

Mónica Bibiana Berdugo Moreno

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Curriculum vitae as February 14, 2021

PERSONAL DETAILS

Nationality: Colombian
Gender: female
Date of birth: November 04, 1980
Career breaks: 2017 – 2018, maternity break

ACADEMIC DEGREES

Syracuse, NY **PhD: Ecology**, State University of New York, College of Environmental Science and Forestry (SUNY – ESF).
2012 – 2018
Leioa, Spain **MSc: Environmental Agrobiology**, University of the Basque Country.
2007 – 2008
Bogota, Colombia **BSc: Biology**, National University of Colombia.
2004

CURRENT POSITION

Marburg Post-Doc Scientific Researcher.
2019 – present Ecological Plant Geography (Junior Prof. Dr. Maaïke Bader), Geography Department, University of Marburg, Germany.

PREVIOUS POSITIONS

Bogota, Colombia Consultant.
2012 Colombian National Herbarium (COL), National University of Colombia.
Tunja, Colombia Scientific Researcher.
2009 – 2011 Biology and Microbiology Department, University of Boyaca.
Bogota, Colombia Young Researcher.
2006 – 2007 Biology Department, Pontifical Xavierian University.

TEACHING EXPERIENCE

Marburg, Germany Instructor.
2020 – present University of Marburg.
Co-teaching the graduate course “Scientific writing” (6 students).
Prepared content presentations and online dynamics.
Assessed and provided feedback on weekly writing tasks.
Syracuse, NY Teaching Assistant.
2016 – 2017 SUNY – ESF.
Tutored two section of laboratory in a large service course for freshman, Diversity of Life (50+ students).
Assessed weekly essays in the course on Indigenous Issues (37 students).
Assisted laboratories in the course on Ecology of Mosses (23 students).
Tunja, Colombia Assistant Professor.
2009 – 2011 University of Boyaca.
Taught introductory and advanced courses (molecular and cellular biology, ecology) for undergrad health science programs (200+ students).
Adapted a demonstrative molecular laboratory into a hands-on teaching space.
Yopal, Colombia Auxiliary Professor.
2005 University Foundation of the American Tropic (UNITROPICO).
Taught plant courses (morphology, taxonomy, histology, physiology, and ethnobotany) in the Biology undergrad program (50+ students).
Outlined an action plan to restore the plant tissue laboratory for teaching.

LANGUAGES

Spanish	Native speaker.
English	Second language.
German	Basic (A1.2).

RESEARCH PROJECTS

- 2019 – present **A global approach to analyze the extent of the newly detected Tropical Lowland Cloud Forest (TLCF) based on a large-scale analysis of fog frequency and epiphyte growth, with a special focus on South America.**
Post-Doc Scientific Researcher working with Junior Prof. Dr. Maaïke Bader and Prof. Dr. Jörg Bendix and collaborating with several students and staff at the Geography Department, University of Marburg, Germany, and with Prof. Dr. Robbert Gradstein at Herbarium PC of the Museum National D' Histoire Naturelle, France. DFG-funded.
- 2014 – 2017 **Analysis of a payment scheme for the conservation of natural pollination service in cholupa (*Passiflora maliformis*) crops from Rivera, Huila.**
Ad Hoc Academic mentor of Laura Calderon, MSc. student at the Environmental Studies Institute (IDEA), National University of Colombia. Funded by Bogota's Botanical Garden Jose Celestino Mutis.
- 2012 – 2018 **Role of ground-level bryophytes in forest regeneration dynamics.**
PhD thesis at SUNY – ESF. Advisors: Prof. Dr. Martin Dovciak and Prof. Dr. Robin Kimmerer. Funded by COLCIENCIAS, SUNY – ESF, and Syracuse University.
- 2009 – 2011 **Life cycle human exposure and risk assessment of pesticide application on agricultural products in Colombia.** Scientific Researcher at the University of Boyaca working with Prof. Jaime Diaz and an international group of researchers led by Prof. Dr. Stephanie Hellweg (ETH – Zurich) and Prof. Dr. Claudia Binder (University of Graz). Funded by One Health European Joint Programme.
- 2007 – 2008 **Identifying environmental service indicators: the case study of providing drinking water in the Mape river basin.** MSc thesis at University of the Basque Country. Advisor: Prof. Dr. Mirem Onaindia. Funded by Fundacion Carolina and UNESCO Chair in Sustainable Development and Environmental Education, University of the Basque Country (UPV/EHU).
- 2006 – 2007 **Valuation of goods and services from biodiversity for the sustainable development in Colombian rural landscapes: Eco-regional complex of the North Andes.** Young Researcher at the Biology Department, Pontifical Javeriana University. Advisor: Prof. Dr. Fabio Roldan. Funded by Center for Research and Studies on Biodiversity and Genetic Resources (CIEBREG).
- 2002 **Identifying clusters of young and community leaders to strengthening media towards environmental development in the Mojana region, Colombia.** Intern at GESPRO Colombia. Funded by GTZ.

