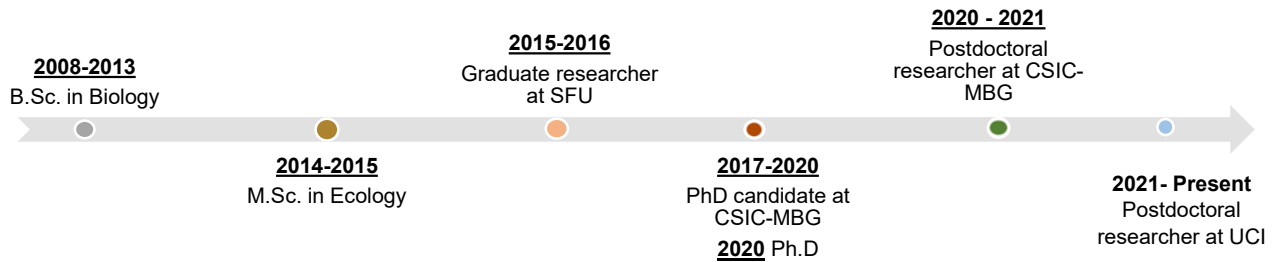


CARLA VÁZQUEZ GONZÁLEZ

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1. Scientific career: Chronogram of major milestones



2. Education

2017 – 2020: **Ph.D.** (University of Vigo, Spain). Dissertation title: *Resin ducts as a retrospective proxy of defensive allocation in a Mediterranean pine species: Adaptive variation and plastic responses*. Qualification: *Summa Cum Laude* by unanimity (Highest mark in Spain). Supervisors: Dr. Rafael Zas (CSIC-MBG) and Dr. Luis Sampedro (CSIC-MBG).

2014 – 2015: **M.Sc.** in Ecology, Environmental Management and Restoration; Specialization in Fundamental Ecology (University of Barcelona, Spain). Dissertation title: *Assessment and modelling of growth-climate relationships of Pinus sylvestris and Pinus uncinata in Serra de Boumort, Spanish Pre-Pyrenees*. Supervisor: Dr. Emilia Gutiérrez (University of Barcelona).

2008 – 2013: **B.Sc.** in Biology (University of Santiago de Compostela, Spain).

3. Research experience

September 2021 – present: Postdoctoral researcher (GAIN-Fulbright fellow) at University of California –Irvine. Department of Ecology and Evolutionary Biology. Dr. Mooney Lab.

April 2020 – September 2021: Postdoctoral researcher at CSIC-MBG (Pontevedra, Spain)

April 2017 – April 2020: Predoctoral researcher (FPI-fellow). CSIC-MBG (Pontevedra, Spain). Group of Forest Ecology and Genetics. Principal researchers: Dr. Rafael Zas and Dr. Luis Sampedro.

October 2015 – April 2016: Graduate researcher. Siberian Federal University - SFU (Krasnoyarsk, Russia). Mathematical Methods and IT department. Project: *Experimental and theoretical analysis of the tree-ring growth variability in mainland of Siberia (the Yenisey-Lena transect)*. Principal researcher: Dr. Vladimir V. Shishov.

July 2012 – September 2012: Laboratory and field assistant. University of Santiago de Compostela (Spain). Department of Cellular Biology and Ecology. Project: *Genetic structure and geographic variation in the ecophysiological characteristics of Arbutus unedo L.* Principal researcher: Prof. Ruben Retuerto.

4. Publications in SCI journals (Currently published or accepted)

* 9 publications as first author, 9 as corresponding author, and 15 co-authored publications.

