

Raquel Benavides Calvo

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ACADEMICS ACHIEVEMENTS

Education background

2010	Specialist in Advanced Statistical Methods	Spanish Open University
2008	PhD in Forestry	University of Santiago de Compostela, Spain
2004	MSc in Forestry Engineering	Polytechnic University of Madrid, Spain

Honours and recognitions

2017	Cristina C. Bastias PhD co-advisor- <i>Cum laude</i> and <i>International Mention</i> . University of Córdoba (Spain).
2013	Marcos Zapatero BSc advisor- <i>Cum laude</i> . University Rey Juan Carlos, Madrid.
2011	<u>Marie Curie PostDoc Fellowship</u> (EU 7FP) (competitive process).
2011	Nuria Simón MSc advisor- best MSc Thesis. Spanish Society of Forestry Science.
2011	Travel grant for the best scientific poster in II Forest Week EFIMED, Avignon, France.
2009	Postdoc Fellowship (competitive process). University of País Vasco, Spain (turned down).
2008	<u>PhD Thesis Special Award- Cum laude and European Mention</u> . University of Santiago de Compostela, Spain.
2004	<u>PhD Scholarship (FPI)</u> . Spanish Ministry of Science and Technology.
2003	<u>Diploma on Forestry Engineering with Distinctions</u> , Faculty of Forestry, Polytechnic University of Madrid (Spain).
2002	<u>Research Initiation Scholarship</u> . Spanish Ministry of Education in the Ecology and Soil Department in the Faculty of Forestry, Polytechnic University of Madrid (Spain) (competitive process).

PROFESSIONAL ACTIVITIES

Specialisation

My general interests broadly lie in Applied Forest Ecology. I have worked in diverse topics, like management strategies to develop sustainable systems in less-favoured areas through multipurpose systems (agroforestry systems); regeneration, mortality and growth patterns of forest species along gradients at multiple spatial and temporal scales; and functional diversity of tree species and its implications in community assembly and ecosystem functioning. The common framework is to disentangle the potential responses of our forests to the current global changes.

Work experience

Sep 2016- Curr	Research Associate PostDoc position	National Museum of Natural Science (MNCN-CSIC), Madrid (Spain)
Sep 2017-Mar 2018	Maternity leave	
Jun 2014- Sep 2015	Maternity leave	
Feb 2013-Jul 2016	Research Associate Marie Curie Fellowship	Faculty of Biology, University of Freiburg, Freiburg (Germany)
Feb 2010-Dec 2012	Research Associate PostDoc position	National Museum of Natural Science (MNCN-CSIC), Madrid (Spain)
Jan 2009-Jan 2010	Research Associate PostDoc position	Centre of Forest Research (CIFOR-INIA), Madrid (Spain)
Jan 2008-Apr 2008	Visiting exchange scholar	The Macaulay Institute, Aberdeen (UK)
Jan 2007-Apr 2007	Visiting exchange scholar	AgResearch Limited, Grasslands, Palmerston North (New Zealand)
Jul 2004-Jul 2008	PhD Fellow	Regional Institute of Agrarian Research and Development in Asturias (SERIDA), Asturias (Spain)
Sep2002-May 2003	Research Assistant	Faculty of Forestry, Polytechnic University of Madrid (UPM), Madrid (Spain)

Collaboration in scientific projects

- 2001-2003 *Ecological restoration in high stressed environment: gypsum outcrops in semiarid conditions.* Polytechnic University of Madrid (Spain). Funded by the Spanish Ministry of Science and Education. PI: Dr. A. Escudero (UPM)
- 2001-2003 *Goat use for the diversification and for added values obtaining in extensive management of livestock systems.* SERIDA (Spain). Funded by Spanish National Institute of Agrarian Research. PI: Dr. K. Osoro (SERIDA).
- 2002-2005 *Integrating foraging attributes of domestic livestock breeds into sustainable systems for grassland biodiversity and wider countryside benefits.* SERIDA (Spain). Funded by the European Union (FP5). PI: Dr. A. J. Rook, Co-PI: Dr. K. Osoro (SERIDA).

- 2004-2007 *Study of grazing management strategies in heath-gorse communities for the sustainable development of livestock production systems and biodiversity enhancement.* SERIDA (Spain). Funded by the Spanish Ministry of Science and Education. PI: Dr. Koldo Osoro (SERIDA).
- 2007-2009 *The dehesa agroforestry system as a carbon sink: towards a combined model of vegetation and soil.* INIA (Spain). Funded by National Program of Agro-food Resources and Technology. PI: Dr. Sonia Roig Gómez (INIA).
- 2009-2012 *Biodiversity And Climate Change, A Risk Analysis (BACCARA).* MNCN-CSIC (Spain). Funded by the European Union (FP7). PI: Dr. Hervé Jactel (UMR BIOGECO – INRA)
- 2009-2014 *Mediterranean Woodlands and Climate Change.* MNCN-CSIC (Spain). Funded by the Spanish Ministry of Science and Innovation. PI: Dr. Javier Retana (CREAF).
- 2010-2013 *Restoration and Conservation of ecosystems of Madrid: response against global change.* MNCN-CSIC (Spain). Funded by the Autonomous Community of Madrid. PI: Dr. A. Escudero (URJC)
- 2010-2014 *Functional significance of forest biodiversity in Europe.* MNCN-CSIC (Spain). Funded by the European Union (FP7). PI: Dr. Michael Scherer-Lorenzen (University of Freiburg).
- 2013-2016 *DIVERFOR: Functional implications of inter- vs. intraspecific trait diversity in European forests.* University of Freiburg. Funded by European Commission (FP7). PI: Dr. Raquel Benavides (University of Freiburg)
- 2016-2020 *GENTREE: Optimising the management and sustainable use of forest genetic resources in Europe.* MNCN-CSIC. Funded by European Commission. (Horizon2020. 676876). PI: Dr. Bruno Fady (INRA)
- 2018-2022 *COMEDIAS: Comprendiendo el bosque mediterráneo: avance y sostenibilidad en escenarios de cambio global.* MNCN-CSIC. Funded by Spanish Ministry of Economy, Industry and Competitiveness. R+D Spanish National Program. PI: Prof. Dr. F. Valladares

