in bold)

As a primary author:

- Wickell, D., L.-Y. Kuo, H.-P. Yang, A.D. Ashok, I. Irisarri, A. Dadras, S. de Vries, J. de Vries, Y.-M. Huang, Z. Li, M.S. Barker, N.T. Hartwick, T.P. Michael, **F.-W. Li**. Underwater CAM photosynthesis elucidated by *Isoetes* genome. **Nature Communications**, in revision.
- Rahmatpour, N., D.A. Hauser, J.M. Nelson, P.Y. Chen, J.C. Villarreal, M.-Y. Ho, **F.-W. Li**. 2021. A novel thylakoid-less isolate fills a billion-year gap in the evolution of Cyanobacteria. **Current Biology** 31: 2857–2867.
#Featured in: [Cornell Chronicle](#), [Current Biology Dispatch](#), [Cover](#)
- Nelson, J.M., D.A. Hauser, **F.-W. Li**. 2021. The diversity and community structure of symbiotic cyanobacteria in hornworts inferred from long-read amplicon sequencing. **American Journal of Botany**, in press
- Szövényi, P., A. Gunadi, **F.-W. Li**. 2021. Charting the genomic landscape of seed-free plants. **Nature Plants** 7: 554–565.
- Li, **F.-W.**, T. Nishiyama, M. Waller, E. Frangedakis, J. Keller, Z. Li, N. Fernandez-Pozo, M.S. Barker, T. Bennett, M.A. Blázquez, S. Cheng, A.C. Cuming, J. de Vries, S. de Vries, P.-M. Delaux, I.S. Diop, J. Harrison, **D. Hauser**, J. Hernández-García, A. Kirbis, J.C. Meeks, I. Monte, S.K. Mutte, A. Neubauer, D. Quandt, **T. Robison**, M. Shimamura, S.A. Rensing, J.C. Villarreal, D. Weijers, S. Wicke, G.K.-S. Wong, K. Sakakibara, P. Szövényi. 2020. *Anthoceros* genomes illuminate the origin of land plants and the unique biology of hornworts. **Nature Plants** 6: 259–272.
#Featured in: [Cornell Chronicle](#)
- Kuo, L.-Y., Y.-H. Chang, Y.-H. Huang, W. Testo, A. Ebihara, G. Rouhan, L.G. Quintanilla, J.E. Watkins Jr, Y.-M. Huang, **F.-W. Li**. 2020. A global phylogeny of *Stegnoگرامma* ferns (Thelypteridaceae): generic and sectional revision, historical biogeography and evolution of leaf architecture. **Cladistics** 36: 164–183.
- Wickell, D.A. and **F.-W. Li**. 2020. On the evolutionary significance of horizontal gene transfers in plants. **New Phytologist** 225: 113–117.
- Kuo, L.-Y. and **F.-W. Li**. 2019. A roadmap for fern genome sequencing. **American Fern Journal** 109:212–223.
- Petlewski, A.R. and **F.-W. Li**. 2019. Ferns: the final frond-tier in plant model systems. **American Fern Journal** 109:192–211.
- Nelson, J.M., D.A. Hauser, J.A. Gudiño, Y.A. Guadalupe, J.C. Meeks, N. Salazar, J.C. Villarreal, **F.-W. Li**. 2019. Complete genomes of symbiotic cyanobacteria clarify the evolution of Vanadium-nitrogenase. **Genome Biology and Evolution** 11: 1959–1964.
- Eily, A.N., K.M. Pryer, **F.-W. Li**. 2019. A first glimpse at genes important to the *Azolla–Nostoc* symbiosis. **Symbiosis** 78: 149–162.
- Li, **F.-W.** and S. Mathews. 2019. Phylogenetic method to study light signaling. In A. Hiltbrunner (Ed.), *Phytochromes: Methods and Protocols*. Springer Nature (New York).

