

Dr. Robert VanBuren

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EDUCATION

Rochester Institute of Tech	Biotechnology	BS	2007-2010
University of Illinois U C	Plant Biology	PhD	2010-2014
Donald Danforth Plant Science Center	Plant Genomics	Postdoc	2014-2016

APPOINTMENTS

2017-present Asst Professor, Plant Resilience Institute, MSU, East Lansing, MI USA
2016-present Asst Professor, Dept of Horticulture, MSU, East Lansing, MI USA
2014-2016 NSF-NPGI Postdoctoral Fellowship, DDPSC, St Louis, MO USA

PUBLICATIONS

Preprints:

1. Pardo J, Wai CM, Harman M, Nguyen A, Kremling KA, Romay C, Lepak N, Bauerle TL, Buckler ES, Thompson AM, VanBuren R (2022) Cross-species predictive modeling reveals conserved drought responses between maize and sorghum. *bioRxiv*, :2022.09.26.509573.
<https://doi.org/10.1101/2022.09.26.509573>
2. Palande S, Kaste JAM, Roberts MD, Abá KS, Claucherty C, Dacon J, Doko R, Jayakody TB, Jeffery HR, Kelly N, Manousidaki A, Parks HM, Roggenkamp EM, Schumacher AM, Yang J, Percival S, Pardo J, Husbands AY, Krishnan A, Montgomery BL, Munch E, Thompson AM, Rougon-Cardoso A, Chitwood DH, **VanBuren R*** The topological shape of gene expression across the evolution of flowering plants. 2022 *bioRxiv* <https://doi.org/10.1101/2022.09.07.506951> *corresponding author
3. Marks RA, Amézquita EJ, Percival S, Rougon-Cardoso A, Chibici-Revneanu C, Tebele SM, Farrant JM, **VanBuren R**. Global disparities in plant science: a legacy of colonialism, patriarchy, and exclusion. 2022 *bioRxiv* <https://doi.org/10.1101/2022.10.15.512190>
4. **VanBuren R***, Wai CM, Giarola V, Župunski M, Pardo J, Kalinowski M, Grossmann G, Bartels D (2022) The complex octoploid *Craterostigma* genome and tissue-specific mechanisms underlying desiccation tolerance. 2022 *bioRxiv*, <https://doi.org/10.1101/2022.05.31.494158> *corresponding author
5. Aubin BS, Wai CM, Raju SKK, Niederhuth CH, **VanBuren R***. Regulatory dynamics distinguishing desiccation tolerance strategies within resurrection grasses 2022 *bioRxiv* <https://doi.org/10.1101/2022.02.16.480747> *corresponding author

6. Bird KA, Pires JC, **VanBuren R**, Xiong Z, Edger PP. A genome in flux: homoeologous exchanges, subgenome dominance, and gene dosage balance constraints in resynthesized allopolyploid *Brassica napus* 2022 *bioRxiv* <https://doi.org/10.1101/2021.11.16.468838>
7. Lu YJ, Chen H, Corrion A, Li P, Buyuk I, Samaradivakara S, Wai CM, Sakamoto H, Santos P, **VanBuren R**, Kim Y, Day B. NDR1 and the Arabidopsis Plasma Membrane ATPase AHA5 are Required for Processes that Converge on Drought Tolerance and Immunity. 2021 *bioRxiv* <https://www.biorxiv.org/content/10.1101/2021.06.10.445978v1>
8. Rowley ER, **VanBuren R**, Bryant DW, Priest HD, Mehlenbacher, Mockler TC. A Draft Genome and High-Density Genetic Map of European Hazelnut (*Corylus avellana* L.). 2018 *bioRxiv* <https://www.biorxiv.org/content/10.1101/469015>

Published manuscripts:

1. Lipham Wilson M, **VanBuren R***. Leveraging millets for developing climate resilient agriculture. 2022 *Current Opinion in Biotechnology*. <https://doi.org/10.1016/j.copbio.2022.102683> *corresponding author
2. Yue J, **VanBuren R***, Liu J, Fang J, Zhang X, Liao Z, Wai CM, Xu X, Chen S, Zhang S, Ma X, Ma Y, Yu H, Lin J, Zhou P, Huang Y, Deng B, Deng F, Zhao X, Yan H, Fatima M, Zerpa-Catanho D, Zhang X, Lin Z, Yang M, Chen NJ, Mora-Newcomer E, Quesada-Rojas P, Bogantes A, Jiménez VM, Tang H, Zhang J, Wang M-L, Paull RE, Yu Q, Ming R. SunUp and Sunset genomes revealed impact of particle bombardment mediated transformation and domestication history in papaya. 2022 *Nature genetics*, 54: 715–724. *co-first author
3. Marks RA, Mbobe M, Greyling M, Pretorius J, McLetchie DN, **VanBuren R**, Farrant JM. Variability in Functional Traits along an Environmental Gradient in the South African Resurrection Plant *Myrothamnus flabellifolia*. 2022 *Plants* 11(10): 1332.
4. R Chávez Montes, Haber A, Pardo J, Powell RF, Divisetty U, Silva AT, Hernandez-Hernandez T, Silveira V, Tang H, Lyons E, Herrera Estrella L, **VanBuren R***, Oliver MJ*. A comparative genomics examination of desiccation tolerance and sensitivity in two sister grass species. 2022 *PNAS* 119(5): e2118886119 *corresponding author
5. Marks R, Hotaling S, Frandsen P, **VanBuren R**. Representation and participation across 20 years of plant genome sequencing. 2021 *Nature plants* 7(12): 1571-1578.
6. Pardo J, **VanBuren R***. Evolutionary innovations driving abiotic stress tolerance in C4 grasses and cereals. 2021 *The Plant Cell* 33 (11), 3391-3401. *corresponding author
7. Bird KA, Hardigan MA, Ragsdale AP, Knapp SJ, **VanBuren R**, Edger PP. Diversification, spread, and admixture of octoploid strawberry in the Western Hemisphere. 2021 *American Journal of Botany* 108 (11), 2269-2281

8. Marks RA, Farrant JM, McLetchie DN, **VanBuren R**. Unexplored dimensions of variability in vegetative desiccation tolerance. (2021) *American Journal of Botany* 108 (2), 346-358
9. Hao Y, Mabry ME, Edger PP, Freeling M, Zheng C, Jin L, **VanBuren R**, Colle M, An H, Shawn Abrahams R, Qi X, Barry K, Daum C, Shu S, Schmutz J, Sankoff D, Barker MS, Lyons E, Chris Pires J, Conant GC. The Contributions of the Allopolyploid Parents of the Mesopolyploid Brassiceae are Evolutionarily Distinct but Functionally Compatible. 2021 *Genome Research* <https://doi.org/10.1101/2020.08.10.245258>
10. Lou P, Woody S, Greenham K, **VanBuren R**, Colle M, Edger PP, Sartor R, Zheng Y, Levendoski N, Lim J, So C, Stoveken B, Woody T, Zhao J, Shen S, Amasino RM, Robertson McClung C. Genetic and Genomic Resources to Study Natural Variation in *Brassica rapa*. 2020 *Plant Direct* 4 (12): e00285
11. Chitwood DH, Mullins J, Migicovsky Z, Frank M, **VanBuren R**, Londo. Vein-to-blade ratio is an allometric indicator of climate-induced changes in grapevine leaf size and shape. 2021 *Applications in Plant Sciences* 108(4): 571-579
12. Bird KA, Niederhuth C, Ou S, Gehan M, Pires JC, Xiong Z, **VanBuren R**, Edger PP. Replaying the evolutionary tape to investigate subgenome dominance in allopolyploid *Brassica napus*. 2021 *New Phytologist* 230(1): 354-371.
13. Marks RA, Smith J, **VanBuren R**, McLetchie DN. Expression dynamics of dehydration tolerance in the tropical plant *Marchantia inflexa*. 2021 *The Plant Journal* 105 (1): 209-222.
14. Bryson AE, Brown MW, Mullins J, Dong W, *et al.*, **VanBuren R**, Londo J, Chitwood DH. . Composite modeling of leaf shape across shoots discriminates *Vitis* species better than individual leaves. 2020 *American Journal of Botany* 8(12): e11404
15. Pardo J, Wai CM, Chay H, Madden CF, Hilhorst HWM, Farrant JM, **VanBuren R*** Intertwined signatures of desiccation and drought tolerance in grasses. 2020. *PNAS*. 117(18): 10079-10088 *corresponding author
16. **VanBuren R***, Wai CM, Pardo J, Yocca AE, Wang X, Wang H, Edger PP, Bennetzen JL, Michael T. Subgenome dynamics and stability in the allotetraploid grain crop tef. 2020 *Nature Communications* 11(1): 1-11 *corresponding author
17. Michael TP, **VanBuren R**. Building near-complete plant genomes. 2020 *Current Opinion in Plant Biology* 54: 26-33
18. Azodi CB, Pardo J, **VanBuren R**, de los Campos G, Shiu S-H. Transcriptome-based prediction of complex traits in maize. 2020 *The Plant Cell* 32: 139-151
19. Baetsen-Young A, Wai CM, **VanBuren R**, Day B. *Fusarium virguliforme* Transcriptional Plasticity Is Revealed by Host Colonization of Corn vs. Soybean. 2019 *Plant Cell* 31: 336–351
20. Cerbin S, Wai CM, **VanBuren R**, Jiang N. GingerRoot: A Novel DNA Transposon Encoding Integrase-Related Transposase in Plants and Animals. 2019 *Genome Biology and Evolution*, 11(11): 3181–3193
21. Chen L-Y*, **VanBuren R***, Paris M*, Zhou H, Zhang X, Wai CM, Yan H, Chen S, Alonge M, Ramakrishnan S, et al. The bracteatus pineapple genome and domestication of clonally propagated crops. 2019 *Nature Genetics* 51: 1549-1558 *co-first authors