Funded scientific visits

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| 2011 | 1 week | Mediterranean Agronomic Institute of Chania (Greece). Host: Dr. I. Manakos. |
| Feb 2013- Jul 216 | | University of Freiburg (Germany). Marie Curie IEF. |
| 2008 | 12 weeks | Macaulay Land Use Research Institute (Aberdeen, Scotland, UK). Host: Dr. J. Pérez Barbería. |
| 2007 | 13 weeks | AgResearch Limited, Grasslands (Palmerston North, New Zealand). Host: Dr. G. Douglas. |
| 2006 | 10 weeks | Centre of Forest Research- National Institute of Agrarian Research (CIFOR-INIA) (Madrid, Spain). Host: Dr. S. Roig Gómez |

PUBLICATIONS

Peer-reviewed Journals

1. **Benavides, R.**, Scherer-Lorenzen, M, Valladares, F. 2019. The functional trait space of tree species is influenced by the species richness of the canopy and the type of forest. *Oikos*, 128, 1435-1445. DOI: 10.1111/oik.06348 (IF= 3.71, Rank=36/158 , Ecology, Q1)
2. Bastias, C.C., Morán-López, T., Valladares, F. & **Benavides, R.** Mismatch between canopy diversity and tree recruitment composition in European forests. *Forest Ecology and Management* 449, . DOI: 10.1016/j.foreco.2019.117471 (IF= 3.126, Rank=6/67 , Forestry, Q1)
3. Ma, X., Mahecha, M., Migliavacca, M., van der Plas, F., **Benavides, R.**, Ratcliffe, S., Kattge, J., Richter, R., Musavi, T., Baeten, L., Barnoiaea, I., Bohn, F., Bouriaud, O., Bussoti, F., Domisch, T., Huth, A., Jaroszewicz, B., Joswig, J., Pabon-Moreno, D.E., Papale, D., Selvi, F., Vaglio, G., Reichstein, M., Wirth, C. Inferring plant functional diversity from space: exploring the potentials of Sentinel-2. *Remote Sensing of Environment*, 233, 111368. DOI: 10.1016/j.rse.2019.111368 (IF= 8.218, Rank= 7/250, Environmental Science , Q1)
4. Lander, B., Bruelheide, H., van der Plas, F., Kambach, S., Ratcliffe, S., Jucker, T., Allan, E., Ampoorter, E., Barbaro, L., Bastias, C.C., Bauhus, J., **Benavides, R.**, Bonal, D., Bouriaud, O., Bussotti, F., Carnol, M., Castagnyrol, B., Charbonnier, Y., Češko, E., Coomes, D., Dahlgren, J., Dawud, S.M., De Wandeler, H., Domisch, T., Finér, L., Fischer, M., Fotelli, M., Gessler, A., Grossiord, C., Guyot, V., Hättenschwiler, S., Jactel, H., Jaroszewicz, B., Joly, F.X., Koricheva, J., Lehtonen, A., Müller, S., Muys, B., Nguyen, D., Pollastrini, M., Radoglou, K., Raulund-Rasmussen, K., Ruiz-Benito, P., Selvi, F., Stenlid, J., Valladares, F., Vesterdal, L., Verheyen, K., Wirth, C., Zavala, M.A. & Scherer-Lorenzen, M. (2018). Identifying the tree species compositions that maximize ecosystem functioning in European forest. *Journal of Applied Ecology*, 56, 733-744. (IF=5.3, Rank= 15/153, Ecology, Q1) DOI: 10.1111/1365-2664.13308
5. **Benavides, R.**, Valladares, F., Wirth, C.; Müller, S.; Scherer-Lorenzen, M. (2018). Intraspecific trait variability of trees is related to canopy species richness in European forests. *Perspectives in Plant Ecology Evolution and Systematics*, 36, 24-32. (IF=2.82; rank= 48/222, Plant Science, Q1). DOI: 10.1016/j.ppees.2018.12.002
6. Bastias, C.C., Valladares, F., Ricote, M.N., **Benavides, R.** 2018. Local canopy diversity does not influence phenotypic expression and plasticity of tree seedlings exposed to different resource availabilities. *Environmental and Experimental Botany*, 156, 38-47 (IF= 3.712, Rank= 29/228, Plant Science, Q1) 38-47 <https://doi.org/10.1016/j.envexpbot.2018.08.02>.
7. Heres, A.M., Kaye, M., Granda, E., **Benavides, R.**, Lázaro-Nogal, A., Rubio-Casal, A.E., Valladares, F., Curiel, J. 2018. Tree vigour influences secondary growth but not responsiveness to climatic variability in Holm oak. *Dendrochronologia* 49: 68-76. (IF= 2.259, Rank=15/67, Forestry, Q1). DOI: 10.1016/j.dendro.2018.03.004
8. van der Plas, F., Ratcliffe, S., Ruiz-Benito, P., Scherer-Lorenzen, M., Verheyen, K., Wirth, C., Zavala, M., Ampoorter, E., Baeten, L., Barbaro, L., Crespo, C., Bauhus, J., **Benavides, R.**, Benneter, A. Bonal, D., Bouriaud, O., Bruelheide, H., Bussotti, F., Carnol, M., Castagnyrol, B., Charbonnier, Y., Cornelissen, H., Dahlgren, J., Checko, E., Coppi, A., Dawud, S., Deconchat, M., DeSmedt, P., De Wandeler, H., Domisch, T., Finer, L., Fotelli, M., Gessler, A., Granier, A. Grossiord, C., Guyot, V., Haase, J., Hattenschwiler, S., Jactel, H., Jaroszewicz, B., Joly, F.X. , Jucker, T., Kambach, S., Kändler, G., Kattge, J., Koricheva, J., Kunstler, G., Lehtonen, A., Liebergesell, M., Manning, P., Milligan, H., Müller, S., Muys, B., Nguyen, D., Nock, C., Ohse, B., Paquette, A., Penuelas, J., Pollastrini, M., Radoglou, K., Raulund-Rasmussen, K., Roger, F., Seidl, R., Selvi, F., Stenlid, J., Valladares, F., van Keer, J., Vesterdal, L., Fischer, M., Gamfeldt, L. & Allan, E. 2018. Continental mapping of forest ecosystem functions reveals a high but unrealized potential for forest multifunctionality. *Ecology Letters* 21(1): 31-42. (IF=9.449, Rank=4/153 Ecology, Q1). DOI: 10.1111/ele.12868
9. Ratcliffe, S., Wirth, C., Jucker, T., van der Plas, F., Scherer-Lorenzen, Verheyen, K., Allan, E., **Benavides, R.**, Bruelheide, H., Oshe, B., Allain, P., Ampoorter, E., Crespo, C., Bauhus, J., Bonal, D., Bouriaud, O., Bussotti, F., Carnol, M., Castagnyrol, B., Checko, E., Coppi, A., Dawud, S., De Wandeler, H., Domisch, T., Finer, L., Fischer, M., Fotelli, M., Gessler, A., Granier, A. Grossiord, C., Guyot, V., Haase, J., Hattenschwiler, S., Jactel, H., Jaroszewicz, B., Joly, F.X. ,Kolb, S., Koricheva, J., Liebergesell, M.,