- Li, F.-W., P. Brouwer, L. Carretero-Paulet, S. Cheng, J. de Vries, P.-M. Delaux, A.N. Eily, N. Koppers, L.-Y. Kuo, Z. Li, M. Simenc, I. Small, E. Wafula, S. Angarita, M.S. Barker, A. Braeutigam, C. dePamphilis, S. Gould, P.S. Hosmani, Y.-M. Huang, B. Huettel, Y. Kato, X. Liu, S. Maere, R. McDowell, L.A. Mueller, K.G.J. Nierop, S.A. Rensing, T. Robison, C.J. Rothfels, E.M. Sigel, Y. Song, P.R. Timilsina, Y. Van de Peer, H. Wang, P. K.I. Wilhelmsson, P.G. Wolf, X. Xu, J.P. Der, H. Schlupepmann, G.K.-S. Wong, and K.M. Pryer. 2018. Fern genomes elucidate land plant evolution and cyanobacterial symbioses. **Nature Plants** 4: 460–472. [Cover](#)
#Featured in: [Discover Magazine](#), [Mongabay](#), [Cosmos](#), [Quartz](#), [Yale Environmental 360](#), [NSF Science360 News](#), [Cornell Chronicle](#), [BTI press release](#), [Faculty of 1000](#), [Nature Plants News&Views](#)
- Kuo, L.-Y., X Qi, H. Ma, F.-W. Li. 2018. Order-level fern plastome phylogenomics: new insights from Hymenophyllales. **American Journal of Botany** 105: 1545-1555.
- Song, M.*, L.-Y. Kuo*, L. Huiet, K.M. Pryer, C.J. Rothfels, F.-W. Li. 2018 A novel chloroplast gene reported for flagellate plants. **American Journal of Botany** 105: 117–121. *Equal contributions
#Featured in: [AJB News and Views](#)
- Li, F.-W., A. Harkess. 2018. A guide to sequence your favorite plant genomes. **Applications in Plant Sciences** 6: e1030. [special issue “Methods for Exploring the Plant Tree of Life”]
- Li, F.-W., J.C. Villarreal, P. Szovenyi. 2017. Hornworts, an overlooked window into carbon-concentrating mechanism. **Trends in Plant Science** 22: 275-277.
- Li, F.-W., C.A. Rushworth, J.B. Beck, M.D. Windham. 2017. *Boechera* Microsatellite Website: an online portal for species identification and hybrid relationship resolution. **Database** 1: baw169.
- Li, F.-W., L.-Y. Kuo, K.M. Pryer, C.J. Rothfels. 2016. Genes translocated into the plastid inverted repeat show marked deceleration in substitution rates and an elevated GC content. **Genome Biology and Evolution** 8: 2452-2458.
- Li, F.-W., S. Mathews. 2016. Evolutionary aspects of plant photoreceptors [invited review]. **Journal of Plant Research** 129: 115-122.
- Li, F.-W., L.Y. Kuo, Y.H. Chang, T.C. Hsu, H.C. Hung, W.L. Chiou, C.J. Rothfels, Y.M. Huang. 2016. *Asplenium pifongiae* (Aspleniaceae: Polypodiales), a new species from Taiwan. **Systematic Botany** 41: 24-31.
- Li, F.-W., M. Melkonian, C.J. Rothfels, J.C. Villareal, D. Stevenson, S.W. Graham, G.K.-S. Wong, K.M. Pryer, S. Mathews. 2015. Phytochrome diversity in green plants and the origin of canonical plant phytochromes. **Nature Communications** 6: 7852.
#Featured in: [Duke Today](#), [Science Daily](#), [Phys.org](#), [Faculty of 1000](#)
- Li, F.-W., C.J. Rothfels, M. Melkonian, J.C. Villareal, D. Stevenson, S.W. Graham, G.K.-S. Wong, S. Mathews, K.M. Pryer. 2015. The origin and evolution of phototropins. **Frontiers in Plant Science** 6: 637.
- Li, F.-W., K.M. Pryer. 2014. Crowdfunding the *Azolla* fern genome project: a grassroots approach. **GigaScience** 3: 16.
#Featured in: Editor’s pick
- Li, F.-W., J.C. Villarreal, S. Kelly, C.J. Rothfels, M. Melkonian, E. Frangedakis, M. Ruhsam, E. M. Sigel, J.P. Der, J. Pittermann, D.O. Burge, L. Pokorny, A. Larsson, T. Chen, S. Weststrand, P. Thomas, E. Carpenter, Y. Zhang, Z. Tian, L. Chen, Z. Yan, Y. Zhu, X. Sun, J. Wang, D.W. Stevenson, B.J. Crandall-Stotler, A.J. Shaw, M.K. Deyholos, D.E. Soltis, S.W. Graham, M.D. Windham, J.A. Langdale, G.K.S. Wong, S. Mathews & K.M. Pryer. 2014. Horizontal transfer of an adaptive chimeric photoreceptor from bryophytes to ferns. **Proceedings of the National Academy of Sciences USA**, 111: 6672-6677.
#Featured in: [The Economist](#), [New York Times](#), [National Geographic](#), [Scientific American](#), [Aeon](#), [Faculty of 1000](#), [Current Biology](#), and [Nature Reviews Genetics](#)