SKILLSET

- Field: Navigating temperate and tropical forests and tree – climbing.
- Programming: Advance user of R and RMD creating interactive figures and apps.
- Analytical: Integrating ecological and environmental data from massive databases.
- Herbarium: Identifying liverwort species at COL, trained by the bryologist Edgar Linares.
- Laboratory: Molecular biology, microbiology, and trace element analysis.
- Grant writer: Studying abroad funded by competitive national and international grants.
- Climate Dataset Creator:
- e.g., [TLCFA: Canopy climate station in a ridge 593.5 m from the Tiputini River.](#)

SERVICE

- 2020 – present *Ad Hoc* Network Mentor of a PhD Student, at Mentoring Hessen, Frauen Wissenschaft und Wirtschaft.
- 2020 – present *Ad Hoc* Reviewer of research proposals by BSc. and Master at the Biology School of the Pedagogic and Technologic University of Colombia (UPTC), Colombia.
- 2018 – present Reviewer for *Applied Vegetation Science*, *Journal of Vegetation Science*, *Communications Biology*, and *Ecosystemas* (in Spanish).
Service featured in the Springer Nature blog The Source: [Five Steps to a Timely Review](#). By: Penny Freedman, Mon Apr 27 2020)
- 2014 – 2017 Volunteer Academic Mentor for BSc and MSc students, National University of Colombia.
- 2015 – 2016 Media and communication officer, Latin American Chapter of the Ecological Society of America (ESA).
- 2015 Beta Tester, Foldscope project at the Prakash Lab, Stanford University.
- 2014 Member of the Bryophyte team in the Onondaga Bioblitz. SUNY – ESF.
- 2014 Invited panelist, International committee of the GSA, SUNY – ESF.
- 2012 – 2014 Board member, Association of Biologist of the National University of Colombia.
- 2012 Rapporteur, National Climate Assessment Northeast Regional Town Hall, State University of New York, College of Environmental Science and Forestry.
- 2002 Volunteer undergrad research assistant, L. Montenegro, Biology Department, National University of Colombia.
- 1998 - 1999 Volunteer undergrad research assistant, E. Linares, National Colombian Herbarium (COL).

AWARDS

- 2016 – 2018 Student child care grant, Cornell University.
- 2012 – 2017 Tuition scholarship award, SUNY – ESF.
- 2012 – 2016 Scholarship to pursue doctoral studies abroad (*Beca Caldas*), COLCIENCIAS.
- 2013 Pack Institute grant for graduate student research, SUNY – ESF.
- 2013 Edwin Ketchledge award for young bryologists, SUNY – ESF.
- 2007 – 2008 Scholarship to pursue graduate studies in Spain, *Fundación Carolina*.
- 2006 – 2007 Supported internship, Pontifical Javeriana University.
- 2006 Scholarship for attending international meetings, International Centre for Genetic Engineering and Biotechnology (ICGEB).

PROFESSIONAL ASSOCIATIONS

- 2019 MARA, MARburg University Research Academy, Germany.
- 2016 Ecological Society of America, NY.
- 2011 Association of Biologist of the National University of Colombia.

WORKSHOPS, TEACHING AND TECHNICAL MATERIAL

- 2020 R tools for ecologists managing climate data series. Three-hour workshop at AG-Bader, Geography Department, Marburg Universität, Germany.
- 2010 Organismal diversity. [Original in Spanish] Teaching material online: www.uniboyacavirtual.edu.co.
- 2010 Search and management of literature sources. [Original in Spanish] A half-day workshop in: XIII National meeting and VII International meeting of student research groups, REDCOLSI. Barranquilla, Colombia.