22. Wai CM, Weise SE, Ozersky P, Mockler TC, Michael TP, **VanBuren R***. Time of day and network reprogramming during drought induced CAM photosynthesis in *Sedum album*. 2019 *PLoS Genetics* 15: e1008209 *corresponding author
23. Edger PP, Poorten TJ, **VanBuren R**, et al. Origin and evolution of the octoploid strawberry genome. 2019 *Nature Genetics* 51: 541–547
24. Dhar N, Short DPG, Mamo BE, Corrion AJ, Wai CM, Anchieta A, **VanBuren R**, Day B, Ajwa H, Subbarao KV, et al. Arabidopsis defense mutant *ndr1-1* displays accelerated development and early flowering mediated by the hormone gibberellic acid. 2019 *Plant Science* 285: 200–213
25. **VanBuren R***, Pardo J, Wai CM, Evans S, Bartels D. Massive tandem proliferation of ELIPs supports convergent evolution of desiccation tolerance across land plants. 2019 *Plant Physiology* 179: 1040–1049 *corresponding author
26. Colle M, et al. **VanBuren R**, Jiang N, Edger PP. Subgenome dominance and evolution of phytonutrient pathways in allopolyploid blueberry. 2019 *GigaScience* 8 (3): giz012
27. Mower J, Ma PF, Grewe F, Taylor A, Michael TP, **VanBuren R**, Yin-Long Q. Lycophyte plastid genomics: extreme variation in GC, gene and intron content and multiple inversions between a direct and inverted orientation of the rRNA repeat. 2019 *New Phytologist* 22(2): 1061-1075
28. **VanBuren R***, Wai CM, Keilwagen J, Pard J. A chromosome scale assembly of the model desiccation tolerant grass *Oropetium thomaeum*. 2018 *Plant Direct* 2(11): e00096. *corresponding author
29. **VanBuren R***, Wai CM, Pardo J, Giarola V, Ambrosini S, Song X, Bartels D. Desiccation tolerance evolved through gene duplication and network rewiring in *Lindernia*. 2018 *Plant Cell* 30(12): 2943-2958 *corresponding author
30. Zhang J... (114 coauthors), **VanBuren R**, Paterson AH, Nagai C, Ming R. Allele-defined genome of the autopolyploid sugarcane *Saccharum spontaneum* L. 2018 *Nature Genetics* 50: 1565–1573.
31. **VanBuren R***, Wai CM, Colle M, Wang J, Sullivan S, Bushakra JM, Liachko I, Vining KJ, Dossett M, Finn CE, Jibrán R. A near complete, chromosome-scale assembly of the black raspberry (*Rubus occidentalis*) genome. 2018 *GigaScience* 7(8): giy094. *corresponding author
32. Bushakra JM, Dossett M, Carter KA, Vining KJ, Lee JC, Bryant DW, **VanBuren R**, Lee J, Mockler TC, Finn CE, Bassil NV. Characterization of aphid resistance loci in black raspberry (*Rubus occidentalis* L.). 2018 *Molecular Breeding* 38(7): 83.
33. Bird KA, **VanBuren R**, Puzey JR, Edger PP. The causes and consequences of subgenome dominance in hybrids and recent polyploids. 2018 *New Phytologist* 220 (1): 87-93
34. Edger PP, McKain MR, Bird KA, **VanBuren R**. Subgenome assignment in allopolyploids: challenges and future directions. 2018 *Current Opinion in Plant Biology* 42: 76-80
35. Jibrán R, Dzierzon H, Bassil N, Bushakra, JM, Edger P, Sullivan S, Finn CE, Dossett M, Vining, KJ, **VanBuren R**, and Mockler TC. Chromosome-scale scaffolding of the black raspberry (*Rubus occidentalis* L.) genome based on chromatin interaction data. 2018 *Horticulture Research* 5(1): 8

