

JEFFREY B. ENDELMAN
1575 Linden Dr., Madison, WI 53706
endelman@wisc.edu (608) 250-0754
<http://potatobreeding.cals.wisc.edu>
<https://github.com/jendelman>

APPOINTMENTS

2024– Professor, University of Wisconsin-Madison
Dept. of Plant & Agroecosystem Sciences
2019–2023 Associate Professor, Dept. Horticulture, UW-Madison
2013–2019 Assistant Professor, Dept. Horticulture, UW-Madison
2011–2013 Postdoctoral Researcher, Cornell University & USDA-ARS, Ithaca, NY

EDUCATION

PhD Crop Science, 2011. Washington State University, Pullman, WA.
MS Plant Science, 2009. Utah State University, Logan, UT.
PhD Bioengineering, 2005. California Institute of Technology, Pasadena, CA.
MA Physics, 2002. University of California, Santa Barbara, CA.
BS Chemical Engineering & Applied Math, 2000. Northwestern University, Evanston, IL.

AWARDS

2019 Vilas Faculty Early Career Investigator Award, UW-Madison
2018 Early Career Scientist Award, National Association of Plant Breeders
2017 Excellence in Research Award, UW-Madison Agricultural Research Stations
2017 Researcher of the Year, Wisconsin Potato and Vegetable Growers Association

TEACHING

- Genetically Modified Crops: Science, Regulation & Controversy (Undergraduate)
- Genetic Mapping (Graduate)
- Selection Theory for Quantitative Traits in Plants (Graduate)

Served on 33 graduate student committees, including 6 MS and 3 PhD as major advisor

PROFESSIONAL ACTIVITIES

- Director of the UW-Madison potato breeding program, including multiple varieties with commercial adoption (e.g., Red Prairie, Plover Russet, Portage Russet)
- Developer of multiple software packages for genomics-assisted breeding (rrBLUP, GWASpoly, LPmerge, ClusterCall, diaQTL, polyBreedR, StageWise, COMA)
- Associate Editor for *Genetics* (2019–), *Theoretical & Applied Genetics* (2016–), *Plant Genome* (2019–) and formerly *Crop Science* (2016–2018)

RECENT GRANTS

- *Optimization of Mate Allocation with Genomic IBD Probabilities*, \$0.7M, 2024–2027
Project Director, USDA NIFA Award 2024-67013-42585
- *Creating a New Paradigm for Potato Breeding Based on True Seed*, \$6.0M, 2019-2025
Project Director, USDA NIFA Award 2019-51181-30021
- *Tools for Genomics-Assisted Breeding of Polyploids*, \$4.3M, 2020-2025
Co-Project Director, USDA NIFA Award 2020-51181-32156

INVITED RESEARCH TALKS (last 4 years)

7th International Conference on Quantitative Genetics, Vienna, July 22, 2024. *Directional dominance in polyploids: trait analysis and mate selection.*

University of Florida Plant Science Symposium, Gainesville, Jan. 30, 2023. *Genomics-assisted breeding of potato.*

Plant and Animal Genome XXX, San Diego, Jan. 17, 2023. *Allelic diversity for maturity and skin color in dihaploids of potato.*

Cornell Corteva Symposium in Plant Sciences, Ithaca, April 22, 2022. *Haplotype reconstruction and QTL mapping in tetraploid diallel populations.*

New Zealand MapNet Conference, Virtual, March 15, 2022. *Haplotype reconstruction and QTL mapping in tetraploid diallel populations.*

Plant and Animal Genome XXIX, San Diego, Jan. 11, 2022. *Haplotype reconstruction and QTL mapping in tetraploid diallel populations.*

Plant and Animal Genome XXIX, San Diego, Jan. 8, 2022. *Fully efficient, two-stage analysis for genomic selection and GWAS.*

International Potato e-Conference, Virtual, November 23, 2021. *Genomic selection in potato.*

REFEREED PUBLICATIONS (last 4 years)

Endelman JB, Kante M, Lindqvist-Kreuzer H, Kilian A, Shannon LM, Caraza-Harter MV, Vaillancourt B, Malloux K, Hamilton JP, Buell CR (2024) Targeted genotyping-by-sequencing of potato and data analysis with R/polyBreedR. *The Plant Genome*: e20484. <https://doi.org/10.1002/tpg2.20484>

