

# Lucas K. Bobadilla

## Curriculum Vitae

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## Education

- 2019–2023: **Ph.D. candidate, Crop Sciences**, *University of Illinois*, Urbana-Champaign, IL, USA.  
Research focuses on the use of genomics and transcriptomics to characterize the evolution of quantitative traits in weed species, including non-target side herbicide resistance and reproduction system.  
GPA : 3.86/4
- 2016–2019 : **Master of Science, Crop Science and Plant Breeding**, *Oregon State University*, Corvallis, OR, USA.  
Thesis: Frequency, Distribution, Ploidy Diversity and Control Options of Herbicide Resistant Italian Ryegrass (*Lolium perenne* L. spp. *multiflorum* (lam.) Husnot) Populations in Western Oregon.  
GPA : 3.89/4
- 2010–2015 : **Bachelor of Science, Agronomy**, *University of Sao Paulo*, ESALQ, Piracicaba, SP - Brazil.  
Comprehensive exposure to the core areas of agronomy along with a final year project on Herbicide resistance in weeds at UC Davis.  
GPA : 7.36/10

## Publications

### Journal Articles

- 2022 **Bobadilla, Lucas K.**, Darci A. Giacomini, Aaron G. Hager, and Patrick J. Tranel. Characterization and inheritance of dicamba resistance in a multiple-resistant waterhemp (*Amaranthus Tuberculatus*) population from illinois. **Weed Science**, volume 70, pages 4–13, 2022, ( **Impact Factor:2.89** ).
- 2021 **Bobadilla, Lucas K.**, Andrew G. Hulting, Pete A. Berry, Marcelo L. Moretti, and Carol Mallory-Smith. Frequency, distribution, and ploidy diversity of herbicide-resistant Italian ryegrass (*Lolium perenne* spp. *multiflorum*) populations of western Oregon. **Weed Science**, pages 1–33. Cambridge University Press, 2021, ( **Impact Factor:2.89** ).
- 2021 Marcelo L. Moretti and Hanson Bradley D. **Bobadilla, Lucas K.** Cross-resistance to diquat in glyphosate/paraquat-resistant hairy fleabane (*Conyza Bonariensis*) and horseweed (*Conyza Canadensis*) and confirmation of 2,4-d resistance in *Conyza Bonariensis*. **Weed Technology**, pages 1–6. Cambridge University Press, 2021, ( **Impact Factor:2.42** ).
- 2021 Stephen O Duke, Ian Heap, Patrick J Tranel, and **Bobadilla, Lucas Kopecky**. How many ways can nature kill the goose that laid the golden egg?—the many mechanisms of evolved glyphosate resistance. **Outlooks on Pest Management**, volume 32, pages 197–202. Research Information, 2021, ( **Impact Factor:1.65** ).

- 2021 Yousoon Baek, **Bobadilla, Lucas K.**, Darci A Giacomini, Jacob S Montgomery, Brent P Murphy, and Patrick J Tranel. Evolution of glyphosate-resistant weeds. ***Reviews of Environmental Contamination and Toxicology***, pages 93–128. Springer, 2021, ( **Impact Factor:5.96** ).
- 2020 **Bobadilla, Lucas K.**, Andrew G. Hulting, Daniel W. Curtis, and Carol Mallory-Smith. Application of synthetic auxin herbicides to suppress seed viability of Italian ryegrass (*Lolium perenne* ssp. *Multiflorum*) in tall fescue seed production. ***Weed Technology***, volume 34, pages 489–497. BioOne, 2020, ( **Impact Factor:2.42** ).
- 2020 Andréia K. Suzukawa, **Bobadilla, Lucas K.**, Carol Mallory-Smith, and Caio ACG Brunharo. Non-target-site resistance in *Lolium* spp. globally: A review. ***Frontiers in Plant Science***, volume 11. Frontiers Media SA, 2020, ( **Impact Factor:5.75** ).

#### Submitted/on process manuscripts

- 2022 **Lucas K. Bobadilla, Yousoon Baek and Patrick J Tranel**, *Comparative transcriptomic analysis of male and females in the dioecious weeds *Amaranthus palmeri* and *Amaranthus tuberculatus**. Submitted to BMC Biology
- 2022 **Lennart Charton, Lucas K. Bobadilla, Susana Gonzales, Gudrun Lange, Marc Lohse, Sebastian Klie, Roland Beffa, Patrick J. Tranel, and Anita Küpper**, *Closing the gap: Complete characterization of iodosulfuron and mesosulfuron metabolism by CYP81A10v7 in European *Lolium* spp. populations*. Submitted to Molecular Biology and evolution
- 2022 **Lucas K. Bobadilla**, *WeedR: A R shiny package for weed scientists*. On process for submission
- 2022 **Lucas K. Bobadilla and Patrick J Tranel**, *Transcriptomics description of dicamba resistance in *Amaranthus tuberculatus**. On process for submission to Pest Management Science
- 2022 **Lucas K. Bobadilla Brent P. Murphy, Roland S. Beffa, Anita Küpper and Patrick J Tranel**, *Population structure and adaptation of weedy *Lolium* spp. revealed by a continental transcriptomic study*. On process for submission