36. **VanBuren R***, Wai CM, Ou S, Pardo J, Bryant D, Jiang N, Mockler TC, Edger P, Michael T. Extreme haplotype variation in the desiccation-tolerant clubmoss *Selaginella lepidophylla*. 2019 *Nature Communications* 9:13. *corresponding author
37. **VanBuren R***, Wai J, Zhang Q, Song X, Edger PP, Bryant D, Michael TP, Mockler TC, Bartels D: Seed desiccation mechanisms co-opted for vegetative desiccation in the resurrection grass *Oropetium thomeum*. 2017 *Plant, Cell & environment* 40(10): 2292-2306 *corresponding author
38. **VanBuren R**: Desiccation tolerance: Seedy origins of resurrection. 2017 *Nature Plants* 3:17046.
39. Yang X, Hu R, ... **VanBuren R**, (33 out of 50 authors) et al. The *Kalanchoë* genome provides insights into convergent evolution and building blocks of crassulacean acid metabolism. 2018 *Nature Communications* 8: 1899
40. Edger PP*, **VanBuren R***, Colle M, Poorten TJ, Wai CM, Niederhuth CE, Alger EI, Ou S, Acharya CB, Wang J: Single-molecule sequencing and optical mapping yields an improved genome of woodland strawberry (*Fragaria vesca*) with chromosome-scale contiguity. 2017 *GigaScience*, 7 (2): gix124 *co-first author
41. Wai CM*, **VanBuren R***, Zhang J, Huang L, Miao W, Edger PP, Yim WC, Priest HD, Meyers BC, Mockler T. Temporal and spatial transcriptomic and microRNA dynamics of CAM photosynthesis in pineapple. 2017 *The Plant Journal*, 92(1): 19-30 *co-first author
42. **VanBuren R**, Wai CM, Zhang J, Han J, Arro J, Lin Z, Liao Z, Yu Q, Wang M-L, Zee F. Extremely low nucleotide diversity in the X-linked region of papaya caused by a strong selective sweep. 2016 *Genome Biology* 17:230
43. Arro J, Park J-W, Wai CM, **VanBuren R**, Pan Y-B, Nagai C, Da Silva J, Ming R. Balancing selection contributed to domestication of autopolyploid sugarcane (*Saccharum officinarum* L.). 2016 *Euphytica* 209: 477-493
44. **VanBuren R**, Bryant D, Bushakra JM, Vining KJ, Edger PP, Rowley ER, Priest HD, Michael TP, Lyons E, Filichkin SA. The genome of black raspberry (*Rubus occidentalis*). 2016 *The Plant Journal* 87: 535-547
45. **VanBuren R**, Bryant D, Edger PP, Tang H, Burgess D, Challabathula D, Spittle K, Hall R, Gu J, Lyons E. Single-molecule sequencing of the desiccation-tolerant grass *Oropetium thomaeum*. 2015 *Nature* 527: 508-511
46. Ming R*, **VanBuren R***, Wai CM, Tang H, Schatz MC, Bowers JE, Lyons E, Wang M-L, Chen J, Biggers E. The pineapple genome and the evolution of CAM photosynthesis. 2015 *Nature Genetics* 47:1435-1442 *co-first author
47. Michael TP, **VanBuren R***. Progress, challenges and the future of crop genomes. 2015 *Current Opinion in Plant Biology* 24: 71-81 *corresponding author
48. **VanBuren R**, Zeng F, Chen C, Zhang J, Wai CM, Han J, Aryal R, Gschwend AR, Wang J, Na JK. Origin and domestication of papaya Yh chromosome. 2015 *Genome Research* 25: 524-533
49. Finn CE, Lee J, **VanBuren R**, Bassil NV, Bryant DW, Gilmore BS, Dossett M, Mockler TC, Vining KJ, Bushakra JM. A genetic linkage map of black raspberry (*Rubus occidentalis*) and the mapping of Ag (4) conferring resistance to the aphid *Amphorophora agathonica*. 2015 *Theoretical and Applied Genetics* 128: 1631-1646