- Li, F.-W., K.M. Pryer & M.D. Windham. 2012. *Gaga*, a new fern genus segregated from *Cheilanthes* (Pteridaceae). **Systematic Botany** 37: 845-860.
#Featured in: [Rolling Stone](#), [New York Times](#), [Huffington Post](#), [The Guardian](#), [Wired](#) and [National Geographic](#)
- Li, F.-W., L.Y. Kuo, C.J. Rothfels, A. Ebihara, W.L. Chiou, M.D. Windham & K.M. Pryer. 2011. *rbcL* and *matK* earn two thumbs up as the core DNA barcode for ferns. **PLoS ONE** 6: e26597.
- Li, F.-W. 2011. Book review: Knapp, Ralf. 2011. Ferns and Fern Allies of Taiwan. **Taxon** 60: 1233-1234.
- Kuo, L.Y.*, F.-W. Li*, W.L. Chiou & C.N. Wang. 2011. The first insight into fern *matK* phylogeny. **Molecular Phylogenetics and Evolution** 59: 556-566. *Equal contributions
- Li, F.-W., L.Y. Kuo, Y.M. Huang, W.L. Chiou & C.N. Wang. 2010. Tissue-Direct PCR, a rapid and extraction-free method for barcoding of ferns. **Molecular Ecology Resources** 10: 92-95.
- Li, F.-W., B.C. Tan, V. Buchbender, R.C. Moran, G. Rouhan, C.N. Wang & D. Quandt. 2009. Identifying a mysterious aquatic fern gametophyte. **Plant Systematics and Evolution** 281: 77-86.

As a contributing co-author:

- Frangedakis, E., M. Waller, T. Nishiyama, H. Tsukaya, X. Xu, Y. Yue, M. Tjahjadi, A. Gunadi, J. Van Eck, F.-W. Li, P. Szövényi, K. Sakakibara. 2021. An Agrobacterium-mediated stable transformation technique for the hornwort model *Anthoceros agrestis*. **New Phytologist**, in press.
- Frangedakis, E., M. Shimamura, J.C. Villarreal, F.-W. Li, M. Tomaselli, M. Waller, K. Sakakibara, K.S. Renzaglia, and P. Szövényi. 2021. The hornworts: morphology, evolution and development. **New Phytologist** 229: 735–754.
- Bouchard, R., G. Peñaloza-Bojacá, S. Toupin, Y. Guadalupe, J. Gudiño, N. Salazar Allen, F.-W. Li, J.C. Villarreal. 2020. Contrasting bacteriome of the hornwort *Leiosporoceros dussii* in two nearby sites with emphasis on the hornwort-cyanobacterial symbiosis. **Symbiosis** 81:39–52.
- Dawes, T., J.C. Villarreal, P. Szövényi, I. Bisang, F.-W. Li, D.A. Hauser, D. Quandt, D.C. Cargill, L.L. Forrest. 2020. Extremely low genetic diversity in the European clade of the model bryophyte *Anthoceros agrestis*. **Plant Systematics and Evolution** 306: 49.
- Radhakrishnan, G.V., J. Keller, M.K. Rich, T. Vernié, D.L. Mbaginda, N. Vigneron, L. Cottret, H.S. Clemente, C. Libourel, J. Cheema, A.-M. Linde, D.M. Eklund, S. Cheng, G.K.-S. Wong, U. Lagercrantz, F.-W. Li, G.E.D. Oldroyd, P.-M. Delaux. 2020. An ancestral signalling pathway is conserved in plant lineages forming intracellular symbioses. **Nature Plants** 6: 280–289.
- Windham, M.D., K.M. Pryer, D.B. Poindexter, F.-W. Li, C.J. Rothfels, and J.B. Beck. 2020. Yes, you can do meiotic chromosome counts: resurrecting a powerful, economical botanical technique. **Applications in Plant Sciences** 8: e11342.
- Bell, D., Q. Lin, W.K. Gerelle, S. Joya, Y. Chang, Z.N. Taylor, C.J. Rothfels, A. Larsson, J.C. Villarreal, F.-W. Li, L. Pokorny, P. Szövényi, B. Crandall-Stotler, L. DeGironimo, S.K. Floyd, D.J. Beerling, M.K. Deyholos, M. von Konrat, S. Ellis, A.J. Shaw, T. Chen, G.K.-S. Wong, D.W. Stevenson, J.D. Palmer, S.W. Graham. 2020. Organellomic data sets confirm a cryptic consensus on (unrooted) land-plant relationships, and provide new insights into bryophyte molecular evolution. **American Journal of Botany** 107: 91–115.
- Delaux, P.-M., A.J. Hetherington, Y. Coudert, C. Delwiche, C. Dunand, S. Gould, P. Kenrick, F.-W. Li, H. Philippe, S.A. Rensing, M. Rich, C. Strullu-Derrien, J. de Vries. 2019. Reconstructing trait evolution: A guideline for plant evo-devo studies (and beyond). **Current Biology** 29: R1105–R1121.
- One Thousand Plants Initiative. 2019. One thousand plant transcriptomes and phylogenomics of green plants. **Nature** 574: 679–685.
#Cover image shot by graduate student Alaina Petlewski
- Kuo, L.-Y., T.-C. Hsu, Y.-S. Chao, W.-T. Liou, H.-M. Chang, C.-W. Chen, Y.-M. Huang, F.-W. Li, Y.-F. Huang, W. Shao, P.-F. Lu, C.-W. Chen, Y.-H. Chang, W.-L. Chiou. 2019. Updating Taiwanese pteridophyte checklist: a new phylogenetic classification. **Taiwania** 64: 367–395.

