

Alejandra Martínez Berdeja, Ph.D.

Curriculum Vitae

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Education

- Ph.D., 2014. Botany and Plant Sciences, University of California, Riverside
Dissertation: “Ecological significance of seed retention and timing of seed dispersal to seasonal rainfall variability in *Chorizanthe rigida*, a serotinous winter desert annual”.
Advisor: Exequiel Ezcurra
- B.S., 2005. Biology, Universidad Nacional Autónoma de México (UNAM)
Thesis (2006): “Early growth analysis of three endangered cacti (*Mammillaria pectinifera*, *Obregonia denegrii* and *Coryphantha werdermannii*) under controlled humidity and radiation conditions”.
Advisor: Ma. Teresa Valverde
- B.A., 2004. Law, Instituto Tecnológico Autónoma de México (ITAM)
Thesis (2011): “Environmental Complaints before the National Human Rights Commission as an instrument that promotes environmental public participation”.
Advisor: Miguel Sarre

Employment History

Academic:

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| 2019 | Postdoctoral Scholar, University of California, Davis, Department of Evolution and Ecology, Schmitt Lab (Feb. – Sept.) |
| 2018 | Postdoctoral Research Affiliate, University of California, Davis, Department of Evolution and Ecology, Schmitt Lab |
| 2014-2017 | Postdoctoral Scholar, University of California, Davis, Department of Evolution and Ecology, Schmitt Lab |
| 2011 | Teaching Assistant for California’s Cornucopia, Department of Botany and Plant Sciences, University of California, Riverside |
| 2005 | Substitute Teacher (Biology), Modern American School, Mexico |

Consulting:

- 2008 Research Assistant to Prof. Irene Pisanty, National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico.
- 2008 Research Assistant to Dr. Lucía Almeida, Global Environmental Fund (GEF, World Bank), Mexican Environmental Agency (SEMARNAT), Mexico.
- 2006-2007 Environmental Law and Impact Assessment Consulting, Vera, Carvajal & Sosa, S. C. Law Firm, Mexico City.

Grants, Honors, and Awards

- 2019 New Phytologist Next Generation Scientists 2019 - travel contribution
- 2019 University of California Davis Postdoctoral Scholars Association Travel Grant
- 2015 CONACyT Postdoctoral Fellowship
- 2014 CONACyT Postdoctoral Fellowship
- 2014 Graduate Student Achievement Award, University of California, Riverside
- 2012 Dissertation Year Program Fellowship, University of California, Riverside
- 2011 California Desert Research Grant, The Community Foundation
- 2008 CONACyT PhD Scholarship, Mexican National Science and Technology Council

Manuscripts in Preparation

Martínez-Berdeja, A., Okada, M., Runcie, D., and Schmitt, J. Effects of precipitation variability on early and late flowering genotypes on a seasonal mediterranean environment. *In prep* for *New Phytologist*

Martínez-Berdeja, A., and Ezcurra, E. Desert annuals plant architecture and micro-scale temperature gradient in cold and warm deserts. Submitted to *Journal of Arid Environments*.

Caton-Darby, M. A., Taylor, M. A., Schmitt, J., and **Martínez-Berdeja, A.** Effects of temperature and water potential to understand the mechanisms behind bet-hedging in *Mimulus bigelovii*, a California desert winter annual. *In prep* for *American Journal of Botany*.

Peer-Reviewed Publications

Martínez-Berdeja, A., Stitzer, M. C., Taylor, M. A., Okada, M., Ezcurra, E., Runcie, D., and Schmitt, J. Functional variants of *DOG1* control seed chilling responses and variation in seasonal life-history strategies in *Arabidopsis thaliana*. *PNAS*, DOI: 10.1073/pnas.1912451117

Martínez-Berdeja, A., Hamilton, J. A., Bontemps, A., Schmitt, J., and Wright, J. W. 2019. Evidence for population differentiation among Jeffrey and Ponderosa pines in survival, growth and phenology. *Forest Ecology and Management*, 434: 40 – 48.

Conlisk, E., Swab, R., **Martínez-Berdeja, A.**, Daugherty, M. P. 2016. Post-fire recovery in coastal sage scrub: seed rain and community trajectory. *PLoS ONE*, 11(9): e0162777. doi:10.1371/journal.pone.0162777

Martínez-Berdeja, A., Ezcurra, E. and Torres, M. 2015. Morphological variability in propagules of a desert annual as a function of rainfall patterns at different temporal and spatial scales. *Functional Ecology*, 29: 1260 – 1267.

Martínez-Berdeja, A., Ezcurra, E. and Sanders, A. C. 2015. Delayed seed dispersal in North American deserts. *Madroño*, 62: 21 – 32.

