

DENNIS NICUH LOZADA

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EDUCATION

- 08/2018 PhD, Cell and Molecular Biology (Plant Breeding and Genetics), University of Arkansas, Fayetteville, AR, USA
- 04/2010 BS Biology, Cell and Molecular Biology, University of the Philippines- Los Baños, Laguna, Philippines

RESEARCH AND PROFESSIONAL EXPERIENCE

- 07/2020-present Assistant Professor, Department of Plant and Environmental Sciences, New Mexico State University, Las Cruces, NM, USA
- 08/2018- 06/2020 Postdoctoral Research Associate, Winter Wheat Breeding and Genetics, Department of Crop and Soil Sciences, Washington State University, Pullman, WA, USA
- 10/2019- 11/2019 Visiting Research Scientist, Philippine Genome Center
University of the Philippines Diliman, Diliman, Quezon City, Philippines
- 08/2013-07/2018 Graduate Research Assistant and Monsanto Beachell-Borlaug Fellow, Crop, Soil, and Environmental Sciences (CSES) Department, University of Arkansas, Fayetteville, AR, USA
- 02/2017-05/2017 Visiting Research Scientist, Wheat Molecular Breeding Laboratory, International Maize and Wheat Improvement Center (CIMMYT), Mexico
- 05/2010-07/2013 Researcher (Genetics), Molecular Marker Applications Laboratory, Plant Breeding, Genetics, and Biotechnology Division, International Rice Research Institute (IRRI), Los Baños, Laguna, Philippines
- 06/2009-04/2010 Affiliate Undergraduate Thesis Researcher, Genetic Resources Center, IRRI, Los Baños, Laguna, Philippines

PUBLISHED WORKS

Peer-reviewed

1. **Lozada, D.N.**, Bhatta, M., Coon, D.L., Bosland, P. W. 2021. Genetic diversity in New Mexico chile pepper genotypes as revealed by single nucleotide polymorphism markers. *BMC Genomics* 22:356. <https://doi.org/10.1186/s12864-021-07662-7>.
2. **Lozada, D.N.**, Coon, D.L., Guzman, I., Bosland, P. W. 2021. Heat profiles of ‘Superhot’ and New Mexican type chile peppers. *Scientia Horticulturae* 283.110088. <https://doi.org/10.1016/j.scienta.2021.110088>.
3. **Lozada, D. N.**, Carter, A. H., Mason, R. E. 2021. Unlocking the yield potential of wheat: Effects of major growth habit and adaptation genes. *Crop Breeding, Genetics, and Genomics* 2021;3(2):e210004. <https://doi.org/10.20900/cbgg20210004>.
4. **Lozada, D.N.**, Carter, A. H. 2020. Genomic selection in winter wheat breeding using a recommender approach. *Genes* 11(7), 779. <https://doi.org/10.3390/genes11070779>.
5. **Lozada, D.N.**, Ward, B. P., Carter, A. H. 2020. Gains through selection for yield in a winter wheat breeding program. *PLoS ONE*. 15(4). <https://doi.org/10.1371/journal.pone.0221603>.