- Yang, E. J., C. Y. Yoo, J. Liu, H. Wang, J. Cao, **F.-W. Li**, K.M. Pryer, T.-P. Sun, D. Weigel, P. Zhu, M. Chen. 2019. NCP activates chloroplast transcription by controlling phytochrome-dependent dual nuclear and plastidial switches. **Nature Communications** 10: 2630.
- Wu, C.-C., **F.-W. Li**, E.M. Kramer. 2019 Large-scale phylogenomic analysis suggests three ancient superclades of the WUSCHEL-RELATED HOMEODOMAIN transcription factor family in plants. **PLoS ONE** 14: e0223521.
- Villarreal, J.C., M. Turmel, M. Bourgouin-Couture, J. Laroche, N. Salazar, **F.-W. Li**, S. Chen, K. Renzaglia, C. Lemieux. 2018. Genome-wide organellar analyses from the hornwort *Leiosporoceros dussii* show low frequency of RNA editing and its increase during hornwort diversification. **PLoS ONE** 13: e0200491.
- Huiet, L., **F.-W. Li**, T.-T. Kao, J. Prado, A.R. Smith, E. Schuettpelz, K.M. Pryer. 2018. A worldwide phylogeny of *Adiantum* (Pteridaceae) reveals remarkable convergent evolution in leaf blade architecture. **Taxon** 67: 488-502.
- Cheng, S., M. Melkonian, S. Smith, S. Brockington, J.M. Archibald, P.-M. Delaux, **F.-W. Li**, B. Melkonian, E.V. Mavrodiev, W. Sun, Y. Fu, H. Yang, D.E. Soltis, S.W. Graham, P.S. Soltis, X. Liu, X. Xu, G.K.-S. Wong. 2018. 10KP: A Phylodiverse Genome Sequencing Plan. **GigaScience** 7: giy013.
- Kuo L.-Y., T.-Y. Tang, **F.-W. Li**, H.-J. Su, W.-L. Chiou, Y.-M. Huang, C.-N. Wang. 2018. Organelle genome inheritances in *Deparia* ferns (Athyraceae, Aspleniaceae, Polypodiales). **Frontiers in Plant Science** 9: 486.
- Schilling, M.P., Z. Gompert, **F.-W. Li**, M.D. Windham, P.G. Wolf. 2018. Admixture, evolution, and variation in reproductive isolation in the *Boechera puberula* clade. **BMC Evolutionary Biology** 18: 61.
- Lang, D., ... **F.-W. Li**, ... S.A. Rensing. 2018. The *Physcomitrella patens* chromosome-scale assembly reveals moss genome structure and evolution. **Plant Journal** 93: 515-533.
- Dijkhuizen, L., P. Brouwer, H. Bolhuis, G.-J. Reichart, N. Koppers, B. Huettel, A. Bolger, **F.-W. Li**, S. Cheng, X. Liu, G.K.-S. Wong, K.M. Pryer, A. Weber, A. Bräutigam, H. Schluepmann. 2018. Is there foul play in the leaf pocket? The metagenome of floating fern *Azolla* reveals endophytes that do not fix N₂ but may denitrify. **New Phytologist** 217: 453-466.
- Rockwell, N.C., S.S. Martin, **F.-W. Li**, S. Mathews, J.C. Lagarias. 2017. The phycocyanobilin chromophore of streptophyte algal phytochromes is synthesized by HY2. **New Phytologist** 214: 1145-1157.
- Rothfels, C.J., K.M. Pryer, **F.-W. Li**. 2017. Next-generation polyploid phylogenetics: Rapid resolution of hybrid polyploid complexes using PacBio single-molecule sequencing. **New Phytologist** 213:413-429.
- Hsu, P.Y., L. Calviello, H.-Y. L. Wu*, **F.-W. Li***, C.J. Rothfels, U. Ohler, P.N. Benfey. 2016. Super-resolution ribosome profiling reveals unannotated translation events in Arabidopsis. **Proceedings of the National Academy of Sciences USA** 113: E7126-E7135.
- *Equal contributions
- Jia, Q., G. Li, T.G. Köllner, J. Fu, X. Chen, W. Xiong, A. Norris, B. Crandall-Stotler, J.L. Bowman, D.J. Weston, Y. Zhang, L. Chen, Y. Xie, **F.-W. Li**, C.J. Rothfels, A. Larsson, S.W. Graham, D.W. Stevenson, G.K.-S. Wong, J. Gershenzon, F. Chen. 2016. Microbial type terpene synthase genes occur specifically in non-seed land plants. **Proceedings of the National Academy of Sciences, USA** 113: 12328-12333.
- Stevenson, S.R., Y. Kamisugi, J. Schmutz, J.W. Jenkins, J. Grimwood, W. Muchero, G.A. Tuskan, S. Rensing, D. Lang, R. Reski, C. Trinh, M. Melkonian, C.J. Rothfels, **F.-W. Li**, A. Larsson, G.K.S. Wong, T. Edwards, A.C. Cuming. 2016. Genetic analysis of *Physcomitrella patens* identifies ABSCISIC ACID NON-RESPONSIVE (ANR): a regulator of ABA responses unique to basal land plants, required for desiccation tolerance. **Plant Cell** 28: 1310-1327..
- Pryer, K.M., L. Huiet, **F.-W. Li**, C.J. Rothfels, E. Schuettpelz. Maidenhair ferns—*Adiantum*—are indeed monophyletic, and sister to the shoestring ferns—vittaroids (Pteridaceae). **Systematic Botany** 41: 14-23.