- [24] **Vázquez-González, C.**, Quiroga, V., Martín-Cacheda, L., Rasmann, S., Röder, G., Abdala-Roberts, L., Moreira, X., 2023. *Effect of herbivore load on VOC-mediated plant communication in potato*. *Planta* 257, 42. (doi.org/10.1007/s00425-023-04075-6)
- [23] Ferrenberg, S., **Vázquez-González, C.**, Lee, S., Kristupaitis, M., 2023. Divergent growth-differentiation balance strategies and resource competition shape mortality patterns in ponderosa pine. (<https://doi.org/10.1002/ecs2.4349>)
- [22] Martín-Cacheda, L., **Vázquez-González, C.**, Rasmann, S., Röder, G., Abdala-Roberts, L., Moreira, X., 2023. *Plant genetic relatedness and volatile-mediated signalling between *Solanum tuberosum* plants in response to herbivory by *Spodoptera exigua**. *Phytochemistry*, 113561. (doi.org/10.1016/j.phytochem.2022.113561)
- [21] **Vázquez-González, C.**, Pombo-Salinas, L., Martín-Cacheda, L., Rasmann, S., Röder, G., Abdala-Roberts, L., Mooney, K.A., Moreira, X., 2022. *Effect of water availability on volatile-mediated communication between potato plants in response to insect herbivory*. *Functional Ecology*. 36(11), 2763-2773 (<https://doi.org/10.1111/1365-2435.14159>)
- [20] *Galmán, A., ***Vázquez-González, C.**, Röder, G., Castagneyrol, B., 2022. *Interactive effects of tree species composition and water availability on growth and direct and indirect defences in *Quercus ilex**. *Oikos*, e09125 (doi.org/10.1111/oik.09125) ***Both authors share first authorship.**
- [19] **Vázquez-González, C.**, Sampedro, L., López-Goldar, X., Solla, A., Vivas, M., Rozas, V., Lombardero, M.J., Zas, R., 2022. *Inducibility of chemical defences by exogenous application of methyl jasmonate is long-lasting and conserved among populations in mature *Pinus pinaster* trees*. *Forest Ecology and Management* 518, 120280 (doi.org/10.1016/j.foreco.2022.120280)
- [18] Abdala-Roberts, L., **Vázquez-González, C.**, Rasmann, S., Moreira, X (2022). *Test of communication between potato plants in response to herbivory by the Colorado potato beetle*. *Agricultural and Forest Entomology* Agricultural and Forest Entomology, 24(2), 212-218 (doi.org/10.1111/afe.12484)
- [17] Moreira, X., **C. Vázquez-González**, and L. Abdala-Roberts (2021). *Proximate drivers of population-level inter-annual variation in seed output in two widespread masting tree species*. *Forest Ecology and Management*. 498: 119562 (doi.org/10.1016/j.foreco.2021.119562). IF = 3.170 (4/67 Forestry).
- [16] Moreira, X., I.M. Pérez-Ramon, L. Matias, M. Francisco, A. García-González, R. Martins-Noguerol, **C. Vázquez-González**, L. Abdala-Roberts, J. Cambrollé (2021). *Effects of soil abiotic factors and plant chemical defences on seed predation on sea fennel (*Crithmum maritimum*)*. *Plant and Soil*. (doi.org/10.1007/s11104-021-04994-x). IF = 3.30 (43/234 Plant Science).
- [15] **Vázquez-González, C.**, L. Sampedro, V. Rozas, J. Voltas, and R. Zas (2021). *Population differentiation in climate sensitivity of resin duct formation during growth resumption in *Pinus pinaster**. *Dendrochronologia*. 67: 125839 (doi.org/10.1016/j.dendro.2021.125839). IF = 2.293 (14/68 Forestry).
- [14] **Vázquez-González, C.**, X. López-Goldar, R. Alía, G. Bustingorri, F. J. Lario, M. Lema, R. de la Mata, L. Sampedro, R. Touza, and R. Zas (2021). *Genetic variation in resin yield and covariation with tree growth in maritime pine*. *Forest Ecology and Management*. 482: 118843 (doi.org/10.1016/j.foreco.2020.118843). IF = 3.170 (4/67 Forestry).
- [13] M, Xoaquín., L. Abdala-Roberts, P. de Frenne, A. Galmán, A. Gaytán, R. Jaatinen, B. Lago-Núñez, C. Meeussen, P. Pulkkinen, P. U. Rasmussen, J. P.J.G. Ten Hoopen, B. G.H. Timmermans, **C. Vázquez-González**, N. Bos, B. Castagneyrol, and A. J.M. Tack (2021). *Effects of latitude and conspecific plant density on insect leaf herbivory in oak saplings and seedlings*. *American Journal of Botany* 108(1): 1-5 (doi.org/10.1002/ajb2.1596). IF = 3.038 (48/234 Plant Sciences).
- [12] Moreira, X., R. Granjel, M. de la Fuente, P. Fernández-Conradi, V. Pasch, P. Soengas, T. Turlings, **C. Vázquez-González**, L. Abdala-Roberts, and S. Rasmann (2020). *Apparent inhibition of induced plant volatiles by a fungal pathogen prevents airborne communication between potato plants*. *Plant, Cell and Environment* 1-10 (doi.org/10.1111/pce.13961). IF = 6.362 (11/234 Plant Sciences).