6. **Lozada, D. N.**, Carter, A. H. 2020. Insights into the genetic architecture of phenotypic stability traits in winter wheat. *Agronomy* 10(3):368. <https://doi.org/10.3390/agronomy10030368>.
7. **Lozada, D.N.**, Godoy, J.V., Ward, B. P., Carter, A. H. 2019. Genomic prediction and indirect selection for grain yield in US Pacific Northwest winter wheat through spectral reflectance indices from high-throughput phenotyping. *International Journal of Molecular Sciences*. 21(1): 165. <https://doi.org/10.3390/ijms21010165>.
8. **Lozada, D. N.**, Mason, E. Sarinelli, J. M., Brown-Guedira, G. 2019. Accuracy of Genomic Selection for Grain Yield and Agronomic Traits in Soft Red Winter Wheat. *BMC Genetics*. 20(82). doi:10.1186/s12863-019-0785-1.
9. **Lozada, D. N.**, Godoy, J. Murray, T., Carter, A. H. 2019. Genetic Dissection of Snow Mold Tolerance in US Pacific Northwest Winter Wheat through Genome-Wide Association Study and Genomic Selection. *Frontiers in Plant Science*. <https://doi.org/10.3389/fpls.2019.01337>
10. **Lozada, D.N.**, Carter, A. H. 2019. Accuracy of single and multi-trait genomic prediction models for grain yield in US Pacific Northwest winter wheat. *Crop Breeding, Genetics, and Genomics* 1: e19. <https://doi.org/10.20900/cbgg20190012>.
11. **Lozada, D.N.**, Mason, E. Sukumaran, S. Dreisigacker, S. 2018. Validation of grain yield QTL from soft winter wheat using a CIMMYT spring wheat panel. *Crop Science* 58:1-8. doi:10.2135/cropsci2018.04.0232.
12. **Lozada, D.N.**, Mason, E. Babar, M. A., Carver, B., Brown-Guedira, G., Merrill K., Arguello, N., Acuna, A., Vieira, L., Holder, A., Addison, C., Moon, D., Miller, R., Dreisigacker, S. 2017. Association mapping reveals loci associated with multiple traits that affect grain yield and adaptation in soft winter wheat. *Euphytica* 213:213-222. DOI 10.1007/s10681-017-2005-2213-222.
13. Sandhu, K. **Lozada, D. N.**, Pumphrey, M., Zhang, Z., Carter, A. H. 2021. Deep learning for predicting complex traits in Spring Wheat Breeding Program. *Frontiers in Plant Science*. <https://doi.org/10.3389/fpls.2020.613325>
14. Larkin, D. L., **Lozada, D.N.**, Mason, R. E. 2019. Genomic selection- considerations for successful implementation in wheat breeding programs. *Agronomy*.9(9):479. <https://doi.org/10.3390/agronomy9090479>.
15. Hayat, H., Mason, R.E., **Lozada, D.N.**, Acuna, A., Holder, A., Larkin, D.L., Winn, Z., Murry, J., Murphy, P., Moon, D.E., Miller, R.G. 2019. Effects of allelic variation at Rht-B1 and Rht-D1 on grain yield and agronomic traits of southern US soft red winter wheat. *Euphytica*. 215(10). DOI: 10.1007/s10681-019-2478-2.
16. Mason, E., Addison, C., Babar, M. A., Acuna, A., **Lozada, D.N.**, Subramanian, N., Arguello, N., Miller, R., Brown-Guedira, G., Guedira, M., Johnson, J. 2017. Diagnostic Markers for Vernalization and Photoperiod Loci Improve Genomic Selection for Grain Yield and Spectral Reflectance in Wheat. *Crop Science*. doi:10.2135/cropsci2017.06.0348.
17. Dilla-Ermita C.J., Tandayu E., Juanillas V.M., Detras J., **Lozada D.N.**, Dwiyantri M.S., Vera Cruz C., Mbanjo E.G.N., Ardales E., Diaz M.G., Mendioro M., Thomson M.J., Kretschmar T. 2017. Genome-wide Association Analysis Tracks Bacterial Leaf Blight

- Resistance Loci In Rice Diverse Germplasm. *Rice*. 10:8. DOI: [10.1186/s12284-017-0147-4](https://doi.org/10.1186/s12284-017-0147-4).
18. Arguello, N.A., Mason, R.E., Roberts, T.L., Subramanian, N., Acuna, A.M., Addison, C.K., **Lozada, D.N.**, Miller, R.G., Gbur, E.E. 2016. Performance of soft red winter wheat subjected to field soil waterlogging: Grain yield and yield components. *Field Crops Research*. 194: 57-64. DOI: [10.1016/j.fcr.2016.04.040](https://doi.org/10.1016/j.fcr.2016.04.040).
19. Addison, C.K. Mason, E., Brown-Guedira, G., Guedira, M., Hao, Y., Miller R., **Lozada, D.N.**, Acuna, A., Arguello, N., Johnson, J., Ibrahim, A., Sutton, R., Harrison, S. 2016. QTL and major genes associated with grain yield in soft red winter wheat adapted to the southern United States. *Euphytica*:1-13. DOI: [10.1007/s10681-016-1650-1](https://doi.org/10.1007/s10681-016-1650-1).