Martínez-Berdeja, A., Torres, M., Altshuler, D. L. and Ezcurra, E. 2014. Hydration history and attachment morphology regulate seed release in *Chorizanthe rigida* (Polygonaceae), a serotinous desert annual. *American Journal of Botany*, 101 (7): doi 10.3732/ajb.1400120

Martínez-Berdeja, A., Pietrasiak, N., Tamase, A., Ezcurra, E. and Allen, E. B. 2013. Living where others dare not: Microhabitat distribution in *Chorizanthe rigida*, a serotinous desert annual. *Journal of Arid Environments*, 97: 120 - 126.

Holt, J. S., Welles, S. R., Silvera, K., Heap, I. M., Heredia, S. M., **Martínez-Berdeja, A.**, Palenscar, K. T., Sweet, L. C., and Ellstrand, N. 2013. Taxonomic and life history bias in herbicide resistant weeds: implications for deployment of resistant crops. *PLoS ONE* 8(9):e71976.

Martínez-Berdeja, A. and Valverde, T. 2008. Growth response of three globose cacti to radiation and soil moisture: an experimental test of the mechanism behind the nurse effect. *Journal of Arid Environments*, 72: 1766 – 1774.

Other publications

Ezcurra, E., Mellin., E., and **Martínez-Berdeja, A.** Hot Deserts. In: eLS (Citable reviews in the Life Sciences). John Wiley & Sons Ltd, Chichester. <http://www.els.net> [doi: 10.1038/npg.els.0003178].

Martínez-Berdeja, A. and Ezcurra, E. What can *Chorizanthe rigida* propagule morphology tell us about rainfall variability and geomorphology in desert ecosystems? Science Newsletter. Mojave National Preserve & Sweeney Granite Mountains Desert Research Center, National Park Service. April, 2015.

Professional Presentations

- 2019 *DOG1* functional variation is associated with flowering and germination syndromes that determine life-history variation in *Arabidopsis thaliana*. Poster presented at the New Phytologist Next Generation Scientists 2019 Symposium. (University College Dublin, Dublin, Ireland)
- 2019 Functional variants of *DOG1* control seed chilling responses and drive variation in seasonal life history strategies in *Arabidopsis thaliana*. Oral presentation at the Evolution Meeting (Providence, RI).
- 2019 *DOG1* functional variation is associated with flowering and germination syndromes that determine life-history variation in *Arabidopsis thaliana*. Poster presented at the 3rd UK Plant Evolution Meeting. (Kew Royal Botanic Gardens, London, UK)
- 2015 Effects of variation at flowering and dormancy loci on life history and fitness responses of *Arabidopsis thaliana* to different precipitation regimes. Oral presentation at the Ecological Society of America Meeting (Baltimore, MD)
- 2013 Morphological variability and divergence in seed characters of a winter desert annual (*Chorizanthe rigida*) across a precipitation gradient. Oral presentation at the Ecological Society of America Meeting (Minneapolis, MN)
- 2012 Desert seasonal rainfall variability and seed retention in *Chorizanthe rigida*. Oral presentation at the Ecological Society of America Meeting (Portland, OR)
- 2011 Ecological significance of serotiny and timing of seed dispersal in desert regions with varying seasonal rainfall distribution. Oral presentation at the Ecological Society of America Meeting (Austin, TX)
- 2005 Early growth analysis of three endangered cactus species. Oral presentation at CITES Cactus Work Group, 5TH Meeting (Oaxaca, Mexico)
- 2005 Inter-American Human Rights Court, Moot Court Competition (Washington, D.C.)
- 2005 Phillip Jessup International Law Moot Court Competition (Mexico City, Mexico)

Service

- 2009-2013 Volunteer: California Invasive Plant Council (Cal-IPC) Student Chapter, UC Riverside.
- 2010-2011 Representative: Botany and Plant Sciences, Graduate Student Association, UC Riverside.
- 2002-2003 Social Service Volunteer: National Institute of Ecology (INE), Mexico.

Additional Education and Training

Fall CEQA Basics Workshops 2011 - Riverside. Topic: Fundamentals of California Environmental Quality Act and the State Guidelines. Organized by the Association of Environmental Professionals (AEP).

Watershed restoration for Sustainable Development. Forever Water Program, Nov. 2004 – Organized by Alternativas y Participación Social, A. C.

International Seminar on “Water and waste regulation in Mexico, U. S. and Canada and transboundary challenges”, Aug. 2004. Organized by the Mexican Law Bar, Lawyers College.

Membership in Professional Organizations

Ecological Society of America (ESA) 2011 – 2015

Society for the Study of Evolution (SSE) 2019 – 2020

Languages

Fluent in English and Spanish, basic proficiency in French

Computer Skills

R software, Gradient Forest analysis, GEMMA for GWAS, UNIX for bioinformatics