- Manning, P., Milligan, H., Müller, S., Muys, B., Nguyen, D., Nock, C., Pollastrini, M., Purschke, O., Radoglou, K., Raulund-Rasmussen, K., Ruíz-Benito, P., Roger, F., Seidl, R., Selvi, F., Seiferling, I., Stenlid, J., Valladares, F., Vesterdal, L. & Baeten, L., 2017. Biodiversity and ecosystem functioning relations in European forests depend on environment context. *Ecology Letters* 20(11): 1414-1426. (IF=9.449, Rank=4/153 Ecology, Q1). DOI: 10.1111/ele.12849
10. Pollastrini, M., Nogales, A.G., **Benavides, R.**, Bonal, D., Finer, L., Fotelli, M., Gessler, A., Grossiord, C., Radoglou, K., Strasser, R. & Bussotti, F. 2017. Tree diversity affects chlorophyll a fluorescence and other leaf traits of tree species in a boreal forest. *Tree Physiology* 37(2):199-208. (IF= 3.587, Rank= 2/66, Forestry, Q1). DOI: 10.1093/treephys/tpw132
 11. Bastias, C.C., Fortunel, C., Valladares, F., Baraloto, C., **Benavides, R.**, Cornwell, W., Markesteijn, L., Poorter, L., Sansevero, J.B.B., Vaz, M. & Kraft, N.J.B. 2017. Intraspecific leaf trait variability along a boreal-to-tropical community diversity gradient. *PLOS ONE* 12(2): e0172495. (IF= 3.057, Rank=11/63 Multidisciplinary, Q1). DOI: 10.1371/journal.pone.0172495
 12. van der Plas, F., Manning, P., Soliveres, S., Allan, E., Scherer-Lorenzen, M., Verheyen, K., Wirth, C., Zavala, M.A., Ampoorter, E., Baeten, L., Barbaro, L., Bauhus, J., **Benavides, R.**, Benneter, A., Berthold, F., Bonal, D., Bouriaud, O., Bruelheide, H., Bussotti, F., Carnol, M., Castagneyrol, B., Charbonnier, Y., Coomes, D., Coppi, A., Bastias, C.C., Dawud, S.M., De Wandeler, H., Domisch, T., Finer, L., Gessler, A., Granier, A., Grossiord, C., Guyot, V., Hättenschwiler, S., Jactel, H., Jaroszewicz, B., Joly, F.X., Jucker, T., Koricheva, J., Milligan, H., Müller, S., Muys, B., Nguyen, D., Pollastrini, M., Raulund-Rasmussen, K., Selvi, F., Stenlid, J., Valladares, F., Vesterdal, L., Zielinski, D. & Fischer, M. 2016 Biotic homogenization is more detrimental than local species loss for landscape-scale forest multifunctionality. *Proceedings of the National Academy of Sciences of the United States of America* 113 (13): 3557–3562. (IF= 9.661; Rank=4/64 –Multidisciplinary, Q1). DOI: 10.1073/pnas.1517903113
 13. van der Plas, F., Manning, P., Allan, E., Scherer-Lorenzen, M., Verheyen, K., Wirth, C., Zavala, M.A., Hector, A., Ampoorter, E., Baeten, L., Barbaro, L., Bauhus, J., **Benavides, R.**, Benneter, A., Berthold, F., Bonal, D., Bouriaud, O., Bruelheide, H., Bussotti, F., Carnol, M., Castagneyrol, B., Charbonnier, Y., Coomes, D., Coppi, A., Bastias, C.B., Dawud, S.M., De Wandeler, H., Domisch, T., Finer, L., Gessler, A., Granier, A., Grossiord, C., Guyot, V., Hättenschwiler, S., Jactel, H., Jaroszewicz, B., Joly, F.X., Jucker, T., Koricheva, J., Milligan, H., Müller, S., Muys, B., Nguyen, D., Pollastrini, M., Raulund-Rasmussen, K., Selvi, F., Stenlid, J., Valladares, F., Vesterdal, L., Zielinski, D. & Fischer, M. 2016 Jack-of-all-trades' effects drive biodiversity-ecosystem multifunctionality relationships. *Nature Communications* 7, No. 11109. (IF= 11.329; Rank=3/66 –Multidisciplinary, Q1). DOI: 10.1038/ncomms11109
 14. **Benavides, R.**, Escudero, A., Coll, L., Ferrandis, P., Ogaya, R., Gouriveau, F., Peñuelas, J. & Valladares, F. 2016. Recruitment patterns of four tree species along elevation gradients in Mediterranean mountains: not only climate matters. *Forest Ecology and Management* 360, 287-296. (IF= 2.826, Rank= 4/66 Forestry, Q1). DOI: 10.1016/j.foreco.2015.10.043
 15. Herguido, E., Granda, E., **Benavides, R.**, García-Cervigón, A. I., Camarero, J. J. & Valladares, F. 2016. Contrasting growth and mortality responses to climate warming of two pine species coexisting in a continental Mediterranean ecosystem. *Forest Ecology and Management* 363, 149-158. (IF= 2.826, Rank= 4/66 Forestry, Q1). DOI: 10.1016/j.foreco.2015.12.038
 16. **Benavides, R.**, Escudero, A., Coll, L., Ferrandis, P., Gouriveau, F., Hódar, J. A., Ogaya, R., Rabasa, S. G., Granda, E., Santamaría, B. P., Martínez-Vilalta, J., Zamora, R., Espelta, J. M., Peñuelas, J. & Valladares, F. 2015. Survival vs. growth trade-off in early recruitment challenges global warming impacts on Mediterranean mountain trees. *Perspectives in Plant Ecology Evolution and Systematics* 17, 369-378. (IF=3.578, Rank=35/150, Q1). DOI: 10.1016/j.ppees.2015.06.004
 17. García-Del Barrio, J.M., Alonso-Ponce, R., **Benavides, R.** & Roig, S. 2014. Species richness and similarity of vascular plants in the Spanish dehesas at two spatial scales. *Forest Systems* 23, 111-119. (IF=0.796, Rank= 37/66 Forestry, Q3). DOI: 10.5424/fs/2014231-04521
 18. **Benavides, R.**, Rabasa, S.G., Granda, E., Escudero, A., Hódar, J. A., Martínez-Vilalta, J., Rincón, A. M., Zamora, R. & Valladares, F. 2013. Direct and indirect effects of climate on demography and early growth of *Pinus sylvestris* at the rear edge: changing roles of biotic and abiotic factors. *PLoS ONE* 8(3): e59824. (IF= 3.534, Rank= 8/55, Multidisciplinary, Q1) DOI:10.1371/journal.pone.0059824
 19. Rabasa, S. G., Granda, E., **Benavides, R.**, Kunstler, G., Espelta, J.M., Ogaya, R., Scherer-Lorenzen, M., Gil, W., Ambrozy, S., Jonsson, L., Hódar, J.A., Zamora, R. & Valladares, F. 2013. Disparity in elevational

