

*Curriculum vitae*

**MARIO VARGAS RAMÍREZ**

Associate Professor

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**Education**

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1991. *High school degree*. Gimnasio Los Pinos. Bogotá D.C., Colombia.

1994-2000. *Biology*. Universidad Nacional de Colombia. Bogotá D.C., Colombia.

2004-2006. *M.Sc. in Biological Sciences, evolutionary biology*. University of Amsterdam, The Netherlands.

2007-2011. *Dr.rer.nat. in biological sciences*. TU- Braunschweig, Germany.  
*Research project:* Phylogeny, phylogeography and population genetics of river turtles and tortoises of the families Podocnemididae, Pelomedusidae and Testudinidae from South America and Africa.

January 2011- April 2012. Researcher. Museum of Zoology Senckenberg Dresden, Germany. *Research project:* Phylogeography of river turtles of the families Podocnemididae and Chelidae from South America and Africa.

May 2012- December 2015. *Postdoc*. Humboldt Foundation. Climate Research Centre (BIK-F) Frankfurt and Museum of Zoology Senckenberg Dresden, Germany.

*Research project:* Integrating Ecological Niche Models and Statistical Phylogeography to predict genetic diversity and identify crucial areas for conservation in the endangered Colombian Seasonally Dry Tropical Forest.

Marzo 2016 – Present. Associate Professor, Instituto de Genética, Universidad Nacional de Colombia.

November 2019- Present. Director. Estación de Biología Tropical Roberto Franco (EBTRF) Science Faculty.

### **Professional profile**

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Professional experience in conducting research and teaching in the fields of molecular systematics, conservation genetics, and biogeography. Particularly interested in the design, implementation, and execution of research projects and teaching activities focused on molecular systematics with the following objectives: (i) reconstructing and elucidating evolutionary relationships at both inter- and intra-specific levels, (ii) enhancing knowledge and understanding of historical events that have shaped present-day biodiversity, and (iii) evaluating the conservation status of species and providing actionable information for conservation initiatives and management. Strong interest in the taxonomy and systematics of herpetofauna, community-based conservation efforts, and environmental education.

### **Selected Grants**

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2004. **Scholarship-credit from Colfuturo** to perform the M.Sc. in biological sciences; line evolutionary biology. Amsterdam University, The Netherlands.

2006. **The Cleveland Zoo Scott Grant** and **Idea Wild** grants to perform the project: First genetic survey on the Magdalena's endemic freshwater turtle *Podocnemis lewyana* (Testudines, Podocnemididae) and its relation with human communities. Consequences for the species conservation.

2007. Scholarship for Young researchers from the **DAAD** (German Academic Exchange Service) to perform the PhD project: Phylogeny, phylogeography and population genetics of river turtles and tortoises of the families Podocnemididae, Pelomedusidae and Testudinidae from South America and Africa.

2007. Grant from the **DFG** (Deutsche Forschungsgemeinschaft, Granted to Prof. Dr. Uwe Fritz ) for complete expenses to perform the research projects of the PhD research: Phylogeny, phylogeography and population genetics of river turtles and tortoises of the families Podocnemididae, Pelomedusidae and Testudinidae from South America and Africa.

2007. **Turtle Conservation Fund** grant, **RFP Wildlife Conservation Society** grant, The Cleveland Zoo Scott Grants e Idea Wild grant to perform the project: Participatory research towards the conservation of the endangered-endemic fresh water turtle *Podocnemis lewyana* in the Upper Magdalena River, Colombia

2008. **CLP** (Conservation Leadership Program) travel grant to assist the 6th Annual Symposium on Conservation and Biology of Freshwater Turtles and Tortoises Tucson, Arizona, USA, 17-20 September

2009. **Turtle Conservation Fund** grant to perform the project: Actions towards the conservation of the endangered-endemic freshwater turtle *Podocnemis lewyana* in the Upper Magdalena River, Colombia.

2010. **CLP** (Conservation Leadership Program) travel grant to assist the 24<sup>th</sup> International Congress for Conservation Biology. Edmonton, Alberta, Canada. 3-7 of July.

2012. **Humboldt Foundation's Georg Forster Research Fellowship for Postdoctoral Researchers** to perform the project: "Integrating Ecological Niche Models and Statistical Phylogeography to predict genetic diversity and identify crucial areas for conservation in the endangered Colombian Seasonally Dry Tropical Forest".

