

# MARGARITA M. FERNÁNDEZ

Ecologist. Postdoctoral Scientist. (She/Her/Hers)  
Environmental Policy Goddard Chair Group  
Department of Ecosystem Science and Management, The Pennsylvania State University  
224 FRB Building, University Park, PA (16802)

[mmf5814@psu.edu](mailto:mmf5814@psu.edu) |+1 (724) 680-6046



## RESEARCH INTERESTS

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I conduct interdisciplinary research using forestry and soil ecology tools to understand how anthropic disturbance impact ecological processes and biodiversity in temperate woodlands. My current research focuses on carbon sequestration and the co-benefits of climate-smart forestry practices in Pennsylvania's private forests. I develop collaborative research and outreach materials with stakeholders, in both English and Spanish, to engage landowners and promote sustainable forest management.

## EDUCATION

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- Ph.D. 2023. Pennsylvania State University, Inter College Graduate Program in Ecology.  
*Graduation:* May 2023. Dissertation Title: [“Impacts of Anthropogenic disturbance on microarthropods: Implications for sustainable management in Patagonian woodlands”](#)
- B.S. 2015. School of Forestry, Universidad Nacional de Misiones (U.Na.M., Argentina)  
Forest Engineering, *Summa Cum Laude*

## RESEARCH APPOINTMENTS

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- FALL 23-present Postdoctoral Fellow in Climate-Smart Forestry Assessment and Policy, Environmental Policy Goddard Chair Group, The Pennsylvania State University.  
Supervisors: Chris Scott, Ph.D., Melissa Kreye, Ph.D.
- Summer 2023 Postdoctoral Fellow in Forest Dynamics, The Pennsylvania State University  
McIntire-Stennis project 2022-2024: “Carbon and Climate Adaptation in Pennsylvania Forests.”  
Supervisor: Margot W. Kaye, Ph.D.
- Summer 2022 Research Fellow in Forest Ecology, The Pennsylvania State University  
McIntire-Stennis project: “Carbon and Climate Adaptation in Pennsylvania Forests.”  
*Activities:* Led plantation of tree species, laboratory management, and forest inventories.  
Advisor: Margot W. Kaye, Ph.D.
- 2019–23 Ph.D. *in Ecology*, The Pennsylvania State University,  
Advisors: David M. Eissenstat, Ph.D; Margot W. Kaye, Ph.D.
- 2016-18 Research Fellow, Universidad Nacional de Río Negro (UNRN, Argentina),  
Advisors: Lucas A. Garibaldi, Ph.D.; José C. Bedano, Ph.D.
- 2014-15 Undergraduate RA in Forest Pests and Entomology, INTA-SENASA (Argentina),  
Advisor: Edgar Eskiviski, Mg. Sc.

2013-15 Undergraduate RA in Silviculture, UNaM (Argentina),  
Advisor: Domingo Maiocco, Mg. Sc.

## TEACHING APPOINTMENTS

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- FALL 24 **Forest Ecology (FOR 308)**. Undergraduate Course. The Pennsylvania State University *Full Instructor*. Delivered lectures and laboratories on Forest Ecology topics for undergraduate students in the Forest Resources Management and the Wildlife programs.
- FALL 24 **Restauración de Bosques Nativos: Construyendo la Resiliencia del Paisaje**, Facultad de Ciencias Forestales, Universidad Nacional de Misiones (Argentina). Invited Lecturer (Undergraduate Course). Delivered a Module on: “Introduction to carbon quantification and offset projects”.
- SP 24 **WEF Nexus, FOR 597**. Invited Lecturer (Graduate Course).  
Delivered a lecture on: “ Climate Governance, Forests and Carbon”.
- FALL 22 **Forest Ecology (FOR 308)**. Undergraduate Course. The Pennsylvania State University *Full Instructor*. Delivered lectures and laboratories on Forest Ecology topics for undergraduate students in the Forest Resources Management and the Wildlife programs.
- 2021 **Ecology (ECO 602)** Supervised Teaching, Pennsylvania State University  
FOR 308: Developed a lecture and laboratory guide on Forest Ecosystem Services.  
Assisted instructor with grading and laboratory classes. Provided weekly personal tutoring.  
Supervisor: Margot W. Kaye, Ph.D.
- 2017-19 **Plant Nurseries I**, Universidad Nacional de Río Negro (Argentina)  
Developed a lecture and a field class on forest soils and nutrient enrichment. Assisted instructor in laboratory classes.