- shifts of European trees in response to recent climate warming. *Global Change Biology* 19, 2490-9. (IF= 8.224, Rank= 5/141, Ecology, Q1). DOI: 10.1111/gcb.12220
20. Beaten, L., Verheyen, K., Wirth, C., Bruelheide, H., Bussotti, F., Finér, L., Jaroszewicz, B., Selvi, F., Valladares, F., Allan, E., Ampoorter, E., Auge, H., Avacarie, D., Barbaro, L., Barnoaiea, I., Bastias, C.C., Bauhus, J., Beinhoff, C., **Benavides, R.**, Benneter, A., Berger, S., Berthold, F., Boberg, J., Bonal, D., Brüggemann, W., Carnol, M., Castagneyrol, B., Charbonnier, Y., Checko, E., Coomes, D., Coppi, A., Dalmaris, E., Danilak, G., Dawud, S.M., de Vries, W., De Wandeler, H., Deconchat, M., Domisch, T., Duduman, G., Fischer, M., Fotelli, M., Gessler, A., Gimeno, T.E., Granier, A., Grossiord, C., Guyot, V., Hantsch, L., Hättenschwiler, S., Hector, A., Hermy, M., Holland, V., Jactel, H., Joly, F.-X., Jucker, T., Kolb, S., Koricheva, J., Lexer, M.J., Liebergesell, M., Milligan, H., Müller, S., Muy, B., Nguyen, D., Nichiforel, L., Pollastrini, M., Proulx, R., Rabasa, S., Radogloug, K., Ratcliffe, S., Raulund-Rasmussen, K., Seiferling, I., Stenlid, J., Vesterdal, L., von Wilpert, K., Zavala, M.A., Zielinski, D. & Scherer-Lorenzen, M. 2013. A novel comparative research platform designed to determine the functional significance of tree species diversity in European forests. *Perspectives in Plant Ecology Evolution and Systematics* 15, 281-291. (IF=3.578, Rank=35/150 Ecology, Q1). DOI: 10.1016/j.ppees.2013.07.002
 21. Ferreira, L.M.M., Celaya, R., **Benavides, R.**, Jáuregui, B.M., Rodrigues, M.A.M., García, U., Santos, A.S., Rosa-García, R., K. Osoro, K. 2013. Foraging behaviour of domestic herbivore species grazing on heathlands associated with improved pasture areas. *Livestock Science* 155, 373-383. (IF=1.10, Rank=17/52 Agriculture, dairy & animal science, Q2). DOI: 10.1016/j.livsci.2013.05.007
 22. Ameztegui, A., Coll, L., **Benavides, R.**, Valladares, F. & Paquette, A. 2012. Understory light predictions in mixed conifer mountain forests: Role of aspect-induced variation in crown geometry and openness. *Forest Ecology and Management* 276, 52-61. (IF= 2.766, Rank= 2/62, Q1). DOI: 10.1016/j.foreco.2012.03.021
 23. Simón, N., Montes, F., Díaz-Pinés, E., **Benavides, R.**, Roig, S., Rubio, A., 2012. Spatial distribution of soil carbon pool in a Holm oak dehesa in Spain. *Plant and Soil* 366, 537-549. (IF=2.638, Rank= 45/197 Plant Science, Q1). DOI: 10.1007/s11104-012-1443-9
 24. Celaya, R., Jáuregui, B.M., Rosa-García, R., **Benavides, R.**, García, U. & Osoro, K. 2010. Changes in heathland vegetation under goat grazing: effects of breed and stocking rate. *Applied Vegetation Science* 13, 125-134 (IF= 1.802, Rank = 9/54 Forestry, Q1). DOI: 10.1111/j.1654-109X.2009.01054.x
 25. **Benavides R.**, Celaya R., Ferreira L.M.M., Jáuregui B.M, García, U. & Osoro, K. 2009. Grazing behaviour of domestic ruminants according to flock type and subsequent vegetation changes on partially improved gorse-heather shrublands. *Spanish Journal of Agricultural Science* 7, 417-430. (IF= 0.407, Rank= 25/46 -Forestry- Q3). ISSN: 1695-971X
 26. **Benavides, R.**, Douglas, G. & Osoro, K. 2009. Silvopastoralism in New Zealand: review of effects of evergreen and deciduous trees on pasture dynamics. *Agroforestry Systems* 76, 327-350. (IF= 1.016, Rank=22/46, Q2, Forestry). DOI: 10.1007/s10457-008-9186-6
 27. McIvor, I.R, Douglas, G.B. & **Benavides, R.** 2009. Coarse root growth of Veronese poplar trees varies with position on an erodible slope in New Zealand. *Agroforestry Systems* 76, 251-264. . (IF= 1.016, Rank=22/46, Q2, Forestry). DOI: 10.1007/s10457-009-9209-y
 28. **Benavides, R.**, Roig, S. & Osoro, K. 2009. Potential productivity of forested areas based on a biophysical model. A case study of a mountainous region in northern Spain. *Annals of Forest Science* 66, 108-118.(IF=1.441, Rank= 11/46 Forestry, Q1) DOI: 10.1051/forest/2008080
 29. Celaya, R. **Benavides, R.**, Garcia, U., Ferreira, L. M. M., Ferre, I., Martínez, A., Ortega-Mora, L. M. & Osoro, K. 2008. Grazing behaviour and performance of lactating suckler cows, ewes and goats on partially improved heathlands. *Animal* 2, 1818-1831. (IF= 2.056, Rank=4/58 -Agricultural, Dairy and Animal Science, Q1). DOI: 10.1017/S1751731108003224
 30. **Benavides, R.**, Montes, F., Rubio, A. & Osoro, K. 2007. Geostatistical modelling of air temperature in mountainous region of northern Spain. *Agricultural & Forest Meteorology* 146, 173-188. . (IF= 2.323, Rank=1/39 -Forestry-, Q1). DOI: 10.1016/j.agrformet.2007.05.014

