

Part A. PERSONAL INFORMATION

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| First and Family name | Maria del Rocío Pérez Barrales | |
| Researcher numbers | Researcher ID | F-7321-2017 |
| | Orcid code | 0000-0002-2472-2214 |

A.1. Current position

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|--------------------------------|--|
| Name of University/Institution | Universidad de Granada |
| Department | Botánica |
| E-mail | rpbarrales@ugr.es |
| Key words | Floral evolution, geographic variation, local adaptation, phenotypic selection, phenotypic plasticity, plant breeding and mating systems, pollination, |

A.2. Education

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| PhD (Doctorate) | Universidad de Sevilla | 2005 |
| MSc in Plant Biology | Universidad de Sevilla | 2004 |
| BSc in Biological Sciences | Universidad de Sevilla | 2001 |

A.3. JCR articles, h Index, thesis supervised

JCR= 32, Q1=21, Index h=16, > 1000, an average of 27 citations per item published.

I have co-supervised four PhDs in Brazil and one in Spain, and supervised five master degree students. At present I supervise a PhD student funded by the University of Portsmouth, where I am invited as visiting senior lecturer.

Part B. CV SUMMARY

My early work tested for the first time long debated Darwinian models on the evolution of sex polymorphism in plants, using the Mediterranean plant group *Narcissus*. Heterostyly is a sex polymorphism, in which plant populations present different floral morphs, with anthers and stigmas at reciprocal position. Darwin interpreted this variation as an adaptation for animal pollinators that moved pollen between the two forms. My work provided for the first-time empirical evidence to this hypothesis and showed that the function and type of pollinators correlate with the evolution of different floral forms, in a process that informed on local adaptation. I published my worked in high impact factor journals (Journal of Biogeography, 36: 1411, New Phytologist, 161: 235, New Phytologist, 171:533, Oikos, 116: 1904), which have received many citations and renewed the interest in the field of sex polymorphisms in plants.

Current and Future Research Interests

My research now investigates the ecological causes and evolutionary consequences of floral variation, including variation in sexual organs, traits involved in the attraction of and fit with different pollinators and flowering (Philosophical Transactions of the Royal Society B, 369: 20130258, Ecology Letters, 19: 1486). I am interested on floral functional traits, the relationship with pollinators, and how floral traits evolve in communities. I investigate the mechanisms that allow coexistence of species in communities and sustain biodiversity. I wish to understand if changes in flowering time represent an adaptive or a plastic response of plants to climate change. The later project represents a new area of research and is focused on the wild crop relatives of cultivated flax, pale blue flax (*Linum bienne*). This has opened the opportunity to look at the value of natural resources as a source to improve crops, a work that has been funded.

Part C. RELEVANT MERITS

C.1. Publications (including books)

I include the publication record from 2010 onwards, for more details see my orcid site [0000-0002-2472-2214](https://orcid.org/0000-0002-2472-2214):