PRESENTATIONS

- 2014 Poster presentation, **Berdugo, M. B.**, M. Dovciak & R. Kimmerer. Mosses of a montane conifer forest can store moisture for six hours. *Spotlight student research*, SUNY – ESF, Syracuse, NY.
Speaker, Bryophytes and environmental moisture: Do forests have a signature of moss abundance? *Ecolunch*, SUNY – ESF, Syracuse, NY.
- 2013 Speaker, Role of bryophytes in water, mineral, and regeneration dynamics of mountain spruce-fir forests. *Ecolunch*, SUNY – ESF, Syracuse, NY.
- 2010 Speaker, Characterization of the hydrologic role of fog water: La Hoya case [Original in Spanish]. *Semana Ambiental por Boyacá*, University of Boyaca, Colombia.
- 2010 Poster, Garcia-Santos, G & **Berdugo, M. B.** Wet season water distribution in a tropical Andean cloud forest of Boyacá (Colombia) during the dry climate of El Niño. 5th International Conference on Fog, Fog Collection and Dew, Germany.
- 2009 Speaker, Environmental services indicators. [Original in Spanish]. *Permanent seminar of biology professors*, National University of Colombia, Colombia.
- 2007 Co-Author, Vallejo, V., V. Gutierrez, **M. Berdugo**, F. Roldan. Comparing two tetrazolium salts to estimate density of hydrocarbon degradation microorganisms in the Colombian Coffee EcoRegion. [Original in Spanish] Presentation in: *VI Latin American Symposium of Biodegradation (6-LABS)*, Colombia.
- 2004 Preliminary ethnobotanical study in the Mojana region (Sucre, Colombia). *III Colombian Congress of Botany*, Colombia.
- 2002 Co-Author, L. Montenegro, M. Chaparro De Valencia, A. Baron, **M. Berdugo**, W. Garcia. Hydric regulation in mosses of the Chingaza Páramo (Colombia). [Original in Spanish]. Poster in *VIII Latin American Congress and II Colombian Congress of Botany. Institute of Natural Sciences*, Colombia.

APPEARANCE IN THE MEDIA

[Bugs sweat and tears. By Vicki Tought](#), Sat April 04 2020

[Five Steps to a Timely Review. By: Penny Freedman](#), Mon Apr 27 2020.

[“Nature by itself has rights to exist” Monica Bibiana. By Vicki Tought](#), Sun May 30 2020

PUBLICATION LIST

STATISTICS

Scientific publications total: 7
 Publications in peer-reviewed indexed journals: 5
 Publications as book chapters: 2
 First-authorships: 5

PEER REVIEWED PAPERS

In prep

- 12 **Berdugo, M. B.** Shrinking mossy substrates stress climate change impacts on high elevation forest regeneration. (*in prep*).
- 11 Bader, M., Guérot, L., Nikolić, N., **Berdugo, M.**, Gradstein, R., Bendix, J., & Achilles, S. Temporal patterns of carbon exchange in different bryophyte life forms in a tropical lowland rain-forest canopy. (*in prep*).
- 10 **Berdugo, M.**, Gradstein, R., Guérot, L., León-Yáñez, S., & Bader, M. Species-rich tree crowns and beta-diverse trunks: Diversity patterns of epiphytic bryophyte communities across spatial scales in lowland tropical forests. (*in prep*).
- 9 **Berdugo, M. B.**, M. Dovciak, & C. L. Driscoll. The roles of the moss layer in mediating tree seedling environmental stress, mercury exposure, and regeneration in high-elevation conifer forests. (*in prep*).
- 8 Canessa, R. van den Brink, L., **Berdugo, M. B.**, Hattenschwiler, S., Rios, R.; Saldana, A., Tielboerger, K. & M. Bader. Trait functional diversity explains mixture effects on litter decomposition in arid but not in humid ecosystems in Chile. (*in prep*).

In press

- 7 Wason, J., Battles, J., **Berdugo, M. B.**, Casson, P., Tourville, J., Dovciak, M. 2021. Sentinel Research Sites in Global Change Research: Whiteface Mountain, New York. *Northeastern Naturalist* (*in press*).

