



Curriculum vitae

Dr. Jesús Aguirre Gutiérrez; Nationality: Mexican

jeaggu@gmail.com; +31623446944

<https://www.eci.ox.ac.uk/people/jaguirregutierrez.html>

Languages

Spanish (mother tongue); English (C2*); Portuguese (B2); Dutch (B2*).

*Common European Framework of Reference for Languages

www.cambridgeenglish.org/exams-and-tests/cefr/

Work experience since completing PhD

Postdoctoral Researcher	01/06/2017-Present	School of Geography and the Environment, Oxford University, UK
	01/11/2015-31/05/2017	Naturalis Biodiversity Center, Netherlands

PhD.

University: University of Amsterdam, The Netherlands

Date of PhD award: 28/10/2015

Main subject: Ecology

MSc. degree

University: University of Amsterdam, The Netherlands

Date: 31/08/2010

Main subject: Landscape Ecology and Evolution -Tropical Ecology

License degree

University: University of Guadalajara, Mexico

Date of award: 30/06/2007

Main subject: Biology (91/100 Honours)

Academic work before PhD

Jan 2011-31 May 2011	Intern at University of Amsterdam (Netherlands). Mapping of the hydrological network of Sierra Blanca Peru and its bedrock formation using GIS and Remote Sensing; Gain experience in the field of remote sensing and GIS techniques after graduation of the MSc. Ecology and evolution.
1 Nov 2010-30 Nov 2010	Research Assistant at University of Amsterdam (Netherlands). Research assistant in the course 'Biodiversity and Landscapes' carried out as part of the MSc. Ecology and Evolution.
Feb 2007-July 2007	Intern at Institute of Chemistry and Biological Technology (ITQB, Portugal). Research about the Pprab1 gene in Pinus pinaster. DNA extraction, PCR reactions, electrophoresis techniques, ligation reactions, plasmid purification;

A) Research

Current Funding received as Researcher Co-Investigator* (PI: Dr. David Galbraith, Leeds University)

- "ARBOLES: A trait-based Understanding of LATAM Forest Biodiversity and Resilience". Funded by *Natural Environment Research Council (NERC)*, UK **£ 800,000**

*I participated in the writing of part of the proposal, which is now funding my current postdoctoral position

Current projects in review for funding as PI

- "Long-term responses of tropical forests to climate change: linking trait-based ecology with forest dynamics and remote sensing" -In review by *Natural Environment Research Council (NERC)*, UK Requested **£ 750,000**

- “Cerrado and Cerradão vegetation around agricultural landscapes as buffers to climate change impacts on pollinators and their services” -In review by Newton Fund, UK and CONFAP, Brazil Requested € 66,000

Current participation on funded Scientific projects as external Investigator

- EUCLIPO: Efeitos da eutrofização e clima nos polinizadores e provisão de serviços ecossistêmicos. Funded by *Fundação para a Ciência e a Tecnologia (FCT) Portugal*

Past Funding received for projects as Principal Investigator (PI)

- Making sense of diversity: remote sensing of functional diversity of tropical forests Funded by Nederlandse Wetenschap Organisatie (NOW-Rubicon, 2017) € 157,600
- Environmental Change Institute small grant for field work and conferences assistance (University of Oxford, 2018/19) £ 1,600
- Mapping the 3D structure of forests in the Dutch Caribbean. Funded by Alberta Menega Foundation (2017) € 1,250
- How the 3D structure of forests in the Dutch Caribbean define species richness and diversity of invertebrates? Funded by Van Eeden Fonds (2017) € 850
- Modelling the distribution of crop wild relatives in Europe. Funded by Wageningen UR, Netherlands (Consultancy funding, 2015). € 38,000
- Historical drivers of pollinator species persistence and distributions in Europe Funded by Consejo Nacional de Ciencia y Tecnología (CONACyT Mexico -PhD research funding, 2011) € 36,000
- STUNT Universiteitsfonds grant for field work during master studies Funding from University of Amsterdam (2010) € 1,000