### **Publications in peer review journals**

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Saldarriaga-Gómez A, Ardila-Robayo MC, Medem F, **Vargas-Ramírez M**. *In press*. Hope is the last thing lost: Colombian captive-bred population of the critically endangered Orinoco crocodile (*Crocodylus intermedius*) is a genetic reservoir that could help to save the species from extinction. *Nature Conservation*.

Gallego-García N, **Vargas-Ramírez M**, Shaffer HB. 2023. The importance of cryptic diversity in the conservation of wide-ranging species: The red-footed tortoise *Chelonoidis carbonarius* in Colombia. *Molecular Ecology* 00:1–15.

Moreno-Arias RA, Méndez-Galeano MA, Beltrán I, **Vargas-Ramírez M**. 2023. Revealing anole diversity in the highlands of the Northern Andes: New and resurrected species of the *Anolis heterodermus* species group. *Vertebrate Zoology* 73, 2023, 161–188

Matta NE, González LP, **Vargas-Ramírez M**, Valkiūnas G, Escalante AA, Pacheco MA. 2022. Morphometric and molecular characterization of an unpigmented haemosporidian parasite in the Neotropical turnip-tailed gecko (*Thecadactylus rapicauda*). *Parasitology* 21:1-9.

Gutierrez-Liberato GA, Lotta-Arévalo IA, González LP, **Vargas-Ramírez M**, Rodríguez-Fandiño O, Cepeda AS, Ortiz-Moreno ML, Matta NE. 2021. The genetic and morphological diversity of Haemogregarina infecting turtles in Colombia: Are

mitochondrial markers useful as barcodes for these parasites? *Infection, Genetics and Evolution* 95:105040.

Hurtado-Gomez JP, **Vargas-Ramírez M**, Ruiz-Gómez FJ, Fouquet A, Fritz U. 2021. Multilocus phylogeny clarifies relationships and diversity within the *Micrurus lemniscatus* complex (Serpentes: Elapidae). *Salamandra* 57(2):229–239.

Ali JR, Fritz U, **Vargas-Ramírez M**. 2021. Monkeys on a free-floating island in a Colombian river: further support for over-water colonization. *Biogeographia – The Journal of Integrative Biogeography* 36: a005.

Hurtado-Gómez JP, Aponte-Gutiérrez AF, Preciado VJ, Fritz U, **Vargas-Ramírez M**. 2021. Morphological and molecular evidence reveals the first record of the coral snake *Micrurus filiformis* (Serpentes: Elapidae) as prey of the piranha *Pygocentrus cariba* (Teleostei: Serrasalminidae). *Russian Journal of Herpetology* 28: 117-121.

Gutiérrez-Liberato GA, Lotta-Arévalo IA, Rodríguez-Almonacid CC, **Vargas-Ramírez M**, Matta NE. 2021. Molecular and morphological description of the first Hepatozoon (Apicomplexa: Hepatozoidae) species infecting a neotropical turtle, with an approach to its phylogenetic relationships. *Parasitology* 148(6):1-42.

Morales-Martínez DM, López-Arévalo HF, **Vargas-Ramírez M**. 2021. Beginning the quest: phylogenetic hypothesis and identification of evolutionary lineages in bats of the genus *Micronycteris* (Chiroptera, Phyllostomidae). *ZooKeys* 1028: 135–159.

Torres-Ramírez JJ, Angarita-Sierra T, **Vargas-Ramírez M**. 2021. A new species of *Amphisbaena* (Squamata: Amphisbaenidae) from the Orinoquian region of Colombia. *Vertebrate Zoology* 71: 55–74.

Andreína-Pacheco M, Ceriaco MLP, Matta NE, **Vargas-Ramírez M**, Bauerf AM, Escalante AA. 2020. A phylogenetic study of Haemocystidium parasites and other Haemosporida using complete mitochondrial genome sequences. *Infection, Genetics and Evolution*. 85:104576.

Balaguera-Reina SA, **Vargas-Ramírez M**, Ordóñez-Garza N, Hernández-González F, Densmore LLD. 2020. Unveiling the mystery: assessing the evolutionary trajectory of the Apaporis caiman population (*Caiman crocodilus apaporiensis*, Medem 1955) via mitochondrial molecular markers. *Biological Journal of the Linnean Society*, 2020, XX, 1–9.

**Vargas-Ramírez M**, Caballero S, Morales-Betancourt MA, Lasso CA, Amaya L, Martínez JG, Silva-Vianag MN, Vogth RC, PiresFarias I, Hrbekg T, Campbell P, Fritz U. 2020. Genomic analyses reveal two species of the matamata (Testudines:Chelidae: Chelusspp.) and clarify their phylogeography. *Molecular Phylogenetics and Evolution*. 148: 106823.

