



Catarina Ginja holds a PhD degree in Animal Breeding and Genetics from the University of Lisbon (2009) and worked as a Research Assistant at the University of California-Davis (2008-2010). She returned to Portugal as Marie Curie fellow and launched an innovative Archaeogenetics research (CE3C-Lisbon 2010). Catarina is experienced in state-of-the-art technologies and was trained in renowned Palaeogenomics groups, e.g. Stockholm University. She earned contract grants in the competitive programs funded by the Portuguese Foundation for Science and Technology (FCT). She is the leader of the Archaeogenetics research group at BIOPOLIS/CIBIO/InBIO and an invited collaborator at the Faculty of Sciences, University of Porto. Since 2017, she authored

over 20 papers and book chapters in international peer review publications (4 as 1st author and 9 as last coordinating author), with an h-index of 26 and over 2000 citations. She is the 1st author of a book chapter on goat conservation published by Springer in 2018, and also of an international hallmark paper - the most comprehensive genetic study of worldwide cattle using mitochondrial, Y-chromosome and STR markers published in Scientific Reports in 2019. Ginja was the scientific coordinator of the Art&Science book *Esses Ossos*. In the last 5 years, she presented over 15 posters and 20 oral communications in international scientific meetings, 14 invited communications, and organized 4 international meetings in Portugal and 4 workshops in conferences abroad. She has been an affiliate of the International Society for Animal Genetics since 2014 and a review editor for *Animal Genetics* since 2020. She is also an invited chairperson and cattle representative of the FAO/ISAG Committee on Animal Genetic Diversity, since 2014, and member of the Committee for Livestock Genomics for Developing Countries, since 2021. Catarina attracted competitive funds nationally and internationally. She is the principal investigator of the ARIES project to study the origins and evolution of Iberian sheep (2023-2026 FCT €249,984) and the Portuguese team leader of the LEAP-AGRI OPTIBOV project to carry out a genomic characterization of cattle populations for optimized performance in African ecosystems (2018-2022 H2020 ERA-net €1,031,574). Catarina has strong leadership ability and expects to continue developing projects around creative and innovative ideas that can benefit the national and international scientific communities. This broad experience and commitment to ISAG's research community means she is well positioned to extend her existing contribution through participation on the Executive Committee.

CURRICULUM VITAE

CATARINA GINJA

PERSONAL INFORMATION

Name: Catarina Ginja
Date of birth: December 13th, 1973
Place of birth: Porto, Portugal
Nationality: Portuguese

CONTACT DETAILS

BIOPOLIS/CIBIO/InBIO, Centro de Investigação em Biodiversidade e Recursos Genéticos,
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Campus Agrário de Vairão, Rua Padre Armando Quintas, n. 7,
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AUTHOR IDENTIFIERS

ORCID: <https://orcid.org/0000-0003-2278-7089>
Scopus: <https://www.scopus.com/authid/detail.uri?authorId=25622566900>
Google Scholar: <https://scholar.google.pt/citations?hl=en&user=3LXSIkAAAAJ>

LANGUAGES

Portuguese (native speaker), English (advanced), Spanish (advanced) and French (intermediate)

EDUCATION

- | | |
|-------------|---|
| 2009 | Ph.D. Zootechnical Engineering, Animal Breeding and Genetics
Universidade de Lisboa, Instituto Superior de Agronomia, Lisbon,
Portugal
Thesis title: Influence of Iberian cattle on the genetic structure of extant
Creole cattle populations of Latin America. Supervisors: L. T. Gama
(Universidade de Lisboa), M.C.T. Penedo (University of California,
Davis), |
| 2002 | M. Sc. Agronomic Sciences – Animal Science , Universidade de
Trás-os-Montes e Alto Douro (UTAD), Vila Real, Portugal
Thesis title: Identification of Portuguese Cattle Breeds using molecular
markers. Supervisors: M.T. Rangel de Figueiredo (UTAD), José Matos
(INIAV, Lisbon) |
| 1998 | Licentiate Zootechnical Engineering , Animal Science, UTAD, Vila
Real, Portugal
Thesis title: Molecular markers in animal science: parentage study in
equidae. Supervisors: M.T. Rangel de Figueiredo (UTAD) |

AWARDS AND APPOINTMENTS

- Coordinator of the REZGEN-IBA - Red Iberoamericana sobre los Recursos Zoogenómicos y su Resiliencia funded by the CYTED – Programa Iberoamericano de Ciencia y Tecnología para el Desarrollo, since March 2023
- Scientific advisor in population genetics and conservation programs aimed at preserving the genetic diversity of Texas Longhorn cattle. Cattlemen's Texas Longhorn Conservancy, since January 2023
- Member of the Committee for Livestock Genomics for Developing Countries. International Society for Animal Genetics (ISAG), since 2021
- Special Award of the Jury in the Category Educational Resource, Casa das Ciências - EDULOG - Fundação Belmiro de Azevedo, Portugal, 2021
- FIRST AWARD EX AEQUO – Ciencia en Acción 2020, en la modalidad de “Cortos científicos”, Consejo Superior de Investigaciones Científicas, Spain, 2020
- Chair and cattle representative of the ISAG-FAO Advisory Group on Animal Genetic Diversity. International Society for Animal Genetics, since 2014
- Member of Red Conbiand for the Conservation of Domestic Animal Biodiversity and Sustainable Rural Development, and researcher of the associated scientific consortia: BIOBOVIS, BIOGOAT, BIOOVIS, BIOPIG and BIOHORSE, Universidad de Cordoba, Spain, since 2014
- Travel grant from the International Society for Animal Genetics, 2008 (student) and 2014 (early career scientist)
- Participation bursary - Conservation Genetics meeting, Salzburg from the European Science Foundation, 2008
- Travel grant from the Fund for Support of Scientific Community – Science and Technology Ministry, 2002 and 2003
- Short term research grant from the Luso-American Foundation – FLAD, 2000