Others

31. **Benavides, R.**, Scherer-Lorenzen, M, Valladares, F. 2019. Data from: the functional trait space of tree species is influenced by the species richness of the canopy and the type of forest. – Dryad Digital Repository, <<http://dx.doi.org/10.5061/dryad.5ck2qs1>>.
32. Valladares, F., **Benavides, R.**, Rabasa, S.G., Diaz, M., Pausas, J., Paula, S., & Simonson, W. 2014 Global change and Mediterranean forests: current impacts and potential responses. In: *Forests and Global Change*. Eds: Coomes, D. A.; Burslem, D. F. R. P.; Simonson, W.D. Cambridge University Press. DOI: 10.1017/cbo9781107323506.005
33. Ferreira L.M.M, Celaya R., **Benavides R.**, García U. & Osoro K. 2012. Comparison of animal performance of domestic herbivores grazing on partially improved heath lands. In: *New trends for innovation in the Mediterranean animal production*. Eds: Bouche R., Derkimba A., Casablanca F.; European Association of Animal Production, publ No. 129, Publisher: Wageningen Academic Publishers, The Netherlands, pp.143-147. DOI: 10.3920/978-90-8686-726-4_21
34. Vázquez- Piqué, J., Alejano Monge, R., Benavides Calvo, R., Martín Pérez, D., Lopez Carrasco, C., Macías Fernández, R., González-Pérez, M.A., Mutke Regneri S., Roig Gómez, S. 2012. Influencia del clima y la humedad del suelo en la fenología del crecimiento secundario de encina (*Quercus ilex* L. subsp. ballota [Desf.] Samp.) en un gradiente climático peninsular. *Cuaderno de la Sociedad Española de Ciencias Forestales* 35,25-133. (1 cite in Google Scholar). ISBN 978-84-937964-5-7
35. **Benavides, R.** 2008. Knowledge and experiences for the development of sustainable silvopastoral systems in heathlands in Asturias. **Doctoral Dissertation**. University of Santiago de Compostela, Spain. ISBN: 978-84-9887-088-6.
36. **Benavides, R.**, Montes, F., Rubio, A., Osoro, K. & Roig, S. 2007. Cálculo de la productividad potencial forestal a escala regional basada en un modelo biofísico en la zona montañosa del norte de España, Asturias. *Cuadernos de la Sociedad Española de Ciencias Forestales* 23, 127-133. ISSN 1575-2410.

Contributions to scientific meetings

1. **Benavides, R.**, Carvalho, B., Bastias, C.C., Escudero, A. & Valladares, F. (2019). Phenotypic integration of *Pinus sylvestris* along its distribution area. 15th European Ecological federation Congress. Lisbon, Portugal (oral communication).
2. Bastias, C.C., Morán, T., Valladares, F. & **Benavides, R.** (2019). Seed size underlies the uncoupling in composition between canopy and recruitment layers in European forests. 15th European Ecological federation Congress. Lisbon, Portugal (poster)
3. **Benavides, R.**, Scherer-Lorenzen, M & Valladares, F. (2019). Functional space of tree species varies with the canopy species richness and this relation is context-dependant. 1st Iberian Ecological Society Meeting (SIBECOL 2019), Barcelona, Spain (oral communication)
4. Ramírez-Valiente JA, Solé A, **Benavides R**, Danusevicius D, Heer K, Notivol E, Opgenoorth L, Pyhäjärvi T, Savolaninen O, Robledo-Arnuncio JJ. Adaptive divergence of *Pinus sylvestris* populations across Europe: implications in a changing world. 1st Iberian Ecological Society Meeting (SIBECOL 2019), Barcelona, Spain (oral communication).
5. Carvalho, B., Hereş, A.M., Martín, L., Ledo, V., Castro, P., Bastias, C.C., **Benavides, R.**, Valladares, F., Escudero, A., (2019). Tree competition effects on secondary growth of Scot pines in a Mediterranean altitudinal limit. 1st Iberian Ecological Society Meeting (SIBECOL 2019), Barcelona, Spain (poster)
6. Bastias, C.C., Carvalho, B., Matesanz, S., Valladares, F., De la Cruz, L. & **Benavides, R.** (2019). Understanding plant community assembly under water limitation: an experimental test with long-lived species.. 1st Iberian Ecological Society Meeting (SIBECOL 2019), Barcelona, Spain (poster)
7. Ma, X., Mahecha, M., Migliavacca, M., Musavi, T., van der Plas, F., Richter, R., Ratcliffe, S., Benavides, R., Pabon, D., Domisch, T., Finér, L., Kattge, J., Reichstein, M. & Wirth, C.. 2018. Potentials and challenges of remote sensing functional trait diversity by integrating high-resolution spaceborne multispectral and radar measurements. 10th International Conference on Ecological Informatics, Jena, Germany