- Lotta-Arévalo I, **Vargas-Ramírez M**, Nates-Parra G, Matta N, Ospina-Torres R. 2020. Accediendo al pasado: uso de especímenes de colección como fuentes de información genética para el género *Bombus* (Hymenoptera: Apidae). *Rev. Biol. Trop.* 68(2): 394-414.
- Acosta-Galvis AR, **Vargas-Ramírez M**, Anganoy-Criollo M, Ibarra O, Gonzáles S. 2020. Description of a new diminutive *Hyloxalus* (Anura: Dendrobatidae: Hyloxalinae) from the Magdalena Valley of Colombia. *Zootaxa* 4758 (1): 083–102.
- Gallego-García N, Forero-Medina G, **Vargas-Ramírez M**, Caballero S, Shaffer HB. 2019. Landscape genomic signatures indicate reduced gene flow and forest-associated adaptive divergence in an endangered neotropical turtle. *Molecular Ecology.* 28 (11): 2757-2771.
- González LP, Pacheco MA, Escalante AA, Jiménez Maldonado AD, Cepeda AS, Rodríguez-Fandiño OA, **Vargas-Ramírez M**, Matta NE. 2019. *Haemocystidium spp.*, a species complex infecting ancient aquatic turtles of the family Podocnemididae: First report of these parasites in *Podocnemis vogli* from the Orinoquia. *IJP: Parasites and Wildlife.* 10:299-309
- Vargas-Ramírez M**. 2019. Evolución y conservación de las tortugas acuáticas ancestrales de la familia Podocnemididae (Testudines: Pleurodira); contribuciones desde la sistemática molecular. Numero Especial homenaje a Federico Medem. Biblioteca José Jerónimo Triana. 34: 147-165.
- Acosta-Galvis, AR, **Vargas-Ramírez, M**. 2018. A new species of *Hyloxalus* Jiménez De La Espada, 1871 “1870” (Anura: Dendrobatidae: Hyloxalinae) from a cloud forest near Bogotá, Colombia, with comments on the subpunctatus clade. 68 (2): 123 –141.
- Vargas-Ramírez, M.**, Michels, J., 2018. Red headed Amazon River Turtles in Venezuela and Colombia: population separation and connection along the famous route of Alexander von Humboldt. *Zoology.* 130: 67-78.
- Gallego-García, N., **Vargas-Ramírez, M.**, Forero-Medina, G., Caballero S. 2017. Genetic evidence of fragmented populations and inbreeding in the Colombian endemic Dahl’s toad-headed turtle (*Mesoclemmys dahl*). *Conservation Genetics.* 19:221-233.
- Vargas-Ramírez M**, del Valle C, Ceballos CP, Fritz U. 2017. *Trachemys medemi n. sp.* from northwestern Colombia turns the biogeography of South American slider turtles upside down. *Journal of Zoological Systematics and Evolutionary Research.* 55:326–339.
- Graciá E., **Vargas-Ramírez, M.**, Delfino, M., Anadón, JD., Giménez, A., Botella, F., Fahd, S., Corti, C., Fritz, U. 2017. Expansion after expansion: dissecting the phylogeography of the widely distributed spur-thighed tortoise, *Testudo graeca* (Testudines: Testudinidae). *Biological Journal of the Linnean Society*, XX, 1–14.

Vamberger M, Stuckas H, **Vargas-Ramírez M**, Kehlmaier C, Ayaz D, Aloufi A. A, Lymberakis P, Široký P, Fritz U. 2016. Unexpected hybridization patterns in Near Eastern terrapins (*Mauremys caspica*, *M. rivulata*) indicate ancient gene flow across the Fertile Crescent. *Zoologica Scripta*. 46: 401-413.

Forero-Medina G, Páez V, Garcés-Restrepo MF, Carr J, Giraldo A, **Vargas-Ramírez M**. 2016. Research and Conservation Priorities for Tortoises and Freshwater Turtles of Colombia. *Tropical Conservation Science* 1-14.

**Vargas-Ramírez M**, Petzold A, Fritz U. 2016. Distribution modelling and conservation assessment for *Pelomedusa* species. *Salamandra* 52: 306-316.

**Vargas-Ramírez M**, Moreno R. 2014. Unknown Evolutionary Lineages and Population Differentiation in *Anolis heterodermus* from Middle-Eastern Cordillera of Colombia (Squamata: Dactyloidae) revealed by DNA Sequence Data. *The South American Journal of Herpetology* 9:131-141.