Recognitions, scholarships and prices

- Recognition as a Member of the Mexican National System of Researchers (SNI, Level 1). A researcher can become a member only after successful evaluation from the current SNI members and after complying with a number of pre-requisites related to research output. <https://www.conacyt.gob.mx/index.php/el-conacyt/sistema-nacional-de-investigadores>
- PhD position won at Naturalis Biodiversity Centre and Amsterdam Uni. (2011) € 96,000
- NUFFIC Huygens Scholarship (HSP) award for MSc studies (Netherlands 2008) € 50,000
- Fellowship programme for outstanding students at U. Guadalajara. € 1,500 Funded by University of Guadalajara (2004-2007)

Published articles and book chapters

(IF= Impact factor 2018-2019)

27 research articles and book chapters; 858 citations; H-Index: 13; i10-Index: 15

https://scholar.google.nl/citations?hl=en&user=P44MS-AAAAAJ&view_op=list_works&sortby=pubdate

27. **Aguirre-Gutiérrez, J.** et al. Drier tropical forests are susceptible to functional changes in response to a long-term drought. *Ecology Letters*. 2019, 22 (5), 855-865. Citations= Just published, IF= 9.137

26. LG Carvalheiro, JC Biesmeijer, M Franzén, **Aguirre-Gutiérrez, J.** et al. Soil eutrophication shaped the composition of pollinator assemblages during the past century. *Ecography*. 2019. Accepted. Citations= Just published, IF=5.9

25. B Tshwene-Mauchaza and **Aguirre-Gutiérrez, J.** Climatic drivers of plant species distributions across spatial grains in Southern Africa tropical forests. *Frontiers in Forests and Global Change*. 2019. Accepted. Citations= Just published

24. de Kom, Y., I., Biesmeijer, J.C. and **Aguirre-Gutiérrez, J.** Risk of potential pesticide use to honeybee and bumblebee survival and distribution: a country-wide analysis for The Netherlands. *Diversity and Distributions*. 2019, 25 (11), 1709-1720.

Citations= Just published, IF=4.614

23. P Castro-Félix, JS Sierra, JAP de la Rosa, **Aguirre-Gutiérrez, J.** et al. Genetic diversity and structure of morphologically characterized populations *Pinus ayacahuite* and *Pinus strobiformis* through the analysis of neutral nuclear markers. **eCUCBA**. 2019, 6, 34-45

22. Raes, N. and **Aguirre-Gutiérrez, J.** Species distribution models under climate and landscape changes. In: Mountains, Climate and Biodiversity. Hoorn, C. and Antonelli, A. (eds). 2018, 584p. **Wiley Blackwell Publishers, Oxford**. ISBN: 978-1-119-15987-2.
Citations=1, IF=Book Chapter

21. **Aguirre-Gutiérrez J.**, WallisDeVries MF, Marshall L, et al. Butterflies show different functional and species diversity in relationship to vegetation structure and land use. **Global Ecology and Biogeography**. 2017, 26:1126–1137.
Citations=3. IF= 5.958

20. Amaral, A. G., Munhoz, C. B.R., Walter, B. M.T., **Aguirre-Gutiérrez, J.** and Raes, N. Richness pattern and phytogeography of the Cerrado herb–shrub flora and implications for conservation. **Journal of Vegetation Science**. 2017, 28: 848–858.
Citations=11. IF=2.658

19. Wicaksono, C. Y., **Aguirre-Gutiérrez, J.**, Nouhra, E., Pastor, N., Raes, N., Pacheco, S. and Geml, J. Contracting montane cloud forests: a case study of the Andean alder (*Alnus acuminata*) and associated fungi in the Yungas. **Biotropica**. 2017, 49: 141–152.
Citations=6. IF=2.281

18. **Aguirre Gutierrez J.**, Kissling, W. D., Biesmeijer, J. C., WallisDeVries, M. F., Reemer, M. and Carvalheiro, L. G. Historical changes in the importance of climate and land use as determinants of Dutch pollinator distributions. **Journal of Biogeography**. 2017, 44: 696–707
Citations=9. IF=4.154

17. Gomes, S. I. F., Aguirre-Gutiérrez, J., Bidartondo, M. I. and Merckx, V. S. F. T. Arbuscular mycorrhizal interactions of mycoheterotrophic *Thismia* are more specialized than in autotrophic plants. **New Phytologist**. 2017, 213: 1418–1427.
Citations=8. IF=7.433

16. **Aguirre-Gutiérrez, J.**, van Treuren, R., Hoekstra, R. and van Hintum, T.JL. Crop wild relatives range shifts and conservation in Europe under climate change. **Diversity and Distributions**. 2017, 23:739–750.
Citations=12. IF=4.614