50. Zhang Q, Liu C, Liu Y, **VanBuren R**, Yao X, Zhong C, Huang H. High-density interspecific genetic maps of kiwifruit and the identification of sex-specific markers. 2015 *DNA Research* 22: 367-375
51. Bushakra JM, Bryant DW, Dossett M, Vining KJ, **VanBuren R**, Gilmore BS, Lee J, Mockler TC, Finn CE, Bassil NV. A genetic linkage map of black raspberry (*Rubus occidentalis*) and the mapping of Ag4 conferring resistance to the aphid *Amphorophora agathonica*. 2015 *Theoretical and Applied Genetics* 128: 1631-1646
52. Zhang Q, Li L, **VanBuren R**, Liu Y, Yang M, Xu L, Bowers JE, Zhong C, Han Y, Li S. Optimization of linkage mapping strategy and construction of a high-density American lotus linkage map. 2014 *BMC genomics* 15: 372
53. Lum G, **VanBuren R**, Ming R, Min XJ. Secretome prediction and analysis in sacred lotus (*Nelumbo nucifera* Gaertn.). 2013 *Tropical plant biology* 6: 131-137
54. Ming R*, **VanBuren R***, Liu Y, Yang M, Han Y, Li L-T, Zhang Q, Kim M-J, Schatz MC, Campbell M. Genome of the long-living sacred lotus (*Nelumbo nucifera* Gaertn.). 2013 *Genome Biology* 14: R41 *co-first author
55. **VanBuren R**, Ming R. Dynamic transposable element accumulation in the nascent sex chromosomes of papaya. 2013 *Mobile genetic elements* 3: 13710-13715
56. **VanBuren R**, Ming R. Organelle DNA accumulation in the recently evolved papaya sex chromosomes. 2013 *Molecular genetics and genomics* 288: 277-284
57. **VanBuren R**, Walters B, Ming R, Min XJ. Analysis of expressed sequence tags and alternative splicing genes in sacred lotus (*Nelumbo nucifera* Gaertn.). 2013 *Plant Omics* 6: 311
58. Gschwend AR, Yu Q, Tong EJ, Zeng F, Han J, **VanBuren R**, Aryal R, Charlesworth D, Moore PH, Paterson AH. Rapid divergence and expansion of the X chromosome in papaya. 2012 *Proceedings of the National Academy of Sciences* 109: 13716-13721
59. Wang J, Na J-K, Yu Q, Gschwend AR, Han J, Zeng F, Aryal R, **VanBuren R**, Murray JE, Zhang W. Sequencing papaya X and Yh chromosomes reveals molecular basis of incipient sex chromosome evolution. 2012 *Proceedings of the National Academy of Sciences* 109: 13710-13715
60. Yang M, Han Y, **VanBuren R**, Ming R, Xu L, Han Y, Liu Y. Genetic linkage maps for Asian and American lotus constructed using novel SSR markers derived from the genome of sequenced cultivar. 2012 *BMC genomics* 13:653
61. **VanBuren R**, Li J, Zee F, Zhu J, Liu C, Arumuganathan AK, Ming R. Longli is not a hybrid of Longan and Lychee as revealed by genome size analysis and trichome morphology. 2011 *Tropical Plant Biology* 4:228-236

Book Chapters:

1. Wai CM, VanBuren R. Circadian regulation of pineapple CAM photosynthesis. *In Genetics and Genomics of Pineapple*. Springer, New York, NY; (2018) 247-258
2. **VanBuren R**: Genomic Relationships, Diversity, and Domestication of *Ananas* Taxa. *In Genetics and Genomics of Pineapple*. Springer, New York, NY; (2018) 259-272

