

Clayton J. Visger

Department of Biological Sciences, California State University, Sacramento

6000 J Street Sacramento, CA 95819-6077

Email: Clayton.visger@csus.edu Twitter: [@HoityPloidy](https://twitter.com/HoityPloidy) Website: <https://cvisger.github.io/Visger-Lab/>

I. RESEARCH INTERESTS:

Plant evolution and speciation by autopolyploidy, genomics, transcriptomics, bioinformatics, phylogenomics, ecological niche modeling, and ecophysiology.

II. POSITIONS AND TRAINING:

- 2017-current **California State University**, Sacramento, California
Assistant Professor, Department of Biological Sciences
- 2017 **University of Florida**, Gainesville, Florida
Ph.D., Department of Biology
- 2012 **California State University**, Sacramento, California
B.S., *magna cum laude*, Department of Biological Sciences

III. TEACHING EXPERIENCE:

- 2017-18 Biodiversity, Evolution, and Ecology. Lecture, Activity, and Laboratory Instructor. CSU Sacramento.
- 2017 Genomics, Proteomics, and Bioinformatics. Lecture and Laboratory Instructor. CSU Sacramento.
- 2016 Graduate Phylogenomics. Guest Lecturer. University of Florida.
Developed and taught a learning module on the analysis of RNAseq data which included lecture and lab components.
- 2015 Workshop: Ecological Niche Modeling: A Crash Course. Co-organizer. Botanical Society of America
- 2013 Integrated Principles of Biology II. Laboratory Instructor. University of Florida
- 2012 Integrated Principles of Biology II. Laboratory Instructor. University of Florida
- 2012 Workshop: Plant Gene Annotation and Analysis. Teaching Assistant. California State University Biotechnology Symposium

IV. AWARDS, GRANTS, AND FELLOWSHIPS:

- 2018 NSF IOS 1754072 Collaborative Research: RUI: Understanding the effects of ploidal level on responses to global change in plants, PIs: EB Sessa University of Florida and JE Watkins Colgate University, Co-PI **CJ Visger** CSU Sacramento \$760,800 (CSU Sacramento portion \$177,862 – PI **CJ Visger**)
- 2018 New Investigator Grant Program, *CSUPERB*, Integrating synthetic RNA normalization with Ribo-seq to evaluate the genome-wide impact of polyploidy at the interface of the transcriptome and the translome in *Saccharomyces cerevisiae* \$14,987

2018	Pedagogy Enhancement Award, <i>CSU Sacramento</i> , awarded 3 unit teaching release
2017	Student Project Support, <i>CIMERA CSU Sacramento</i> , \$1300
2016	College of Liberal Arts and Sciences travel award, <i>University of Florida</i> , \$350
2015	Doctoral Dissertation Improvement Grant, <i>National Science Foundation</i> , \$19,353
2014	Ecology Section, Best Graduate Student Presentation, <i>Botanical Society of America</i>
2014	Graduate Student Research Award, <i>Botanical Society of America</i> , \$500
2014	Graduate Student Council Travel Award, <i>University of Florida</i> , \$250
2014	American Society of Plant Taxonomists Travel Award, \$300
2013	Graduate Research Fellowship Program, <i>National Science Foundation</i> , \$142,956
2012	Alumni Graduate Fellowship, <i>University of Florida</i> , \$75,473
2012	Presenter travel and lodging award, <i>CSU Biotechnology Symposium</i> , \$500
2011	PLANTS Grant, St. Louis Conference, <i>Botanical Society of America</i> , \$1000
2011	Summer Undergraduate Research Experience Award, <i>CSU, Sacramento</i> , \$5000
2009	Marda West Scholarship, <i>California State University, Sacramento</i> , \$4000