- Windham, M.D., J.B. Beck, **F.-W. Li**, A. Allphin, J.G. Carman, C.A. Rushworth, E.M. Sigel, P.J. Alexander, C.D. Bailey, I.A. Al-Shehbaz. 2015. Searching for diamonds in the apomictic rough. I: A case study involving *Boechera lignifera* (Brassicaceae). **Systematic Botany** 40: 1031-1044.
- Wolf, P.G., E.B. Sessa, D.B. Marchant, **F.-W. Li**, C.J. Rothfels, E.M. Sigel, M.A. Gitzendanner, C.J. Visger, J.A. Banks, D.E. Soltis, P.S. Soltis, K.M. Pryer, and J.P. Der. 2015. An exploration into fern genome space. **Genome Biology and Evolution** 7: 2533-2544.
- Rothfels C.J., **F.-W. Li**, E.M. Sigel., L. Huiet, A. Larsson, D.O. Burge, M. Ruhsam, M. Deyholos, D. Soltis, N. Stewart, S. Shaw, L.M. Pokorny, T. Chen, C. dePamphilis, L. DeGironimo, D.W. Stevenson, S.W. Graham, G.K.-S. Wong, and K.M. Pryer. 2015. The evolutionary history of ferns inferred from 25 single-copy nuclear genes. **American Journal of Botany** 10: 1089-1107.
- Sessa, E.B., J.A. Banks, M.S. Barker, J.P. Der, A.M. Duffy, S.W. Graham, M. Hasebe, J. Langdale, **F.-W. Li**, D.B. Marchant, K.M. Pryer, C.J. Rothfels, S.J. Roux, M.L. Salmi, E.M. Sigel, D.E. Soltis, P.S. Soltis, D.W. Stevenson, P.G. Wolf. 2014. Between two fern genomes. **GigaScience** 3: 15.
- Zhang, W.Y., L.Y. Kuo, **F.-W. Li**, C.N. Wang & W.L. Chiou. 2014. The hybrid origin of *Adiantum meisbanianum* (Pteridaceae): a rare and endemic species in Taiwan. **Systematic Botany**, 39: 1034-1041.
- Rothfels, C.J., A. Larsson, **F.-W. Li**, E.M. Sigel, L. Huiet, D.O. Burge, M. Ruhsam, S. Graham, D. Stevenson, G.K.S. Wong, P. Korall & K.M. Pryer. 2013. Transcriptome-mining for fern single-copy nuclear regions. **PLoS ONE** 8: e76957.

