

**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

2019–Present Associate Professor, University of Wisconsin-Madison  
Dept. Horticulture, Plant Breeding & Plant Genetics Graduate Program  
2013–2019 Assistant Professor, 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 (HORT/AGRON 360)  
Genetic Mapping (HORT/AGRON/AN SCI/GENETICS 615)  
Selection Theory for Quantitative Traits in Plants (AGRON/HORT 812)  
Served on 27 graduate student thesis committees, including 6 as major professor

## SYNERGISTIC ACTIVITIES

- PI for the UW-Madison potato breeding program; co-inventor of 16 varieties
- Developer of software packages for genomics-assisted breeding (rrBLUP, GWASpoly, LPmerge, ClusterCall, diaQTL, polyBreedR, StageWise)
- Associate Editor for *Genetics* (2019–), *Theoretical & Applied Genetics* (2016–), *Plant Genome* (2019–) and formerly *Crop Science* (2016–2018)

## SELECTED GRANTS

- \$4.3M USDA-NIFA-SCRI: *Tools for Genomics-Assisted Breeding in Polyploids* (Co-PD), 2020-2024.
- \$6.0M USDA-NIFA-SCRI: *Creating a New Paradigm for Potato Breeding based on True Seed* (PD), 2019–2023
- \$0.5M USDA-NIFA-AFRI: *Joint Linkage Analysis and Selection in Autotetraploid Potato and Blueberry* (PD), 2019–2023
- \$0.5M USDA-NIFA-AFRI: *Improving Breeding Efficiency in Autotetraploids with Genome-wide Prediction* (Co-PD), 2014–2018

## INVITED TALKS (last 4 years)

*Genomic selection in potato*. Plant Sciences Symposia Series. Virtual Symposium. April 24, 2020.

*Joint QTL analysis of a tetraploid potato diallel population*. Plant and Animal Genome XXVIII, San Diego, CA. Jan. 13, 2020.

*Genomics-assisted breeding of autotetraploid potato*. Dept. Crop Sciences, University of Illinois, Urbana, IL. Nov. 20, 2019.

*Genomics-assisted breeding of autotetraploid potato*. James Hutton Institute, Dundee, UK. Nov. 12, 2019.

*Genomics-assisted breeding of autotetraploid potato*. Roslin Institute, University of Edinburgh, UK. Nov. 11, 2019.

*Genomics-assisted breeding of autotetraploid potato*. Dept. Plant Sciences, Montana State University, Bozeman, MT. Oct. 22, 2019.

*Genomics-assisted breeding in potato*. 2019 National Association of Plant Breeders Annual Meeting, Pine Mountain, GA. Aug. 28, 2019.

*Genotype quality in polyploids*. Polyploid Genomics Data Management and Analysis (EiB Working Group), International Potato Center (CIP), Lima, Peru. May 8, 2019.

*Genomic selection in tetraploid potato*. 19<sup>th</sup> Joint Meeting of the European Association of Potato Research and EUCARPIA, Rostock, Germany. Dec. 6, 2018.

*Genomics-assisted breeding for autotetraploid potato*. 2<sup>nd</sup> International Meeting on Plant Breeding, University of São Paulo, Piracicaba, Brazil. Oct. 4, 2018.

*Genetic variance partitioning and genome-wide prediction in tetraploid potato*. Symposium on Polyploid Genetics and Breeding, Wageningen University, The Netherlands. June 14, 2018.

*Genome-wide prediction in tetraploid potato using pedigree and marker information*. Plant and Animal Genome XXVI, San Diego, CA. Jan. 14, 2018.

## REFEREED PUBLICATIONS (last 4 years)

- Zheng C, Amadeu RR, Muñoz PR, Endelman JB (2021) Haplotype reconstruction in connected tetraploid F1 populations *Genetics*. doi:10.1093/genetics/iyab106
- Amadeu RR, Muñoz PR, Zheng C, Endelman JB (2021) QTL mapping in outbred tetraploid (and diploid) diallel populations. *Genetics*. 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
- Matias FI, Alves FC, Meireles KGX, Barrios SCL, do Valle CB, Endelman JB, Fritsche-Neto R (2019) On the accuracy of genomic prediction models considering multi-trait and allele dosage in *Urochloa* spp. interspecific tetraploid hybrids. *Molecular Breeding* 39:100.
- Matias FI, Meireles KGX, Nagamatsu ST, Barrios SCL, do Valle CB, Carazzolle MF, Fritsche-Neto R, Endelman JB (2019) Expected genotype quality and diploidized marker data from genotyping-by-sequencing of *Urochloa* spp. tetraploids. *Plant Genome* 12:190002.
- de Bem Oliveira I, Resende Jr. MFR, Ferrão LFV, Amadeu RR, Endelman JB, Kirst M, Coelho ASG, Muñoz PR (2019) Genomic prediction of autotetraploids; Influence of relationship matrices, allele dosage, and continuous genotyping calls in phenotype prediction. *G3 (Bethesda)* 9:1189–1198.
- Schmitz Carley CA, Coombs JJ, Clough ME, De Jong WS, Douches, Haynes KG, Higgins CR, Holm DG, Miller Jr. JC, Navarro FM, Novy RG, Palta JP, Parish DL, Porter GA, Sathuvalli VR, Thompson AL, Yencho GC, Zotarelli L, Endelman JB (2019) Genetic covariance of environments in the Potato National Chip Processing Trial. *Crop Science* 59:107–114.
- Bali S, Patel G, Novy R, Vining K, Brown C, Holm D, Porter G, Endelman J, Thompson A, Sathuvalli V (2018) Evaluation of genetic diversity among Russet potato clones and varieties from breeding programs across the United States. *PLoS ONE* 13(8):e0201415.
- Endelman JB, Schmitz Carley CA, Bethke PC, Coombs JJ, Clough ME, da Silva WL, De Jong WS, Douches DS, Frederick CM, Haynes KG, Holm DG, Miller JC, Muñoz PR, Navarro FM, Novy RG, Palta JP, Porter GA, Rak KT, Sathuvalli VR, Thompson AL, Yencho GC (2018) Genetic variance partitioning and genome-wide prediction with allele dosage information in autotetraploid potato. *Genetics* 209:77–87.
- Braun SR, Endelman JB, Haynes K, Jansky S (2017) Quantitative trait loci for resistance to common scab and cold-induced sweetening in diploid potato. *Plant Genome* 10:3.

Wang Y, Snodgrass LB, Bethke PC, Bussan AJ, Holm DG, Novy RG, Pavek MJ, Porter GA, Rosen CJ, Sathuvalli V, Thompson AL, Thornton MT, Endelman JB (2017) Reliability of measurement and genotype x environment interaction for potato specific gravity. *Crop Science* 57:1–7.

Schmitz Carley CA, Coombs JJ, Douches DS, Bethke PC, Palta JP, Novy RG, Endelman JB (2017) Automated tetraploid genotype calling by hierarchical clustering. *Theoretical & Applied Genetics* 130:717–726.

Endelman JB, Schmitz Carley CA, Douches DS, Coombs JJ, Bizimungu B, De Jong WS, Haynes KG, Holm DG, Miller JC, Novy RG, Palta JP, Parish DL, Porter DA, Sathuvalli VR, Thompson AL, Yencho GC (2017) Pedigree reconstruction with genome-wide markers in potato. *American Journal of Potato Research* 94:184–190.