

May, 2015

Cristina Branquinho, PhD
Associate Researcher at ce3c,
Centre for Ecology, Evolution and Environmental Changes,
Faculdade de Ciências, Universidade de Lisboa
Lisbon, Portugal, Phone (+351 966534767)
cmbranquinho@fc.ul.pt



Cristina Branquinho has been working in Ecology and in Environmental topics since 1992. She is an Associate Researcher at Faculty of Sciences of the University of Lisbon, Centre for Ecology, Evolution and Environmental Changes. She is experienced in monitoring the impact of pollution or anthropogenic activities, such as, mines, quarries, industrial, rural and urban areas on different environmental matrixes: air, soil, water, plants and also at ecosystem level. Part of the work has been based on the use of biological organisms as indicators of environmental quality. She has also developed methodologies for measuring PAHs and heavy metal contamination in stream water using transplanted aquatic mosses. With the previous information she has been building spatial (local or regional) and temporal geostatistical models with potential use for decision making. Since 2000 she has also been applying the previous knowledge to Environmental Health studies, in particular developing environmental biomonitoring to assess human exposure to toxic pollutants mainly, heavy metals, dioxins, furans and PAHs, and relating several environmental bioindicators and/or biomonitors of pollution and of land-uses changes with public health indicators in order to develop efficient tools for evaluation of the Human health risk assessment, especially with long-term chronic effects on health. This allows the production of high-resolution data on environmental exposure for developing reliable environmental health risk assessment studies.

Part of her research is also been developed using the knowledge and the scientific principles of structure and functioning of ecosystems to undergo an ecological management and define sustainable strategies for the ecological restoration of degraded ecosystems. Namely, proposing managing options and scenarios including the strategy of ecological restoration in particular in Mediterranean streams, metal mines, quarries, heavy industries natural forests and sand beach dunes. In particular she is using Biological Soil Crusts for the restoration of margins of dams and desertified areas. Recently she has been involved in the production of Biological Soil Crusts for green roofs in order to avoid watering in Mediterranean areas.

She is also interested in studying early warning indicators of climate-change and of desertification especially in the south of Portugal. More recently she is interested in further apply this methodology in other areas of the world especially Africa and South America. For that she intends to use the changes in ecological indicators of the structure and functioning of ecosystems as a result of global changes, climate change, nitrogen, metal and organic pollution.

EXPERTISE

Ecological Indicators

Ecological Management and Restoration

Ecology and restoration of Biological Soil Crusts

Modelling atmospheric pollution

Environmental Health studies

Biomonitoring air, water and soil

Plant ecology

Ecotoxicology

Climate Change and Desertification

Dioxins, PAHs, heavy metals, oxidized nitrogen pollutants

CREDENTIALS

PhD, Ecology, Lisbon University, Faculty of Sciences

Degree, Biology, Faculty of Sciences, University of Lisbon

Projects:

Cristina Branquinho coordinated or coordinates 23 research projects: 18 as the main coordinator and 6 as principal investigator representing the country or the Faculty of Sciences of the University of Lisbon. In this context coordinated a total of 1 781 K € since 1997. Of the 23 projects, 10 were the result of competitive bidding, 6 nationally (Foundation for Science and Technology) and four internationally (2 Life, 1 and 1 FP7 Marie Curie). The remaining 13 were funded by private companies (10) and the Municipalities (3). As coordinator of projects about 42% of its funding comes from EU funds, 37% of companies or municipalities and 21% of the Foundation for Science and Technology.

Funded in competing calls on the last 5 years:

1. March 2015- April 2016 - AdaptForChange "Improving the success of reforestation in semi-arid areas: adaptation to climate change scenario" project under the "Adapt program - Portugal Adapting to Climate Change". Funded by Portuguese Environmental Agency, 103k€. General coordination : Cristina Branquinho
2. 2014-2016 - EXPL / ATP-ARP / 0252/2013 - Use of native species on green roofs - Alternative to optimize water use and sustainability in Mediterranean conditions urban green spaces. Funded by FCT in 50 K €. General Coordination: Superior Institute of Agronomy (Teresa Afonso's Palace); Coordination in FFCUL: Cristina Branquinho; FFCUL funding: € 8 K;
3. March 2014 - February 2016 - Laura Concostrina (Spanish), BCSSES "Functional diversity of Biocrusts: towards ecosystem services in drylands quantification". Scholarship provided by Marie Curie Intra-European Fellowships for Career Development (FP7- FP7-PEOPLE-2013-IEF, call identifier; Nº628406). Funding: 147 K €. Cristina Branquinho participates as a single supervisor.
4. 2010-2013 - Modelling Ecosystem Structure and Functional Diversity as early-warning indicators of Desertification and Land-degradation: from regional to local level. PTDC/AAC-CLI/104913/2008.
5. 2005-2008 – A technological framework to assess PAHs atmospheric pollution and their impacts in biotic and abiotic compartments. POCTI/AMB/56120/2004.
6. 2005-2008 - Managing human activities intensity for water quality in ecological-economic sustainability: the case study of Monfurado. POCTI/AMB/63160/2004.
7. 2009-2010 - Transnational cooperation between Portugal and Italy (CNR). Biomonitoring of soil and atmospheric pollution at mine sites in Mediterranean areas: responses from cellular to ecosystem level. Financed by FCT Portugal and CNR Italy.

