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EDUCATION

Feb. 2013 - Jan. 2017: PhD Ecology and Evolution, Institute of Plant Sciences, University of Bern, CH.
Defended on 13.01.2017.
Oct. 2010 - Oct. 2011: MSc Global Change Natural Resources and Sustainability. Univ. Córdoba. Spain
Sept. 2007 - Oct. 2010: BSc in Forest Engineering. University of Córdoba. Spain.

EMPLOYMENT

Sept. 2024-Now: Assistant Professor and Head of the Forest Ecology Lab, Institute of Plant Sciences, University of Bern.
2020-2024: Senior Scientist (Oberassistent) Plant Ecology, Inst. of Integrative Biology, ETH Zürich
2019-2020: Postdoctoral Researcher, Department of Biology, University of Washington.
2017-2019: Postdoctoral Researcher, Harvard Forest, Harvard University.
2013-2017: PhD student and Laborant II. Institute of Plant Sciences. University of Bern.
2011-2012: Scientific Coordinator. Center for Applied Research in Forestry Development.

INSTITUTIONAL RESPONSIBILITIES

2024-: Member of the DEI group. Biology Dpt. University of Bern
2019-2020: Steward of University of Washington Postdocs, Biology (1-year term)

PARTICIPATION IN RESEARCH PROJECTS

(TOTAL COMPETITIVE FUNDING GRANTED AND MANAGED AS PI: \approx 1.8+ MILLION €)

IN REVIEW:

Proposed 2025-2029: SNSF Project: "Tree Elevational Shifts and Demography (TESTDEM)" (~700K€, PI)

2024-2029: ERC Starting 2022 "Forest biodiversity-stability relationships across spatiotemporal scales". (1.5 Million €, PI)
2022-2023: Innovedum ETH Zürich. "DiQ: Developing an Interactive Toolset for Quantitative Ecology Education". (60K CHF = 61K €, Project Manager).
2023: Paul Scherrer Institute SLS. "Predicting the future of Swiss forests – what is the regeneration niche?". Covering costs of 5 shifts in the TOMCAT beamline of PSI particle accelerator, Swiss Light Sources. (50K CHF = 51K €, Co-proposer).
2019-2020: Swiss National Science Foundation. Post.Doc Mobility. "The effect of discrete and long-term processes on forest growth synchrony". (104K CHF = 106K €, PI).
2017-2019: Swiss National Science Foundation. Early Post.Doc Mobility. "Synchrony in forest growth: from the global to the local scale" (105K CHF = 107K €, PI).
2014: Trees4Future. "Forest diversity and Intra-specific variability (ForInDiv)" (cover material and analytical costs, undisclosed, PI).
2013-2015: European Union Seventh Framework Programme. "Functional significance of forest biodiversity" FunDivEUROPE. (PhD student).

2012-2013: Economy and Competitivity Ministry. Government of Spain. "Functional diversity and resilience in Mediterranean forests" (translated title). (Researcher)
2012: Spanish Agency for International Cooperation (AECID). Gov. of Spain. "Institutional Strengthen of Faculty of Agronomical Sciences, implementation of a Silvicultural Degree in Universidad Agostinho Neto (Republic of Angola)" (translated title). (Researcher).

SUPERVISION OF JUNIOR RESEARCHERS

Participation in the supervision and mentoring of 14 students from a wide cultural range:
2010-2013: UCO-IDAF. Collaborated in 9 BSc or MSc Theses (Kathelyn Paredes, Bolivia; Euclides Januário, Angola; Laura Ruiz Tudela, José Antonio Rojo, Julia Bohórquez, and Isaac Parejo, Spain; Sarita Bassil, Lebanon; and Moustafa Ousmana and Ibrahima Sangare III, Morocco).
2013-2017: UniBe. Assisted Federica N. Schanz Practicum, Biology BSc.
2017-2019: Harvard. Collaborated in 2 PhD theses, Junzhou Zhang (visiting PhD, Lanzhou University), and Shoudong Zhao (PhD, Beijing Normal University).
2019-2020: UW. Co-hosted and co-supervise Jiajia Su (visiting PhD, Lhanzou University)
2020-2024: ETHZ. Co-supervised 3 MSc Thesis (Anna Görlich, Marc Bast, Savannah Goetsch), and 2 BSc internships (Emily Gates, Univ. of Queensland Australia, Giacomo Colasurdo, Univ. of Milan).
2024-now: University of Bern. Supervising 1 PhD student (Zabdi López) and 1 BSc Thesis (Matteo Trachsel).

