

Xiaochi (Max) Ma

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126 Johnson Hall, 100 Dairy Road, Pullman, WA, 99164, USA

Education

Washington State University	Pullman, USA
Ph.D. Candidate in Crop Science Grape Physiology, Plant-Water Relations	2015-2019
Nanjing Agricultural University	Nanjing, China
M.S. in Ecology Plant-Microbe-Soil Interactions	2012-2015
Nanjing Forestry University	Nanjing, China
B.S. in Ecology Plant Ecophysiology	2008-2012

Grants (*Principal Investigator, ‡Research Assistant)

Western Sustainable Agriculture Research & Education Program (SARE) Grant*, USDA (GW17-058, Effects of Subsurface Micro-irrigation on Water Use Efficiency and Grapevine Growth, \$25,000) 2016-2018

- Investigated the effects of innovative subsurface irrigation strategy on wine grape quality, grapevine growth, root development, and water use efficiency.

US-National Science Foundation Project‡ (NSF-DEB0820560, Aboveground and belowground enemies and the invasion success of plants: experimental tests in the US and China) 2012-2015

- Compared the evolving sensitivities of invasive Chinese tallow ecotypes towards allelopathy, and investigated its biological control in the Southeast U.S.

College Science and Technology Innovation Grant*, **Nanjing Forestry University** (No. 200906, Carbon dynamics in different Ginkgo agroforestry systems, ¥3,000) 2009-2010

- Conducted both lab and field experiments to evaluate the soil carbon sequestration, economic and ecological benefits of Ginkgo agroforestry management; estimated soil enzyme activities, microbial properties, and crop yields in different agroforestry systems.

Undergraduate Science and Technology Innovation Grant*, **Nanjing Forestry University** (No. 200905, Drought tolerances in five woody plants for ecological restoration of limestone mountains, ¥2,000) 2009-2010

- Examined the physiological responses of five native plants to extreme drought stress; chose suitable woody plants for ecological restoration of limestone mountains.

Publications

- **Xiaochi Ma**, Karen Sanguinet, Pete Jacoby. 2019. Performance of direct root-zone deficit irrigation on *Vitis vinifera* L. cv. Cabernet Sauvignon production and water use efficiency in semi-arid southcentral Washington. *Agricultural Water Management* 221: 47-57.
- Pete Jacoby, **Xiaochi Ma**. 2018. Introducing direct root-zone deficit irrigation to conserve water and enhance grape quality in the Pacific Northwest. *Crops & Soils Magazine* 51 (5): 34-37.
- Hong Wang, Ling Zhang, **Xiaochi Ma**, Jianwen Zou, Evan Siemann. 2018. The effects of elevated ozone and CO₂ on growth and defense of native, exotic and invader trees. *Journal of Plant Ecology* 11 (2): 266-272.
- Zhi Li, Ling Zhang..., **Xiaochi Ma**, Xiaomin Guo, Dekui Niu. 2017. Response of soil sulfur availability to elevation and degradation in the *Wugong* Mountain meadow, China. *Plant, Soil, and Environment* 63 (6): 250-256.
- Hong Wang, **Xiaochi Ma**, Evan Siemann, *et al.* 2016. UV-B radiation has larger impacts on invasive populations of *Triadica sebifera* but surface ozone impacts do not vary. *Journal of Plant Ecology* 9 (1): 61-68.
- Ling Zhang, **Xiaochi Ma**, Evan Siemann, *et al.* 2016. Increased soil respiration and litter decomposition following perennial forbs invasion of an annual grassland. *Pedosphere* 26 (4): 567-576.

Publications in Review or Preparation

- **Xiaochi Ma**, Karen Sanguinet, Pete Jacoby. 2019. Direct root-zone irrigation outperforms surface drip irrigation for grape yield and crop water use efficiency while restricting root growth. *Under review*.
- **Xiaochi Ma**, Pete Jacoby, Karen Sanguinet. 2019. Photosynthetic capacity of red wine grapevine negatively correlates with shallow root growth while distribution of deep roots does not vary. *In preparation*.

Presentations (*Oral, ‡Poster)