Funded by private companies:

1. 2014-2017 - Environmental monitoring of dioxins / furans and metals in the vicinity of a hospital incinerator. Funding: AmbiMed, 67 K €. General Coordination: Cristina Branquinho.
2. 2012-2017 - Pilot study for the revegetation of biological crusts in order to control and mitigate the erosion processes that occur at the zones where there are daily changes of water level in the reservoirs, in the context of the power reinforcement of Salamonde Dam in the north of Portugal. Financed by EDP – Gestão da Produção de Energia, S.A: 66 480€. Coordinator Cristina Branquinho.
3. 2012-2013 - Urban Biodiversity in the context of "green structures", ecological connectivity and climate change. Funding: Municipality of Almada: 40 K €. Scientific coordination: Cristina Branquinho.
4. 2013-2014 - Development of strategies for remediation of contaminated by metals and its impact human health in the context of mining soil. Funding: Mining Company Somincor 75 K €. Scientific coordination: Cristina Branquinho.
5. 2012-2013 - Monitoring the ecological quality of streams in the municipality of Cascais. Funding: Municipality of Cascais: 3.5 K €. Scientific coordination: Cristina Branquinho, Centre for Environmental Biology, Faculty of Science, University of Lisbon.
6. 2012-2014 - "A mine of biodiversity". Holistic plan for dissemination of biodiversity, ecology and environment promoted by the Department of Environment of Copper Mine Neves-Corvo, for Somincor Company. Funding: SOMINCOR - Neves Corvo mines: 53 K €. Scientific coordination: Cristina Branquinho, Centre for Environmental Biology, Faculty of Science, University of Lisbon.
7. 2011-2014 – Assessment of atmospheric deposition of heavy metals and PCDD/Fs in the surroundings of a cement factory in Pataias and Maceira using biomonitors. Financed by the Cement industry COMPANHIA GERAL DE CAL E CIMENTO SECIL: 49000€. Coordinator Cristina Branquinho.
8. 2010-2012 – Lichen and Plant biodiversity of a Cu mine site in the south of Portugal. Financing: 45 000€; by SOMINCOR, sociedade mineira de Neves Corvo, SA.
9. 2008-2013 - "Evaluating the atmospheric deposition of heavy metals and PCDD/Fs in the surroundings of the SECIL-Outão industry using biomonitors"; Funding entity SECIL: 49280 €
10. 2007-2009 - "Monitoring the environmental quality of urban streams: the case-study of Oeiras Municipality". Project Financed by Oeiras Municipality: 27000€.
11. 2007-2011 - GISA – Integrated Management of Environment and Health in the Alentejo Litoral Region Financing: 1 082 800 € by Private companies: Petróleos de Portugal-PETROGAL, S.A.; REPSOL Polímeros, Lda.; Administração do Porto de Sines, S.A.; Águas de Santo André, S.A.; Apiparques–Gestão de Parques Industriais, S.A.; Carbogal–Carbonos de Portugal, S.A.; EDP–Gestão da Produção de Energia, S.A.; EuroResinas-Indústrias Químicas, S.A.; Kimaxtr –Produtos de Construção S.A.; Repsol Polímeros, Lda.; REN–Atlântico, Terminal de GNL, S.A.

Papers with IF on the last 5 years:

<http://orcid.org/0000-0001-8294-7924>

<http://scholar.google.pt/citations?user=5OjG1v0AAAAJ>

<http://www.researcherid.com/rid/B-3670-2008>

<http://www.scopus.com/authid/detail.url?authorId=6603447018>

2015

1. Listopad CMCS, Masters RE, Drake J, Weishampel J, Branquinho C. 2015. Structural diversity indices based on airborne LiDAR as ecological indicators for managing highly dynamic landscapes. *Ecological Indicators*, ECOLIND-3575R3 (aceite para publicação).
2. Nunes A, Tápia S, Pinho P, Correia O, Branquinho C. 2015. Advantages of the point-intercept method for evaluating functional diversity in semi-arid areas? *iForest - Biogeosciences and Forestry* e1-e8, doi: 10.3832/ifer1261-007, (in press) YW86T9, ID: #1261.
3. Matos P, Pinho P, Aragón G, Martínez I, Nunes A, Soares AMVM, Branquinho C. Lichen traits responding to aridity. *Journal of Ecology*, 103,451-458
4. Barros C, Pinho P, Durão R, Augusto S, Máguas C, Pereira MJ, Branquinho C. 2015. Disentangling natural and anthropogenic sources of atmospheric sulfur in an industrial region using biomonitors. *Environmental Science and Technology*, 49:2222–2229. DOI: 10.1021/es505292t
5. Shibata H, Branquinho C, McDowell WH, Mitchell MJ, Monteith DT, Tang J, Arvola L, Cruz C, Cusack D, Halada L, Kopacek J, Máguas C, Sajidu S, Schubert H, Tokuchi N, Záhora J. 2015. Consequence of altered nitrogen cycles in the coupled human and ecological system under changing climate: the need for long-term and site-based researches. *Ambio*, 44:178-193. DOI:10.1007/s13280-014-0545-4; <http://link.springer.com/article/10.1007/s13280-014-0545-4>.
6. Serrano H, Antunes Cristina, Pinto MJ, Máguas C, Martins-Loução MA, Branquinho C. 2015. The ecological performance of metallophyte plants thriving in geochemical islands explained by the Inclusive Niche Hypothesis. *Journal of Plant Ecology*, 1:41-45. doi:10.1093/jpe/rtu007
7. Ramos A, Pereira MJ, Soares A, Rosario L, Matos P, Nunes P, Branquinho C, Pinho P. 2015. Seasonal patterns of Mediterranean evergreen woodlands (Montado) are explained by long-term precipitation. *Agricultural and Forest Meteorology*, 202:44–50. <http://dx.doi.org/10.1016/j.agrformet.2014.11.021>.
8. Augusto S, Pinho P, Santos A, Botelho MJ, Palma-Oliveira JM, Branquinho C. 2015. Declining trends of PCDD/Fs in lichens over a decade in a Mediterranean area with multiple pollution sources. *Science of the Total Environment*, 508:95-100.
9. Rocciotiello E, Serrano HC, Mariotti MG, Branquinho C. 2015. Nickel phytoremediation potential of the Mediterranean *Alyssoides utriculata* (L.) Medik. *Chemosphere*, 119:1372-1378. <http://dx.doi.org/10.1016/j.chemosphere.2014.02.031>.

2014

1. Munzi S, Correia O, Silva P, Lopes N, Freitas C, Branquinho C, Pinho P. 2014. Lichens as ecological indicators in urban areas: beyond the effects of pollutants. *Journal of Applied Ecology*, 51: 1750–175; <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12304/abstract>
2. Henriques JF, Tavares PC, Correia-dos-Santos MM, Trancoso MA, Santos-Reis M, Branquinho C. 2014. Monitoring Hg and Cd contamination using red-swamp crayfish (*Procambarus clarkii*): implications for wetland food-chain contamination. *Water, Air, & Soil Pollution*, 225:2210. DOI: 10.1007/s11270-014-2210-8.
3. Nunes A, Oliveira G, Cabral MS, Branquinho C, Correia O. 2014. Beneficial effect of pine thinning in mixed plantations through changes in the understory functional composition. *Ecological Engineering*, 70:387–396. <http://dx.doi.org/10.1016/j.ecoleng.2014.06.026>
4. Príncipe AS, Nunes A, Pinho P, Rosário L, Correia O and Branquinho C. 2014. Modeling the long-term natural regeneration potential of woodlands in semi-arid regions to guide restoration efforts. *European Journal of Forest Research*, 133:757-767. DOI 10.1007/s10342-014-0787-5. <http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s10342-014-0787-5>.
5. Munzi C, Cruz C, Branquinho C, Pinho P, Leith ID, Sheppard LJ. 2014. Can ammonia tolerance amongst lichen functional groups be explained by physiological responses? *Environmental Pollution*, 187:206-209. DOI:10.1016/j.envpol.2014.01.009.
6. Ribeiro MC, Pinho P, Llop E, Branquinho C, Soares A, Pereira MJ. 2014. Associations between outdoor air quality and birth weight: a geostatistical sequential simulation approach in Coastal Alentejo, Portugal. *Stochastic Environmental Research and Risk Assessment* 28(3):527-540. DOI 10.1007/s00477-013-0770-6.