Research Grants

- 2021 **Large-Scale EMSL Research User Grant**, Department of Energy, "Understanding the genetic and structural bases of hornworts' carbon-concentrating mechanism" \$118,888 (in-kind support)
PI: Fay-Wei Li
- 2021 **NSF Supplemental Funding**, Research Experience for Post-Baccalaureate Students, National Science Foundation \$40,850
PI: Fay-Wei Li
- 2021 **Triad Competitive Research Funding**, Triad Foundation, "An "EPYC" quest to search for the rubisco tether protein in hornwort pyrenoids" \$59,125
PI: Fay-Wei Li, Co-PI: Joyce Van Eck and Aleksandra Skirycz (BTI)
- 2020 **NSF Supplemental Funding**, Research Collaboration Opportunity in Europe, National Science Foundation \$22,411
PI: Fay-Wei Li
- 2020 **Triad Competitive Research Funding**, Triad Foundation, "Biosynthesis of cannabinoids in liverwort" \$75,000
PI: Georg Jander, Co-PI: Fay-Wei Li and Frank Schroeder (BTI)
- 2019 **NSF EDGE**, National Science Foundation, "Developing transformation capacity for *Anthoceros agrestis* to facilitate gene function studies in hornworts, a remarkable phylum of plants" \$548,419
PI: Fay-Wei Li, Co-PI Joyce Van Eck (BTI)
- 2018 **NSF Dimensions of Biodiversity**, National Science Foundation, "Integrating phylogenetics, ecophysiology, and transcriptomics to understand the diversity of hornwort-cyanobacterium symbiosis" \$1,772,655 (Li portion \$1,123,223)
PI: Fay-Wei Li, Jed Sparks (Cornell), John Meeks (UC-Davis)
- 2018 **Triad Plants for Human Health Awards**, Triad Foundation, "Exploring native plant diversity: what a threatened *Aconitum* can teach us about changing species distributions and medicinal compounds" \$50,500
PI: Suzy Strickler (BTI), Co-PI: Fay-Wei Li, Georg Jander (BTI), Chelsea Specht (Cornell)
- 2018 **Triad BTI-Selby Collaboration**, Triad Foundation, "Dry times call for dry adaptations: genetic and physiological responses to desiccation tolerance in ferns and lycophytes" \$50,130

PI: Fay-Wei Li, Sally Chambers (Selby Botanic Garden)

2017 **Arnold Arboretum Genomics Initiative and Sequencing Award**, “Developing Genomic Resources for North American Beech” \$9,287

PI: Eric Richards (BTI), Co-PIs: Fay-Wei Li, Susan Strickler (BTI)

2017 **Smithsonian Tropical Research Institute and Simons Foundation**, “Genetic diversity and genomic commonalities among symbiosis-capable nitrogen-fixing cyanobacteria” \$3,600

PI: Noris Salazar (Smithsonian Tropical Research Institute), Co-PIs: Fay-Wei Li, Juan Carlos Villarreal (Laval University)