## HONORS & AWARDS

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De La Torre Scholar (2021–22), Pennsylvania State University. Advisor: Dr. Buechler Stephanie.  
College of Ag. Sciences Graduate Competitive Grants (2020-21), The Pennsylvania State University  
Robert W. Graham Award (2019), The Pennsylvania State University  
Graduate Fulbright Scholarship (Argentina, 2019-21), The Pennsylvania State University  
Beca Inicial de Doctorado (Argentina, 2016-2019), Agencia de Promoción Científico Tecnológica  
Fulbright Scholarship, *Future Leaders Program* (Argentina, 2015), University of Texas at Austin  
CIN Undergraduate RA Scholarship (Argentina, 2013-15), Universidad Nacional de Misiones  
Fundación Carolina de Argentina Undergraduate Award (2010-12), Universidad Nacional de Misiones

## ACTIVITIES AND SERVICES DEPARTMENTAL SERVICE

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- 2024-present Member, IDEA Committee. ESM Ecology Program Committee for Diversity, Equity, and Inclusion
- SP 2022 Service Assistant, PSU Ecosystem Science and Management Department
- 2021-22 Member, ESM Ecology Program Committee for Diversity, Equity, and Inclusion

2020-21 Member, ESM Diversity, Equity, and Inclusion Graduate Sub-Committee

#### UNIVERSITY GRADUATE ASSOCIATIONS

2023-24 Board Member, Graduate and Professional Outdoor Club (GPOC)  
2023-24 Board Member, Penn State Postdoctoral Society (PSPS)  
2021-22 Board Member, PSU Latin American Graduate Students Association (LAGraSA)  
2019-23 Member, PSU Latin American Graduate Students Association (LAGraSA)

#### ECOLOGY PROGRAM-HUCK INSTITUTES

SP 2023 Service Assistant, Ecology Program Diversity, Equity, and Inclusion Representative  
Coordinator, Ecology Peer Mentoring Program

#### PROFESSIONAL DEVELOPMENT

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2023 Forest Vegetation Simulator Workshop (50 hs.), Rocky Mountain Research Station,  
2022 US Forest Service  
BEST Extension Training, ESM Department, PSU  
2021 Inclusive and Critical Mentor Training & Workshop, PSU Ecology  
2021 Creating an Inclusive Culture in Environmental Fields, PSU Ecology  
2020 Antiracism in Ecology and Conservation, PSU Ecology  
2014 Silviculture and Management of Subtropical Forests. Workshop (60 hs.). FCF,  
UNaM.

#### PUBLICATIONS

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##### PEER-REVIEWED

**MM Fernández;** M. Kreye & CA Scott. (2025, *in preparation*). “Global threats to long-term carbon stocks in terrestrial ecosystems: a meta-analysis”. *Journal: Carbon Management*.

**MM Fernández;** B. Lockwood & M.Kaye. (2025, *in preparation*). Quantifying IFM potential for forest carbon sequestration and additionality in the eastern US: a synthesis. *Journal: Forest Ecology and Management*.

**MM Fernández;** MW Kaye; DM Eissenstat; R. Manzo; LA Garibaldi (2025, *in preparation*). Divergent microarthropod community responses to macronutrients in soil and litter after nutrient enrichment. *Journal: Applied Soil Ecology*.

**MM Fernández;** MW Kaye; DM Eissenstat; N Pérez-Méndez; LA Garibaldi (2025, *in press*). Nutrient addition hinder microarthropod-driven leaf litter decomposition in Patagonian woodlands. *SI20: Mediterranean Ecosystems. Plant and Soil*.