- [11] López-Villamor, A., R. Zas, A. Pérez, Y. Cáceres, M. Nunes, M. Vasconcelos, **C. Vázquez-González**, L. Sampedro, and A. Solla (2020). *Traumatic resin ducts induced by methyl-jasmonate in Pinus spp.* *Trees-Structure and Function*, 1-11 (doi.org/10.1007/s00468-020-02057-9). IF = 2.125 (17/67 Forestry).
- [10] Zas, R., R. Quiroga; R. Touza, **C. Vázquez-González**, L. Sampedro, and M. Lema (2020). *Resin tapping potential of Atlantic maritime pine forests depends on tree age and timing of tapping.* *Industrial Crops and Products* 157:112940 (doi.org/10.1016/j.indcrop.2020.112940). IF = 4.244 (6/83 Agronomy).
- [9] Moreira, X., L. Abdala-Roberts, M. D. Hidalgo-Galvez, **C. Vázquez-González**, and I. M. Pérez-Ramos (2020). *Micro-climatic effects on plant phenolics at the community level in a Mediterranean savannah.* *Scientific Reports* 10:14757 (doi.org/10.1038/s41598-020-71782-5). IF = 3.998 (17/72 Multidisciplinary Sciences).
- [8] **Vázquez-González, C.**, R. Zas, N. Erbilgin, S. Ferrenberg, V. Rozas, and L. Sampedro (2020). *Resin ducts as resistance traits in conifers: Linking dendrochronology and resin-based defenses.* *Tree Physiology*: tpa064 ([doi:10.1093/treephys/tpaa064](https://doi.org/10.1093/treephys/tpaa064)). IF = 3.655 (3/67 Forestry).
- [7] **Vázquez-González, C.**, L. Sampedro, V. Rozas, and R. Zas (2020). *Climate drives intraspecific differentiation in the expression of growth-defence trade-offs in a long-lived pine species.* *Scientific Reports* 10:10584 (doi.org/10.1038/s41598-020-67158-4). IF = 3.998 (17/72 Multidisciplinary Sciences).
- [6] Rozas, V., L. Sampedro, **C. Vázquez-González**, A. Solla, M. Vivas, M. J. Lombardero, and R. Zas (2020). *Site conditions exert more control than genetic differentiation on modulation of secondary growth and climate sensitivity of Pinus pinaster.* *Dendrochronologia* 125732 (doi.org/10.1016/j.dendro.2020.125732). IF = 2.293 (13/67 Forestry).
- [5] Moreira, X., L. Abdala-Roberts, A. Galmán, A. W. Bartlow, J. C. B. M. y Teran, E. Carrari, F. Covelo, M. de la Fuente, S. Ferrenberg, N. M. Fyllas, Y. Hoshika, S. Lee R, R. Marquis J, M. Nakamura, C. Nell S, M. Pesendorfer B, M. Steele A, **C. Vázquez-González**, S. Zhang, and S. Rasmann (2020). *Ontogenetic consistency in oak defence syndromes.* *Journal of Ecology* 108:1822-1834 ([doi: 10.1111/1365-2745.13376](https://doi.org/10.1111/1365-2745.13376)). IF = 5.762 (16/169 Ecology).
- [4] **Vázquez-González, C.**, X. López-Goldar, R. Zas, and L. Sampedro (2019). *Neutral and climate-driven adaptive processes contribute to explain population variation in resin duct traits in a Mediterranean pine species.* *Frontiers in Plant Science* 10:1613 ([doi: 10.3389/fpls.2019.01613](https://doi.org/10.3389/fpls.2019.01613)). IF = 4.402 (19/234 Plant Sciences).
- [3] Moreira, X., **C. Vázquez-González**, M. Encinas-Valero, F. Covelo, B. Castagnyrol, and L. Abdala-Roberts (2019). *Greater phylogenetic distance from native oaks predicts escape from insect leaf herbivores by non-native oak saplings.* *American Journal of Botany* 106(9): 1202-1209 ([doi:10.1002/ajb2.1343](https://doi.org/10.1002/ajb2.1343)). IF = 3.038 (48/234 Plant Sciences).
- [2] Moreira, X., L. Abdala-Roberts, C. S. Nell, **C. Vázquez-González**, J. D. Pratt, K. Keefover-Ring, and K. A. Mooney. 2019. *Sexual and genotypic variation in terpene quantitative and qualitative profiles in the dioecious shrub Baccharis salicifolia.* *Scientific Reports* 9:14655 (doi.org/10.1038/s41598-019-51291-w). IF = 3.998 (17/72 Multidisciplinary Sciences).
- [1] Abdala-Roberts, L., T. Quijano-Medina, X. Moreira, **C. Vázquez-González**, V. Parra-Tabla, J. C. Berny Mier Y Terán, L. Grandi, G. Glauser, T. C. Turlings, and B. Benrey. 2019. *Bottom-up control of geographic variation in insect herbivory on wild cotton (Gossypium hirsutum) by plant defenses and climate.* *American Journal of Botany* 106:1059-1067 ([doi:10.1002/ajb2.1330](https://doi.org/10.1002/ajb2.1330)). IF = 3.038 (48/234 Plant Sciences).