Published in peer-reviewed international publications

- 7 **Berdugo, M. B.** & M. Dovciak. 2019. Bryophytes under fir waves: Species and functional metrics vary among forest gaps, gap edges, and closed canopies. *Journal of Vegetation Science* 30:235–246. DOI: [10.1111/jvs.12718](https://doi.org/10.1111/jvs.12718)
- 6 **Berdugo, M. B.**, Quant J. M., Wason J. & M. Dovciak. 2018. Latitudinal patterns and environmental drivers of moss layer cover in extratropical Forests. *Global Ecology and biogeography* 27:1213–1224. DOI: [10.1111/geb.12778](https://doi.org/10.1111/geb.12778)
- 5 Juraske, R., C. S. Mosquera, A. Erazo, G. Garcia–Santos, **M. B. Berdugo**, J. Diaz, C. R. Binder, S. Hellweg, J. Guerrero. 2011. Pesticide Uptake in Potatoes: Model and Field Experiments. *Environmental Science & Technology* 45 (2): 651–657. DOI: [10.1021/es102907v](https://doi.org/10.1021/es102907v)
- 4 **Berdugo M.**, A. Betancourt, A. Maldonado, J. Garzon. 2004. Assessment and use dynamic of water resource in Baru Town (Cartagena, Bolívar), Colombia. [Original in Spanish] *Acta Biológica Colombiana* 9 (1): 23–36.
- 3 **Berdugo, M.** & J. Sánchez. 2004. Experiencias de investigación en tecnologías de biorremediación: Revisión para un planteamiento experimental de biorremediación en aguas residuales generadas por la fabricación de coque de hulla. *Acta Biológica Colombiana*, 9(2), 84.

BOOK CHAPTERS

Published

- 2 **Berdugo, M. B.** 2011. Remediation as a start point for restoring of chemically disturbed scenarios. [Original in Spanish] Chapter in: *La Restauración Ecológica en la Práctica. Memorias I Congreso Colombiano de Restauración Ecológica y II Simposio Nacional de Experiencias en Restauración Ecológica*. Ed. National University of Colombia, Bogota. p. 613–625.
- 1 Roldan, F., A. Varela, E. Garzon, L. Sierra, V. Vallejo, **M. Berdugo**, M. Aguilera, D. Santos, A. M. Cubillos, M. M. Gomez, N. Latorre, A. Vela. 2009. Assessment of the soil use effects on edaphic microbial functional group in the Colombian Coffee EcoRegion. [Original in Spanish] Chapter in: *Valoración de la Biodiversidad en la Ecoregión del Eje Cafetero*. Pereira, Colombia. ed: Publicaciones UTP, p. 209–221.

LIST OF SUCCESSFUL FUNDING APPLICATIONS

- 2020 Covid-19 Student Assistant-Fund, 2020
Marburg University Research Academy (MARA).
Corona aid fund to support doctoral candidates and postdocs with family obligations at the Philipps University of Marburg
Train a graduate student on Scientific writing by involving her/him in writing a paper derived of my postdoctoral research.
€ 1 911
- 2019 Scientific and technological cooperation with Colombia, 2019
BMBF (WTZ) in Germany, COLCIENCIAS and EIA University in Colombia.
Colombian treelines in a global context: developing regionally suited and globally comparable studies on the functioning of forest-páramo transition zones in the northern Andes.
Facilitated networking between the PIs in the German (Junior Prof. Dr. Maaike Bader) and in the Colombian (Prof. Maria Elena Gutierrez, EIA University) sides and supported the submission process in the German side.
€ 49 711 *Currently delayed due to the public health crisis.*
- 2014 Seed Grand for faculty members.
State University of New York, College of Environmental Science and Forestry
Effects of mosses on the chemistry of tree seedlings and their impacts on forest regeneration.
Led writing the proposal submitted by Prof. Dr. Martin Dovciak and Prof. Dr. Robin Kimmerer in collaboration with Prof. Dr. Charles Driscoll (Syracuse University)
US\$ 4 000
- 2011 Scholarship to pursue doctoral studies abroad (*Beca Caldas*).
COLCIENCIAS
From mosses to forests
~ US\$ 80 200 (original amount in Colombian Pesos: 300 million COP).
- 2007 Carolina Scholarship to pursue a Master in Spain.
Fundacion Carolina.
Application to the Master program Environmental Agrobiology
~ € 18 500 (most of the costs were covered as payment in kind).