TEACHING ACTIVITIES

2024-Now: Lecturer. Importance of Biodiversity for Sustainability (1 module)
2024-Now: Supervision of SemesterArbeiten in Biology (3 students per year).
2021-2024: Quantitative Approaches to Plant Population and Community Ecology (c. 20 students)
2021-2024: Term paper supervisor, 'Ecology and Evolution: Term paper and Seminar'.
2022-2024: Teaching of interactive modules in Plant Ecology (2 modules) and Advanced Ecological Processes (2 modules). Associated with Innovedum grant to promote innovation in high education in ETH courses.
2020-2022, 2023-: Praktikum in Umweltbiologie (Module on seed predation) (20-30 students).
2022: Foundations of Teaching and Learning. ETH Teaching Development and Technology. Student 55hours.
2012: Student teaching assistant: 'Habitat prediction models and global change in Mediterranean forests' in MSc 'Climate change, global resources and sustainability'. University of Córdoba.
2011: Student practical assistant 'Forest management' in BSc Forest Engineer. University of Córdoba.
2010-11: Student teaching assistant. University's Forest: Montes de Málaga project. Funded by University of Córdoba within initiative 'Good practices and innovations in education' (translated).
2013-Present: 11 invited speaker talks in 9 institutions, including: U. of Valladolid, U. of Extremadura, U. of Córdoba, Harvard U., U. of Columbia, Lanzhou U., U. of Bern, U. Gabriel René Moreno

BOARD AND PANEL MEMBERSHIP, SCIENTIFIC REVIEWING

2025: Chair and Organizer: PI of Tomorrow Session. Life Sciences Switzerland Annual Meeting LS2 2025 – Fribourg.
2021: Committee for the Prize: Contribution to Diversity in Academy by the Spanish Association of Terrestrial Ecology (AEET).
2019: Guest Editor for Scientific Data.

2019: SNSF Project reviewer

2014-Present: Scientific Reviewer. 18 Journals, including: •*Science*, •*Nature Ecol Evol*, •*J Ecol*, •*Glob Ecol Biogeogr*, •*Ecography*, •*Clim Change*, •*Agr For Met*, •*Sci Tot Environ*, •*Front Plant Sci*, •*Ecol Evol*, •*Evn Exp Bot*, •*For Ecol Manag*, •*Forests*, •*Tuexenia*, •*Trees*, •*Tree-Ring Res*, •*Dendrochronologia*, •*Folia Geobot*, and •*Sustainability*.

SCIENTIFIC SOCIETY MEMBERSHIPS

2022-Present: Association of Tree Ring Research.

2017-Present: Ecological Society of America

2015-2016; 2018-Present: British Ecological Society

2014-2022: Tree Ring Society.

ORGANIZATION OF CONFERENCES & WORKSHOPS

2023: Workshop “Using Interactive and Code-Based Exercises to Enhance Learning”. Main Organizer and lecturer, in collaboration with ETH’s Innovedum (<https://ethz.ch/en/the-eth-zurich/education/innovedum.html>) and LET (<https://ethz.ch/en/the-eth-zurich/organisation/departments/educational-development-and-technology.html>). Villa Hatt, Zürich, Switzerland).

2021: Scientific Writing Workshop for BSc, MSc, and PhD Students at the Dpt. Environmental Systems Sciences, ETH-Zürich (non-officially registered, 8 students). Main Lecturer and Organizer.

2019: Co-organizer thematic session “Embracing the temporal dimension of ecology”. British Ecological Society Annual Meeting 2019. Belfast, Northern Ireland.

2011-2012. 4 workshops coordinated by University of Córdoba and University Gabriel René Moreno on tropical and temperate dendrochronology (3 times in person, 1 on-line). Organizer and lecturer.

PRIZES, AWARDS, FELLOWSHIPS

2023: ‘PIs of Tomorrow: The future of Swiss research’ Jury award at LS2+ Life Sciences Switzerland Annual Meeting 2023.

2019: Program for short stays of professors and scientists of prestige by IISTA, Institute of Earth System Investigations of Andalusiar to impart the inaugural talk in international lecture series “Challenges and perspectives of silviculture and forest ecology in a climate change context”. Córdoba. Spain.

2014, 2016: Young Academics Support to participation in International Meetings. University of Bern.

2013: Ubbo Emmius Talent Scholarship. University of Groningen. *Declined to join University of Bern*.

2009-2010: Granted Student Assistant. Ministry of Education. Government of Spain.

2010: International Cooperation Grant UCO-5B. University of Córdoba.