3. **VanBuren R**, et al. : Sequence and Analysis of the Black Raspberry (*Rubus occidentalis*) Genome. In *The Genomes of Rosaceous Berries and Their Wild Relatives*. Springer, New York, NY; (2018) 185-197
4. **VanBuren R**, Mockler TC: The Brachypodium distachyon Reference Genome. In *Genetics and Genomics of Brachypodium*. Springer, Cham; (2015) 55-70
5. **VanBuren R**, Ming R: Sequencing and assembly of the transgenic papaya genome. In *Genetics and genomics of papaya*. Springer, New York, NY; (2014) 187-203
6. **VanBuren R**, Ming R: Genomics of Papaya Sex Chromosomes. In *Genetics and Genomics of Papaya*. Springer, New York, NY; (2014): 309-326

FUNDING

External:

Funding Source: NSF-BII (DBI-2213983)

Project Title: "BII: Life without water: protecting macromolecules, cells, and organisms during desiccation and rehydration across kingdoms of life"

Period: 08.2022-07.2027

Total costs: \$ 12,500,000 (~\$1,200,000 to VanBuren)

Role: co-PI

Funding Source: USDA-NIFA AFRI

Project Title: "Identifying the mechanisms controlling stress tolerance in the resilient grain and forage crop teff (*Eragrostis tef*)"

Period: 12.2021- 11.2024

Total costs: \$ 634,382 (~\$460,000 to VanBuren)

Role: PI

Funding Source: NSF-MCB Systems and Synthetic Biology (MCB-1817347)

Project Title: "The origin and genetic architecture of desiccation tolerance in C4 grasses"

Period: 8.2018- 7.2022

Total costs: \$720,000 (\$720,000 to VanBuren)

Role: PI

Funding Source: NIH-T32

Project Title: "Plant Biotechnology for Health and Sustainability"

Period: 07.2019- 06.2024

Total costs: \$ 1,974,057

Role: Senior Personnel

Funding Source: NSF-NRT (NRT-1828149)

Project Title: "Intersecting computational and data science to address grand challenges in plant biology"

Period: 9.2018- 8.2023

Total costs: \$ 2,999,967

Role: co-PI

Funding Source: NSF Postdoctoral Fellowship in Biology FY 2019 (NPGI- 2208915, Dr. Ian Gilman)
Project Title: "NSF Postdoctoral Fellowship in Biology: Exploring Cell-type Regulatory Dynamics of CAM and C4 Photosynthesis in Portulaca"

Period: 03.2023-02.2026

Total costs: \$216,000

Role: Sponsoring Scientist

Funding Source: NSF Postdoctoral Fellowship in Biology FY 2019 (NPGI-1906094, Dr. Rose Marks)
Project Title: "Leveraging Natural Variation to Understand Desiccation Tolerance in the Resurrection Plant *Myrothamnus flabellifolia*"

Period: 05.2019-04.2022

Total costs: \$216,000

Role: Sponsoring Scientist

Funding Source: USDA-FAS (FX17BF-10777R036)

Project Title: "Borlaug fellowship program Indonesia (ARSIATY) Biotechnology @ MSU"

Period: 10.01.2017- 9.30.2019

Total costs: \$ 39,917

Role: PI

PRESENTATIONS

Invited Seminars:

- 2021 Heinrich Heine University Düsseldorf, Düsseldorf, Germany
- 2021 University of Nebraska
- 2018 University of Bonn. Bonn, Germany.
- 2018 RIKEN Yokohama. Yokohama Japan.
- 2018 RIKEN Wako. Wako, Japan.
- 2016 University of Illinois, Department of Crop Science, Champaign-Urbana IL USA.

Invited conference talks:

- 2022 Royal Society meeting on Anhydrobiosis, London UK
- 2021 International Conference on Plant Systems Biology and Biotechnology, Golden Sands, Bulgaria.
- 2019 VanBuren R, 'Origins of desiccation tolerance in land plants'. Botany. July 27-31 2019, Tuscon AZ USA.