Jansky S, Hamernik A, Endelman JB (2024) Diploid interspecific recombinant inbred lines for genetic mapping in potato. *American Journal of Potato Research* 101:153-161. <https://doi.org/10.1007/s12230-024-09953-7>

Agha HI, Endelman JB, Chitwood-Brown J, Clough M, Coombs J, De Jong WS, Douches DS, Higgins C, Holm D, Novy R, Resend MFR, Sathuvalli V, Thompson AL, Yencho GC, Zotarelli L, Shannon LM (2024) Genotype-by-Environment interactions and local adaptation shape selection in the United States National Chip Processing Trial. *Theoretical & Applied Genetics* 137:99. <https://doi.org/10.1007/s00122-024-04610-3>

- Asano K, Endelman JB (2024) Development of KASP markers for the potato virus Y resistance gene *Ryhc* using whole-genome resequencing data. *American Journal of Potato Research*. Published online 28 March 2024. <https://doi.org/10.1007/s12230-024-09944-8>
- Sorensen PL, Christensen G, Karki HS, Endelman JB (2023) A KASP Marker for the Potato Late Blight Resistance Gene *RB/Rpi-blb1*. *American Journal of Potato Research* 100:240–246. doi:10.1007/s12230-023-09914-6
- Labroo MR, Endelman JB, Gement DC, Werner CR, Gaynor RC, Covarrubias-Pazarán GE (2023) Clonal diploid and autopolyploid breeding strategies to harness heterosis: insights from stochastic simulation. *Theoretical & Applied Genetics* 136:147. doi: 10.1007/s00122-023-04377-z
- Kumar P, Kaplan Y, Endelman JB, Ginzberg I (2023) Epigenetic modifications related to potato skin russetting. *Plants* 12:2057. doi:10.3390/plants12102057
- Song L, Endelman JB (2023) Using haplotype and QTL analysis to fix favorable alleles in diploid potato breeding. *Plant Genome* e20339. doi:10.1002/tpg2.20339
- Endelman JB (2023) Fully efficient, two-stage analysis of multi-environment trials with directional dominance and multi-trait genomic selection. *Theoretical & Applied Genetics* 136:65. doi:10.1007/s00122-023-04298-x
- Pandey J, Scheuring DC, Koym JW, Endelman JB, Vales MI (2023) Genomic selection and genome-wide association studies in tetraploid chipping potatoes. *Plant Genome* e20297. doi:10.1002/tpg2.20297
- Caraza-Harter MV, Endelman JB (2022) The genetic architectures of vine and skin maturity in tetraploid potato. *Theoretical & Applied Genetics* 135: 2943–2951. doi:10.1007/s00122-022-04159-z
- Hoopes G, Meng X, Hamilton JP et al. (2022) Phased, chromosome-scale genome assemblies of tetraploid potato reveal a complex genome, transcriptome, and proteome landscape underpinning phenotypic diversity. *Molecular Plant* 15: 520-536. doi:10.1016/j.molp.2022.01.003
- Zheng C, Amadeu RR, Muñoz PR, Endelman JB (2021) Haplotype reconstruction in connected tetraploid F1 populations. *Genetics* 219(2). doi:10.1093/genetics/iyab106
- Amadeu RR, Muñoz PR, Zheng C, Endelman JB (2021) QTL mapping in outbred tetraploid (and diploid) diallel populations. *Genetics* 219(3). doi:10.1093/genetics/iyab124
- Karki HS, Halterman DA, Endelman JB (2021) Characterization of a late blight resistance gene homologous to R2 in potato variety Payette Russet. *American Journal of Potato Research* 98:78–84. doi:10.1007/s12230-020-09811-2
- Matias FI, Caraza-Harter MV, Endelman JB (2020) FIELDimageR: An R package to analyze orthomosaic images from agricultural field trials. *Plant Phenome Journal* 3:e20005. doi:10.1002/ppj2.20005
- Amadeu RR, Ferrão LFV, de Bem Oliveira I, Benevenuto J, Endelman JB, Muñoz PR (2020) Impact of dominance effects on autotetraploid genomic prediction. *Crop Science* 60:656–665. doi:10.2135/csc2.20075

Caraza-Harter MV, Endelman JB (2020) Image-based phenotyping and genetic analysis of potato skin set and color. *Crop Science* 60:202-210. doi:10.1002/csc2.20093