RESEARCH AND TRAVEL GRANTS

- 2021-2022 **Lozada, D. N.**, Walker, S., Tonnessen, B., Coon, D.⁺ “Genomics-assisted breeding for the development of machine harvestable chile peppers in New Mexico.” Amount requested: \$171,125; Sponsor: New Mexico Chile Association; Project duration: 2 years (PI)
- 2020-2025 **Lozada, D.N.**, Nunez, G., Coon, D., Lujan, P., Dura, S., Sanogo, S. "Genomics-assisted Breeding for the Improvement of Chile Peppers (*Capsicum* spp.) in New Mexico," USDA HATCH; FY 2020-2025; Total amount awarded for 5 years: \$11,250.00 (PI)
- 2021-2022 Walker, S., Tonnessen, B., **Lozada, D. N.**, Coon, D. “Development of Improved Chile Cultivars for New Mexico Growers”; Sponsor: New Mexico Chile Commission; Amount requested: \$15,000; Project Duration: 1 year (Co-PI)
- 2019 **Lozada, D. N.**, Saloma, C. P. Murao, L. A., Barlaan, E., Galvez, H. “Genomewide selection and association mapping of Philippine coconut varieties” Returning Scientist Program, Department of Science and Technology, Republic of the Philippines; Total grant awarded \$8,000.00 (PI)
- 2017 **Lozada, D N.**, Mason R. E. Guedira, G B., Peterson, J. “Molecular marker technologies in public and private plant breeding programs” Art E. Spooner Travel Scholarship, Crop, Soil, and Environmental Sciences Department, University of Arkansas, Fayetteville, AR; Total grant awarded: \$ 2,000.00
- 2015-2018 **Lozada, D. N.**, Mason R.E., Dreisigacker, S. “Genomewide association study for major growth habit and adaptation genes in wheat” Monsanto Beachell - Borlaug International Scholar’s Program, AY 2015-2018; Total grant awarded: \$ 107,111.00 (PI)

TEACHING EXPERIENCE

GENE 440 (Genetics Seminar), PES Department, New Mexico State University
 HORT300 (Special Topics in Horticulture), PES Department, NM State University
 Facilitator, Genetic Mapping and Genomic Selection Workshop, University of the Philippines Mindanao, Davao City, Philippines, October 2019
 Teaching Assistant, CSES 4103 (Plant Breeding and Genetics), CSES Department University of Arkansas, Fayetteville, Fall semester 2016
 Facilitator, Molecular Breeding Course, Rice: Research to Production, SNP Data Analysis Course, International Rice Research Institute, Los Baños, Philippines

PRESENTATIONS (O- Oral; P- Poster)

1. Nunez, G., **Lozada, D.N.**, Coon, D., Lujan, P., Dura, S., Barchenger, D., Sanogo, S. Providing economic advantages to New Mexican Farmers through the identification of disease-resistant quantitative trait loci in chile peppers. 2021 New Mexico Chile Conference, January 29, 2021, Las Cruces, NM (*Awarded 2nd Place, Student Poster Competition*)
2. Whelpley, L., **Lozada, D.N.**, Acuna, A. Meta-analysis of QTL for diverse traits in chile peppers (*Capsicum* spp.). 2021 New Mexico Chile Conference, January 29, 2021, Las Cruces, NM
3. **Lozada, D. N.** “*Red and Green*”: Genomics-assisted improvement of chile peppers in New Mexico. 2021 New Mexico Chile Conference. February 2, 2021, Las Cruces, NM (*invited*)
2. **Lozada, D. N.** “*Of Bread and Spices*”: Harnessing the power of phenomics and genomics for the genetic improvement of wheat and chile peppers. University of the Philippines Los Baños, Los Baños, Philippines Plant Breeding Online Symposium. September 18, 2020 (O, *invited*)
3. **Lozada, D. N.** “*Grains of Hope*”: Genomics and Phenomics for Trait Improvement in Winter Wheat. Molecular Plant Sciences (MPS) Student Retreat 2020. March 7, 2020, Washington State University, Pullman, WA (O, *invited*)
4. **Lozada, D. N.**, Ward, B. P., Carter, A. H. Gains through selection for grain yield in a winter wheat breeding program. *Plant and Animal Genome Conference 2020*, January 11-15, 2020, San Diego, CA (P)
5. **Lozada, D. N.** “*Oh, My Genes: Lessons from Plant Genetics and Genomics for Trait Improvement.*” Philippine Genome Center, University of the Philippines Los Baños, Los Baños, Laguna, Philippines, November 21, 2019 (O, *invited*)
6. **Lozada, D. N.** “*Oh, My Genes: Lessons from Plant Genetics and Genomics for Trait Improvement.*” Philippine Genome Center, University of the Philippines Diliman, Quezon City, Philippines, November 18, 2019 (O, *invited*)
7. **Lozada, D. N.** “Genomic prediction as a breeding and selection tool for winter wheat improvement.” 2nd Mindanao-wide Genomics Seminar, Davao City, Philippines, October 29, 2019 (O, *invited*)
8. **Lozada, D. N.** “Genetic mapping and genomic selection tools in Agriculture.” Philippine Genome Center Mindanao Satellite Facility, University of the Philippines Mindanao, Davao City, Philippines, October 28, 2019 (O, *invited*)
9. **Lozada, D. N.** “*Hooded: An International Student’s Journey in the US.*” University of the Philippines Mindanao, October 25, 2019 (O, *invited*)
10. **Lozada, D.N.**, Godoy, J.V., Carter, A.H. Spectral Reflectance Indices from High-throughput Phenotyping for Indirect Selection and Genomic Prediction of Grain Yield in Pacific Northwest Winter Wheat. *Phenome 2019*, February 6-9, 2019, Tucson, AZ (P)
11. **Lozada, D.N.**, Godoy, J.V., Murray, T. D., Carter, A.H. Association Mapping and Genomic Selection for Snow Mold Tolerance in Winter Wheat. *Pacific Northwest Wheat Quality Council Meeting*, January 30-February 1, 2019, Portland, OR (P)