2013

1. Augusto S, Máguas C, Branquinho C. 2013. Guidelines for biomonitoring persistent organic pollutants (POPs), using lichens and aquatic mosses – a review. *Environmental Pollution* (in press). <http://dx.doi.org/10.1016/j.envpol.2013.05.019>
2. Augusto S, Pereira MJ, Máguas C, Branquinho C. 2013. A step towards the use of biomonitors as estimators of atmospheric PAHs for regulatory purposes. 2013. *Chemosphere*, 95:626-632.
3. Oliveira AR, Branquinho C, Pereira MJ, Soares A. 2013. Stochastic Simulation Model for the Spatial Characterization of Lung Cancer Mortality Risk and Study of Environmental Factors. *Mathematical Geosciences*. DOI 10.1007/s11004-013-9443-8
4. Munzi S., Branquinho C., Cruz C. & Loppi S. 2013. Nitrogen tolerance in the lichen *Xanthoria parietina*: the sensitive side of a resistant species. *Functional Plant Biology*, 40:237-243. DOI:10.1071/FP12127.
5. Ribeiro MC, Pinho P., Llop E., Branquinho C., Sousa AJ, Pereira MJ. 2013. Multivariate geostatistical methods for analysis of biodiversity and environmental factors at multiple spatial scales. *Ecological Indicators*, 29:339-347. (IF2011= 2.695)

2012

6. Cruz de Carvalho R, Catalá M, García-Breijo F, Marques da Silva J, Branquinho C, Barreno E. 2012. The impact of dehydration rate on the production and cellular location of reactive oxygen species in an aquatic moss. *Annals of Botany* 110(5): 1007-1016. doi: 10.1093/aob/mcs180
7. Antunes, C., Correia, O., Marques da Silva, J., Cruces, A., Freitas, C., Branquinho, C. Factors involved in spatiotemporal dynamics of submerged macrophytes in a Portuguese coastal lagoon under Mediterranean climate. *Estuarine, Coastal and Shelf Science* (in press). 10.1016/j.ecss.2012.03.034.
8. Augusto S, Pereira MJ, Máguas C, Soares A, Branquinho C. Assessing human exposure to PAHs in a petrochemical region based on data from environmental biomonitor. *Journal of Toxicology and Environmental Health* (in press).
9. Pinho, P., Theobald, M. R., Dias, T., Tang, Y. S., Cruz, C., Martins-Loução, M. A., Máguas, C., Sutton, M., and Branquinho, C. 2012. Critical loads of nitrogen deposition and critical levels of atmospheric ammonia for semi-natural Mediterranean evergreen woodlands, *Biogeosciences*, 9, 1205-1215, doi:10.5194/bg-9-1205-2012.
10. Pinho P, Bergamini A, Carvalho P, Branquinho C, Stofer S, Scheidegger C, Máguas C. Lichen functional groups as ecological indicators of the effects of low-intensity land-use in Mediterranean ecosystems. *Ecological Indicators*, 15:36-42. (<http://dx.doi.org/10.1016/j.ecolind.2011.09.022>).
11. Llop E, Pinho P, Matos P, Pereira MJ, Branquinho C. 2012. The use of lichen functional groups as indicators of air quality in a Mediterranean urban environment. *Ecological Indicators*, 215-221. : <http://dx.doi.org/10.1016/j.ecolind.2011.06.005>

2011

12. Pinho P, Dias T, Cruz C, Tang YS, Sutton M, Martins-Loução MA, Máguas C, Branquinho C. Using lichen functional-diversity to assess the effects of atmospheric ammonia in Mediterranean woodlands. *Journal of Applied Ecology*, 48:1107-1116.
13. N Ochoa-Hueso R, Allen EB, Branquinho C, Cruz C, Dias T, Fenn ME, Manrique E, Pérez-Corona ME, Sheppard L Stock WD. 2011. Nitrogen deposition effects on Mediterranean-type ecosystems: an ecological assessment. *Review. Environmental Pollution*, 159:2265-2279.
14. Serrano HC, Pinto MJ, Martins-Loução MA, Branquinho C. 2011. How does an Al-hyperaccumulator plant respond to a natural field gradient of soil phytoavailable Al? *Science of the Total Environment*, 409:3749-3756.
15. Cruz de Carvalho R, Branquinho C, Marques da Silva J. Physiological consequences of desiccation in the aquatic bryophyte *Fontinalis antipyretica*. *Planta*, 234:195-205.
16. Branquinho C, Matos P, Vieira AR, Prestello-Ramos MM. 2011. The relative impact of lichen symbiotic partners to repeated copper uptake. *Environmental and Experimental Botany*, 72: 84-92.
17. Augusto S, Gonzalez C, Vieira R, Máguas C, Branquinho C. Evaluating the sources of PAHs in urban streams based on land-use and biomonitors. *Environmental Science and Technology*, 45:3731-3738.
18. Munzi S, Loppi S, Cruz C, Branquinho C. 2011. Do lichens have “memory” of their native N environment? *Planta*, 233:333-342.