15. Gama R., **Aguirre-Gutiérrez J.** and Stech M. Ecological niche comparison and molecular phylogeny segregate the invasive moss species *Campylopus introflexus* (Leucobryaceae, Bryophyta) from its closest relatives. **Ecology and Evolution**. 2017, 7:8017–8031.
Citations=6. IF=2.34

14. Roger, N., Moerman, R., Carvalheiro, L.G., **Aguirre-Gutiérrez, J.**, et al. Impact of pollen resources drift on common bumble bees in NW Europe. 2016. **Global Change Biology**. 2017, 23: 68-76
Citations=10. IF=8.997

13. **Aguirre-Gutiérrez, J.**, Kissling, W.D., Carvalheiro, L.G., WallisDeVries, M.F., Franzén, M. and Biesmeijer, J.C. Functional traits help to explain half-century long shifts in pollinator distributions. **Scientific Reports**. 2016, 6:24451.
Citations=17. IF=4.122

12. Lens, F., Vos, R.A., Charrier, G., van der Niet, T., Merckx, V., Pieter Baas, P., **Aguirre-**

Gutierrez, J. et al. Scalariform-to-simple transition in vessel perforation plates triggered by differences in climate during the evolution of Adoxaceae. *Annals of Botany*. 2016, 118: 1043–1056.

Citations=10. IF=3.646

11. **Aguirre-Gutierrez, J.**, Serna-Chavez, H.M., Villalobos-Arámula, A.R., Pérez de la Rosa, J.A. and Raes, N. Similar but not equivalent: ecological niche comparison across closely-related Mexican white pines. *Diversity and Distributions*. 2015, 21: 245–257.

Citations=37. IF=4.614

10. **Aguirre-Gutierrez, J.**, Biesmeijer, J.C., van Loon, E.E., Reemer, M., WallisDeVries, M.F. and Carvalheiro, L.G. Susceptibility of pollinators to ongoing landscape changes depends on landscape history. *Diversity and Distributions*. 2015, 21: 1129-1140.

Citations=25. IF=4.614

9. Marshall, L., Carvalheiro, L.G, **Aguirre-Gutiérrez, J.**, et al. Testing projected wild bee distributions in agricultural habitats: predictive power depends on species traits and habitat type. *Ecology and Evolution*. 2015, 5: 4426-4436.

Citations=4. IF=2.34

8. Schilthuizen, M., Looijestijn, S., Chuan Chua, S., **Aguirre-Gutiérrez, J.** and Castillo Cajas, R. F. Mapping of dextral: sinistral proportions in the chirally dimorphic land snail *Amphidromus inversus*. *PeerJ PrePrints*. 2015, e470v2.

Citations=1. IF=2.118

7. Buckland, S., Cole, N.C., **Aguirre-Gutiérrez, J.** et al. Ecological effects of the invasive giant Madagascar day gecko on endemic Mauritian geckos: applications of binomial-mixture and species distribution models. *PLoS One*. 2014, 9(4): e88798.

Citations=19. IF=2.766

6. **Aguirre-Gutiérrez, J.** Are Plant Species' Richness and Diversity Influenced by Fragmentation at a Microscale? *International Journal of Biodiversity*. 2014, ID:384698.

Citations=4. IF=not yet available

5. Carvalheiro L.G., Kunin W.E., Keil P., Aguirre-Gutierrez J. et al. Species richness declines and biotic homogenisation have slowed down for NW European pollinators and plants. *Ecology Letters*. 2013, 16: 870-878.

Citations=221. IF=9.137

4. **Aguirre-Gutiérrez, J.**, Carvalheiro, L.G., Polce, C., van Loon, E.E., Raes, N., Reemer, M., Biesmeijer, J.C. Fit-for-purpose: species distribution model performance depends on evaluation criteria—Dutch hoverflies as a case study. *PLoS One*. 2013, 8(5): e63708.

Citations=134. IF=2.766

3. Polce, C., Termansen, M., **Aguirre-Gutiérrez, J.** et al. Species distribution models for crop pollination: a modelling framework applied to Great Britain. *PLoS One*. 2013, 8(10): e76308.

