

Curriculum Vitae

Marta Barluenga Badiola

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Nationality: Spanish

Position: Senior Research Scientist / Científico Titular CSIC

Museo Nacional de Ciencias Naturales

Consejo Superior de Investigaciones Científicas (CSIC)

José Gutierrez Abascal 2, 28006 Madrid

EDUCATION

Doctoral Thesis "*Plasticidad ecológica asociada al diseño morfológico. Un estudio ecomorfológico con especies del género Parus (Aves: Passeriformes)*" Department of Evolutionary Ecology, Museo Nacional de Ciencias Naturales (CSIC), Spain; supervisors: Prof. Eulalia Moreno & Prof. Andrés Barbosa

RESEARCH GRANTS AND CONTRACTS

2023-2025	Spanish Research Agency (AEI) Research Networks <i>Research Network Genomics of Adaptation AdaptNET</i> (co-PI. Marta Barluenga; Coordinator Carles Vilà)	€ 18,300
2021-2023	Spanish Research Agency (AEI) Plan Nacional I+D+i Generación del Conocimiento <i>Host-parasite interactions drive biodiversity in cichlid fish</i> (PI. Marta Barluenga, co-PI. Diego San Mauro)	€ 206,910
2018-2021	Spanish Research Agency (AEI) Plan Nacional I+D+i Generación del Conocimiento <i>Role of host-parasites and host-microbiota interactions in cichlid fishes adaptive radiations</i> (PI. Marta Barluenga)	€ 187,550
2014-2017	Spanish Research Agency (AEI) Plan Nacional I+D+i Generación del Conocimiento <i>Mechanisms of speciation in sympatry</i> (PI. Marta Barluenga)	€ 145,200
2014-2016	Volkswagen Stiftung, 'Support Europe' <i>The driving forces for sympatric speciation in Nicaraguan crater lake cichlids</i> (PI. Marta Barluenga, co-PI. Olivia Roth)	€ 49,780

SUPERVISION OF RESEARCHERS

PostDoctoral Researchers

Natividad García Cabello (2024-) MICIN grant contract

Seraina Bracamonte (2019-2024) Postdoc Mobility SNF & Juan de la Cierva Incorporación

Ana Santacruz (2022-2023) MICIN grant contract

Isabel S. Magalhaes (2011-2013) Marie Skłodowska Curie Actions

Alan Hudson (2010-2012) MICIN grant contract, Frosppects Exchange Grant & ConGenOmics Exchange Grant

Doctoral Thesis

Carlos Lozano (in progress) *Función del MHC en la especiación del cíclido de Midas* University Autónoma of Madrid, Spain

Mariana Leal Cardín (2024) *Patrones fenotípicos y de expresión génica convergentes y divergentes en cíclidos Neotropicales* University of Alcalá de Henares, Spain

Ana Santacruz (2022) *Procesos de diversificación de helmintos parásitos de cíclidos en los lagos cráter de Nicaragua* UNAM, Mexico (co-supervised with Prof. Gerardo Pérez)

Carlos Garita (2021) *Evolución en paralelo de morfotipos lacustres de Astyanax (Characidae) de México y Centroamérica* UNAM, Mexico (co-supervised with Prof. Patricia Ornelas)

Melinda Hofmann (2017) *Host-parasite interactions and speciation in Nicaraguan cichlids* University Complutense of Madrid, Spain

Romulus Abila (2005) University of Maseno, Kenya (co-supervised with Prof. Walter Salzburger)