2010

19. Ribeiro MC, Pereira MJ, Soares A, Branquinho C, Augusto S, Llop E, Fonseca S, Nave JG, Tavares A, Dias C, Silva A, Selemene I, Toro J, Santos MJ, Santos F. A study protocol to evaluate the relationship between outdoor air pollution and pregnancy outcomes. *BMC Public Health*, 10:613 <http://www.biomedcentral.com/1471-2458/10/613> (IF 2,223)
20. Augusto S, Máguas C, Matos J, Pereira MJ, Branquinho C. 2010. Lichens as an integrating tool for monitoring PAH atmospheric deposition: a comparison with soil, air and vegetation. *Environmental Pollution* 158:483-489. [doi:10.1016/j.envpol.2009.08.016](http://dx.doi.org/10.1016/j.envpol.2009.08.016). (IF3,426)

21. Durão RM, Pereira MJ, Branquinho C, Soares A. 2010. Assessing Spatial Uncertainty of the Portuguese Fire Risk through Direct Sequential Simulation. *Ecological Modelling* 221:27–33. [doi:10.1016/j.ecolmodel.2009.09.004](https://doi.org/10.1016/j.ecolmodel.2009.09.004). (IF1,871)

2009

22. Gonzalez C, Clemente A, Nielsen KA, Branquinho C, Santos RF. 2009. Human-Nature Relationship in Mediterranean Streams: Integrating Different Types of Knowledge to Improve Water Management. *Ecology and Society* 14 (2): 35. <http://www.ecologyandsociety.org/vol14/iss2/art35/>
23. Augusto S, Máguas C, Matos J, Pereira MJ, Soares A, Branquinho C. 2009. Spatial modelling of PAHs in lichens for fingerprinting of multi-source atmospheric pollution. *Environmental Science and Technology*, 43:7762-7769. DOI: 10.1021/es901024w
24. Augusto S, Máguas C, Branquinho C. 2009. Performance of different lichen species as dioxin and furan biomonitors. *Ecotoxicology* 18:1036–1042. DOI: 10.1007/s10646-009-0360-z
25. Vieira AR, Martins-Loução MA, Branquinho C. 2009. Intracellular and extracellular ammonium (NH₄⁺) uptake and its toxic effects on the aquatic biomonitor *Fontinalis antipyretica*. *Ecotoxicology* 18:1087–1094. DOI: 10.1007/s10646-009-0374-6