Fellowships and Awards

2016 **Forschungskredit postdoc fellowship**, University of Zurich

2015 **Perry Price**, Best thesis in plant science, Duke University

2014 **Edgar T. Wherry Award**, Botanical Society of America

2014 **Graduate Student Research Fellowship**, Torrey Botanical Society (US \$2,500)

2014 **NSF Doctoral Dissertation Improvement Grant**, National Science Foundation (US \$20,410)

2014 **Duke Biology Grant-in-Aid**, Department of Biology, Duke University (US \$1,000)

2013 **Shirley and Alan Graham Graduate Student Research Grant**, American Society of Plant Taxonomists (US \$1,000)

2013 **Duke Biology Grant-in-Aid**, Department of Biology, Duke University (US \$1,000)

2012 **NSF Graduate Research Fellowship**, National Science Foundation (US \$30,000/year for 3 years)

2012 **Duke Biology Grant-in-Aid**, Department of Biology, Duke University (US \$1,000)

2012 **Sigma Xi Matching Grant**, Duke Graduate School (US \$1,000)

2012 **Sigma Xi Grant-in-Aid of Research**, Sigma Xi (US \$1,000)

2011 **Awards for Graduate Student Research**, Society of Systematic Biologists (US \$1,700)

Invited Seminars

2021 **UMD Plant Virtual Minisymposium**, University of Maryland and ASPB

2021 **Photosynthesis Mini-Symposium**, University of California Davis

2021 **Laboratoire Reproduction et Développement des Plantes**, Lyon

2021 **University of Goettingen**, Institute for Microbiology and Genetics

2020 **Oxford University**, Oxford University Biological Society

2020 **Botany 2020**, Colloquium on Mechanisms of rapid adaptation through the expression of “heterogenomicity”

2020 **Ithaca College**, Department of Biology

2019 **Smithsonian National Museum of Natural History**, Washington DC

2019 **Marine Biological Laboratory**, Woods Hole

2018 **Harvard University**, Herbarium Seminar Series

2018 **EMBO Workshop**, “New shores in land plant evolution”

2018 **National Tsing Hua University (Taiwan)**, Institute of Molecular and Cell Biology

2018 **7th Asian Symposium of Ferns and Lycophyte** (Keynote speaker)

2017 **University of Rochester**, Department of Biology

2017 **Arizona State University**, The Life Science Cafe seminar series

2017 **Iowa State University**, Department of Ecology, Evolution, and Organismal Biology

2017 **Chicago Plant Science Symposium**

2016 **Utrecht University**, Institute of Environmental Biology

- 2016 **University of Zurich**, Department of Systematic and Evolutionary Botany
- 2016 **Université Laval**, Institute for Integrative Systems Biology
- 2015 **North Carolina State University**, Plant & Microbial Biology Seminar

Public Engagement

- 2021 **Art at BTI**, “Dead Plant Wisdom: Exploring identity, colonialism and climate change through art and herbaria” [video recording](#)
- 2020 **BTI Breaking Ground Discussion Series**, “Spooky Plants” [video recording](#)
- 2019 **Finger Lakes Native Plant Society**, “Ferntastic Ferns and Lycophytes”
- 2019 **Science on Screen: Little Shop of Horror**
Presented “Killer plants!!” before the movie.
- 2018 **Sciencenter After Dark: Wicked Plants**
Led hands-on activities in a cocktail party.
- 2018 **Sciencenter Members’ Night**, “Wicked ferns—Ferns that killed the early Australian explorers”
The opening talk for the Wicked Plants exhibition.
- 2018 **Judy’s Day** at Cornell Botanic Gardens
My lab has two booths: “Ferntastic Azolla and Lycophytes” and “Amazing Bryophytes”. Jessica Nelson (my postdoc) did several botanical drawing for the stickers, and I helped make sure the tree of life figure (this year’s theme) is correct.
- 2018 **Workshop on Pteridophyte Reproductive Biology** at Dr. Cecilia Koo Botanic Conservation Center (Taiwan)
A training workshop for researchers in Southeast Asia. I gave a lecture on “High-level classification of ferns and lycophytes”.
- 2018 **NSF INCLUDE** at Cornell University, “Biodiversity!”
To high school students from underserved school districts
- 2017 **Ithaca Garden Club**, “Ferntastic ferns and where to find them”
To members of the garden club
- 2017 **NSF INCLUDE** at Cornell University, “Biodiversity!”
To high school students from underserved school districts
- 2017 **Art at BTI**, “Tamed Wonders: Ferns and humans as seen from the BTI atrium”
To artists and art-lovers; [video recording](#)
- 2017 **BTI Giving Tuesday Livestream**
Live video interview with Keith Hannon
- 2017 **Fascination of Plants Day Livestream**
Live video interview with Keith Hannon
- 2017 **BTI Science Bomb Podcast**
Audio interview with Keith Hannon; [podcast link](#)