12. **Lozada, D.N.**, Godoy, J.V., Murray, T. D., Carter, A.H., Genetic Dissection of Snow Mold Tolerance in Pacific Northwest Winter Wheat. *Plant and Animal Genome Conference 2019*, January 11-16, 2019, San Diego, CA (P)
13. **Lozada, D. N.** Association Mapping and Genomic Selection in Soft Winter Wheat. *Crop, Soil, and Environmental Sciences Departmental Seminar*, April 16, 2018, University of Arkansas, Fayetteville, AR (O)
14. **Lozada, D. N.**, Mason, R. E., Dreisigacker, S., Sukumaran, S. Validation of yield QTL from winter wheat using a CIMMYT spring wheat panel. *Gamma Sigma Delta Annual Student Presentations*, March 16, 2018, Fayetteville, AR (O)
15. **Lozada, D.N.**, Mason, R. E., Sukumaran, S., Dreisigacker S. Validation of yield QTL from winter wheat using a spring wheat panel from CIMMYT, Mexico, *Plant and Animal Genome Conference 2018*, January 13-17, 2018, San Diego, CA (P)
16. **Lozada, D.N.** and D. L. Larkin “Cloning of a gene on Chromosome 1AL for increasing wheat yield.” *Plant and Animal Genome Conference 2018*, January 13-17, 2018, San Diego, CA (O)
17. **Lozada, D.N.**, Mason, R. E., Larkin, D. L. Sarinelli, J. M. Genome-wide selection in soft winter wheat: Effects of training population size, number of markers, and relatedness on genomic prediction accuracy. *2017 ASA, CSSA, and SSSA Annual Meetings*, October 22-25, 2017, Tampa, FL (P)
18. **Lozada, D. N.** “Plant Breeding in the Public and the Private Sectors: A Student’s Perspective.” *Crop, Soil, and Environmental Sciences Spooner Scholar Seminar*, October 30, 2017, University of Arkansas, Fayetteville, AR (O)
19. **Lozada, D. N.** “Physiological and Genomic Based Plant Ideotype for Increasing Wheat Yield and Productivity” *2017 Basic Wheat Improvement Course*, CIMMYT, El Batan, Mexico (O)
20. **Lozada, D.N.**, Mason, R. E., Arguello, M. N., Acuna, A., Addison, T., Brown-Guedira, G. Using association mapping and genomic selection to dissect grain yield and agronomic traits in wheat. *2016 Philippine Society for Biochemistry and Molecular Biology*, December 5-7, 2016, Manila, Philippines (P)
21. **Lozada, D.N.**, Mason, R. E., Acuna, A., Brown-Guedira, G. “Genome-wide association study for grain yield and agronomic traits in soft winter wheat.” *ASA, CSSA, and SSSA International Annual Meeting 2016*, November 6-9, 2016, Phoenix, AZ (O)
22. **Lozada, D.N.**, Mason, R. E., Brown-Guedira, G., Dreisigacker, S. “A genomewide association study for yield and agronomic traits in soft winter wheat.” *Monsanto Beachell-Borlaug Scholars’ Convocation*. October 11, 2016, Ankeny, IA (O)
23. **Lozada, D.N.**, Mason, R. E., Acuna, A., Brown-Guedira, G., Dreisigacker, S. “Association mapping and gene diversity in a soft winter wheat germplasm panel.” *American Society of Agronomy Southern Regional Branch Meeting 2016*, February 7-9, 2016, San Antonio, TX (O)
24. **Lozada, D.N.**, Mason, R. E., Arguello, M. N., Acuna, A., Addison, T., Brown-Guedira, G. GWAS for yield, growth habit, and adaptation traits in wheat, *Monsanto Beachell-Borlaug Scholars’ Convocation*. October 13, 2015, Ankeny, IA (P)