V. PUBLICATIONS:

13. Folk, R.A., **C.J. Visger**, P.S. Soltis, D.E. Soltis, and R.P. Guralnick. 2018. Geographic range dynamics drove ancient hybridization in a lineage of angiosperms. *The American Naturalist* DOI: 10.1086/698120
12. **Visger, C.J.**, G.K-S. Wong, Y. Zhang, P.S. Soltis, and D.E. Soltis. Using synthetic spike-in RNAs to quantify expression level divergence following autopolyploidy. 2017. *bioRxiv* DOI: 10.1101/169367
11. Soltis, D.E. and **C.J. Visger**. 2016. Polyploid speciation. Oxford bibliographies in evolutionary biology. Ed. Jonathan Losos. *Oxford University Press*. New York, New York, USA
10. **Visger, C.J.**, C. Germain-Aubrey, M. Patel, P.S. Soltis, and D.E. Soltis. 2016. Niche divergence between diploid and autopolyploid *Tolmiea*. *American Journal of Botany* DOI:10.3732/ajb.1600130
9. Soltis, D.E., **C.J. Visger**, D.B. Marchant, and P.S. Soltis. 2016. Polyploidy: Pitfalls and paths to a paradigm. *American Journal of Botany* DOI:10.3732/ajb.1500501
8. Crowl, A., N.W. Miles, **C.J. Visger**, K. Hansen, T. Ayers, R. Haberle, and N. Cellinese. 2016. A global perspective on Campanulaceae: Biogeographic, genomics, and floral evolution. *American Journal of Botany* DOI:10.3732/ajb.1500450
7. 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(9) DOI:10.1093/gbe/evv163
6. Wolf, P.G., C.A. Rowe, J.P. Der, M.P. Schilling, **Visger, C.J.**, and J.A. Thomson. 2015. Origins of *Pteridium* on Galapagos and other archipelagos. *AoB Plants*. 7 DOI:10.1093/aobpla/plv118
5. Servick*, S, **C.J. Visger***, M.A. Gitzendanner, P.S. Soltis, and D.E. Soltis. 2015. Population genetic variation, geographic structure, and multiple origins of autopolyploidy in *Galax urceolata* (Diapensiaceae). *American Journal of Botany* 102(6) DOI:10.3732/ajb.1400554

***Authors contributed equally**

4. Crowl, A., **C.J. Visger**, G. Mansion, R. Hand, H. Wu, G. Kamari, D. Phitos, and N. Cellinese. 2015. Evolution and biogeography of the endemic *Roucela* complex (Campanulaceae: *Campanula*) in the eastern Mediterranean. *Ecology and Evolution* 5(22) DOI:10.1002/ece3.1791
3. Mavrodiev, E.V., M. Chester, V.N. Suárez-Santiago, **C.J. Visger**, R. Rodriguez, A. Susanna, R.M. Baldini, P.S. Soltis, and D.E. Soltis. 2015. Multiple origins and chromosomal novelty in the allotetraploid *Tragopogon castellanus* (Asteraceae). *The New Phytologist* 206(3) DOI: 10.1111/nph.13227.
2. Soltis, D.E., **C.J. Visger**, and P.S. Soltis. 2014. The polyploidy revolution then...and now: Stebbins revisited. *American Journal of Botany* 101(7) DOI:10.3732/ajb.1400178 -Recommended by the Faculty of 1000
1. Soltis, P.S., X. Liu, D.B. Marchant, **C.J. Visger**, and D.E. Soltis. 2014. Polyploidy and novelty: Gottlieb's legacy. *Philosophical Transactions of the Royal Society B Biological Sciences* 369(1648) DOI:10.1098/rstb.2013.0351

VI. PRESENTATIONS

Invited presentations

- 2018 **Visger, C.J.** Keynote address: How did I get here? 32nd Annual CSU Student Research Competition. Sacramento, California, USA.
- 2018 **Visger, C.J.**, P.S. Soltis, and D.E. Soltis. Differential drought response and transcriptome size plasticity between diploid and autotetraploid *Tolmiea*. Evolution of Genome Size. International Plant and Animal Genome Conference XXVI. San Diego, California, USA.
- 2016 **Visger, C.J.** The Evolutionary impact of polyploidy (genome doubling) in *Tolmiea* (Saxifragaceae). California State University, Sacramento, Department of Biological Sciences. Sacramento, California, USA.
- 2016 **Visger, C.J.**, G.K-S. Wong, P.S. Soltis, and D.E. Soltis. Quantifying transcriptome-wide levels of divergent gene expression following speciation by autopolyploidy in *Tolmiea*. Speciation Genomics colloquium. International Plant and Animal Genome Conference XXIV. San Diego, California, USA.

