

CURRICULUM VITAE

NAME

Eric Patterson

ADDRESS

Bioagricultural Sciences and Pest Management
College of Agricultural Sciences

PHONE

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ACADEMIC POSITIONS

2017-2018 - Research Associate (College of Agricultural Sciences)

2016-2017 - Research Associate (College of Agricultural Sciences)

2015-2016 (College of Agricultural Sciences)

2013-2014 (College of Agricultural Sciences)

PUBLISHED WORKS

Refereed Journal Articles

- Kuepper, A., Manmathan, H. K., Giacomini, D., Patterson, E., McCloskey, W., Gaines, T. (2018). Population genetic structure in glyphosate-resistant and -susceptible Palmer amaranth (*Amaranthus palmeri*) populations using genotyping-by-sequencing (GBS). *Frontiers in Plant Science*., Peer Reviewed/Refereed
- Patterson, E., Fleming, M. B., Kessler, K. C., Nissen, S. J., Gaines, T. (2017). A KASP genotyping method to identify northern watermilfoil, Eurasian watermilfoil, and their interspecific hybrids. *Frontiers in Plant Science*, 8, 752. <http://journal.frontiersin.org/article/10.3389/fpls.2017.00752>, Peer Reviewed/Refereed
- Patterson, E., Pettinga, D. J., Ravet, K., Neve, P., Gaines, T. (2017). Glyphosate resistance and EPSPS gene duplication: Convergent evolution in multiple plant species. *Journal of Heredity*., Peer Reviewed/Refereed
- Pettinga, D. J., Ou, J., Patterson, E., Jugulam, M., Westra, P., Gaines, T. (2017). Increased Chalcone Synthase (CHS) expression is associated with dicamba resistance in *Kochia scoparia*. *Pest management science*., Peer Reviewed/Refereed
- Kuepper, A., Borgato, E. A., Patterson, E., Netto, A. G., Nicolai, M., Carvalho, S. J. d., Nissen, S. J., Gaines, T., Christoffoleti, P. J. (2017). Multiple resistance to glyphosate and acetolactate synthase inhibitors in Palmer amaranth (*Amaranthus palmeri*) identified in Brazil. *Weed Science*, 65(3), 317-326., Peer Reviewed/Refereed
- Sarangi, D., Tyre, A. J., Patterson, E., Gaines, T., Irmak, S., Knezevic, S. Z., Lindquist, J. L., Jhala, A. J. (2017). Pollen-mediated gene flow from glyphosate-resistant common waterhemp (*Amaranthus rudis* Sauer): consequences for the dispersal of resistance genes. *Scientific Reports*, 7, 44913., Peer Reviewed/Refereed
- Oliveira, M. C., Gaines, T., Dayan, F. E., Patterson, E., Jhala, A. J., Knezevic, S. Z. (2017). Reversing resistance to tembotrione in an *Amaranthus tuberculatus* (var. *rudis*) population from Nebraska, USA with cytochrome P450 inhibitors. *Pest Management Science*., Peer Reviewed/Refereed

Brunharo, Caio A. C. G., Patterson, E., Carrijo, D. R., de Melo, Marcel S. C., Nicolai, M., Gaines, T., Nissen, S. J., Christoffoleti, P. J. (2016). Confirmation and mechanism of glyphosate resistance in tall windmill grass (*Chloris elata*) from Brazil. *Pest Management Science*, 72(9), 1758-1764. <http://dx.doi.org/10.1002/ps.4205>, Peer Reviewed/Refereed

Gaines, T., Barker, A. L., Patterson, E., Westra, P., Westra, E. P., Wilson, R. G., Jha, P., Kumar, V., Kniss, A. R. (2016). EPSPS gene copy number and whole-plant glyphosate resistance level in *Kochia scoparia*. *PLOS ONE*, 11(12), e0168295. <http://dx.doi.org/10.1371/journal.pone.0168295>!!!, Peer Reviewed/Refereed

Kuepper, A., Borgato, E.A., Patterson, E., Netto, A GONÇALVES, Nicolai, M., Carvalho, S.J.P., Nissen, S. J., Gaines, T., Christoffoleti, P.J. (2016). Multiple resistance to glyphosate and ALS inhibitors in Palmer amaranth (*Amaranthus palmeri*) identified in Brazil. *Weed Science.*, Peer Reviewed/Refereed

Refereed Chapters in Books

Gaines, T., Tranel, P., Fleming, M. B., Patterson, E., Kuepper, A., Ravet, K., Giacomini, D., Gonzalez, S., Beffa, R. (2017). Applications of Genomics in Weed Science. In Mithila Jugulam (Ed.), *Biology, Physiology and Molecular Biology of Weeds.*: CRC Press., Peer Reviewed/Refereed

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

2017, "Decreased dicamba transport due to increased flavonoid biosynthesis: a candidate dicamba resistance mechanism", Global Herbicide Resistance Challenge.

2017, "Genome sequencing and assembly for *Kochia scoparia*", Global Herbicide Resistance Challenge.