Citations=36. IF=2.766

2. **Aguirre-Gutierrez, J.**, Seijmonsbergen, A.C. and Duivenvoorden J.F. Optimizing land cover classification accuracy for change detection, a combined pixel-based and object-based approach in a mountainous area in Mexico. *Applied Geography*. 2012, 34: 29-37.

Citations=141. IF=3.117

1. **Aguirre-Gutiérrez, J.** and Duivenvoorden, J.F. Can we expect to protect threatened species in protected areas? A case study of the genus *Pinus* in Mexico. *Revista Mexicana de Biodiversidad*.

2010, 81(3): 875-882.

Citations=26. IF=0.609

In review/in prep. research articles

Aguirre-Gutiérrez, J. et al. Drier tropical forests may become more functionally, taxonomically and phylogenetically homogenous than wetter forests after a long-term drought. *Nature Communications* (In review).

Aguirre-Gutiérrez, J. et al. An integrated pantropical forest Sentinel-2 model for mapping functional trait diversity. In prep.

Invited Lectures

- Brussels, Belgium. **Invited speaker** *Tracking effects of climate change on plant functional traits across the tropics using field methods and remote sensing data.* –In Royal African Museum. December 2019
- Uberlandia, Brazil. **Invited speaker** *Vegetation structure, land-use and climate proxies applied in the study of pollinators distributions.* –In XII Brazilian Bee Meeting. July 2018
- Leeds, UK. **Invited speaker** *Drier tropical forest may become more functional, taxonomic and phylogenetically homogeneous than wetter forests after a long-term drought.* –In Ecology and Global Change cluster, Leeds University. November 2018.

Co-organiser of International Symposium

- *Remote sensing of plant functional traits across tropical forests under environmental change.* In Association for Tropical Biology and Conservation, Cartagena, Colombia, 2020. Organisers: Jesus Aguirre Gutierrez/Sandra Duran (ASU, US)/Eleanor Thompson (Oxford, UK)

Oral presentations and research visits

2019. Oxford, UK. An integrated pantropical forest Sentinel-2 model for mapping functional trait diversity. –In Oxford Ecosystems Laboratory meeting, November 2019.
2019. Antanarivo, Madagascar. Drier tropical forests may become more functionally, taxonomically and phylogenetically homogeneous after a long-term drought. –In Association for Tropical Biology and Conservation annual meeting, July 2019.
2018. Uberlandia, Brazil. **Invited speaker** *Vegetation structure, land-use and climate proxies applied in the study of pollinators distributions.* –In XII Brazilian Bee Meeting, July 2018
2018. Leeds, UK. **Invited speaker** *Drier tropical forest may become more functional, taxonomic and phylogenetically homogeneous than wetter forests after a long-term drought.* –In Ecology and Global Change cluster, Leeds University, November 2018.
2018. Kuching, Malaysia. *Changing tropical forests in West Africa.* –In ATBC meeting, July 2018.
2018. Évora, Portugal. *Shift in community level traits across forest types in tropical Ghana.* –In IBS Climate Change Biogeography meeting, March 2018.
2017. Oxford, UK. *Making sense of diversity remote sensing of functional diversity of tropical forests.* – Visiting the Ecosystems Lab at Oxford University.
2017. Lunteren, Netherlands. *LiDAR remote sensing and functional diversity as applied in the Netherlands and the Amazon.* –In NAEM, Netherlands Annual Ecology Meeting.
2016. Montpellier, France. *Similar but not equivalent: ecological niche comparison across closely-related Mexican white pines.* –In ATBC conference meeting.
2016. Towson University, Towson, USA. *Functional traits help explain half century long shifts in pollinators distributions.* –In Isem Global Ecological Modelling conference.
2014. University Tor Vergata, Rome, Italy. *Susceptibility of pollinators to landscape change depends on past landscapes and recent change.* –In ApiEcoFlora conference.
2013. University of Cambridge, Cambridge, UK. *Biodiversity responses to Environmental change.* Visiting the Forest Conservation laboratory.
2012. University of Concepción, Concepción, Chile. *Optimizing land cover classification accuracy for change detection.* –In International Union of Forest Research Organizations conference.
2012. University of Sao Paulo, Sao Paulo, Brazil. *The performance of species distribution models depends on evaluation criteria.* Visiting the BeeLab of the Núcleo de Pesquisa em Biodiversidade e Computação.