#### In Conference Proceedings

- 2021 **Lucas K. Bobadilla** and Aaron Hager Darci Giacomini, Patrick Tranel. The first dicamba-resistance case in waterhemp (*Amaranthus tuberculatus*): Inheritance characterization and identification of candidate resistance genes from rna-seq. In *Proceedings of the 76th Annual Meeting of the North Central Weed Science Society, Grand Rapids, MI*, page 168. NCWSS, 2021.
- 2021 **Lucas K. Bobadilla** and Roland S. Beffa Patrick Tranel Brent P. Murphy, Anita Küpper. Population structure and adaptation of weedy *Lolium* spp. revealed by a continental transcriptomic study. In *Proceedings of the 76th Annual Meeting of the North Central Weed Science Society, Grand Rapids, MI*, page 52. NCWSS, 2021.
- 2021 Damilola A. Raiyemo and Patrick Tranel **Lucas K. Bobadilla**. Comparative genomics of dioecious *Amaranthus* species. In *Proceedings of the 76th Annual Meeting of the North Central Weed Science Society, Grand Rapids, MI*, page 119. NCWSS, 2021.
- 2020 **Lucas K. Bobadilla** and Patrick J Tranel. Transcriptomics-based identification of candidate genes responsible for reduced dicamba sensitivity in waterhemp (*Amaranthus tuberculatus*). In *Proceedings of the 75th Annual Meeting of the North Central Weed Science Society, Virtual*, page 78. NCWSS, 2020.

- 2020 **Lucas K. Bobadilla** and Patrick J Tranel Darci A. Giacomini. Characterization of dicamba cross resistance in a multiple-resistant waterhemp (*Amaranthus tuberculatus*) population from illinois. In *Proceedings Weed Science Society of America annual meeting, Maui, HI*, page 21. WSSA, 2020.
- 2019 **Lucas K. Bobadilla** and Andrew G. Hulting Carol Mallory-Smith Camila R. P. Lima, Pete A. Berry. The recent scenario of italian ryegrass herbicide resistance frequency and ploidy diversity in western oregon. In *Proceedings Western Society of Weed Science annual meeting, Denver CO*, pages 21–22. WSWS, 2019.
- 2018 Nami Wada and **Lucas K. Bobadilla**, Carol Mallory-Smith Jennifer Parke, Pete A. Berry. Comparison of solarization and biosolarization for weed control in a tree seedling nursery in western oregon. In *Proceedings Western Society of Weed Science annual .meeting, Garden Grove, CA*, pages 12–13. WSWS, 2018.
- 2018 **Lucas K. Bobadilla** and Andrew G. Hulting Carol Mallory-Smith Pete A. Berry, Dan W. Curtis. Frequency and distribution of herbicide resistant biotypes of italian ryegrass in the willamette valley of western oregon. In *Proceedings Western Society of Weed Science annual meeting, Garden Grove, CA*, page 65. WSWS, 2018.
- 2018 **Lucas K. Bobadilla** and Carol Mallory-Smith Dan W. Curtis, Andrew G. Hulting. Effects of synthetic auxin herbicides on seed production and seed viability of herbicide resistant populations of italian ryegrass in western oregon. In *Proceedings Western Society of Weed Science annual meeting, Garden Grove, CA*, page 24. WSWS, 2018.
- 2017 **Lucas K. Bobadilla** and Carol Mallory-Smith Andrew G. Hulting. Management of multiple resistant italian ryegrass - characterizing resistant populations. In *Proceedings Western Society of Weed Science annual meeting, Coeur d'Alene, ID*, page 24. WSWS, 2017.

## Fellowships & Awards

- 2016 **William Kent Wiley, Jr. Memorial Fellowship** of Oregon Seed Growers Commission.
- 2017 **Crop and Soil Science Travel Award** to attend WSSA conference.
- 2018 **Larry C. Burrill Memorial Scholarship** from the OSU Crop Science Department.
- 2018 **Outstanding student Scholarship** from the Oregon Weed Science Society.
- 2018 **Award** 2nd place of the Poster contest at the WSWS annual meeting.
- 2019 **Award** 1st place of the Poster contest at the WSWS annual meeting.
- 2019 **Award** Elena Sanchez Memorial WSWS Outstanding Student Award.
- 2020 **Award** 2nd place of the Poster contest at the WSSA annual meeting.
- 2021 **Award** 1st place of the Poster contest at the NCWSS annual meeting.
- 2022 **Fellowship** College of ACES Johnathan Baldwin Turner (JBT) Fellowship.

## Skills

Programming	R, Python, Bash, Julia, C++, Docker, SQL
Bioinformatics	RNA-seq, genome sequencing, GWAS, QTL mapping, eQTL, Gene regulatory networks
Agronomy	Weed management, Plant breeding, Soil Fertility, Pest management, farm equipment use, field trial implementation
Data science	Data viz, machine learning, mixed model, logistic model, random forest, LASSO, Quarto, Shiny, Jupyter notebook

Software Microsoft office, Tableau, ARCGIS, CytoScape, IGV, ImageJ, ARM, Adobe photoshop, Adobe illustrator, Linux, RaspberryPi  
Language English, Portuguese  
fluency

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## Position of Responsibility

2017 **Student representative - Evaluation Committee for Promotion and Tenure, OSU.**  
2018-2020 **Student liaison at the Western Society of Weed Science, WSWS.**  
2020-present **Organizer, Corteva Plant Science symposium, UIUC.**  
2022-present **Graduate student representative, Crop Sciences Departmental Advisory Committee, UIUC.**

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## Teaching experience

Fall, 2022 : **CPSC428: TA - Weed Science Practicum**, University of Illinois.  
Spring, 2022 : **HRT892: Guest lecture - Co-expression network analysis**, Michigan State University.  
Spring, 2021 : **VEN250: Guest lecture - Data analysis in agriculture**, Fresno State University.  
Spring, 2020 : **CPSC220: TA - Introduction to weed science**, University of Illinois.  
Fall, 2018 : **PBG530: TA - Plant genetics**, Oregon State University.

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## References

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