Garibaldi, L. A., Zermoglio, P. F., Agüero, J. I., Nacif, M. E., Goldenberg, M. G., Fioroni, F., **Fernández, MM.** & Puntieri, J. G. (2024). Designing multifunctional forest systems in Northern Patagonia, Argentina. *Frontiers in Sustainable Food Systems*, 8, 1357904. <https://doi.org/10.3389/fsufs.2024.1357904>

Fioroni, F., Fernández, N., **Fernández, MM.**, & Garibaldi, L. (2022). La disponibilidad de luz limita la producción frutícola del calafate en un matorral mixto nativo (Río Negro, Argentina). *Ecología Austral*, 32(3), 984-989. <https://doi.org/10.25260/EA.22.32.3.0.1952>

**Fernández MM.**, Casas, C., Bedano, J. C., Eissenstat, D. M., Kaye, M. W., García, I. M., & Garibaldi, L. A. (2022). Mite density, not diversity, declines with biomass removal in Patagonian woodlands. *Applied Soil Ecology*, 169, 104242. <https://doi.org/10.1016/j.apsoil.2021.104242>

Pérez-Méndez, N., **Fernández, MM.**, van Doorn, L., Català-Forner, M. M., Martínez, L., & Garibaldi, L. A. (2021). Bottom-up effects of woodland eutrophication: Interacting limiting nutrients determine herbivory frequency in northwestern Patagonia. *Science of The Total Environment*, 151608. <https://doi.org/10.1016/j.scitotenv.2021.151608>

Eskiviski, E. R., Schapovaloff, M. E., Dummel, D. M., **Fernandez, MM.**, & Aguirre, F. L. (2018). Susceptibility of eucalyptus species and hybrids to the gall wasp *Leptocybe invasa* (Hymenoptera: Eulophidae) in northern Misiones, Argentina. *Forest Systems*, 27(1), eSC01-eSC01

#### EXTENSION ARTICLES AND PRODUCTION OF OUTREACH MATERIALS

**MM Fernández** (2024). Climate-smart forestry: Mitigating climate change and enhancing resilience in Pennsylvania. IEE Blog. URL: <https://iee.psu.edu/news/blog/climate-smart-forestry-mitigating-climate-change-and-enhancing-resilience-pennsylvania>

**MM Fernández & M Kreye** (2024). Valoración del carbono en la actividad forestal: conectando el manejo forestal con los mercados de carbono. *Argentina Forestal*. URL: <https://www.argentinaforestal.com/2024/02/21/valoracion-del-carbono-en-la-actividad-forestal/>

**MM Fernández, Fragni S. & M Kreye** (2024). Perspectivas del mercado voluntario de carbono tras la experiencia de un propietario de bosque y una consultora argentina. *Argentina Forestal*. URL: <https://www.argentinaforestal.com/2024/05/08/perspectivas-del-mercado-voluntario-de-carbono/>

**MM Fernández & M Kreye** (2024). El carbono forestal ¿dónde encontramos los reservorios? *Argentina Forestal*. URL: <https://www.argentinaforestal.com/2024/01/19/el-carbono-forestal-donde-encontramos-los-reservorios/>

#### PRESENTATIONS AT CONFERENCES AND SCIENTIFIC EVENTS

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**MM Fernández** (2024). “Forest Rich, Carbon Strong: unleashing carbon stewardship for PA and beyond”. Millenium Café Series. Penn State's 17th Annual Postdoctoral Symposium. (Oral). *Speaker:* MM Fernández.

**MM Fernández;** & CA Scott (2024). “Forest Carbon is an Essential Part of the Global Climate Solution” Millenium Café Series. The Pennsylvania State University. (Oral). *Speaker:* MM Fernández.

**MM Fernández;** B. Lockwood & M. Kaye. (2024). “Quantifying IFM potential for forest carbon sequestration and additionality in the eastern US: a synthesis.” 2024 *Society of American Foresters National Convention*. (Oral). *Speaker:* MM Fernández.

**MM Fernández;** N Pérez-Méndez; L van Doorn; F Fioroni; L Martínez; DM Eissenstat; MW Kaye; H Marrero; LA Garibaldi (2024). “From roots to leaves: multifunctional outcomes of nutrient enrichment in Patagonian woodlands”. (Oral). 2024 *Ecological Society of America Meeting*. *Speaker:* MM Fernández.