Master Thesis

Pilar González (in progress) University Valencia, Spain

Sergi Gómez Espí (2022) University Complutense of Madrid, Spain

Javier Adelgunde (2020) International University Menéndez Pelayo-CSIC, Spain

Adrián Agreda (2020) University Complutense of Madrid, Spain

Tania Ramirez (2016) University Rey Juan Carlos, Spain

Aixa del Olmo (2016) University Rey Juan Carlos, Spain

Mariana Leal Cardín (2015) University Complutense of Madrid, Spain

Victor García Olivares (2013) University of Alcalá of Henares, Spain

Gema Aguilera García (2013) University Autónoma of Madrid, Spain

Jaime Ramos (2011) University Complutense of Madrid, Spain

Moritz Muschick (2007) University of Konstanz, Germany

Kai Stölting (2004) University of Konstanz, Germany

Bachelor Thesis

Natalia Mínguez (2024) University Autónoma of Madrid, Spain

Ana Ginés Lozano (2023) University Autónoma of Madrid, Spain

Manuel García-Cervigon (2021) University of Alcalá de Henares, Spain

Brian Condori (2021) University Complutense of Madrid, Spain

Amanda Martín Martínez (2018) University Rey Juan Carlos, Spain

Javier Adelgunde (2018) University of Alcalá de Henares, Spain

Marina de la Cámara (2016) University Complutense of Madrid, Spain

Borja Hernández (2016) University Complutense of Madrid, Spain

Aixa del Olmo (2015) University of Alcalá de Henares, Spain

Fernando Cabanillas Vega (2015) University of Alcalá de Henares Spain

Tania Ramirez (2015) University Complutense of Madrid, Spain

Mariana Leal Cardín (2014) University of Alcalá de Henares, Spain

Manuel Rojo (2012) University Rey Juan Carlos, Spain

Gema Aguilera García (2012) University of Alcalá de Henares, Spain

Marta Muñoz Palacios (2011) University of Alcalá de Henares Spain

Samuel Wittwer (2009) University of Bern, Switzerland

NETWORK OF COLLABORATORS

Gerardo Pérez Ponce de León, UNAM Mérida, México
 Christophe Eizaguirre, Queen Mary University, UK
 Walter Salzburger, University Basel, Switzerland
 Diego San Mauro, Universidad Complutense de Madrid, Spain
 Laura Baldo, Universidad Central de Barcelona, Spain
 Patricia Ornellas García, UNAM Mexico City, México
 Zuzana Musilova, Charles University, Prague, Czech Republic

EDITORIAL WORK

2022- Associated Editor Molecular Phylogenetics and Evolution
 2010-2018 Associated Editor BMC Evolutionary Biology
 2011-2019 Associated Editor Journal de Evolutionary Biology
 2015-2021 Associated Editor Genome Biology and Evolution

PROFESSIONAL ACTIVITY

Management Positions

2024 **Member of the directive Board** Spanish Society for Evolutionary Biology SESBE
 2023- **Head of Dept. Biodiversity and Evolutionary Biology** Museo Nacional de Ciencias Naturales
 2020- **President of the Committee for Equal Treatment** Museo Nacional de Ciencias Naturales
 2015-2021 **Deputy Director for Research** Museo Nacional de Ciencias Naturales
 2015-2019 **President of the Ethics Committee for animal experimentation** Museo Nacional de Ciencias Naturales (CEEA-MNCN)

Network Participation

LifeHub CSIC – Conexión Vida, Red multidisciplinar del CSIC para la investigación del Origen, (Co)Evolución, Diversidad y Síntesis de la Vida
 Conexión Genoma - Red multidisciplinar del CSIC para la investigación sobre los Genomas.
 AdaptNET - Red Temática en Genómica de la Adaptación