González-Zárate A, Montenegro O, Castaño-Mora OV, **Vargas-Ramírez M**. 2014. Abundancia, Estructura poblacional y Conservación de *Podocnemis lewyana* (podocnemididae) en el Rio Prado, Colombia. *Acta Biológica Colombiana* 19: 351-361.

Petzold A, **Vargas-Ramírez M**, Kehlmaier C, Vamberger M, Branch WR, Du Preez L, Hofmeyr MD, Meyer L, Schleicher A, Široký P, Fritz U. 2014. A revision of African helmeted terrapins (Testudines: Pelomedusidae: Pelomedusa), with descriptions of six new species. *Zootaxa* 3795: 523–548.

**Vargas-Ramírez M**, Carr J, Fritz U. 2013. Complex phylogeography in *Rhinoclemmys melanosterna*: conflicting mitochondrial and nuclear evidence suggests past hybridization (Testudines: Geoemydidae). *Zootaxa*, 3670: 238–254.

**Vargas-Ramírez M**, Michels J, Castaño-Mora OV, Cárdenas-Arevalo G, Gallego-García N, Fritz U. 2012. Weak genetic divergence between the two South American toad-headed turtles *Mesoclemmys dahli* and *M. zuliae* (Testudines: Pleurodira: Chelidae). *Amphibia-Reptilia*, 33: 373-385.

**Vargas-Ramírez M**, Castaño-Mora OV, Stuckas H, Fritz U. 2012. Extremely low genetic diversity and weak population differentiation in the critically-endangered Colombian endemic river turtle *Podocnemis lewyana* (Testudines, Podocnemididae). *Conservation Genetics*, 13: 65-77.

**Vargas-Ramírez M**, Vences M, Branch WR, Daniels SR, Glaw F, Hofmeyr MD, Kuchling G, Maran J, Papenfuss TJ, Široký P, Vieites DR, Fritz U. 2010. Deep genealogical lineages in the widely distributed African helmeted terrapin: Evidence from mitochondrial and nuclear DNA (Testudines: Pelomedusidae: *Pelomedusa subrufa*). *Molecular Phylogenetics and Evolution*, 56: 428–440.

- Vargas-Ramírez M**, Maran J, Fritz U. 2010. Red- and yellow-footed tortoises, *Chelonoidis carbonaria* and *C. denticulata* (Reptilia: Testudines: Testudinidae), in South American savannahs and forests: do their phylogeographies reflect distinct habitats? *Organisms Diversity & Evolution*, 10: 161–172.
- Vargas-Ramírez M**, Castaño-Mora OV, Fritz U. 2008. Molecular phylogeny and divergence times of ancient South American and Malagasy river turtles (Testudines: Pleurodira: Podocnemididae). *Organisms Diversity & Evolution*, 8: 388-398.
- Vargas-Ramírez M**, Chiari Y, Castaño-Mora OV, Menken SBJ. 2007. Low genetic variability in the endangered Colombian endemic freshwater turtle *Podocnemis lewyana* (Testudines, Podocnemididae). *Contributions to Zoology*, 76: 1-7.
- Fritz U, **Vargas-Ramírez M**, Široký P. 2012. Phylogenetic position of *Pelusios williamsi* and a critique of current GenBank procedures (Reptilia: Testudines: Pelomedusidae). *Amphibia-Reptilia* 33, 150-154.
- Fritz U, Alcalde L, **Vargas-Ramírez M**, Goode E.V., Fabius-Turoblin D.U., Praschag P. 2012. Northern genetic richness and southern purity, but just one species in the *Chelonoidis chilensis complex*. *Zoologica Scripta*, 41: 211–325.
- Fritz U, Packert M, **Vargas-Ramírez M**, Maran J, Stuckas H, Hundsdörfer AK. 2011. Molecular phylogeny of Central and South American slider turtles: implications for biogeography and systematics (Testudines: Emydidae: Trachemys). *Journal of Zoological Systematics and Evolutionary Research*, 50: 89–173.
- Fritz U, Branch WR, Hofmeyr M, Maran J, Prokop H, Schleicher A, Široký P, Stuckas H, **Vargas-Ramírez M**, Vences M, Hundsdörfer A.K. 2010. Molecular phylogeny of African hinged and helmeted terrapins (Testudines: Pelomedusidae: Pelusios and Pelomedusa). *Zoologica Scripta*, 40: 115–125.
- Gong S, Shi H, Mo Y, Auer M, **Vargas-Ramírez M**, Hundsdörfer AK, Fritz U. 2009. Phylogeography of the endangered black-breasted leaf turtle (*Geoemyda spengleri*) and conservation implications for other chelonians. *Amphibia-Reptilia*, 30: 57-62.
- Paez VP, Restrepo A, **Vargas-Ramírez M**, Bock BC. 2009. *Podocnemis lewyana* (Duméril 1852) – Magdalena River turtle. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. Chelonian Research Monographs No. 5, pp. 024.1-024.6.