SCIENTIFIC PUBLICATIONS

In total, I have published 42 papers in peer-reviewed international journals, with those being cited more than 1600 times.

COMPLETE PUBLICATION LIST: <https://scholar.google.com/citations?user=Fg6tKWQAAAAJ>
https://www.researchgate.net/profile/Ruben_Manzanado/research

HIGHLIGHTED PUBLICATIONS

- Su, J, Gou X, Hille Ris Lambers, J, Zhang DD, Zheng W, Xie M, **& Manzanedo RD**. 2024. Increasing ENSO variability synchronizes tree growth in subtropical forests. *Agricultural and Forest Meteorology*, 345: 109830.
- Visakorpi K, **Manzanedo RD**, Görlich A, Schiendorfer K, Altermatt Bieger AA, Gates E, Hille Ris Lambers J. 2023. Leaf-level resistance to frost, drought and heat covaries across European temperate tree seedlings. *Journal of Ecology*. *In press*.
- Li W, **Manzanedo RD**, Jian Y, Ma W, Du E, Zhao S, Rademacher T, Dong M, Xu H, Kang X, Wang J, Cui X, & Pederson N. 2023. Reassessment of growth-climate relations indicates the potential for decline across Eurasian boreal larch forests. *Nature Communications*: 14, 3358.
- Zhang X, Rademacher T, Liu H, Wang L, **& Manzanedo RD**. 2023. Fading regulation of diurnal temperature ranges on drought-induced growth loss for drought-tolerant tree species. *Nature Communications*: 14, 6916.
- **Manzanedo RD**, John A, Sethi ML, Theobald EJ, Brosy B, Jenkins J, Kloss-Schmidt A, Lia E, Schiffer A, Sevigny J, Wilson A, Yogev Y, & HilleRisLambers J. 2022. MeadoWatch: a long-term community science database of wildflower phenology in Mount Rainier National Park. *Scientific Data*, 9: 1-10.
- Su J, Gou X, HilleRisLambers J, Deng Y, Fan H, Zheng W, Zhang R, **& Manzanedo RD**. 2021. Increasing climate sensitivity of subtropical conifers along an aridity gradient. *Forest Ecology and Management*, 482: 118841.
- Zhang X, Li X, **Manzanedo RD**, D'Orangeville L, Lv P, Wang C, Xu C, Hou M, Huand X, & Radermacher T. 2021. High risk of growth cessation of planted larch under extreme drought. *Environmental Research Letters*, 16:014040.
- **Manzanedo RD**, & Manning P. 2020. COVID-19: lessons for the climate change emergency. *Science of the Total Environment*, 742:140563.
- **Manzanedo RD**, Fischer M, Navarro-Cerrillo RM, & Allan E. 2019. A new approach to study local adaptation in long-lived woody species: virtual transplant experiments. *Methods in Ecology and Evolution*, 10: 1761-1772
- **Manzanedo RD**, & Pederson N. 2019. Towards a more ecological dendroecology. *Tree Ring Research*, 75(2): 152-159.
- Zhang X, Bai X, Hou M, Chen Z, **& Manzanedo RD**. 2019. Warmer winter ground temperatures trigger rapid growth of Dahurian larch in the permafrost forest of Northeast China. *Journal of Geophysical Research – Biogeosciences*, 124. DOI:10.1029/2018JG004882.
- Zhao S, Pederson N, D'Orangeville L, HilleRisLambers J, Boose E, Penone C, Bauer B, Yiang Y **& Manzanedo RD**. 2018. The International Tree Ring Data Bank (ITRDB) revisited: data availability and global ecological representativity. *Journal of Biogeography*, 46(2): 355-368.