Committee Activities

Agencia Española de Evaluación de Proyectos (ANEP),
 Agencia Española de Investigación (AEI), Research grant Reviewer 2015-
 Austrian Science Fund (FWF), Research grant Reviewer 2023
 Belgian Research Action (BRAIN-be), Research grant Reviewer 2022
 Biotechnology and Biological Sciences Research Council (BBSRC), UK, Grant Reviewer 2022
 Consejo Superior de Investigaciones Científicas (CSIC), Board of Examiners (
 Fundación BBVA, Awards Committee 2018
 Fundación 'la Caixa', PhD grant Reviewer 2014, 2015
 Fundación Española para la Ciencia y Tecnología (FECYT), Research grant Reviewer 2016
 Czech Science Foundation (GA CR), Research grant Reviewer 2013, 2015
 German Science Foundation (DFG), Research grant Reviewer 2009
 Israel Science Foundation (ISF), Research grant Reviewer 2017, 2021
 National Fund for Scientific Research (FNRS), Belgium, Grant Reviewer 2010-2022
 National Geographic Society, USA, Research grant Reviewer 2011, 2013, 2014
 National Science Center (NCN), Poland, Research grant Reviewer 2019, 2021
 National Science Foundation (NSF), USA, Research grant Reviewer 2013

Natural Sciences and Engineering Research Council of Canada (NSERC), Grant Reviewer
 Natural Environment Research Council (NERC) UK, Research grant Reviewer 2017
 Network of Centers of Excellence of Canada (ARCTICNET), Research grant Reviewer 2014
 Research Foundation Flanders (FWO), Research grant Reviewer 2016, 2017
 University of Vigo, Spain, Board of Examiners (Professor Titular) 2022
 University Rey Juan Carlos, Awards Committee 2023

International Scientific Journals

American Naturalist; Aquaculture; Aquatic Biology; BioEssays; Bioinformatics; Biological Journal of the Linnean Society; Biology Letters; BMC Evolutionary Biology; BMC Genomics; Ecology; Ecology and Evolution; Ecology Letters; Estuarine, Coastal and Shelf Science; Evolution; Evolutionary Biology; Evolutionary Ecology; Frontiers in Genetics; Frontiers in Zoology; Gene; Gene Reports; Genome Biology and Evolution; Heredity; Hydrobiologia; iScience; Journal of Biogeography; Journal of Evolutionary Biology; Journal of Fish Biology; Marine Biology; Microbiome; Methods in Ecology and Evolution; Molecular Ecology; Molecular Ecology Resources; Molecular Genetics and Genomics; Molecular Phylogenetics and Evolution; North American Journal of Fisheries Management; PLOs One; Proceedings of the National Academy of Science USA; Proceedings of the Royal Society of London; Scientific Reports; Systematic Biology; Thalassas: An International Journal of Marine Sciences

CONFERENCES AND SEMINARS

- 2024 3rd Joint Congress on Evolutionary Biology, Montreal, Canada, July
 Annual Meeting of the Fisheries Society of the British Islands, Bilbao, Spain, July
 Perspectives on Speciation Meeting, London, UK, April, Linnean Society of London.
 Sociedad Española de Biología Evolutiva Meeting (SESBE), Málaga, Spain, January
- 2023 **Organization of Iberian Society of Systematics Meeting**, Madrid Spain, October
 Society of Molecular Biology and Evolution Meeting (SMBE) Ferrara, Italy, July
 III Encuentro Comisiones de Igualdad CSIC, Granada, May
 Gordon Conference on Speciation, Tuscany, Italy, January-February
 Sociedad Española de Genética de Poblaciones Meeting, Oviedo, Spain, January
- 2022 **Invited Conference** at the University of Valencia, Spain (Pau Carazo), October
 Cichlid European Conference (CichlidScience), Cambridge, UK, September
 Species in Ancient Lakes Conference (SIAL), Kigoma, Tanzania, July
 Genomics of Convergence Symposium, Konstanz, Germany, June
 Sociedad Española de Biología Evolutiva Meeting (SESBE), Vigo, Spain, February
- 2021 I Encuentro Comisiones de Igualdad CSIC, Madrid, November
 Cichlid European Conference (CichlidScience), Cambridge, UK, Online, September
 Society of Molecular Biology and Evolution Meeting (SMBE), Online, July
- 2020 Sociedad Española de Biología Evolutiva Meeting (SESBE), Sevilla, Spain, February
- 2019 **Invited Conference** at the University of Göttingen, Germany (Christoph Bleidorn), November
Organization of Cichlid European Conference (CichlidScience), Madrid, Spain, September
 Society of Molecular Biology and Evolution Meeting (SMBE) Manchester, UK, July
Invited Conference at the University of Berkeley, USA (Rosemary Gillespie), March
 Gordon Conference on Speciation, Ventura, USA, March
 International Biogeography Society Meeting, Malaga, Spain, January