Lynch JD, **Vargas-Ramírez M**, 2000. Lista preliminar de especies de ranas del departamento de Guainía, Colombia. Rev. Acad. Colomb. Cienc. Ex- Fis. Nat 23 (93): 2000. SIN 0370-3908.

### **Reviewer service for scientific journals**

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Acta herpetological, Actualidades Biológicas, Amphibia-Reptilia, Aquatic Biology, Caldasia, Journal of Biogeography, Turtle conservation and biology, Zootaxa, Zoological Journal of the Linnean Society, Organismal, Diversity and Evolution, Zoologica Scripta, Conservation Genetics, Vertebrate Zoology, Science.

### **Book chapters**

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**Vargas-Ramírez M**. 2012. Filogenia y Filogeografía de las Tortugas Continentales Colombianas. Chapter 6. Pp.91-101. In: Páez, V. P., M. A. Morales-Betancourt, C. A. Lasso, O. V. Castaño-Mora y B. Bock. (Editors). 2012. V. Biología y conservación de las tortugas continentales de Colombia. Serie Editorial Recursos Hidrobiológicos y Pesqueros Continentales de Colombia. Instituto de Investigación de los Recursos Biológicos Alexander von Humboldt (IAvH). Bogotá, D. C., Colombia.

Morales-Betancourt M.A, Lasso C.A., Páez V., Trujillo F., **Vargas-Ramírez M**., Forero-Medina G., Hernández O., Trujillo G. 2012. Estrategias para la conservación de las tortugas continentales de Colombia. Chapter 20. Pp.495-522. In: Páez, V. P., M. A. Morales-Betancourt, C. A. Lasso, O. V. Castaño-Mora y B. Bock. (Editors). 2012. V. Biología y conservación de lastortugas continentales de Colombia. Serie Editorial Recursos Hidrobiológicos y Pesqueros Continentales de Colombia. Instituto de Investigación de los Recursos Biológicos Alexander von Humboldt (IAvH). Bogotá, D. C., Colombia.

Páez V.P., Restrepo-Isaza A., **Vargas-Ramírez M**., Bock, B.C., Gallego-García, N. *Podocnemis lewyana*. Pp.379-385. In: Páez, V. P., M. A. Morales-Betancourt, C. A. Lasso, O. V. Castaño-Mora y B. Bock. (Editors). 2012. V. Biología y conservación de lastortugas continentales de Colombia. Serie Editorial Recursos Hidrobiológicos y Pesqueros Continentales de Colombia. Instituto de Investigación de los Recursos Biológicos Alexander von Humboldt (IAvH). Bogotá, D. C., Colombia.

### **Technical reports**

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Antelo R., **Vargas-Ramírez M**, Preciado G, Saavedra-Rodríguez CA, Forero-Medina G. 2022. Plan de acción interinstitucional para la conservación del caimán llanero (*Crocodylus intermedius*) en Colombia. Wildlife Conservation Society, Estación de Biología Tropical Roberto Franco, Gobernación de Casanare y Universidad Nacional. Cali, Colombia. 46 pp.



**Vargas-Ramírez M**, Castaño-Mora OV. 2009. Actions towards the conservation of the endangered-endemic freshwater turtle *Podocnemis lewyana* in the Upper Magdalena River, Colombia. Report, 26 pp.

**Vargas-Ramírez M**, Castaño-Mora OV, Meza-Fernandez N, Zarate-Gonzalez A. 2007. Participatory research towards the conservation of the endangered-endemic fresh water turtle *Podocnemis lewyana* in the Upper Magdalena River, Colombia. Report, 49 pp.

**Vargas-Ramírez M**, Castaño-Mora OV., Menken SBJ. 2006. First genetic survey on the Magdalena's endemic freshwater turtle *Podocnemis lewyana* (Testudines, Podocnemididae) and its relation with human communities. Consequences for the species conservation. Report, 60 pp.

### **Links with research institutions**

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#### ***In Colombia:***

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#### ***In Germany:***

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