International course and activities

2019. London, UK. Workshop – Arboles project first workshop for gathering and analysing big data on plant traits and vegetation censuses across time and degradation gradients from Latin-American forests. Assistants included Prof. Sandra Diaz (Universidad Nacional de Cordoba, Argentina) and Prof. Yadvinder Malhi (Oxford University, UK).
2018. Saint Eustatius, Dutch Caribbean. Fieldwork – Across the island collecting LiDAR point clouds across vegetation and pollinators sampling plots.
2017. Highstats LTD, Lisbon, Portugal. Course –Spatial, Temporal and Spatial-Temporal Ecological Data Analysis with R-INLA.
2016. Belem, Brazil. Fieldwork –In one of the suggested sampling plots for this research in the Amazon forest (north-east). Collection of LiDAR and tree leaf traits.
2015. University of Lisbon, Lisbon, Portugal. Course -Introduction to Linear Mixed Effects Models, GLMM and MCMC with R.
2013. University of Cambridge, Cambridge UK. Course-Light Detection and Ranging (LiDAR).
2013. Peyresq, France. Summer school. ALTER-Net: A Long-Term Biodiversity, Ecosystem and Awareness Research Network: Ecosystem services school.
2013. Institute for Geo-Information Science, ITC, Enschede, the Netherlands. Course -Spatial modelling of biological ecosystem properties.
2012. University of Grenoble, Grenoble, France. Course -Habitat distribution models and their applications in ecology, evolutionary ecology and conservation.
2012. University of Coimbra, Coimbra, Portugal. Course -Data Analysis Tools in Ecology: Module I Multivariate Statistics and II, GLM and GAM.
2010. Tarahumara forest, Mexico. Field research campaign (3 months) for master thesis.
2007. University of Lisbon, Portugal. Internship. Institute of Chemistry and Biological Technology.
2005. University of Sussex, Brighton, UK. Exchange student. Partial scholarship from The University of Guadalajara.

Other academic activities

Reviewer for proposals submitted to:

- Agence Nationale de la Recherche (ANR), France
- Mexican National Council for Science and Technology (CONACyT), Mexico

2016-Present Leader of the inter-institutional agreement between the Natural History Museum of the Netherlands (Naturalis Biodiversity Center) and the University of Guadalajara, CUCBA, Mexico, to carry out research, education and students exchange between the institutions.

2015-Present Recognition as a Member of the Mexican National System of Researchers (SNI, Level 1). A researcher can become a member only after successful evaluation from the current SNI members and after complying with a number of pre-requisites related to research output and knowledge dissemination.

<https://www.conacyt.gob.mx/index.php/el-conacyt/sistema-nacional-de-investigadores>

2011-2015 PhD council leader representing the PhD students at Natural History Museum of the Netherlands -Naturalis Biodiversity Center.

Reviewer for Ecology Letters; Diversity and Distributions; Ecological Modelling; the journals: International Journal of Geo-Information; Lankesteriana; Environmental Monitoring and Assessment; Forest; Journal of Applied Remote Sensing; Applied Geography; Geosciences; Environmental Engineering and Management Journal; Remote Sensing; Biodiversity and Conservation; Biological Conservation; Scientific Reports; Ecography; Forest Ecology and Management.

B) Pedagogical

Academic staff supervised

- PhD Thesis Chapter supervisor of Ms. B. Tshwene-Mauchaza (Oxford University)

Acting as daily supervisor for her second thesis chapter, with article now in review:
"Climatic Drivers of Plant Species Distributions Across Spatial Resolutions in Southern Africa Tropical Forests" In review in **Frontiers in Forests and Global Change**.

- Master students 10 students (Co-)Supervisor (Netherlands and Oxford).

Co-Supervisor -Laura Velasquez Casallas (Ongoing Oxford University)
Main Supervisor -Carly Sivilia (Ongoing Oxford University)
Main Supervisor -Julio Acosta (2018 Oxford University)
Main Supervisor -Kim Renkens (2016 Leiden University)
Co-Supervisor -Koen Stam (2016 Leiden University)
Main Supervisor -Robbert Poldermans (2016 Leiden University)
Main Supervisor -Jolien Morren (2015 Leiden University)
Main Supervisor -Bastiaen Boekelo (2015 Wageningen University)
Co-Supervisor -Andoni Santander (2014 Leiden University)
Co-Supervisor -Leon Marshall (2014 Leiden University)

-With published article from MSc. thesis: "Marshall, L... **Aguirre-Gutiérrez, J.** et al. *Testing projected wild bee distributions in agricultural habitats: predictive power depends on species traits and habitat type* (2015) **Ecology and Evolution**, 4426-4436."