8. Bastias, C.C., Truchado, D.A., Valladares, F., Bouriaud, O., **Benavides, R.**, Bruelheide, H., Coppi, A., Finér, L., Gimeno, T.E., Jaroszewicz, B., Scherer-Lorenzen, M., Selvi, F. & De la Cruz, M. 2017. Species richness influences the spatial structure of European forests. BES, GFÖ, NECOV and EEF Joint Annual Meeting: Ecology across borders. Ghent, Belgium (Poster and flash communication).
9. Carvalho, B., Bastias, C.C., **Benavides, R.**, Valladares, F. & Escudero, A. 2017. Trait correlation network in Scots pine populations: a whole plant perspective. BES, GFÖ, NECOV and EEF Joint Annual Meeting: Ecology across borders. Ghent, Belgium (Poster)
10. **Benavides, R.**, Scherer-Lorenzen, M. & Valladares, F. 2017. El espacio funcional de especies forestales varía con la riqueza de especies del dosel. VII National Congress of the Spanish Society of Forestry Science, Plasencia, Spain (Oral presentation).
11. Bernard, M., Morin, X., Kunstler, G., Boulanger, V., **Benavides, R.**, Rabasa, S.G., Granda, E., Valladares, F., Jactel, H. & Said, S. 2017. Are plant-ungulates interactions related to climate? Comparison of consumption indexes along elevation gradients across a latitudinal gradient of European sites. XXXIII International Union Game Biologists Congress, Montpellier, France (Oral Communication)
12. **Benavides, R.**, Scherer-Lorenzen, M. & Valladares, F. 2017. Phenotypic space of tree species responds to the canopy species richness. XIV MEDECOS & XIII AEET Meetings. Seville, Spain (Poster).
13. Bastias, C.C., Morán-López, T., **Benavides, R.** & Valladares, F. 2017. Richer tree canopies do not increase recruitment richness nor abundance in five mature European forests. XIV MEDECOS & XIII AEET Meetings. Seville, Spain (Poster).
14. Hereş, A.M., Kaye, M., **Benavides, R.**, Granda, E., Lázaro Nogal, A., Rubio Casal, A., Valladares, F. & Curiel Yuste, J. 2017. Severely defoliated holm oak trees show reduced growth rates compared to healthy ones, but similar responses to climatic conditions. XIV MEDECOS & XIII AEET Meetings. Seville, Spain (Oral presentation).
15. **Benavides, R.**, Wirth, C., Valladares, F. & Scherer-Lorenzen, M. 2015. Species diversity favours the intraspecific trait variability of tree species in three European forests. British Ecological Society Annual Symposium: Forests and Global Change. Edinburgh, UK. (Oral presentation).
16. Bastias, C.C., **Benavides, R.**, Sansevero, J. B.B., Godoy, A.G., Rabasa, S. & Valladares, F. 2015. The influence of canopy diversity and other environmental factors on tree species regeneration in six contrasting European forests. IUFRO Landscape Ecology Conference, Tartu, Estonia (Oral presentation).
17. Hereş, A.M., **Benavides, R.**, Lázaro Nogal, A., Rubio Casal, Granda, E., Valladares, F. & Curiel Yuste, J. 2015. Growth trends of declining Holm oak (*Quercus ilex* L.) trees: a study case from central Spain. TRACE- Tree-Rings in Archaeology, Climatology and Ecology. Sevilla, Spain (Poster).
18. Herguido, E., **Benavides, R.**, Granda, E., García-Cervigón, A.I., Camarero, J.J. & Valladares, F. 2015. Death patterns in two pine species in a continental Mediterranean ecosystem: gradual or abrupt? TRACE- Tree-Rings in Archaeology, Climatology and Ecology. Sevilla, Spain (Oral presentation).
19. Bastias, C.C., Fortunel, C., Valladares, F., **Benavides, R.**, Cornwell, W., Markesteijn, L., Sansevero, J.B.B., Varitá, M. & Kraft, N. 2015. Using leaf traits to explain woody species coexistence along a species richness gradient. 4th Iberian Congress of Ecology, Coimbra, Portugal. (Oral presentation).
20. **Benavides, R.**, Escudero, A., García-Rabasa, S., Granda, E., Coll, L., Ferrandis, P., Gouriveau, F., Hódar, J.A., Rincón, A., Martínez-Vilalta, J., Zamora, R. & Valladares, F. 2013. Demografía y crecimiento primario durante la regeneración de tres especies de pino a lo largo de gradientes climáticos. VI National Congress of the Spanish Society of Forestry Science, Vitoria, Spain (Oral presentation).
21. **Benavides, R.**, Escudero, A., García Rabasa, S., Granda, E., Coll, L., Ferrandis, P., Gouriveau, F., Hódar, J.A., Rincón, A., Ogaya, R., Martínez-Vilalta, J., Zamora, R., Espelta, J., Peñuelas, J. & Valladares, F. 2013. Efectos del clima y factores locales sobre la regeneración de cinco especies arbóreas en gradientes altitudinales mediterráneos. XI National Congress of the Spanish Society of Terrestrial Ecology. Pamplona, Spain (Poster).
22. Bastias, C.C., **Benavides, R.**, Sansevero, J.B.B., Rabasa, Godoy, A.G., García-Rabasa, S. & Valladares, F. 2013. Efecto de la diversidad del dosel en la regeneración de diferentes especies arbóreas. VI National Congress of the Spanish Society of Forestry Science, Vitoria, Spain (Poster).
23. Bastias, C.C., **Benavides, R.**, Carrascón, I., Rabasa, S.G., Godoy, A., Sansevero, J., Carrascón Iglesias, I. & Valladares Ros, F. 2013. Regeneración natural en seis bosques europeos: efecto de la diversidad del dosel e importancia relativa de factores bióticos y abióticos. XI National Congress of the Spanish Society of Terrestrial Ecology. Pamplona, Spain (Poster)