PUBLICATIONS

- Leal-Cardín M, Bracamonte SE, Hudson AB, Magalhaes IS, Ornelas-García CP, **Barluenga M** (2024) Exploring phenotypic diversity: a comparative analysis of cichlid convergence. *Molecular Ecology*, 33:e17524. <https://doi.org/10.1111/mec.17524>
- Bracamonte S, Hablützel P, Lozano-Martín C, **Barluenga M** (2024) Expression diversity of cichlid MHC alleles. *bioRxiv*, 2024/576710.
- Lozano-Martín C, Bracamonte SE, **Barluenga M** (2023) Evolution of MHC IIb diversity across cichlid fish radiations. *Genome Biology and Evolution*, 15: evad11 <https://doi.org/10.1093/gbe/evad110>
- Bracamonte SE, Hofman MJ, Lozano-Martín C, Eizaguirre C, **Barluenga M** (2022) Divergent and non-parallel evolution of MHC IIB in the Neotropical Midas cichlid species complex. *BMC Ecology and Evolution*, 22: 41. <https://doi.org/10.1186/s12862-022-01997-9>
- Santacruz A, **Barluenga M**, Pérez-Ponce de León G (2022). Filling the knowledge gap of Middle American freshwater fish parasite biodiversity: Metazoan parasite fauna of Nicaragua. *Journal of Helminthology*, 96: e24, 1–10 <https://doi.org/10.1017/S0022149X2200013X>
- Santacruz A, **Barluenga M**, Pérez-Ponce de León G (2022). Macroparasite diversity in cichlid fish from Nicaraguan lakes: first steps towards understanding host-parasite diversification and speciation in a model system. *Scientific Reports*, 12: 3944. <https://doi.org/10.1038/s41598-022-07647-w>
- Garita-Alvarado CA, Garduño-Sánchez M, **Barluenga M**, Ornelas-García CP (2021) Genetic and ecomorphological divergence between sympatric *Astyanax* morphs from Central America. *Journal of Evolutionary Biology*, 34: 1752-1766. <https://doi.org/10.1111/jeb.13933>
- Sowersby W, Cerca J, Wong BBM, Lehtonen TK, Chaple D, Leal-Cardín, **Barluenga M***, Ravinet M* (2021) Pervasive admixture and the spread of a large-lipped form in a cichlid fish radiation. *Molecular Ecology*, 30: 5551-5571. <https://doi.org/10.1111/mec.16139>
- Santacruz A, **Barluenga M**, Pérez-Ponce de León G (2021). Taxonomic assessment of the genus *Procamallanus* (Nematoda) in Middle American cichlids (Osteichthyes) with molecular data, and the description of a new species from Nicaragua and Costa Rica. *Parasitology Research* 120: 1965-1977. <https://doi.org/10.1007/s00436-021-07148-1>
- Santacruz A, Morales-Serna FN, Leal-Cardín M, **Barluenga M**, Pérez-Ponce de León (2020). *Acusicola margulisiae* n. sp. (Copepoda: Ergasilidae) from freshwater fishes in a Nicaraguan crater lake based on morphological and molecular evidence. *Systematic Parasitology*, 97: 165–177 <https://doi.org/10.1007/s11230-020-09906-8>.
- Baldo L, Riera JL, Salzburger W, **Barluenga M** (2019). Phylogeography and ecological niche shape the cichlid fish gut microbiota in Central American and African lakes. *Frontiers in Microbiology*, 15 October 2019. <https://doi.org/10.3389/fmicb.2019.02372>
- Hofmann MJ, Bracamonte SE, Eizaguirre, C, **Barluenga M** (2017). Molecular characterization of MHC class IIB genes of sympatric Neotropical cichlids. *BMC Genetics* 18: 15. <https://doi.org/10.1186/s12863-017-0474-x>
- Magalhaes IS, Ornelas-García CP, Leal-Cardin M, Ramírez T, **Barluenga M** (2015) Untangling the evolutionary history of a highly polymorphic species: introgressive hybridization and high