Book chapters of the last 5 years

1. Branquinho C, Gonzalez C, Clemente A, Pinho P, and Correia O. 2014. Chapter 25 - The impact of the rural land-use on the ecological integrity of the intermittent streams of the Mediterranean 2000 Natura network. In: *Nitrogen Deposition, Critical Loads and Biodiversity*. Sutton MA, Mason KE, Sheppard LJ, Sverdrup H, Haeuber R, Hicks WK (eds.), 539 p.
2. Baron JS, Barber M, Feest A, Gilliam F, Lu X, Stevens CJ, Woodin S, Bobbink R, Adams M, Agboola J, Allen E, Bealy B, Bobrovsky M, Bowman WD, Branquinho C, Bustamente M, Clark CM, Cocking E, Cruz C, Davidson E, Denmead T, Dias T, Diese N, Harrison I, Galloway JN, Geiser L, Khanina L, Manrique E, Ochoa-Hueso R, Ometto JP, Payne R, Scheuschner T, Sheppard LJ, Simpson G, Singh YV, Strachan I, Sverdrup H, Tokuchi, van Dobben H. 2014. The effects of atmospheric N deposition on terrestrial and freshwater biodiversity. In: *Nitrogen Deposition, Critical Loads and Biodiversity*. Sutton MA, Mason KE, Sheppard LJ, Sverdrup H, Haeuber R, Hicks WK (eds.), 539 p.
3. Oenema O, Salomez J, Branquinho C, Budnakova M, Cermak P, Geupel M, Johnes P, Tomkins C, Spranger T, Erisman JW, Palliere C, Maene L, Alonso R, Maas R, Magid J, Sutton MA, Grinsven HV. 2011. Chapter 23: Developing integrated approaches to Nitrogen management. *The European Nitrogen Assessment: sources, effects and policy perspectives*. Sutton M, Howard CM, Erisman JW, Billen G, Bleeker A, Grennfelt P, Grinsven HV, Grizzetti B, (eds). Cambridge University Press, New York. Pp 612. ISBN-13: 9781107006126.
4. Pinho P, Máguas C, Cruz C, Martins-Loução MA, Branquinho C. 2011. Selecting critical areas for monitoring the impact of ammonia on biodiversity. In Hicks WK, Whitfield CP, Bealey WJ, Sutton MA (eds.) *Nitrogen Deposition and Natura 2000- Science & practice in determining environmental impacts* 165-170; Published by Cost, 290 pp; ISBN 978-91-86125-23-3. <http://cost729.ceh.ac.uk/n2kworkshop>.
5. Martins-Loução MA, Cruz C, Pinho P, Dias T, Branquinho C. 2011. Nitrogen deposition and Natura 2000 sites in Portugal 260. In Hicks WK, Whitfield CP, Bealey WJ, Sutton MA (eds.) *Nitrogen Deposition and Natura 2000- Science & practice in determining environmental impacts*, 260-268; Published by Cost, 290 pp; ISBN 978-91-86125-23-3. <http://cost729.ceh.ac.uk/n2kworkshop>
6. Dias T, Malveiro S, Chaves S, Tenreiro R, Branquinho C, Martins-Loução MA, Sheppard L, Cruz C. 2011. Effects of increased N availability on biodiversity of Mediterranean-type ecosystems: a case study in a Natura 2000 site in Portugal. In Hicks WK, Whitfield CP, Bealey WJ, Sutton MA (eds.) *Nitrogen Deposition and Natura 2000- Science & practice in determining environmental impacts*, 171-179. Published by Cost, 290 pp; ISBN 978-91-86125-23-3. <http://cost729.ceh.ac.uk/n2kworkshop>
7. Martins-Loução MA, Branquinho C, Cruz C. 2011. Portugal. In *Final report COST729: Assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe*. Bleeker A and Erisman JW, eds. 148-156. Published by Cost, 218pp.
8. Strengborn J, Jenssen M, Fenn M, Achermann B, Alonso R, Augustin S, Bortoluzzi E, Branquinho C, Braun S, Dobben HV, Hamens H, Hettelingh JP, Hinsberg AV, Lacoban C, Pardo L, Santamaria JM, Scheuschner T, Schutz K, Skorepova I, Sverdrup H, Weijters M. 2011. Report of working group 3: forest and woodland habitats (G). In: *Review and revision of empirical critical loads and dose-response relationships*. Bobbink R and Hettelingh (eds). 229-234. ISBN:978-90-6960-251-6, 241pp.
9. Branquinho C, Pinho P, Dias T, Cruz C, Máguas C and Martins-Loução MA. 2010. Lichen transplants at our service for atmospheric NH₃ deposition assessments. *Together and separate: The lives of the lichen symbionts* Thomas H. Nash III (ed.): *Bibliotheca Lichenologica* 105: 103–112. J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung, Stuttgart.
10. Pinho P, Branquinho C, Máguas C. 2010. Modeling ecology of lichens communities based on photobiont type in response to potential solar radiation and neighborhood land-use. *Together and separate: The lives of the lichen symbionts* Thomas H. Nash III (ed.): *Bibliotheca Lichenologica* 105: 149–160. J. Cramer in der Gebrüder Borntraeger Verlagsbuchhandlung, Stuttgart.
11. Pinho P, Branquinho C, Cruz C, Tang S, Dias T, Rosa, AP, Máguas C, Martins-Loução MA, Sutton M. 2009. Assessment of critical levels of atmospherically ammonia for lichen diversity in cork-oak woodland, Portugal. Chapter: *Critical Loads*. In "Atmospheric Ammonia - Detecting emission changes and environmental impacts - Results of an Expert Workshop under the Convention on Long-range Transboundary Air Pollution", Mark Sutton, Stefan Reis and Samantha Baker (eds), Springer, 109-119. <http://www.springerlink.com/content/978-1-4020-9120-9>;
12. Cape JN, van derEerden L, Fangmeier A, Ayres J, Bareham S, Bobbink R, Branquinho C, Crittenden P, Cruz C, Dias T, Leith I, Martins-Loução MA, Pitcairn C, Sheppard L, Spranger T, Sutton M, vanDijk N and Wolseley P. 2009. 21 - Critical Levels for ammonia. In "Atmospheric Ammonia - Detecting emission changes and environmental impacts - Results of an Expert Workshop under the Convention on Long-range Transboundary Air Pollution", Mark Sutton, Stefan Reis and Samantha Baker (eds), Springer, 375-383. http://www.springerlink.com/content/978-1-4020-9120-9?sortorder=asc&p_o=20

Conferences participation:

