

Lindsay V. Clark
Postdoctoral Research Associate
Department of Crop Sciences
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Education:

PhD, Genetics September 2011
University of California, Davis

Bachelor of Arts June 2004
Dartmouth College, Hanover, NH
Major: Genetics, Cell, and Developmental Biology
Minor: Chemistry

Publications:

Submitted or in preparation:

Lindsay V. Clark and Andrea Drauch Schreier (2015) "Resolving microsatellite genotype ambiguity in populations of allopolyploid and diploidized autopolyploid organisms using negative correlations between alleles." Preprint on bioRxiv. DOI: [10.1101/020610](https://doi.org/10.1101/020610)

Lindsay V. Clark, Elena Dzyubenko, Nikolay Dzyubenko, Larisa Bagmet, Andrey Sabitov, Doug A. Johnson, Jens Bonderup Kjeldsen, Karen Koefoed Petersen, Uffe Jørgensen, and Erik J. Sacks. "Genetic and ecological characteristics of *Miscanthus* in eastern Russia." In preparation.

Published:

Lindsay V. Clark, J. Ryan Stewart, Aya Nishiwaki, Yo Toma, Jens Bonderup Kjeldsen, Uffe Jørgensen, Hua Zhao, Junhua Peng, Ji Hye Yoo, Kweon Heo, Chang Yeon Yu, Toshihiko Yamada, and Erik J. Sacks. (2015) "Genetic structure of *Miscanthus sinensis* and *Miscanthus sacchariflorus* in Japan indicates a gradient of bidirectional but asymmetric introgression." **Journal of Experimental Botany** 66:4213-4225. DOI: [10.1093/jxb/eru511](https://doi.org/10.1093/jxb/eru511)

Lindsay V. Clark, Joe E. Brummer, Katarzyna Głowacka, Megan Hall, Kweon Heo Junhua Peng, Toshihiko Yamada, Ji Hye Yoo, Chang Yeon Yu, Hua Zhao, Stephen P. Long, and Erik J. Sacks (2014) "A footprint of past climate change on the diversity and population structure of *Miscanthus sinensis*." **Annals of Botany** 114:97-107. DOI: [10.1093/aob/mcu084](https://doi.org/10.1093/aob/mcu084)

Siyao Liu, Lindsay V. Clark, Kankshita Swaminathan, Justin M. Gifford, John A. Juvik, and Erik J. Sacks (2015) "High density genetic map of *Miscanthus sinensis* reveals inheritance of zebra stripe." **Global Change Biology Bioenergy**. DOI: [10.1111/gcbb.12275](https://doi.org/10.1111/gcbb.12275)

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- Hironori Nagano, Lindsay V. Clark, Hua Zhao, Junhua Peng, Ji Hye Yoo, Kweon Heo, Chang Yeon Yu, Kossonou Guillaume Anzoua, Tomoaki Matsuo, Erik J. Sacks, and Toshihiko Yamada (2015) "Contrasting allelic distribution of *CO/Hdl* homologues in *Miscanthus sinensis* from the East Asian mainland and the Japanese archipelago." **Journal of Experimental Botany** 66:4227-4237. DOI: [10.1093/jxb/erv292](https://doi.org/10.1093/jxb/erv292)
- Katarzyna Głowacka, Lindsay V. Clark, Shivani Adhikari, Junhua Peng, J. Ryan Stewart, Aya Nishiwaki, Toshihiko Yamada, Uffe Jørgensen, Trevor R. Hodkinson, Justin Gifford, John A. Juvik, and Erik J. Sacks (2015) "Genetic variation in *Miscanthus × giganteus* and the importance of estimating genetic distance thresholds for differentiating clones." **Global Change Biology Bioenergy** 7:386-404. DOI: [10.1111/gcbb.12166](https://doi.org/10.1111/gcbb.12166)
- Christopher M. Kaiser, Lindsay V. Clark, John A. Juvik, Thomas B. Voigt and Erik J. Sacks (2015) "Characterizing a *Miscanthus* Germplasm Collection for Yield, Yield Components, and Genotype × Environment Interactions" **Crop Science**. DOI: [10.2135/cropsci2014.12.0808](https://doi.org/10.2135/cropsci2014.12.0808)
- Lindsay V. Clark, Katherine J. Evans, and Marie Jasieniuk (2013) "Origins and distribution of invasive *Rubus fruticosus* L. agg. clones in the Western United States." **Biological Invasions** 15:1331-1342. DOI: [10.1007/s10530-012-0369-8](https://doi.org/10.1007/s10530-012-0369-8)
- Lindsay V. Clark and Marie Jasieniuk (2012) "Native and exotic *Rubus* hybridize to produce facultative apomictic offspring in the Western United States." **Heredity** 109:320-328. DOI: [10.1038/hdy.2012.45](https://doi.org/10.1038/hdy.2012.45)
- Lindsay V. Clark and Marie Jasieniuk (2011) "POLYSAT: an R package for polyploid microsatellite analysis." **Molecular Ecology Resources** 11: 562-566. DOI: [10.1111/j.1755-0998.2011.02985.x](https://doi.org/10.1111/j.1755-0998.2011.02985.x)
- Amanda Garris, Lindsay Clark, Chris Owens, Steven McKay, James Luby, Kathy Mathiason, and Anne Fennell (2009) "Mapping of Photoperiod-Induced Growth Cessation in the Wild Grape *Vitis riparia* Michx." **Journal of the American Society for Horticultural Science** 134: 261-272. [link](#)

Software:

[polysat: tools for polyploid microsatellite analysis](#)

published May 2010, updated June 2015

R package available at cran.r-project.org.