- 2019 VanBuren R, 'Comparative genomics of desiccation tolerance'. Plant Genome Evolution. September 29- Oct 1 2019. Sitges, Spain.
- 2019 VanBuren R, 'The Genetics of Drought and Desiccation Tolerance in C4 Grasses'. Great Lakes Plant Breeding Initiative. June 26 2019. East Lansing, MI USA.
- 2019 VanBuren R, 'Abiotic stress memory in plants'. Michigan State Genetics Mini-Symposium. May 7 2019. East Lansing, MI USA.
- 2018 VanBuren R, 'Convergent evolution of desiccation tolerance across land plants'. Gordon Research Conference Salt and Water Stress Tolerance in Plants. June 3-8 2018. Waterville Valley, NH USA.
- 2018 VanBuren R, 'Comparative genomics of CAM photosynthesis'. Biology of CAM Plants. April 9-13 2018. Desert Botanical Garden, Phoenix, AZ USA.
- 2016 VanBuren R, 'Drought Induced CAM Photosynthesis in Sedum album'. Plant and Animal Genome Meeting. January 10-15 2016. San Diego, CA USA.
- 2015 VanBuren R, 'De novo assembly of a complex panicoid grass genome using ultra-long PacBio reads with P6/C4 chemistry'. January 13-17 2015. San Diego, CA USA.
- 2013 VanBuren R, 'Recent origin and divergence of the two Y chromosomes in papaya. Plant and Animal Genome Meeting'. January 12-16 2013. San Diego, CA USA.
- 2013 VanBuren R, 'Sex Chromosome Evolution in Papaya'. Society for Molecular Biology and Evolution. July 8-13 2013. Chicago, IL USA.

TEACHING

- HRT 841 (Fall 2019-2022) Foundation in Plant Computational and Data Sciences. 3 credits. (Co-taught with Dr. Dan Chitwood; part of NSF-NRT program)
- CMSE/HRT (Spring 2019) Forum in Plant Computational and Data Science. 1 credit. (part of NSF-NRT program)
- HRT 812 (Fall 2018, 2021) Graduate Level Research Methods in Horticulture. 2 credits. (2 lessons)
- HRT 892 (Fall 2021) Seminar in Orphan Crops 1 credit.
- HRT 892 (Fall 2018) Seminar in Plant Resilience 1 credit.
- HRT 892 (Fall 2017) Seminar in Emerging Frontiers of Plant Breeding and Genetics. 1 credit.

MENTORING AND ADVISING

Undergraduate students (MSU):

- Olivia Magnotte (September 2022-present) Biochemistry and Molecular Biology
- Annie Nguyen (June 2022-present) Biochemistry and Molecular Biology
- Jack Sinnaeve (June 2022-August 2022) Sustainable and Organic Horticulture program

Jack Day	(June 2022- August 2022) Environmental Science and Management
Kirk Maibach	(June 2021-September 2021) Mechanical Engineering
Cate Kirkwood	(January 2020-present) Biochemistry and Molecular Biology
Sarah Pilarski	(August 2020-May 2022) Biochemistry and Molecular Biology
Sarah Tesfa	(May 2021-August 2021) Biochemistry and Molecular Biology
Bryce Davis	(May 2021-August 2021) Biochemistry and Molecular Biology
Paige Smith	(May 2021-August 2021) Conservation Biology
Joseph Baczkowski	(May 2018-Jan 2020) Biochemistry and Molecular Biology
Nichelle Wooden	(Fall 2017) Lyman Briggs, Molecular Science

Undergraduate students (non-MSU):

Michael Gasdick	(Summer 2022) Plant genomics REU program at MSU. Senior Robert Morris University
Catherine Zhao	(Summer 2021) Plant genomics REU program at MSU. Senior Swarthmore College
Max Harman	(Summer 2021) Plant genomics REU program at MSU. PhD student, MSU
Mike Kalinowski	(Summer 2019) Plant genomics REU program at MSU. Senior at Aquinas College
Serena Lotreck	(Summer 2018) Plant genomics REU program at MSU. PhD student MSU, Plant Biology
Sterling Evans	(Summer 2017) Plant genomics REU program at MSU. BS U. of Missouri.

MSU High School Honors Science Program:

Emily Dias	(Summer 2017) Undergraduate Harvard
Hannah Chay	(Summer 2018) Undergraduate U Penn

Graduate Students (MSU):

Jeremy Pardo	(Fall 2017-Fall 2022) Plant Biology. PhD student. MSU Distinguished Fellowship.
Kevin Bird	(Fall 2017-Summer 2022) PhD Ecology, Evolutionary Biology, and Behavior Program. PhD student. NSF-GRFP Awardee, Fulbright Scholar and MSU Distinguished Fellowship. This student was co-advised with Dr. Patrick Edger.
McKena Lipham	(Fall 2019-present) Horticulture, Plant Breeding, Genetics, and Biotechnology, PhD student.
Anna Haber	(Fall 2019-present) Horticulture, PhD student. University Enrichment Fellowship.
Jenny Schuster	(Fall 2021-present) Cell and Molecular Biology, PhD Student.