- genetic structure in the desert cichlid fish *Herichthys minckleyi*. **Molecular Ecology** 24: 4505-4520. <http://dx.doi.org/10.1111/mec.13316>
- Loh Y-HE, Bezault E, Muenzel F, Roberts RB, Swofford R, **Barluenga M**, Kidd CE, Howe AE, Di Palma F, Lindblad-Toh K, Hey J, Seehausen O, Salzburger W, Kocher TD, Strelman JT (2013) Origins of shared genetic variation in African cichlids. **Molecular Biology and Evolution** 30: 906-917. <https://doi.org/10.1093/molbev/mss326>
- Colombo M, Diepeveen ET, Muschick M, Santos ET, Indermaur A, Boileau N, **Barluenga M**, Salzburger W (2013) The ecological and genetic basis of convergent thick-lipped phenotypes in cichlid fishes. **Molecular Ecology** 22, 670-684. <https://doi.org/10.1111/mec.12029>
- Muschick M, **Barluenga M**, Salzburger W, Meyer A (2011) Adaptive phenotypic plasticity in the Midas cichlid fish pharyngeal jaw and its relevance in adaptive radiation. **BMC Evolutionary Biology** 11, 116. <https://doi.org/10.1186/1471-2148-11-116>
- Barluenga M**, Elzinga JA, Teixeira S, Goudet J, Bernasconi G (2011) Fine-scale spatial genetic structure and gene dispersal in *Silene latifolia*. **Heredity** 106, 13-24. <https://doi.org/10.1038/hdy.2010.38>
- Barluenga M**, Meyer A. (2010) Phylogeography, colonization and population history of the Midas cichlid species complex (*Amphilophus* spp.) in the Nicaraguan crater lakes. **BMC Evolutionary Biology** 10: 326. <https://doi.org/10.1186/1471-2148-10-326>
- Hyuk Je Lee HJ, Pittlik S, Jones JC, Salzburger W, **Barluenga M**, Meyer A (2010) Genetic support for random mating between left and right mouth-morphs in the dimorphic scale-eating cichlid fish, *Perissodus microlepis*, from Lake Tanganyika. **Journal of Fish Biology** 76, 1940-1957. <https://doi.org/10.1111/j.1095-8649.2010.02620.x>
- Gavrilets S, Vose A, **Barluenga M**, Salzburger W, Meyer A (2007) Case studies and mathematical models of ecological speciation. 1. Cichlids in a crater lake. **Molecular Ecology** 16, 2893-2909. <http://dx.doi.org/10.1111/j.1365-294x.2007.03305.x>
- Bunje PME, **Barluenga M**, Meyer A (2007) Sampling genetic diversity in the sympatrically speciating Nicaraguan Midas cichlid species complex over a 16 year time series. **BMC Evolutionary Biology** 7: 25 <https://doi.org/10.1186/1471-2148-7-25>
- Barluenga M**, Sanetra M, Meyer A (2006) Genetic admixture of burbot (Teleostei: *Lota lota*) in Lake Constance from two European glacial refugia. **Molecular Ecology**, 15, 3583-3600. <http://dx.doi.org/10.1111/j.1365-294x.2006.03045.x>
- Barluenga M**, KN Stölting KN, Salzburger W, Muschick M, Meyer A (2006) Evidence for sympatric speciation (reply). Brief Communication Arising. **Nature**, 444: E13. <https://doi.org/10.1038/nature05420>