- **Xiaochi Ma***. 2019. Grapevines under drought: Applying integrated monitoring method and efficient water management for sustainable viticulture. *Crop and Soil Sciences Department Seminar, WSU. April 22. Pullman, WA.*
- **Xiaochi Ma***, Andrei Smertenko, Markus Keller, Pete Jacoby, Karen Sanguinet. 2018. Enhancing crop production and water conservation through direct root-zone irrigation strategy. *American Society of Agronomy, Crop Science Society of America Annual Meeting. November 4-7. Baltimore, MD.*
- **Xiaochi Ma*‡**, Karen Sanguinet, Andrei Smertenko, Pete Jacoby. 2018. Performance of Cabernet Sauvignon under direct root-zone deficit irrigation. *69th American Society for Enology and Viticulture National Conference. June 18-21. Monterey, CA.*
- **Xiaochi Ma*‡**, Karen Sanguinet, Pete Jacoby. 2018. Invited talk: Effects of Subsurface Micro-irrigation on Water Use Efficiency and Grapevine Growth. *Our Farms, Our Future National Conference (SARE, USDA). April. 3-5. St. Louis, MO.*
- **Xiaochi Ma‡**, Pete Jacoby, Karen Sanguinet. 2018. Comparing effects of different irrigation rates and depths on wine grape production, grapevine growth, and root development through direct root-zone irrigation strategy. *Washington Winegrowers Convention & Trade Show. February 5-7. Kennewick, WA.*
- **Xiaochi Ma‡**, Pete Jacoby, Karen Sanguinet. 2017. Influences of direct root-zone deficit irrigation on wine grape production, grapevine growth, and root distribution in Pacific Northwest. *American Society of Agronomy Annual Meeting. October 22-25. Tampa, FL. (First-place award, graduate poster competition).*
- **Xiaochi Ma‡**, Pete Jacoby, Alexis Torp, Gillian Hawkins, Lindsey Mongan. 2017. Effects of root-zone deficit irrigation on crop growth, fruit yield, and agroecosystem stability: Using the wine grapevine Cabernet Sauvignon as a model. *Ecological Society of America 102nd Annual Meeting. August 6-11. Portland, OR.*
- **Xiaochi Ma‡**, Jeremy Thompson, Pete Jacoby. 2017. Direct root-zone deficit irrigation: A strategy to enhance water conservation and sustain grape production in Pacific Northwest. *Center for Precision & Automated Agricultural Systems (CPAAS) Agricultural Technology Day. July 31. Prosser, WA.*
- **Xiaochi Ma‡**, Pete Jacoby, Jeremy Thompson. 2016. Assessing impacts of direct root-zone irrigation on grapevine physiology. *Crop Science Society of America Annual Meeting. November 7-11. Phoenix, AZ. (Third-place award, graduate poster competition).*

Teaching Experience

Crops 411 Crop Physiology and Environmental Interactions, Washington State University

Teaching Assistant

Fall 2019

- Help students reinforce the knowledge presented by instructor; help instructor prepare for the class, grade exams and assignments; give a lecture “Irrigation in Grapes” to students.

Professional Experience

Safety Committee, Department of Crop and Soil Sciences, Washington State University

Student Representative

2017-2019

- Review the safety documents and coordinate with lab and farm safety efforts.

Viticulture & Enology Program, Washington State University

Undergraduate Research Mentor

2016-2019

- Worked closely with five undergraduate students on their wine grape research projects, and helped three of them develop research posters, which they presented at professional meetings and research showcase in 2018; reviewed Undergraduate Research Award applications.

Graduate and Professional Student Association (GPSA), Washington State University

Senator

2016-2017

- Attended GPSA senate meeting to vote for policies related to graduate and professional student benefits; organized events that address specific needs of graduate and professional students; reviewed and selected abstracts for GPSA Research Exposition.

Awards and Achievements

**Number of awards with same titles/categories*

<i>O. A. Vogel</i> Washington State Crop Improvement Association Scholarship, Washington State University	2018-2019
<i>Roscoe and Frances Cox</i> Scholarship, Washington State University (2*)	2017-2019
<i>Michael Vail</i> Scholarship, American Society for Enology and Viticulture (2)	2017-2019
Travel Grants/Awards for National Conferences (6)	2016-2018
GPSA Scholarship, Graduate and Professional Student Association at Washington State University (2)	2016-2017
Excellent Graduate Student (Top 10%), Nanjing Agricultural University	2014
Outstanding Volunteer, The 2 nd Asian Youth Olympic Game	2013
First Class Postgraduate Scholarship, Nanjing Agricultural University	2012-2015
Outstanding Graduate, Nanjing Forestry University	2012
Merit Student Scholarship, Nanjing Forestry University	2011-2012
Pacemaker to Merit Student Scholarship, Nanjing Forestry University	2010-2011
<i>Wenyu Xiong</i> Ecology Scholarship, Nanjing Forestry University	2009-2010

Press Releases

“Irrigation system to use less water”. 2019. *The Daily Evergreen Newspaper*. August 20. Article by George Eralil.

(<https://dailyevergreen.com/58922/news/irrigation-system-to-use-less-water/>)

“Student’s intellect, drive result in scholarships and grants”. 2018. *WSU Insider*. June 22. Article by Scott Weybright.

(<https://news.wsu.edu/2018/06/22/atypical-driven-student-wins-scholarship/>)

“Making a difference: teaching sustainability”. 2018. *Our Farms, Our Future Podcasts*. September 7.

(<https://www.sare.org/Newsroom/Press-Releases/Our-Farms-Our-Future-Podcast-Making-a-Difference-Teaching-Sustainability>)