Invited talks - >60

Other talks in conferences - >120

Posters at conferences - >120

Scientific Coordination Experience

Post-doc

1. March 2014 - February 2016 - Laura Concostrina (Spanish), BCSES "Functional diversity of Biocrusts: towards ecosystem services in drylands quantification". Scholarship provided by Marie Curie Intra-European Fellowships for Career Development (FP7- FP7-PEOPLE-2013-IEF, call identifier; N°628406). Funding: € 147,210. Cristina Branquinho participates as a single supervisor.
2. January 2014 - Present - Ricardo Cruz de Carvalho, "Ecological Restoration of eroded regions Biological Soil Crusts using". Post-doctoral scholarship from the Faculty of Sciences of Lisbon University Foundation in the context of the provision of services to businesses. Cristina Branquinho is the only supervisor.
3. Agosto 2012 - 2013 November - Sofia Augusto, "Monitoring of toxic organic compounds using lichens as biomonitors in various types of industries." Post-doctoral scholarship from the Faculty of Sciences of Lisbon University Foundation in the context of the provision of services to businesses. Cristina Branquinho is the only supervisor.
4. May 2012 - April 2014 - Silvana Munzi: REAL TUNE "Role of enzymatic activity in lichen tolerance under nitrogen excess". Marie Curie Intra-European Fellowships for Career Development (FP7-PEOPLE-2011-IEF, call identifier; N°301785). Budget: 151426€. CB participates as a co-supervisor of Silvana Munzi.
5. January 2012-2015 - Claudia Listopad – Impact of land use and management practices on the montado ecosystem: an evaluation of changes in composition, structure, function and ecological value in the last 4 decades. Post doc grant from Portuguese Science Foundation: SFRH/BPD/78679/2011.
6. Dez 2011-April 2012 - Silvana Munzi -Modeling Ecosystem Structure and Functional Diversity as early-warning indicators of Desertification and Land-degradation: from regional to local level." Post Doc grant in the context of the Project PTDC/AAC-CLI/104913/2008.
7. April 2011 to Nov 2011 – Silvana Munzi - Monitoring pollutants using lichens in industrial areas.Pos-doc grant from the private company Secil of Maceiras e Patais.
8. Mar 2011–September 2011 - Pedro Pinho, "Modeling Ecosystem Structure and Functional Diversity as early-warning indicators of Desertification and Land-degradation: from regional to local level." Post Doc grant in the context of the Project PTDC/AAC-CLI/104913/2008.
9. Jan 2009- April 2010 - Esteve Llop - Use of lichen diversity as bioindicators of the impact of atmospheric pollution on public health. Post-doc Grant from project GISA.

Finished PhD Thesis

1. December 2013 - Ricardo Filipe Duarte da Cruz de Carvalho, PhD in Physiology and Biochemistry, at Faculty of Sciences University of Lisbon "Coping with Extreme Dehydration: A Physiological, Biochemical and Molecular Study on the Aquatic Bryophyte *Fontinalis antipyretica*" (SFRH/BD/31424/2006). Co-supervised with Prof. Dr. Jorge Marques da Silva.
2. Julho 2012 - Sofia Augusto, PhD in Ecology at Faculty of Sciences University of Lisbon, "Developing a technology for biomonitoring the atmospheric pollution of toxic organic compounds and evaluating its impact on ecosystem and on the public health" (SFRH / BD / 35308 / 2007). Co-supervised with Prof. Dr. Cristina Máguas.
3. May 2011 – Carla Sofia Dávila Soares Gonzalez, PhD in Environmental Sciences at Science and Technology Faculty of New University of Lisbon "Interpreting change in Human-Nature and long term social relationships" SFRH/BD/22096/2005. Co-supervised with Prof. Dr. Rui Santos UNL.
4. December 2010 – Pedro António Pinho Lopes, PhD in Applied Ecology in Faculty of Sciences University of Lisbon "Modeling lichen communities: ecologic key factors in a changing environment" SFRH/BD/17880/2004. Co-supervised with Prof. Dr. Cristina Máguas.
5. April 2010 - Silvana Munzi, European PhD in Science and Technologies Applied to the Environment. University of Siena. Faculty of Maths, Physics and Natural Sciences. "Sensitive organisms (lichens) as monitors of biological effects of nitrogen pollution". Supervisor Stefano Loppi, and co-supervisor Cristina Branquinho. PhD Erasmus Student in Portugal for 6 months.

PhD Students

- 2008 - Helena Cristina de Matos Serras Cadete Serrano, PhD in Applied Ecology in Faculty of Sciences University of Lisbon "Ecology of endemic rare *Plantago* species: ecological constraints for conservation purposes". (SFRH/BD/38289/2007) Co-supervised with Prof. Dr. Maria Amélia Martins-Loução.
- 2011 – Paula Matos, PhD in Biology and Ecology of Global Change in University of Lisbon and University of Aveiro "Establishing early-warning ecological indicators of desertification based on plant and lichen functional diversity". Co-supervised with Prof. Dr. Amadeu Soares. PhD in collaboration with Brazil.
- 2011 – Alice Nunes, PhD in Biology and Ecology of Global Change in University of Lisbon and University of Aveiro "Plant functional response to desertification and land degradation – contribution to restoration strategies". PhD in collaboration with Brazil.

Master and undergraduate Students

Supervised 15 master students 12 of each finished.

Supervised 18 post-graduation and 21 undergraduate students.

Scientific representations

2013 – Working Group 1 member of the Cost action FP1204 GreenInUrbs - "Green infrastructures approach: linking environmental with social aspects in studying and managing urban forests. Present in the meeting of Sofia, Bulgaria 2-3 October 2013.