25. **Lozada, D.N.**, Mason, R. E., Arguello, M. N., Acuna, A., Addison, T., Brown-Guedira, G. “The Phenotype-Genotype Connection:” Association Mapping for Yield, Growth Habit, and Adaptation Traits in Wheat, *Plant and Animal Genome (PAG) Asia*, July 13-15, 2015, Singapore, Singapore (P)
26. **Lozada, D.N.**, Mason, R. E., Arguello, M. N., Acuna, A., Addison, T., Brown-Guedira, G. Genome-wide Association Analysis for Yield, Growth Habit, and Adaptation Traits in Wheat. 2015 *Arkansas Plant Powered Production (P3) Annual Research Symposium*, June 29- July 1, 2015, Fayetteville, AR (P)
27. **Lozada, D.N.**, Mason, R. E., Arguello, M. N., Acuna, A., Addison, T., Brown-Guedira, G. Using GWAS to Dissect Growth Habit, Yield, and Adaptation Traits in Soft Red Winter Wheat. 2015 *Eastern Wheat and Southern Small Grains Workers Conference*, April 28-30, 2015, Richmond, VA (P)
28. **Lozada, D.N.**, Mason, R. E., Arguello, M. N., Acuna, A., Addison, C.K., Subramanian N., Sater, H. “Molecular and Genetic Dissection of Yield, Growth Habit, and Adaptation Traits in Wheat.” 2015 *Gamma Sigma Delta Annual Student Presentations*, March 20, 2015, University of Arkansas, Fayetteville, AR (O)
29. **Lozada, D.N.**, Mason R.E., Acuña, A., Arguello N.M., Subramanian, N., Addison, C.K., Sater, H.M. “Effects of Growth Habit Genes on Yield and Adaptation of Soft Red Winter Wheat (*Triticum aestivum*).” *ASA-CSSA-SSSA International Annual Meeting*, November 2-5, 2014, Long Beach, CA (O)
30. **Lozada, D.N.**, Rey J., Naredo, M.E., Mercado S.M., Duka, I., Choi Y., McNally, K. Genetic Diversity Analysis of Korean Rice (*Oryza sativa*) varieties using microsatellite markers. *Crop Science Society of the Philippines (CSSP) Annual Scientific Conference*, April 16-21, 2012, Puerto Princesa City, Philippines (P)
31. Larkin, D.L., Mason, R.E., **Lozada, D. N.**, Holder, A. L., Moon, D. E., Brown-Guedira, G. Genome wide association analysis and prediction of agronomic traits in soft red winter wheat. *Plant and Animal Genome Conference Conference*, January 11-15, 2020, San Diego, CA (P).
32. Larkin, D.L., Mason, R. E. Moon, D., Holder, A. L., **Lozada, D. N.**, G. Brown-Guedira. 2018. A genome wide association study for yield traits in soft red winter wheat. *Plant and Animal Genome Conference*, January 13-17, 2018, San Diego, CA (P)
33. Holder, A., Mason, R. E., Moon, D., Acuña, A., **Lozada, D. N.**, Hayat, H., Brown-Guedira, G. A genomewide association study for Fusarium head blight resistance in southeastern soft red winter wheat. *ASA-CSSA-SSSA International Annual Meeting*, October 22-25, 2017, Tampa, FL (O)
34. Acuña, A., Mason, R.E., Holder, A., Arguello N.M., Hayat, H., **Lozada, D.N.**, Brown-Guedira, G. Dissection of soil waterlogging tolerance in soft red winter wheat through integration of genomic approaches. *ASA-CSSA-SSSA International Annual Meeting*, October 22-25, 2017, Tampa, FL (P)
35. Hayat, H., Mason, R. E., Acuña, A., **Lozada, D. N.**, Holder, A. Effect of allelic variation in Rht genes in grain yield and plant height of winter wheat. *ASA-CSSA-SSSA International Annual Meeting*, October 22-25, 2017, Tampa, FL (P)