- Bachelor students One student -Main supervisor
Main supervisor -Izak Yasrebi-de Kom (2017, Amsterdam University)
-With published article from MSc. thesis: "Yasrebi-de Kom I., JC Biesmeijer and **Aguirre-Gutiérrez, J.** *Risk of potential pesticide use to honeybee and bumblebee survival and distribution: a country-wide analysis for The Netherlands* (2019) **Diversity and Distributions**, In press.

Teaching and Lectures

2019. Oxford University, UK. *Workshop teaching, MSc students: Joint Species Distribution Models and their application for Conservation.* In Techniques for monitoring ecological responses of terrestrial ecosystems.
2018. Oxford University, UK. *Workshop teaching, MSc students: Species Distribution Models for Biodiversity Monitoring.* In Techniques for monitoring ecological responses of terrestrial ecosystems.
2016. Naturalis Biodiversity Center, The Netherlands. *Lecture for first year biology bachelor students: Biodiversity dynamics* -In WUR cursus biodiversiteit van Nederland excursie Naturalis.
2016. Wageningen University, The Netherlands. *Lecture for international NGO's staff: Crop wild relatives and climate change* -In Contemporary approaches to genetic resources conservation and use.
2013. University of Amsterdam, the Netherlands. *Lecture for PhD students: Species distribution model performance depends on evaluation criteria* -Dutch hoverflies as a case study -In Species Distribution Modelling workshop.
2013. Naturalis Biodiversity Center, Leiden, the Netherlands. *Lecture for staff members: The niche, what is it? How does it work? Links to modelling species distributions.*
2011. University of Amsterdam, Amsterdam, the Netherlands. Research assistant in the course 'Biodiversity and Landscapes' carried out as part of the MSc. Ecology and Evolution.

Pedagogical material created

- Manual for fitting species distribution models under different climate change scenarios. Part of workshop on Species Distribution Models imparted at Oxford University to MSc. Students.

Professional experience outside academia related to this call

Aug 2007-July 2008 Project Coordinator Indigenous Mission Bawinokachi (Mexico)
 Coordination of the general NGO's project, which included the environment, health and Education programmes. The main focus was on biodiversity conservation, forestry, productive projects and environmental education. Coordination of volunteers.

Sep 2001-July 2002 Volunteer Indigenous Mission Bawinokachi, Bawinokachi (Mexico)
 Collaboration with indigenous people for forest conservation. Analysis of deforestation activities in the rural area and surroundings.

C) Other activities

Outreach -Media coverage on research for the general public:

- Crop Wild Relatives & Niche modelling highlight of research done for Wageningen University and Research Center.
<https://www.wur.nl/en/Research-Results/Statutory-research-tasks/Centre-for-Genetic-Resources-the-Netherlands-1/Expertise-areas/Plant-Genetic-Resources/Research-at-CGN/Niche-modelling.htm>
- Commentary on “The impact of climate change on tropical forest vegetation” (page 4), in EcoAmericas, April 2019, Vol. 21 (6). <https://www.ecoamericas.com/>

Scientific and/or academic positions:

- PhD council leader representing the PhD students at Natural History Museum of the Netherlands -Naturalis Biodiversity Center (From 2011 to 2015).
- Member of the Mexican ‘Sistema Nacional de Investigadores’ with level 1 as a recognition to research output, scientific quality and pedagogical activities.
<https://www.conacyt.gob.mx/index.php/el-conacyt/sistema-nacional-de-investigadores>
- Academic examiner of Master in Science students research projects from the Environmental Change Institute, School of Geography and the Environment, University of Oxford (2019).

Proficient user of statistical and spatial analysis software (select set shown):

R statistical environment, Geographic Information Systems including Remote Sensing software as ArcGis, ENVI, ERDAS, SNAP Toolbox Sentinel-2 ESA, Google Earth Engine (EE), QGIS.