Graduate Students (visiting):

Natascha Hebler	(Winter 2022) PhD student, University of duesseldorf. iGRAD-Plant exchange program.
Vanessa Reichel-Deland	(Winter 2021) PhD student, University of duesseldorf. iGRAD-Plant exchange program.

Antonio Rigueiro-Mesejo (Spring 2018) PhD student, University of duesseldorf. iGRAD-Plant exchange program.

Postdoctoral Research Associates:

Dr. Ian Gilman (March 2023) NSF-PGRP postdoctoral fellow
Dr. Rose Marks (June 2019-present) NSF-PGRP postdoctoral fellow
Dr. Brian St. Aubin (Jan 2020-July 2022). Research Scientist at Pairwise Plants
Dr. Jennifer Wai (Oct. 2017-July 2020). Currently a Research Assistant Professor in Biochemistry and Molecular Biology and Associate Director of the NUSeq Core at Northwestern University, Chicago, IL.

Research Associates (visiting):

Mirza Arsyad (Oct. 2017-Jan. 2018). USDA Borlaug fellow from Indonesia

Graduate Student Committee (MSU):

Elizabeth Alger	PhD	Horticulture, Plant Breeding Genetics and Biotechnology
Alan Yocca	PhD	Plant Biology
Ying-Chen Lin	PhD	Horticulture, Plant Breeding Genetics and Biotechnology
Davis Mathieu	PhD	BioMolecular Science
Levi Bauer	PhD	BioMolecular Science
Charity Goecheritz	PhD	Horticulture, Plant Breeding Genetics and Biotechnology
Ally Schumacher	PhD	Plant Biology
Brandon Webster	PhD	Plant Biology
Miles Roberts	PhD	Plant Biology
Nick Johnson	PhD	Plant, Soil, Microbial Sciences

Graduate Student Committee (External):

Natascha Hebler 2021-present. PhD student. Institute of Plant Biochemistry, Heinrich Heine University Düsseldorf

Vanessa Reichel-Deland 2019-present. PhD student. Institute of Plant Biochemistry, Heinrich Heine University Düsseldorf

Ian Gilman 2019-present. PhD student. Department of Ecology and Evolutionary Biology, Yale University

Omar Gonzalez 2020-present. PhD Student. Langbio Institute, Mexico

SERVICE AND LEADERSHIP

Ad-hoc manuscript reviewer (since August 2018):

Nature (3), Nature Genetics (6), Nature Food (1), Nature Plants (10), Nature Communications (12), Nature Reviews Genetics (1), PNAS (2), Science Advances (1), Communications Biology (2), Giga Science

(2), *Physiologia Plantarum* (1), *The Plant Cell* (6), *Plant Physiology* (4), *Plant Journal* (7), *Plant Cell & Environment* (3), *Plant and Cell Physiology* (1), *Molecular Plant* (2), *Planta* (11), *PloS ONE* (2), *Peer J* (4), *Theoretical and Applied Genetics* (1), *BMC Genomics* (2), *BMC Plant Biology* (2), *Tropical Plant Biology* (1), *Frontiers in Plant Science* (8), *Genes* (1), *Agronomy* (1), *Physiology and Molecular Biology of Plants* (1), *New Phytologist* (3), *Crop and Pasture Science*, *Hort Research* (2), *Plant Direct* (2), *Functional Plant Biology* (1), *Cogent Food & Agriculture* (1), *Ecology and Evolution* (1)

Review and Editorial service:

2016-present *Peer J* (handling editor)

2017-present *Planta* (editorial board member)

Ad-hoc reviewer for the following granting agencies:

2022 National Science Foundation (USA)

2021 National Science Foundation (USA)

2020 National Science Foundation (USA)

2020 National Research Foundation (South Africa)

2019 National Science Foundation (USA)

2018 National Science Foundation (USA)

2018 JGI-CSP (USA), panelist

2017 ERA-NET Coordinating Action in Plant Sciences (ERA-CAPS; Europe)