Presentations:

- "Diversifying the cultivars of *Miscanthus* and Miscane available for bioenergy feedstocks through breeding and genomics." Invited speaker at the 4th Pan-American Congress on Plants and Bioenergy, Guelph, Ontario, June 7, 2014.
- "Genetic Diversity and Population Structure of *Miscanthus sinensis*." Invited speaker at Plant and Animal Genome XXII, January 11, 2014.
- "Genetic diversity of *Miscanthus* as a resource for breeding *Miscanthus*, Miscanes, and Sugarcane" at the Energy Biosciences Institute retreat, July 15, 2013.
- "Using molecular markers to investigate invasive *Rubus* and genetic diversity of *Miscanthus*." Invited seminar speaker, Western Kentucky University Biology Department, September 7, 2012.
- "Genetic diversity and population structure of *Miscanthus* in Japan" at the 3rd Pan American Congress on Plants and Bioenergy, Champaign, Illinois, June 17, 2012.

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“Hybridization of native and invasive blackberries in California” at UC Davis Weed Day, July 17, 2008.

Posters:

"Genome-wide association analysis of flowering time in *Miscanthus sinensis*" at Plant and Animal Genome XXIII, January 10-14, 2015.

“Genetic structure of *Miscanthus sinensis* from Asia and the United States” at Plant and Animal Genome XXI, January 12-16, 2013.

[“Microsatellites distinguish sexual vs. apomictic reproduction in spontaneous *Rubus* hybrids”](#) at Plant and Animal Genome XIX, January 15-19, 2011.

[“Hybridization between native and introduced *Rubus* in California and the Pacific Northwest”](#) at Plant and Animal Genome XVIII, January 9-13, 2010.

[“Hybridization between invasive and native blackberries \(*Rubus*\) in California”](#) at California Invasive Plant Council Symposium, October 2-4, 2008.

Research Experience:

Postdoctoral Research Associate

August 2011-present

Erik Sacks, University of Illinois, Urbana-Champaign

Characterizing molecular genetic diversity and population structure in *Miscanthus*, using genotyping-by-sequencing, GoldenGate SNPs, microsatellites, and flow cytometry, in order to develop plant breeding resources for the development of bioenergy crops. Performing association mapping of yield traits, and mentoring graduate students performing QTL mapping. Conducting physiological studies using gas exchange and fluorescence with LI-COR 6400 instruments. Organizing lab meetings and hazardous waste disposal. Maintaining laboratory chemical inventory, chemical hygiene plan, MSDS, and safety training records. Managing hourly workers and mentoring independent study and graduate students.

Graduate Student Researcher

June 2007-July 2011

Marie Jasieniuk, UC Davis

Conducted molecular research on invasiveness in *Rubus*, including studies on hybridization, clonal diversity, reproductive strategy, and differential gene expression. Performed field collections of wild *Rubus* germplasm. Wrote software for polyploid data analysis. Mentored an undergraduate August 2009-October 2010.

Biological Science Laboratory Technician

November 2004-July 2006

Amanda Garris, USDA-ARS-Plant Genetic Resources Unit, Geneva, NY

Cloned phytochrome genes from *Vitis* species. Performed genotyping and phenotyping experiments relating to day-length detection in grapevine. Organized and participated in journal club.

Undergraduate Honors Thesis

June 2002-June 2004

Thomas Jack, Dartmouth College, Hanover, NH

Performed research and wrote honors thesis on the characterization of a gene cluster in *Arabidopsis*. Regularly presented this research and outside papers at lab meetings.

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Women in Science Project Intern

January-May 2001, January-March 2002

Roger Sloboda, Dartmouth College, Hanover, NH

Performed research on protein localization during mitosis, using Western blotting and immunofluorescence.

Laboratory Technician

June-August 2001

Thomas Foxall, University of New Hampshire

Developed a protocol for immunocytochemical staining hamster arteries for estrogen receptors. Prepared photographs for publication using Adobe Photoshop.

Teaching Experience:

Associate Instructor, Plant Genetics and Biotechnology Laboratory

June-July 2009

Department of Plant Sciences, UC Davis

Instructor of record for an intensive laboratory course. Edited laboratory manual and designed a new activity to introduce students to primary literature. Prepared and gave lectures, held office hours, and did all lab setup and clean up. Wrote quizzes and extra credit assignments, wrote and graded exams. Demonstrated techniques, assisted students, and answered questions during lab.