24. Valladares F., García-Rabasa S., **Benavides R.**, Granda E., Doblas-Miranda, E. & Retana, J. 2012. Merging research agendas to find global patterns: elevation and latitudinal gradients of forest regeneration across Europe. *Planet under Pressure*, London, UK (Oral presentation).
25. Valladares, F., Rabasa, S.G. & **Benavides, R.** (2012). Relative influence of climate on the regeneration of European forests. *4th International Ecosummit. Ecological Sustainability*. Columbia, Ohio, USA (Oral presentation).
26. **Benavides, R.**, Lázaro, A. & Valladares, F. 2011. Efecto de la sequía en el estado y fenología de masas de *Quercus ilex* en dehesas del suroeste de Madrid. *50th Meeting of the Spanish Society of Grasslands (SEEP)*, Toledo, Spain (Oral presentation).
27. **Benavides, R.** Alonso-Ponce, R., García del Barrio J.M. & Roig, S. 2011. Biodiversidad de plantas vasculares en cuatro dehesas mediterráneas bajo un gradiente climático. *50th Meeting of the Spanish Society of Grasslands (SEEP)*, Toledo, Spain (Oral presentation).
28. Rabasa, S.G., **Benavides, R.**, Martínez-Vilalta, J., Hódar, J.A., Zamora, R., Rincón, A., Granda, E. & Valladares, F. 2011. Growth patterns of *Pinus sylvestris* along altitudinal gradients in its southern limit of distribution (Spain). *12th European Ecology Federation Congress*, Avila, Spain (Oral presentation).
29. **Benavides, R.**, Rabasa, S.G., Martínez-Vilalta, J., Hódar, J.A., Zamora, R., Rincón, A., Granda, E. & Valladares, F. 2011. Patterns of *Pinus sylvestris* recruitment under climate change scenarios: insights from altitudinal and latitudinal surveys. *12th European Ecology Federation Congress*, Avila, Spain (Poster).
30. Rabasa, S.G., **Benavides, R.** & Valladares, F. 2011. Recruitment and growth of *Pinus sylvestris* in its southern limit of distribution (Spain). *British Ecological Society Annual Symposium: Forests and Global Change*. Cambridge, UK (Poster).
31. Simón, N., Montes, F., Díaz-Pinés, E., **Benavides, R.**, Roig, S. & Rubio, A. 2011. Modelización de la distribución espacial del carbono orgánico del suelo en dehesas. *IV Meeting of the Agroforestry System group of the Spanish Society of Forestry Science*, Granada, Spain (Poster).
32. Vázquez- Piqué, J., Alejano, R., **Benavides, R.**, Martín, D., López-Carrasco, C., Macías, R., González-Pérez, A., Mutke, S. & Roig, S. 2011. Influencia del clima y la humedad de suelo en la fenología del crecimiento secundario de encina (*Quercus ilex* L.) en un gradiente climático peninsular. *III Meeting of the Ecology, Ecophysiology and Edaphology group of the Spanish Society of Forestry Science*. Huelva, Spain (Poster).
33. **Benavides, R.**, Rabasa, S.G. & Valladares, F. 2011. Effects of climate change in *Pinus sylvestris* recruitment: approach through a climate gradient. *II Mediterranean Forest Week (EFIMED)*, Avignon, France, (Poster).
34. **Benavides, R.**, Roig, S., Alonso-Ponce, R. & López-Carrasco, C. 2010. Modelización de la producción de pastos herbáceos en una dehesa del centro peninsular. *IV Iberian Meeting os Grassland Association*. Zamora- Miranda do Douro, Spain-Portugal. (Communication).
35. Vázquez-Piqué, J., Roig, S., Alejano, R., **Benavides, R.**, Martín, D. & González- Pérez, A. 2010. Intra and interregional variability in the diametric growth of Holm oak (*Quercus ilex* subs. *ballota* (Desf.) Samp.): influence of climate and soil factors through the combination of continuous and monthly measurements. *WorldDendro 2010. International Conference on Dendrochronology*. Rovaniemi, Finland. (Poster).
36. Roig, S., López-Carrasco, C., **Benavides, R.**, Simón, N., Díaz-Pinés, E., Montes, F., Alonso-Ponce, A. & Rubio, A. 2010. Can the dehesa system work as Carbon sink? Case of the 'Dehesón del Encinar' (Spain). *23rd General Meeting of the European Grassland Federation: Grassland in a changing world*. Kiel, Germany (Poster).
37. **Benavides, R.**, Roig, S., Celaya, R., Ferreira, F.M.M. & Osoro, K. 2009. Silvopastoral systems in mountainous regions: grazing management in heath-gorse communities. *V National Congress of the Spanish Society of Forestry Science*. Ávila, (Spain) (Communication).
38. Ferreira, L.M.M., Celaya, R., **Benavides, R.**, García, U. & Osoro, K. 2008. Comparison of animal performance of domestic herbivores grazing on partially improved heathlands. *X Mediterranean Symposium of the European Association of Animal Production (EAAP)*. CIHEAM, INRA. Corté, (France) (Poster).
39. **Benavides, R.**, Jáuregui, B. M., García, U., Celaya, R. & Osoro, K. 2007. Grazing behaviour of domestic ruminants according to the type of flock on partially improved heath-gorse shrublands. *XLVII*

Meeting of the Spanish Society of Grasslands (SEEP), pp. 327-331. Vitoria-Gasteiz (Spain). (Oral Presentation).

40. **Benavides, R.**, Roig, S., Montes, F., Rubio, A. & Osoro, K. 2007. Geostatistical modelling of climatic variables with interest for grazing purpose in the inner-western Asturias. *XLVII Meeting of the Spanish Society of Grasslands* (SEEP), pp. 145-151. Vitoria-Gasteiz (Spain). (Oral Presentation).
41. **Benavides, R.**, Montes, F., Rubio, A., Osoro, K. & Roig, S. 2007. Review of the assessment of potential forest productivity at regional scale based on a biophysic model in a mountainous region in northern Spain, Asturias. *II National Meeting of Forestry Modelling*. Jarandilla de la Vera, Cáceres (Spain) (Communication).
42. Rosa, R., Jáuregui, B. M., **Benavides, R.**, García, U., Osoro, K. & Celaya, R. 2007. Plant-insect relationships in goat grazed heathlands. *X European Heathland Workshop*. Norway. (Poster).
43. Jáuregui, B. M., **Benavides, R.**, Rosa, R., García, U., Osoro, K. & Celaya, R. 2007. Vegetation changes caused by sheep or goat grazing on northern Spain heathlands. *X European Heathland Workshop*. Norway. (Poster).

OTHER RELEVANT INFORMATION

Teaching, tutoring

- Nov 2019 PhD co-advisor. Bárbara Carvalho. University Rey Juan Carlos.
- Jun 2019 BSc advisor. Borja Ruiz-Valdepeñas Martin. Universidad Rey Juan Carlos
- Oct2019 BSc advisor. Ana Sanz Barciela. Universidad Rey Juan Carlos.
- 2017 PhD co-advisor. Cristina C. Bastias. *Relative importance of the inter- vs. intraspecific functional diversity in the regeneration of the European forests'* University of Córdoba.
- 2017 Internship supervision. Camilla Bosi (undergraduate student). Cámara de Comercio Italiana. 3 weeks.
- 2016 Internship supervision. Pablo Tabarés (undergraduate student). University Rey Juan Carlos. 3 months.
- 2016 BSc advisor. Sarah Funk . *Intraspecific variability of foliar venation of Fagus sylvatica L. and Q. faginea Lam. along environmental gradients*. University of Freiburg
- 2016 MSc advisor. Tobias Kern. *Intraspecific variability of litter traits in along biotic and abiotic gradients of two different species: Pinus sylvestris and Quercus ilex*. University of Freiburg
- 2013 BSc advisor. Marcos Zapatero. *Estudio de la regeneración de dos especies del género Pinus a lo largo de su rango altitudinal*. University Rey Juan Carlos, Madrid, Spain. Mark: *Cum laude*
- 2013 MSc advisor. Estela Herguido. *Patrones de mortalidad en dos especies de pino en un ecosistema mediterráneo continental: Progresivos o abruptos?* Autonomous University of Madrid, Spain. Mark: 9 over 10.
- 2011 Research visit supervision. M.Sc.(Tech.) Gonzalo Caballé. INTA. Bariloche, Argentina. 3 months
- 2011 MSc advisor. Nuria Simon. *Geostatistical modelisation of carbon soil distribution in a 'dehesa'*. Polytechnic University of Madrid, Spain.