- Fernández, MM** (2023). More carbon sequestration or less carbon release? Climate-Smart Forestry strategies and forest carbon additionality in Pennsylvania. Penn State's 16th Annual Postdoctoral Symposium. (Póster).
- MM Fernández** (2022). “Unraveling the role of leaf litter on microarthropod response to anthropic disturbance: a Patagonian perspective”. Ecology Mini Symposium- Fall 2022. Penn State. (Oral).
- Fernández, MM.** (Aug. 2021). Is multiple nutrient addition affecting mesofauna-mediated litter decomposition in Patagonian woodlands? 2021 *Ecological Society of America Annual Meeting: “Vital Connection in Ecology”*. Online. (Póster).
- LA Garibaldi, JI Agüero, AI Carrón, C. Coulin, **Fernández, MM.** I García., Giroto, Alberto Goldenberg, M., Fontenla, S., Nacif, M., Oddi, F., Pérez Méndez, N., van Doorn, L. (May 2019). Sustainable management of the native mixed forest: aerial and belowground interactions between plants and insects. In *II International Symposium-Mycorrhizal Symbiosis in South America* (Oral).
- Abranchuk MF., **Fernández, MM.**, Zurita GA., Gatti MG. (2018). “Almacenamiento de carbono en plantaciones de *Pinus taeda* L. y bosque nativo en la provincia de Misiones” *Jornadas Científico-Tecnológicas UNaM* (Argentina, Oral).
- Fernández, MM.**; Maiocco D.C.; Stehr A.; Dummel C.; Gómez C (2014). Initial growth of *Hovenia* (*Hovenia dulcis* Thunb.) and *Cañafístola* (*Peltophorum dubium* (Spreng.) Taub.) in an enrichment-essay in degraded subtropical forests in Santiago de Liniers, Misiones. XVI *Forest Sciences and Environmental Conference*. FCF-INTA. Eldorado, Misiones. (Póster).

#### OUTREACH ACTIVITIES

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- M Kreye; C Norman; **MM Fernández**; K Neupane (2024) Professional Training Series: Teaching Forest Owners about Carbon Incentives. FOCCE Live Webinar Series 2024. *Role*: Moderator.
- Leopold P.; Muth A.; **MM Fernández**; CA Scott; M Kreye (2024). “Keep Penn's Woods Healthy Workshop”. Organizing Institutions: [NIACS](#), FOCCE, Penn State. *Role*: Organizing Committee and activity Leader. Website: <https://forestadaptation.org/learn/keep-penns-woods-healthy-workshop>
- Smith S., Groh T., Wurzbacher S., **Fernández MM.** (August 2022). "Woods and Stream Health" Tour. Extension activity with forest owners and general public. Ag. Progress Days 2022. Penn State Extension. College of Agricultural Sciences, The Pennsylvania State University.

#### FUNDED RESEARCH GRANTS

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| 2024-2026 | “Advancing the Co-benefits of Climate-Smart Forestry through Research and Extension in Pennsylvania's Private Forestlands”. CAS McIntire-Stennis Competitive Grants Program, FFY 2025-202. USDA-NIFA. Project. <i>Role</i> : CO-Principal Investigator. <i>Grant prize</i> : USD 100,000 per year.  |
| 2024-2026 | “Augmenting Climate Transition across the Atlantic Transect: Extension-driven solutions to implementing socially responsible, high-integrity forest carbon offsets (ACT-AT Forests)”. Climate Solutions Accelerator Phase II. Institute of Energy and the Environment (IEE), The Pennsylvania State University. <i>Role</i> : CO-Principal Investigator. <i>Grant prize</i> : USD 100,000 per year. |

- 2020-21 College of Agricultural Sciences Graduate Student Competitive Grant (Lead PI): *Do increases in soil fertility increase mesofauna-mediated decomposition of leaf litter?* Grant prize: USD 3000.
- 2018-21 PI 40 B 635 UNRN (Argentina, Project manager): *Soil fertility in Patagonian woodlands: implications for biological interactions and carbon sequestration.* Grant prize: USD 1,022 per year. Lead PI: Dr. Lucas A. Garibaldi.
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