ORAL CONTRIBUTIONS TO INTERNATIONAL CONFERENCES

- 2024: 8th Asian Dendrochronology Conference. "Moving towards open and representative tree-ring data". Cheongju, South Korea.
- 2023: Ecological Society of America Annual Meeting. "Patterns and limitations in ontogenetic niche shifts across Swiss tree species". Portland, USA.
- 2023: Tree Rings in Archeology, Climate and Ecology, TRACE 2023. "Using bias analyses to improve tree-ring ecological data". Coimbra, Portugal.
- 2023: LS2 Annual Meeting 2023 "Forest biodiversity-stability relationships across spatiotemporal scales". Zürich. Switzerland.
- 2022: International Mountain Conference 2022. "Ontogenetic niche contraction across Swiss tree species". Innsbruck. Austria.
- 2020: 2020 Interdisciplinary conference on Humanities, Social sciences, Medicine, Biology, and Mathematics, Natural & Engineering sciences. "Evidence of unprecedented rise in growth synchrony from global tree ring records". On-line.
- 2019: BES Annual Meeting 2019. "Long-term changes in global tree-growth synchrony using tree ring big data". Belfast. Northern Ireland.
- 2018: WorldDendro18. "ITRDB in ecological research: challenges and opportunities". Thimphu, Bhutan.
- 2017: ESA Annual Meeting 2017. "Biotic and abiotic drivers of local adaptation in European dominant species". Portland, USA.
- 2016: Ameridendro16. "Local adaptation and dendrochronology: new paths in ecology and tree-ring science". Mendoza, Argentina.
- 2015: IUFRO Landscape Ecology Conference. "Local adaptation and climate change". Tartu, Estonia.
- 2014: 24th IUFRO World Congress. "Forest biodiversity and local adaptation in dominant European tree species". Salt Lake City, USA.
- 2013: ClimTree 2013. "Effects of forest biodiversity on local adaptation to climate". Zurich, Switzerland.

OUTREACH ACTIVITIES

- 2023: Co-organizer: "Alpine meadows and forest floors: How species interact". Booth in Scientifica23 (<https://scientifica.ch/en/ausstellungen/alpine-meadow-and-forest-floor-how-species-interact/>). September 2023. Zürich. Switzerland.
- 2019: Scientific volunteer for the citizen science project MeadoWatch (<http://www.meadowatch.org/>). Including help in the organization of the orientation days for Rangers, science divulgation talks, and improving the media presence of the program by updating logos, scientific material, and results communication.
- 2018: Summer Research Program Harvard Forest, <http://harvardforest.fas.harvard.edu/other-tags/reu>, which offers support to BSc students from over USA, particularly traditionally marginalized groups, to receive mentoring and research experience. Participation as day seminar speaker.
- 2018: Manuscript revision for the book chapter Pederson N, Stan AB, Ariya U, Martín-Benito D. 2018. "Low Hanging DendroDynamic Fruits in Temperate, Mesic Forests". Amoroso MM, Daniels LD, Baker PJ, Camarero (editors) "Dendroecology. Tree-Ring Analyses Applied to Ecological Studies". Vol. 231. Springer (acknowledged as R. Delgado).
- 2012: Speaker in the annual activities organized by Córdoba Public Penitentiaries to promote ecological views and scientific understanding in the Spanish inmates. 2012.

2011: Invited speaker in the outreach activity “XIII Technical Speaks on the English Yew and the Tejada, Almirajara and Alhama Mountains” to increase public awareness on the scientific activities to understand how climate change will affect the dry ecosystems in south Spanish mountains.

MENTIONS IN MASS MEDIA:

- <https://www.washingtonpost.com/climate-solutions/2020/08/21/questions-about-cimate-change-virus/> (related to Manzanedo & Manning 2020).
- <https://www.eenews.net/climatewire/stories/1060322135> (related to Zhang et al. 2019)
- <https://e360.yale.edu/digest/global-warming-is-fueling-growth-spurts-in-some-of-chinas-oldest-trees> (related to Zhang et al. 2019)
- <http://uco.edu.es/servicios/actualidad/vida-academica/item/133375-analizan-los-efectos-del-cambio-global-en-los-anillos-de-crecimiento-de-los-arboles> (related to the IISTA international conference series keynote talk).
- <https://phys.org/news/2018-12-million-tree-stories-accessible-science.html> (related to Zhao et al. 2018)
- https://www.eurekalert.org/pub_releases/2018-12/hu-nsm121118.php (related to Zhao et al. 2018)
- <https://helvia.uco.es/xmlui/bitstream/handle/10396/7851/innovacion16.pdf?sequence=1&isAllowed=y> (related to the creation of the University Forest in Montes de Málaga, associated with the award on education innovation by the University of Córdoba).

OTHER ARTEFACTS WITH DOCUMENTED USE

- 2022: MeadoWatch: a long-term community science database of wildflower phenology in Mount Rainier National Park (Associated with the publication Manzanedo *et al.* 2022 Sci Data).
<https://datadryad.org/stash/dataset/doi:10.5061/dryad.g1jwstqs2>
- 2018: rITRDB – Revisited International Tree Ring Databank. Harmonized and corrected version of the largest dataset of tree growth worldwide (Associated with the publication Zhao *et al.* 2018 J Biogeo.)
<https://datadryad.org/resource/doi:10.5061/dryad.kh0qh06>