Seminars, expertise

- 2019 Member of the Scientific Committee 5th Meeting of Forestry Modelling working group of the Spanish Society of Forestry Science "Modelización forestal en la era de la información: retos y soluciones ante un futuro incierto", Solsona, Spain
- Since 2016 Member of LINGGLOBAL (Laboratorio Internacional en Cambio Global)

- 2016 Postdoctoral project evaluation. AgreeSkills+ postdoc fellowships Program (FP7 COFUND)
- 2014 Invited member for workshop "sFunDivEUROPE". German Centre for Integrative Biodiversity Research (iDiv)
- 2013 *Invited lecturer*. 'DIVERFOR: The functional implications of the intraspecific trait variability in European forests: being on the track'. University of Bern (Switzerland)
- 2011 Accreditation for "Contratado Doctor", "Ayudante Doctor" and "Profesor Doctor de la Universidad Privada" by the Agencia de Calidad, acreditacion y prospectiva de las Universidades de Madrid
- 2011 *Invited lecturer*. 'Spatial analysis of data from Spanish forests recruitment'. Master Program 'Geoinformation in Environmental Management' of the Mediterranean Agronomic Institute of Chania, Greece.
- 2007 *Invited lecturer*. 'Search for management strategies of silvopastoral systems in heath and gorse communities in order to develop sustainable systems for animal production and to increase biodiversity'. Seminar Program of AgResearch Institute, Palmerston North, New Zealand.
- Referee of Mountain Research and Development (International Mountain Society), Agricultural and Forest Meteorology, Journal of Vegetation Science, Annals of Forest Science, European Journal of Forest Research, Functional Ecology, PLoS ONE, Oikos, Oecologia.

Dissemination activities

Press releases:

-CORDIS News: European forest trees show high levels of biodiversity within one tree species (in 6 different EU languages). http://cordis.europa.eu/news/rcn/125499_es.html.

-NCYT:<http://noticiadelaciencia.com/not/17536/el-numero-de-arboles-nuevos-disminuye-ante-el-cambio-climatico-/>;

- Ecoticias: [http://www.ecoticias.com/co2/110376/cambio-climatico-crezcan-tanto-arboles-deberia](http://www.ecoticias.com/co2/110376/cambio-climatico-crezcan-tanto-arboles-deberia;);

-Antena3: http://www.antena3.com/especiales/noticias/ciencia/hazte-eco/noticias/menos-arboles-como-consecuencia-cambio-climatico_2015122100331.html

- 2019 Noche Europea de los Investigadores. Actividades para niños en el Museo Nacional de Ciencias Naturales.
- 2019 Workshop for high school students (programa 4ºESO+Empresa). Biogeography and Global Change. Museo Nacional de Ciencias Naturales (1-4 April)
- 2018 Workshop for children: "Plántate! Todo lo que debes saber del mundo de las plantas". Science Week. Museo Nacional de Ciencias Naturales (7-14 Nov)

Other specific education

- 2019 Training workshop on "Methods in forest conservation genetics" at INIA, Madrid, Spain (30 hours)
- 2019 15th European Ecological Society Meeting, Lisbon (Portugal)
- 2019 1st Iberian Ecological Society Meeting, Barcelona (Spain)
- 2018 R advanced. DevAcademy. MNCN, Madrid Spain (6 hours)
- 2017 7th National Congress of the Spanish Society of Forestry Science, Plasencia, Spain.

- 2017 XIV MEDECOS & XIII AEET Meetings. Seville, Spain.
- 2017 Course on Functional and Phylogenetic Diversity. University of Alcalá de Henares, Spain (24 hours).
- 2015 British Ecological Society Meeting. Edinburgh, UK.
- 2015 Basic methodology in Evolutionary Ecology. University Rey Juan Carlos, Madrid (40 hours).
- 2014 Teaching in English Course. University of Freiburg, Germany. (30 hours).
- 2013 6th National Congress of the Spanish Society of Forestry Science, Vitoria, Spain.
- 2013 International Summer School on the functional significance of forest biodiversity, Bialowieza, Poland.
- 2011 12th European Ecology Federation Congress, Avila, Spain.
- 2011 2nd Mediterranean Forest Week (EFIMED), Avignon, France.
- 2011 51st Congress of the Spanish Society of Grasslands (SEEP), Toledo, Spain.
- 2010 Grade in Advanced Statistical Methods. Spanish Open University.
- 2010 Course on Structural Equations Models. University of Bilbao, Spain. (20 hours)
- 2010 23rd General Meeting of the European Grassland Federation. Kiel, Germany.
- 2010 4th Iberian Meeting os Grassland Association. Zamora- Miranda do Douro, Spain-Portugal.
- 2010 Course on Dendrochronology applied to Ecology and Forest Management. Gobierno de Andalucía, Jaén, Spain (40 hours).
- 2009 5th Spanish Congress of Forestry. Spanish Society of Forestry Science, Ávila, Spain.
- 2009 Course on Meta-analysis. Autonomous University of Madrid, Spain. (30 hours).
- 2009 Congress of Extensive Livestock Management in the region of Madrid. PROFOR and Regional Government of the Autonomous Community of Madrid. Navacerrada, Spain.
- 2009 Practical course on "R" software. National Museum of Natural Science (CSIC). Madrid, Spain. (15 hours)
- 2009 Modelling on Forest ecosystems course. University of Valladolid, Spain. (10 hours)
- 2008 Organically Management of Fruit Trees. SERIDA, Spain. (45 hours).
- 2007 47th Meeting of the Spanish Society of Grasslands (SEEP). Vitoria-Gasteiz, Spain.
- 2007 2nd National Meeting of Forestry Modelling, Practical aspects of the Forestry Modelling. Jarandilla de la Vera, Spain.
- 2007 20th Annual FLRC Workshop, Designing Sustainable Farms – Critical aspects of soil and water management. Massey University, Palmerston North, New Zealand.
- 2006 Practical course on Exploratory Statistics and Regression Analysis. Spanish National Museum of Natural Sciences. Madrid, Spain. (30 hours).
- 2005 Doctoral courses at Polytechnic University of Madrid (Spain):
- Methods for research in agroforestry systems.
 - Remote sensing as a tool to study the Environment.
 - Optimization of Agroforestry Systems.
 - Management and Planning of Protected Natural Habitats.
- 2005 Course on Statistics for Spatial Data. National Institute of Agrarian Research (INIA). Madrid, Spain. (20 hours).
- 2005 45th Meeting of the Spanish Society of Grasslands. SERIDA. Gijón, Spain.
- 2004 GIS and Environment Management. Polytechnic University of Madrid, Spain (250 hours).

2004 Environmental Management for Companies. Local Government of Madrid, Madrid, Spain (250 hours).