Teaching

- 2020 Guest lecturer, **Plant Systematics** (PLBIO2480), Cornell University
- 2020 Guest lecturer, **Medical Ethnobotany** (PLBIO 2100), Cornell University
- 2020 Guest lecturer, **Problems in Plant Biology** (PLBIO 7410), Cornell University
- 2019 Guest lecturer, **Medical Ethnobotany** (PLBIO 2100), Cornell University
- 2019 Guest lecturer, **Problems in Plant Biology** (PLBIO 7410), Cornell University
- 2018 Instructor, **Plant Comparative and Evolutionary Genomics** (PLBIO 7420), Cornell University
Syllabus: <https://sites.google.com/site/plbio7420plantgenomics/>
- 2018 Guest lecturer, **Medical Ethnobotany** (PLBIO 2100), Cornell University

- 2018 Guest lecturer, **Problems in Plant Biology** (PLBIO 7410), Cornell University
- 2017 Guest lecturer, **Medical Ethnobotany** (PLBIO 2100), Cornell University
- 2014 Instructor, **Practical Phylogenetics**, Duke University
Co-taught with D. Swofford and K.M. Pryer.
- 2012 Teaching assistant, **Genetics and Evolution**, Duke University

Mentoring

Dissertation Committee

- Tanner Robison, Cornell University
- David Wickell, Cornell University
- Alaina Petlewski, Cornell University
- Joseph Cammarata, Cornell University
- Thereis Choo, Cornell University
- Nikolai Hay, Duke University
- Blake Fauskee, Duke University
- Ariana Eily, Duke University
- Michael Song, UC-Berkeley

Undergraduate/High School Student Mentoring

- 2021 Isa Johnson, Ohio Wesleyan University
- 2019 Ariel Patterson, Reed University (Best poster award)
Victor Cai, Duke University
- 2018 Marazzano Colon, Duke University
Harry Hou, Kimball Union Academy

Professional Activities

Editorial Service

- 2021- Associate Editor, American Fern Journal
- 2018- Associate Editor, Molecular Phylogenetics and Evolution

Journal Reviewer

- 2021 Nature Plants (x3), Current Biology, Molecular Biology and Evolution, New Phytologist, Plant Systematics and Evolution
- 2020 Nature Plants, PNAS, Genome Biology, New Phytologist (x2), Plant Journal, American Journal of Botany, Journal of Systematics and Evolution
- 2019 Nature Plants (x2), Nature Communications, Scientific Reports, Genome Biology and Evolution, G3
- 2018 Nature Plants, New Phytologist, Applications in Plant Sciences, Frontiers in Plant Science, GigaScience (x2), Heredity, Molecular Biology and Evolution, Molecular Phylogenetics and Evolution (x2), Plant and Cell Physiology, Scientific Reports, Symbiosis, Systematic Botany

Grant Proposal Reviewer

- 2020 The Royal Society University Research Fellowship (UK)
- 2020 Czech Science Foundation
- 2020 Academia Sinica Thematic Research Program (Taiwan)
- 2020 American Society of Plant Taxonomists Graduate Student Research Grants
- 2020 Society for the Study of Evolution Rosemary Grant Awards
- 2018 Czech Science Foundation
- 2018 Society of Systematic Biologists Graduate Student Research Awards

Workshop/Symposium Organizer

2021 **Hornworts: the Next Generation**, BL2021 virtual

2019 **BTI Nanopore workshop**, co-organized with Suzy Strickler

2017 **Plant genome evolution from the very beginning**, co-organized with Charles Delwiche (U of Maryland), XIX International Botanical Congress, Shenzhen, China

Fieldwork

>1,500 accessions of plant specimens (mostly ferns) collected from Taiwan, USA, Costa Rica, Guatemala, Belize, Lanyu, Ryukyus, and Luzon islands.