2013 - present – Cristina Branquinho is a National Deputy of IUFRO Division 8 concerning Forest Health under the sub-task 7.01.00 – Impacts of air pollution and climate change on forest ecosystems – Multiple Stressors on Ecosystems. This Division includes study of forest ecosystems; site research and site classification; forest hydrology (including water quality); natural disasters and mitigation measures; forest fire prevention and control; wildlife and its habitats; biodiversity; forests and climate. IUFRO is "the" global network for forest science cooperation. It unites more than 15,000 scientists in almost 700 Member Organizations in over 110 countries, and is a member of ICSU. Scientists cooperate in IUFRO on a voluntary basis. IUFRO is open to all individuals and organizations dedicated to forest and forest products research and related disciplines. It is a non-profit, non-governmental and non-discriminatory organization with a long tradition dating back to 1892.

2012-2016 – Leader of the working group 3 “Traditional and Innovative Systems: Plants, Ecology and Microclimate Manipulation for Enhanced Vegetation Establishment Think-Tank” of the Cost action ES1104 “Arid Lands Restoration and Combat of Desertification: Setting Up a Drylands and Desert Restoration Hub”.

2012-2016 – Member of the Steering committee of the Cost action ES1104 “Arid Lands Restoration and Combat of Desertification: Setting Up a Drylands and Desert Restoration Hub”.

2012-2016 – National representative of the Cost action ES1104 “Arid Lands Restoration and Combat of Desertification: Setting Up a Drylands and Desert Restoration Hub”.

2011-2014 - National representative of the Cost action FP0903: “Climate Change and Forest Mitigation and Adaptation in a Polluted Environment (MAFor)”.

2011-2012 - Representative of the Faculty of sciences of the University of Lisbon in the R&D Agrofood ITECH Executive Commission: presentation of innovative and technological projects with potential commercial value, in agro, food and forest areas.

2010 -Member of the National Commission to Combat Desertification and Land Degradation.

2011 -Member of the National Commission of Science and Technology to Combat Desertification and Land Degradation.

2010 – Selected as an expert of the Euro-Mediterranean University (EMUNI) for evaluating and developing projects.

2010 – Represented Portugal as a national expert on the Workshop on the review and revision of empirical critical loads and dose-response relationships, under the UNECE Convention on Long-Range Trans-boundary Air Pollution at the Noordwijkerhout, The Netherlands 23-25 June 2010.

2010 - Represented Portugal as a national expert on the Task Force on Reactive Nitrogen (TFRN) under the Working Group on Strategies and Review of the UNECE Convention on Long-range Trans-boundary Air Pollution on the meeting in Prague Czech Republic, 12-13th May, 2010. The Task Force on Reactive Nitrogen has the long-term goal of developing technical and scientific information, and options which can be used for strategy development across the UNECE to encourage coordination of air pollution policies on nitrogen in the context of the nitrogen cycle and which may be used by other bodies outside the Convention in consideration of other control measures. The meeting had the objective of the implementation of the Convention (ECE/EB.AIR/96/Add.2) adopted by the Executive Body at its twenty-sixth session in December 2008 and intended to give options for revising the Gothenburg protocol.

2009-2011 - Portuguese representation at the European Nitrogen Assessment (ENA). ENA represented a process of scientific and policy synthesis that provided a major review of the role of excess nitrogen on environmental problems. Based on analysis of the problems and interactions, the review explored the potential to establish integrated solutions and better communicate the implications to society. The ENA report will have 5 major Sections, with 26 chapters. Each chapter will be written by leading international experts, comprising of Lead and Contributing Authors.

2008-2013 - Elected Member of the National Committee Global Change, IGBP, International Geosphere Biosphere Program Portugal, Academy of Sciences.

2008-2013 - National representative at the European Committee for Standardisation (CEN) and AFNOR Normalisation for: biomonitoring methods with mosses and lichens. CEN/TC 264/WG 31: 1) Biomonitoring of air - determination of biological index of epiphytic lichens; 2) Biomonitoring of air quality – procedure for passive biomonitoring of air quality using in situ mosses: from the collection to the preparation of samplings.

2007-2011 - Integrates the Scientific Commission of the project “Integrated Management of Environment and Health” coordinated by the regional authority: Coordinator Commission of Regional Development of the Alentejo Region (CCDR-A).

2006 – Invited as specialist of the working group 1 “Ammonia critical thresholds” at the United Nations Economic Commission for Europe (UNECE) Expert workshop on ammonia. Atmospheric ammonia: detecting emissions changes and environmental impacts. Leith, Edinburgh 4-6 December 2006.

2006-2011 – National Representative (substitute), of the Cost Action 729: “Assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe”. (in July 2006 Gdansk, Poland and in December 2006 Edinburgh, UK)

2004-2008 – Invited to be a Member of the Scientific and Technical Council of the Environmental Agency of the Municipality of Oeiras, Portugal.