2017, "Multiple resistance to glyphosate and ALS inhibitors in Palmer amaranth (*Amaranthus palmeri*) identified in Brazil", Global Herbicide Resistance Challenge.

2017, "A Qualitative Assay for Detecting Palmer Amaranth and its Hybrids Amongst Pigweed Species", North Central Weed Science Society.

2017, "Genome-wide analysis of copy number variation in *Kochia*", North Central Weed Science Society.

2017, "Quick Genotyping for an ACCase Herbicide Resistance Gene in Wheat Using KASP Assay", Plant and Animal Genome.

2017, "The Draft Genome of *Kochia scoparia* : A Foundation for Studying Adaptive Evolution and Its Impacts on Genome Architecture", Plant and Animal Genome.

2017, "A Draft Genome for *Kochia scoparia*", Western Society of Weed Science.

May 2017, "Non-target site resistance in the HPPD-resistant waterhemp from Nebraska", Global Herbicide Resistance Challenge, (Presenter) Oliveira, M. C., peer-reviewed/refereed.

2016, "An in vitro system for predicting herbicide subcellular partitioning", 7th International Weed Science Congress.

2016, "Confirmation and mechanism of glyphosate resistance in tall windmill grass (*Chloris elata*) from Brazil", 7th International Weed Science Congress.

2016, "Using multiple sequencing platforms to assemble the genome of *Kochia scoparia*", 7th International Weed

Science Congress.

- 2016, "Weed genomes as potential sources of new, adaptive agronomic traits: a summary of Kochia scoparia research in North America", 7th International Weed Science Congress.
- 2016, "Population genomics of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*) using genotyping-by-sequencing (GBS)", 7th International Weed Science Congress:
- 2016, "Using RNA-Seq to Explore Dicamba Resistance Mechanisms in Kochia scoparia", American Society of Plant Biologists Western Meeting.
- 2016, "Human selection on the genome of the invasive agronomic weed, Kochia scoparia", Genomics of Adaptation to Human Context.
- 2016, "A draft genome of Kochia scoparia", North Central Weed Science Society.
- 2016, "Modelling Pollen-Mediated Gene Flow from Herbicide-Resistant Weeds: Common Waterhemp as an Example", North Central Weed Science Society.
- 2016, "Population genomics of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*) using genotyping-by-sequencing (GBS)", Plant and Animal Genome.
- 2016, "Developing genomics resources for Kochia scoparia", Weed Science Society of America.
- 2016, "Population genomics of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*) using genotyping-by-sequencing (GBS)", Weed Science Society of America.
- 2016, "Relationship between EPSPS copy number and glyphosate resistance level in Kochia scoparia collected from sugarbeet fields", Weed Science Society of America.
- 2016, "Using RNA-Seq to explore dicamba resistance mechanisms in Kochia scoparia", Weed Science Society of America.
- 2016, "An in vitro System for Predicting Herbicide Subcellular Partitioning", Western Society of Weed Science.
- 2016, "Developing Simple Sequence Repeat (SSR) Markers for Kochia Scoparia", Western Society of Weed Science.
- 2016, "Population Genomics of Glyphosate-Resistant Palmer Amaranth (*Amaranthus palmeri*)", Western Society of Weed Science.
- 2016, "Using Multiple Sequencing Platforms to Assemble the Kochia scoparia Genome", Western Society of Weed Science.
- January 2016, "Population genomics of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*) using genotyping-by-sequencing (GBS)", Plant and Animal Genome XXIV.
- 2015, "EPSPS Gene Amplification in Kochia from Sugar Beet Fields", Western Society of Weed Science.
- 2015, "Genomic Variability in Kochia and its Potential Impact on Weediness", Western Society of Weed Science.
- 2015, "Population Genetics of Glyphosate-Resistant Palmer Amaranth", Western Society of Weed Science.

OTHER ACTIVITIES/ACCOMPLISHMENTS – PUBLICATIONS/SCHOLARLY RECORD

Kessler, K. C., Patterson, E., Fleming, M. B., Gaines, T. "High throughput method to genotype plants," Assigned to: Colorado State University Research Foundation. (Application: November 16, 2017).

Gaines, T., Patterson, E. "Diagnosing Amaranthus species in seed mixture using KASP," Assigned to: CSU Ventures. (Application: February 22, 2017).

TEACHING:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2012	Fall	LIFE103 - Biology of Organisms-Animals and Plants - Lab	0	24
2012	Fall	LIFE103 - Biology of Organisms-Animals and Plants -Lab	0	22
2012	Spring	LIFE103 - Biology of Organisms-Animals and Plants - Lab	0	21
2012	Spring	LIFE103 - Biology of Organisms-Animals and Plants - Labs	0	24
2011	Fall	LIFE103 - Biology of Organisms-Animals and Plants - Lab	0	22
2011	Fall	LIFE103 - Biology of Organisms-Animals and Plants - Lab	0	21
2011	Spring	BZ310 - Cell Biology - Lab	0	24
2011	Spring	BZ310 - Cell Biology - Lab	0	23
2010	Fall	BZ223 - Plant Identification-Lab	0	17
2010	Fall	BZ223 - Plant Identification-Lab	0	21