Contributed presentations (presenter indicated with *)

- 2018 ***Visger, C.J.**, P.S. Soltis, and D.E. Soltis. Differential drought response and transcriptome size plasticity between diploid and autotetraploid *Tolmiea*. Botanical Society of America. Rochester, Minnesota, USA. (oral presentation)
- 2016 ***Visger, C.J.**, G.K-S. Wong, P.S. Soltis, and D.E. Soltis. Using synthetic spike-in RNAs to quantify expression level divergence following autopolyploidy. International Conference on Polyploidy, Hybridization, and Biodiversity. Rovinj, Croatia. (oral presentation)

- 2016 *Folk, R., **C.J. Visger**, R. Guralnick, D.E. Soltis, and P.S. Soltis. Ancestral reconstruction of habitat shifts from ecological niche models of extant species: A pipeline with applications to ancestral hybridization in *Heuchera* (Saxifragaceae). Botanical Society of America, Savannah, Georgia, USA. (oral presentation)
- 2016 ***Visger, C.J.**, G.K-S. Wong, P.S. Soltis, and D.E. Soltis. Quantifying expression level divergence following autopolyploidy in *Tolmiea* (Saxifragaceae). Evolution. Austin, Texas, USA. (oral presentation).
- 2015 *Wolf, P.G., C.A. Rowe, M.P. Schilling, J.P. Der, **C.J. Visger**, and J.A. Thomson. Origins of the fern *Pteridium* on Galapagos Islands. AAAS, Pacific Division, San Francisco, California, USA. (oral presentation).
- 2015 *Wolf, P.G., E.B. Sessa, J.P. Der, F.-W. Li, C.J. Rothfels, M.A. Gitzendanner, **C.J. Visger**, D.B. Marchant, D.E. Soltis, P. S. Soltis, and K. M. Pryer. Skimming the surface of fern nuclear genomes. 13th Smithsonian Botanical Symposium, Smithsonian Institution, Washington, DC, USA. (oral presentation).
- 2015 ***Visger, C.J.**, G.K-S. Wong, P.S. Soltis, and D.E. Soltis. Quantifying transcriptome-wide levels of gene expression following autopolyploidy in *Tolmiea* (Saxifragaceae). Botanical Society of America, Edmonton, Alberta, Canada. (oral presentation).
- 2014 *Miles, N.W., A. Cowl, **C.J. Visger**, K. Hansen, T. Ayers, R. Haberle, and N. Cellinese. Botanical Society of America, Boise, Idaho, USA. (poster presentation).
- 2014 *Wolf, P.S., C.A. Rowe, M.P. Schilling, J. Der, **C.J. Visger**, and J.A. Thomson. Origins of *Pteridium* on Galapagos Islands. Botanical Society of America, Boise, Idaho, USA. (oral presentation).
- 2014 ***Visger, C.J.**, C. Germain-Aubrey, P.S. Soltis, and D.E. Soltis. Niche divergence in *Tolmiea* (Saxifragaceae): using ecological niche modeling to develop a testable hypothesis for a diploid-autotetraploid species pair. Botanical Society of America, Boise, Idaho, USA. (oral presentation).
- Awarded Ecology Section Best Graduate Student Presentation
- 2014 *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. An exploration of fern genome space. Botanical Society of America, Boise, Idaho, USA. (oral presentation).
- 2013 ***Visger C.J.**, Soltis P.S., and D.E. Soltis. Did niche differentiation occur following autopolyploidy in *Tolmiea* (Saxifragaceae)? Determining range requirements using ecological niche modeling. Botanical Society of America, New Orleans, Louisiana, USA. (poster presentation).
- 2013 *Mavrodiev, E.V., M. Chester, **C.J. Visger**, R. Rodriguez, P.S. Soltis, D.E. Soltis, A. Susanna, and V.N. Suárez-Santiago. On the parentage and multiple origins of an Old World allotetraploid, *Tragopogon casellanus* Levier s.l. (Asteraceae), based on molecular data. Botanical Society of America, New Orleans, Louisiana, USA. (poster presentation).
- 2012 ***Visger C.J.** and S. Datwyler. A cytogeographical survey of *Penstemon* section *Saccanthera* subsection *Heterophylli*. Botanical Society of America, Columbus Ohio, USA. (oral presentation).

VII. PROFESSIONAL SERVICE AND OUTREACH

Outreach activities

- 2018-present Botanical Society of America, Genetics Section Secretary/Treasurer
- 2018 Sickle Cell Anemia molecular lab experience for students from Galt High School, Co-Leader, CSU Sacramento
- 2012-2014, 2018 PLANTS (Preparing Leaders and Nurturing Tomorrow's Scientists). Mentor. Botanical Society of America
- 2013-2016 Earth Day Exploration. Exhibitor. Florida Museum of Natural History
- 2014 Summer Science Quest, College for Precollegiate Training and Education, University of Florida
- 2013 Applying to Grad School and Beyond Workshop. Panelist. Botanical Society of America

Peer reviewer

Applications in Plant Sciences, Botany, Genetica, Heredity, Plant Molecular Biology Reporter

Professional Society membership

Botanical Society of America
California Botanical Society