5. Book chapters

- [1] **Vázquez-Gonzalez, C.**, L. Sampedro, X. López-Goldar and R. Zas (2021 *in press*). *Genetic and ecological basis of resistance to herbivorous insects in Mediterranean pines* In *Pines and Their Mixed Forest Ecosystems in the Mediterranean Basin*. Edited by Gidi Ne'eman and Yagil Osem. Springer. (<https://www.springer.com/gp/book/9783030636241>)

6. Other publications

- [2] **Vázquez-González, C.**, A. Solla, L. Sampedro and R. Zas (2021). *Comprender cómo se defienden los árboles: primer paso para la prevención de plagas y enfermedades*. FORESTA 78. Revista de la ‘Asociación y Colegio Oficial de Ingenieros Técnicos Forestales y Graduados en Ingeniería Forestal y del Medio Natural’.
- [1] **Vázquez-González, C.**, R. Zas, V. Rozas, R. Alía, and L. Sampedro (2020). *Intraspecific genetic variation in defensive investment of a model Mediterranean pine: A dendroecological analysis of resin ducts*. Pages 109-113 in *The Proceedings of the Sixth International Workshop on the Genetics of Host-Parasite Interactions in Forestry—Tree Resistance to Insects and Diseases: Putting Promise into Practice*. Department of Agriculture, Forest Service, Southern Research Station, Ohio, USA.

7. Participation at national and international scientific conferences

- [6] **Vázquez-González, C.**, A. Galmán, G. Roeder and B. Castagnerol. Oral communication: *Tree species composition and water availability influence direct and indirect defences in *Quercus ilex**. The 17th **Symposium on Insect-Plant relationships**. July 2021. Leiden, The Netherlands.
- [5] **Vázquez-González, C.**, X. López-Goldar and R. Zas and L. Sampedro. Oral communication: *Climate and genetic structure contributes to explain intraspecific genetic variation in defensive anatomical traits of a Mediterranean pine*. **SIBECOL Meeting** (1st Meeting of the Iberian Ecological Society & XIV AEET Meeting; Ecology an integrative science in the Anthropocene). February 2019. Barcelona, Spain.
- [4] **Vázquez-González, C.**, L. Sampedro and R. Zas. Oral communication: *Resin duct differentiation as a function of genetic and environmental effects in *Pinus pinaster**. **Fourth Young Researchers Workshop**. European Allelopathy Society. December 2018. Vigo, Spain
- [3] **Vázquez-González, C.**, V. Rozas, R. Alía, R. Zas and L. Sampedro. Oral communication: *“Intraspecific genetic variation in defensive investment varies along the ontogeny of a model Mediterranean pine: a retrospective dendroecological analysis of resin ducts”*. **The 6th International Workshop on the Genetics of Tree-Parasite Interactions**. *Tree Resistance to Insects and Diseases: Putting Promise into Practice*. August 2018. Mt. Sterling, Ohio, USA
- [2] **Vázquez-González, C.**, V. Rozas, R. Alía, L. Sampedro and R. Zas. Oral communication: *Environmental significance of resin duct differentiation assessed by its quantification in tree rings of a Mediterranean pine*. **TRACE** (Tree rings in Archaeology, Climatology and Ecology) April 2018. Greifswald, Germany.
- [1] **Vázquez-González, C.**, L. Sampedro and R. Zas. Oral communication: *Retrospective assessment of defence investment and phenotypic variability in Iberian pines through the study of their resin ducts*. **Third Young Researchers Workshop**. European Allelopathy Society. December 2017. Vigo, Spain

8. Participation in research projects

2022 – 2023: The role of insectivorous birds at mediating insularity effects on plant-herbivore interactions Asociación Española de Ecología Terrestre. Spain. (PI: **Carla Vázquez-González**; 2500 €).

2018 – 2020: RESDRON: *Novas tecnoloxías aplicadas ao aproveitamento resineiro do interior de Galicia*. Xunta de Galicia. Regional Government of Galicia, Spain (PI: Dr. Rafael Zas; MBG – CSIC; 26.541,50 €).

2018 – 2021: RTI2018-094691-B-C33-RESILPIN: *Resilience of Mediterranean pines in a changing environment: phenotypic integration of chemical and physical defences, climatic responses and adaptive syndromes*. MICINN-FEDER-UE. (PI: Dr. Rafael Zas and Dr. Luis Sampedro; MBG – CSIC; 153.065,00 €).