36. Acuña, A., Mason, R.E., Addison, C.K., Arguello N.M., Sater, H.M., **Lozada, D.N.**, Subramanian, N. "Evaluation of wheat gene expression under waterlogging conditions using RNA-seq analysis." *ASA-CSSA-SSSA International Annual Meeting*, November 2-5, 2014, Long Beach, CA (O)
37. Addison, C.K., Mason, R.E., Acuña, A., Arguello N. M, Subramanian, N., Sater, H.M., **Lozada, D.N.** Genetic mapping of yield and normalized difference vegetative index (NDVI) in soft red winter wheat (*Triticum aestivum* L.). *ASA-CSSA-SSSA International Annual Meeting*, November 2-5, 2014, Long Beach, CA (P)
38. Arguello N., Mason, R.E., Acuña, A., Addison, C.K., **Lozada, D. N.**, Sater, H., Subramanian, N. "Genome-wide analysis for elemental concentration and ion toxicity tolerance in wheat." *ASA-CSSA-SSSA International Annual Meeting*, November 2-5, 2014, Long Beach, CA (O)
39. Acuna, A., Mason, R.E., Addison C.K., Arguello N.M., **Lozada, D.N.**, Subramanian, N., Srivastava, S. Transcriptome analysis of soft red winter wheat under waterlogging conditions using next generation sequencing. *Eastern Wheat and Southern Small Grain Workers Conference*, April 28-30, 2015, Richmond, VA (P)
40. Arguello N.M., Mason, R.E., Acuña, A., Addison, C.K., **Lozada, D. N.**, Sater, H.M. Association mapping analysis for elemental accumulation in wheat (*Triticum aestivum*) under waterlogging. *Eastern Wheat and Southern Small Grain Workers Conference*, April 28-30, 2015, Richmond, VA (P)

HONORS AND AWARDS

Returning Scientist Awardee, *Balik* Scientist Program, Department of Science and Technology, Republic of the Philippines

1st Place, 3 Minute Thesis (3MT) Competition, Cell and Molecular Biology Interdisciplinary Graduate Programs, University of Arkansas, January 2018

Art E. Spooner Travel Scholarship Awardee, CSES Department, University of Arkansas, Spring 2017

3rd place, Oral presentation (PhD), Gamma Sigma Delta Annual Student Presentations, March 2016

1st place, Oral presentation, American Society of Agronomy Southern Regional Branch Annual Meeting, February 2016

3rd place, Poster presentation, Eastern Wheat and Southern Small Grains Workers Conference, April 2015

Recipient, Monsanto's Beachell-Borlaug International Scholars Program, March 2015

1st place, Oral presentation (PhD), Gamma Sigma Delta Annual Student Presentations, March 2015

One of the recipients of the 2012 IRRI National Recruited Staff (NRS) Award for Outstanding Scientific Support, IRRI, Los Baños, Laguna, Philippines, April 2013 (Team Award)

Recipient, University of the Philippines (UP) President's Medal for Academic Excellence, April 2010

Recipient, University of the Philippines Los Baños (UPLB) College of Arts and Sciences Medal of Merit for Academic Excellence, April 2010

Recipient, UPLB Institute of Biological Sciences (IBS) Medal for Academic Excellence, April 2010

University and College Scholarship Awardee, UPLB, AY 2006-2010