Guest Instructor, Crop Germplasm Resources

November 2013, October 2014

Department of Crop Sciences, University of Illinois, Urbana-Champaign

Designed and led a computer exercise on detecting population structure in germplasm collections using SNP data.

Guest Lecturer, Molecular Markers in Plant Breeding

October 2013

Department of Crop Sciences, University of Illinois, Urbana-Champaign

“A footprint of past global climate change on the population genetic structure of *Miscanthus sinensis*.”

Guest Lecturer, Ecological Genetics

February 2011

Ecology Graduate Group, UC Davis

“Polyploid data analysis, and how to gently transition from software user to software developer”

[Presentation PDF](#)

Teaching Assistant, Molecular Genetics Laboratory

January-March 2010

Department of Molecular & Cellular Biology, UC Davis

Wrote answer keys and graded assignments and exams. Held review sessions. Answered student questions during lab. Assisted professor and staff with lab setup and clean up.

Teaching Assistant, Genes and Gene Expression

Sept.-Dec. 2009, January-March 2011

Department of Molecular & Cellular Biology, UC Davis

Led three one-hour discussion sections per week as well as exam review sessions. Held office hours. Wrote exam questions and graded exams and quizzes.

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Teaching Assistant, Human Heredity

March-June 2007, March-June 2009

Department of Molecular & Cellular Biology, UC Davis

Wrote lesson plans and quizzes and led four one-hour discussion sessions every week. Held office hours and graded quizzes and extra credit assignments.

Teaching Assistant, Plant Genetics and Biotechnology Laboratory

February-March 2009

Department of Plant Sciences, UC Davis

Prepared reagents and equipment needed for course. Demonstrated and instructed students in molecular techniques.

Undergraduate Teaching Assistant, Molecular Biology

June-August 2003

Department of Biological Sciences, Dartmouth College, Hanover, NH

Instructed students in molecular techniques and protocols in a laboratory setting. Ensured that benches were clean, samples were collected, and equipment was shut off at the end of each lab.

Graduate Honors and Awards:

UC Davis Department of Plant Sciences Graduate Research Assistantship	2007-2011
Jastro-Shields Research Award	2008-2009, 2009-2010, 2010-2011
UC Davis Department of Plant Sciences Graduate Student Travel Award	2009, 2010
California Weed Science Society Scholarship	2010

Graduate Coursework:

Genetic Analysis, Population and Quantitative Genetics, Molecular Biology, History of Genetics, Population Genetic Software, Genomics, Multivariate Systems and Modeling, Molecular Phylogenetic Analysis, Molecular Ecology, Plant Population Biology, Translating Research Beyond Academia, Landscape Genetics

Postdoctoral Service:

Reviewer for <i>Molecular Ecology Resources</i>	2012 - 2015
Reviewer for <i>Molecules</i>	2014, 2015
Reviewer for <i>Plant, Cell & Environment</i>	2015
Reviewer for <i>Heredity</i>	2014
Reviewer for <i>Molecular Ecology</i>	2014
Reviewer for <i>Canadian Journal of Plant Science</i>	2014
Reviewer for <i>Molecular Biotechnology</i>	2014
Reviewer for <i>Biological Journal of the Linnean Society</i>	2013
Reviewer for <i>Biological Invasions</i>	2013
Reviewer for <i>Euphytica</i>	2013
Reviewer for <i>BioEnergy Research</i>	2012
Mentored two undergraduates from Zhejiang University for International Summer Immersion Program	2015
Mentored McNair Scholar during Summer Research Institute	2013

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Mentored undergraduates for independent study	2013-2015
Volunteer at Genome Day, Orpheum Children's Museum, Champaign, IL	November 2012
Organizer for Genome Day, Orpheum Children's Museum, Champaign, IL	September-November 2013
Video chat with Cub Scout troop to discuss being a scientist	May 2013

Graduate Service:

Organized Genetics student seminar	Winter 2008
Hosted prospective students	2007-2011
Hosted Genetics recruitment barbecue	2008-2010
Helped with Plant Science displays at Picnic Day	2007-2011
Graduate Student Association Representative	2008-2009
Genetics Graduate Group Education Policy Committee	2009-2010
Genetics Graduate Group Student Executive Committee	2007-2010
Helped with Genetics Graduate Group Colloquium	2010, 2011
Outreach presentation to Anna Kyle Elementary, Fairfield, CA	May 2010

Professional Development

"Entering Mentoring" workshop series, UC Davis College of Biological Sciences	Fall 2009
"Beyond the Basics" workshop series, UC Davis Teaching Resources Center	Spring 2009

Undergraduate Honors and Awards:

Summa Cum Laude (95th percentile GPA), Phi Beta Kappa, Sigma Xi, High Honors in Major, Beckman Scholar, Presidential Scholar, Women in Science Project Intern, Willard W. Eggleston Botany Prize, John Whiteley Band Spirit Award