2015 – 2018: AGL2015 – 68274-C3-2-R-FUTURPIN: *Dinámica reproductiva y estrategias defensivas en pinos mediterráneos: relevancia para la gestión futura de sus recursos genéticos*. MICINN-FEDER-UE (PI: Dr. Rafael Zas and Dr. Luis Sampedro; MBG – CSIC; 157.300,00 €).

2018-2019: I-LINK1221: “Unravelling the mechanisms behind elevational gradients in plant-herbivore interactions”. i-LINK+ (CSIC). (PI: Dr. Xoaquín Moreira-MBG-CSIC, Dr. Arndt Hampe-INRA-Bordeaux; €10,200).

2019-2021: RTI2018-099322-B-I00: “Use of plant-plant communication through volatile organic compounds as a strategy for biological control of pests and diseases in potato plants”. MICINN-FEDER-UE. (PI: Dr. Xoaquín Moreira, MBG-CSIC; €84,700).

10. Participation at scientific courses

2019: ‘Data and Models in Ecology and Evolution’. Summer School organized by the Institut Pascal. Orsay, Paris, France.

2019: ‘Introduction to the tidyverse: dplyr, tidyr and purrr’. Workshop organized by the SIBECOL at the 1st Meeting of the Iberian Ecological Society & XIV AEET Meeting. Barcelona, Spain.

2018: ‘Introduction to Evolutionary Quantitative Genetics’. Transmitting Science. Barcelona, Spain.

2018: ‘Scientific writing workshop’. University of Vigo. Vigo, Spain.

2017: Meta-analysis with R. MESIO UPC-UB Summer School (Polytechnic University of Catalonia). Barcelona, Spain.

11. Research stays

September 2021-March 2023: University of California Irvine (24 months).

September 2019: INRA-Bordeaux (Bordeaux, France). In Collaboration with Dr. Bastien Castagnerol (2 weeks).

August 2018 – November 2018: New Mexico State University (NMSU; Las Cruces. NM, USA). In collaboration with Dr. Scott Ferrenberg (3 months).

October 2015 – April 2016: Siberian Federal University - SFU (Krasnoyarsk, Russia). In collaboration with Dr. Vladimir V. Shishov (6 months).

12. Fellowships and grants

2021 –2024: Xunta de Galicia – GAIN/Fulbright Grant (IN606B 2021/004).

2017 –2021: FPI grant (3-year predoctoral + 1-year postdoctoral grant). Spanish Government (BES-2016-076624).

2015 –2016: Euro-Russian Academic Network Plus Grantee (ERANET Plus). European Commission. ERASMUS MUNDUS project.

13. Awards and recognitions

[1] The Annals of Botany Plants Journal ‘Evolutionary Ecology Award’ to the best oral presentation in evolutionary ecology in terrestrial, aquatic and marine environments. At 1st Meeting of the Iberian Ecological Society (SIBECOL 2019).

[2] Marie Skłodowska-Curie Actions ‘Seal of Excellence’ for the proposal: AridHERB (Aridity gradients in plant-herbivore interactions in drylands) in the MSCA-IF 2020 Call (90.8% score).

14. Student supervision and mentoring

2020 – 2021: Co-supervisor of Violeta María Quiroga Álvarez. Bachelor thesis at University of Santiago de Compostela: “*Effect of herbivore density on VOC-mediated communication between potato plants*”. Academic Score:10/10

2017 – 2021: Mentoring and supervising the activities of undergrad students (CSIC-MBG).

2018: Mentoring and supervising the activities of undergrad students (NMSU. Las Cruces, NM, USA).

15. Participation in outreach activities

Regular school visits at CSIC-MBG (2017 – Present): During scholar period, responsible of receiving scholars (elementary and high school) at the CSIC-MBG to show and communicate the research activities done in the Forest Ecology and Genetics group.

PONTECIENCIA 2019: Responsible of the workshop ‘Plants also suffer’ (SP: Las plantas también sufren).

The ‘Week of Science’ 2019: Responsible of the workshop ‘Dendrochronology, the time record of trees’ (SP: Dendrocronología, el registro histórico de los árboles). Hosted at the CSIC-MBG.

POTECIENCIA 2018: Responsible of the workshop ‘Growing the future’ (SP: Cultivando el futuro) and managing the CSIC-MBG stand to communicate the research activities carried out in the institute.

16. Miscellaneous

Referee Activities: Ecology; Ecological Applications; Functional Ecology; New Phytologist; Scientific Reports; Plants, People Planet; Plant Cell and Environment, Silvae Genetica.

English certifications: IELTS (International English Language Testing System). Score 7.5

Driving Licence: European Driving Licence B.