- Furtado MT, Martias R, Consolaro H, **Pérez-Barrales R**. Do reciprocal herkogamy and pollinators affect the legitimate pollen flow in distylous species? *Botanical Journal of the Linnean Society*, accepted
- Albertsen E, Øystein HO, Bolstad GH, **Pérez-Barrales R**, Hansen TF, Pélabon C, Armbruster WA. Evolution. Using ecological context to interpret spatiotemporal variation in natural selection. *Evolution*, in press
- Viruel J, Kantar MB, Gargiulo R, Hesketh-Prichard P, Leong N, Cockel C, Forest F, Gravendel B, **Pérez-Barrales R**, Leitch IJ, Wilkin P. 2021. Crop wild phylorelatives (CWPs): phylogenetic distance, cyrogenetic compatibility and breeding system data enable estimation of crop wild relative gene pool classification. *Botanical Journal of the Linnean Society*, 195:1-33
- Marias R, **Pérez-Barrales R**, Consolaro H. 2020. Patterns of variation in distylous traits and reproductive consequences in *Erythroxylum* species and populations. *American Journal of Botany*, 6:910-922
- Landoni B, Viruel J, Gómez R, Allaby R, Brennan AC, Picó FX, **Pérez-Barrales R**. Microsatellite markers development in the crop wild relative *Linum bienne* Mill. (Linaceae) using genome skimming. *Applications in Plant Sciences*, 8: e11394.
- Montesinos-Navarro A, Storer I, Pérez-Barrales R. 2019. Benefits of nurse and facilitated plants emerge when interactions are considered along the entire life-span. *Perspectives in Plant Ecology, Evolution and Systematics*, 41: 125483
- Øystein O, Albertsen E, **Pérez-Barrales R**, Armbruster WS, Pélabon C. 2019. No evidence that seed predators constrain pollinator-mediated trait evolution in a tropical vine. *American Journal of Botany*, 106:145-153
- Ruiz-Martín J, Santos-Gally R, Escudero M, Mudgley JJ, **Pérez-Barrales R**, Arroyo J. 2018. Style polymorphism in *Linum* (Linaceae): a case of Mediterranean parallel evolution? *Plant Biology*, 20:100-111
- **Pérez-Barrales R**, Abarca CA, Santos-Gally R, Schiestl FP, Arroyo J. 2018. The function of the floral corona in the pollination of a Mediterranean style dimorphic daffodil. *Plant Biology*, 20:118-127
- Opedal OH, Falahati-Anbaran M, Albertsen E, Armbruster WS, **Pérez-Barrales R**, Stenoien HK, Pélabon C. 2017. *Euglossine* bees mediate only limited long-distance gene flow in a tropical vine. *New Phytologist*, 213: 1898-1908
- Falahati-Anbaran M, Stenoien H K, Bolstad G H, Hansen T F, **Pérez-Barrales R**, Armbruster WS, Pelabon C. 2017. Novel microsatellite markers for *Dalechampia scandens* (Euphorbiaceae) and closely related taxa: application to studying a species complex. *Plant Species Biology*, 32: 179-186

- Opedal OH, Albertsen E, Armbruster WS, **Pérez-Barrales R**, Falahati-Anbaran M, Pelabon C. 2016. Evolutionary consequences of ecological factors: reliability predicts mating-system traits of a perennial plant. *Ecology Letters*, 19: 1486-1495
- Sá T, Furtado MT, Ferrero V, **Pérez-Barrales R**, Rodrigues EB, dos Santos IG, Consolaro H. 2016. Floral biology, reciprocal herkogamy and breeding system in four *Psychotria* (Rubiaceae) species in Brazil. *Botanical Journal of the Linnean Society*, 182: 689-707
- Ruiz Martin J, Jiménez-Mejías P, Martínez-Labarga JM, **Pérez-Barrales R**. 2015. *Linum floss-carmini* (Linaceae), a new species from Northern Morocco. *Annales Botanici Fennici*, 52: 383-395
- Valverde PL, Arroyo J, Nuñez-Farfan J, Guillermo C, Calahorra A, **Pérez-Barrales R**, Tapia-Lopez R. 2015. Natural selection on plant resistance to herbivores in the native and introduced range. *AoB Plants*, 7: doi: 10.1093/aobpla/plv090
- Santos-Gally R, De Castro Alejandra, **Pérez-Barrales R**, Arroyo J. 2015. Styler polymorphism on the edge: unusual flower traits in Moroccan *Narcissus broussonetii* (Amaryllidaceae). *Botanical Journal of the Linnean Society*, 177: 644-656
- **Pérez-Barrales R**, Simon-Porcar VI, Santos-Gally R, Arroyo J. 2014. Phenotypic integration in style dimorphic Daffodils (*Narcissus*, Amaryllidaceae) with different pollinators. *Philosophical Transactions of the Royal Society B*, 369: 20130258 *Invited paper for the special issue "Phenotypic integration and modularity in plants and animals"*
- Bolstad GH, Hansen TF, Pélabon C, Falahti-Anbaran M, **Pérez-Barrales R**, Armbruster WS. 2014. Genetic constraints predict evolutionary divergence in *Dalechampia* blossoms. *Philosophical Transactions of the Royal Society B-Biological Sciences*, 369: artículo número 20130255 *Invited paper for the special issue "Phenotypic integration and modularity in plants and animals"*
- **Pérez-Barrales R**, Bolstad GH, Pélabon C, Hansen TF, Armbruster WS. 2013. Pollinators and seed predators generate conflicting selection on *Dalechampia* blossoms. *Oikos*, 122: 1411-1428
- Falahti-Anbaran M, Stenoien HK, Pélabon C, Bolstad GH, **Pérez-Barrales R**, Hansen TF, Armbruster WS. 2013. Development of microsatellite markers for the Neotropical vine *Dalechampia scandens* (Euphorbiaceae). *Applications in Plant Sciences*. 1: doi: 10.3732/apps.1200492.
- Santos-Gally R, **Pérez-Barrales R**, Simon VI, Arroyo J. 2013. The role of short-tongued insects in floral variation across the range of a style-dimorphic plant. *Annals of Botany*, 111: 317-328
- Rosas-Guerrero V, Quesada M, Armbruster WS, **Pérez-Barrales R**, Smith Stacey DeWitt. 2011. Influence of pollination specialization and breeding system on floral integration and phenotypic variation in *Ipomoea*. *Evolution*, 65: 350-364
- Bolstad GH, Armbruster WS, Pélabon C, **Pérez-Barrales R**, Hansen TF. 2010. Direct selection at the blossom level on floral reward by pollinators in a natural population of *Dalechampia schottii*: full-disclosure honesty? *New Phytologist*, 188: 310-384

- **Pérez-Barrales R**, Arroyo J. 2010. Pollinator shifts and the loss of style polymorphism in *Narcissus papyraceus* (Amaryllidaceae). *Journal of Evolutionary Biology*, 23 :1117-1128

Book chapter

- Pélabon C, Armbruster WS, Hansen TF, Bolstad GH, **Pérez-Barrales R**. 2012. Adaptive accuracy and adaptive landscapes in “The adaptive landscape in Evolutionary Biology”, eds. E. Svensson and R. Calbeck. Oxford Univ. Press, Oxford

Outreach

- Santos-Gally R, Pérez-Barrales R, Arroyo J, Jordano P, Valido A, Picó X, Narbona E. 2013. X reunion annual de Ecoflor. *Ecosistemas*, 22: 125.
- Pérez-Barrales R. 2013. The same but different. *Ventnorenensis*. 21: 20-21.

C.2. Research projects and grants awarded

Since the start of my career (PhD period, 2001-2005) and as postdoctoral researcher (2006-2012) I have participated in ca. 10 research projects. Below I present the projects and grants awarded as Principal Investigator:

- July 2018: Research and Innovation placement, IBBS (University of Portsmouth), “Genomic Variation in Wild Flax”, grant value (£5000)
- June 2016: Travel grant from Percy Sladen Memorial Fund, The Linnean Society, “Genetic causes and ecological consequences of flowering phenology and pollination in *Linum* species in Spain”, grant value (£1.500)
- November 2014: University of Portsmouth Research Development Funding, “Development of a seed collection and genomic resources to study adaptive evolution in wild flax species (*Linum*)”, grant value £15950.
- April 2014: Research grant from The Royal Society “Is heterospecific pollen transfer an evolutionary driver of floral phenotypic variation? *Linum* (Linaceae) as study case; grant value £15.000.
- February 2014: Research link travel grant from the British Council “The role of pollination interactions on floral diversity and evolution of the tropical plant family Rubiaceae in Brazilian Cerrado”, grant value £4.950.

C.3 Peer review of manuscripts, research proposals and PhD committees

- Regular reviewer of manuscripts for research journals
- Regular reviewer of research proposal (ANEP, NERC, La Caixa Foundation)
- External examiner for Master and PhD viva (University of Vigo (Spain), University Rey Juan Carlos (Spain), Federal University of Uberlandia (Brazil), Norwegian University of Science and Technology (NTNU), University of Stirling (UK)

C.4 Professional Memberships

- Fellow of the Higher Education Academy (UK)
- Member of British Ecological Society, Spanish Association for Terrestrial Ecology, European Society for Evolutionary Biology and Genetic Society