RESEARCH EXPERIENCE

- 2020 to present **Associate Researcher and leader of the Archaeogenetics research group**, BIOPOLIS/CIBIO/InBIO – Centro de Investigação em Biodiversidade e Recursos Genéticos, Universidade do Porto, Vairão, Portugal (2020/03608/CEECD/CP 1601)
- 2015 to 2020 **Associate Researcher**, CIBIO – Centro de Investigação em Biodiversidade e Recursos Genéticos, Universidade do Porto, Vairão, Portugal (FCT IF/00866/2014). Developed the ARADO project to study the coevolution of key domestic species (cattle, pig & sheep), CIBIO-InBIO, University of Porto, Vairão, Portugal
- 2011 to 2015 **Marie Skłodowska-Curie Fellow**, Welcome II Program, CE3C – Centro de Ecologia Evolução e Alterações Ambientais, Faculdade de Ciências, Universidade de Lisboa, Portugal. (DFRH/WIIA/15/2011) Initiated an innovative zoo-archaeogenetics research following a phylochronological approach to refine the understanding of the origins and evolutionary trajectories of Iberian cattle, dogs, and horses
- 2008 to 2010 **Staff Research Assistant II**, Veterinary Genetics Laboratory, University of California, Davis, CA, U.S.A.
- 2004 to 2009 **Ph. D. Research**, Instituto Superior de Agronomia, Universidade de Lisboa, Portugal and Veterinary Genetics Laboratory – University of California, Davis (VGL – UCDavis), U.S.A. (FCT, SFRH/BD/13502/2003). Characterized Y chromosome specific markers in Portuguese and Creole cattle; laboratory techniques involved microsatellites and SNPs genotyping, pyrosequencing, gene cloning and sequencing; analysis of genetic data such as haplotype definition, AMOVA, network and phylogenetic reconstruction

- 2002 to 2004 **Researcher**, CE3C – Centro de Ecologia Evolução e Alterações Ambientais, Faculdade de Ciências, Universidade de Lisboa, Portugal. Project: Non-invasive monitoring of Iberian carnivores: using molecular scatology towards conservation (PRAXISXXI/40788/BSE/2001). Applied molecular methods for the genetic characterisation of Portuguese carnivores, developed species specific primers (mtDNA), implemented parentage and sexing tests for non-invasive monitoring
- 2000 to 2001 **Masters Research**, UTAD, Vila Real, Portugal and VGL – UC Davis, Davis, U.S.A. (PRAXIS XXI BM/20854/99). Used microsatellite data for individual assignment and performed the statistical analysis of genetic data for the application in the certification of breed specific meat products
- 1998 to 2001 **Researcher**, UTAD, Vila Real, Portugal, Project: Studying the diversity of autochthonous bovine and ovine breeds through DNA analysis (PRAXIS XXI 3/3.2/CA/2005/95). Sample collection and DNA extraction from autochthonous cattle; DNA amplification through PCR; microsatellite genotyping and parentage testing

TEACHING EXPERIENCE

- 2017 to Present **Invited Assistant Professor**, Advanced Post-Graduation Course 'Molecular Markers: Y Chromosome, mitochondrial DNA and Non-Human Forensic Applications'. Theory, Lab and *in silico* classes for the master programs in Molecular and Cell Biology, and Forensic Genetics, Faculdade de Ciências, Universidade do Porto, Portugal
- 2019 and 2022 **Organized and coordinated** the Advanced course in Archaeogenetics, BIODIV Doctoral Program in Biodiversity, Genetics and Evolution, BIOPOLIS/CIBIO/InBIO, Faculdade de Ciências, Universidade do Porto, Portugal
- 2014, March-December **Assistant Professor**, Course 'Animal Breeding and Genetics' for 2nd year Veterinary Medicine students. Annual course, 4h/week (60 students), Laboratory sessions (Theory & Practice) & Practical Evaluation, Universidade Lusófona de Humanidades e Tecnologias, Lisbon
- 1998 to 2000 **Teaching Assistant**, Course – “Biochemistry” for second year Agronomic Engineering Students, Leader Prof. Torres de Castro. Annual course, 6 hours/week, Laboratory sessions & Practical Evaluation. UTAD, Vila Real, Portugal

RESEARCH GRANTS

- 2023 to 2026 €249,984. ARIES - The variation of Iberian sheep under domestication: an archaeogenetics study. Fundação para a Ciência e a Tecnologia, Portugal (2022.04843.PTDC). Principal investigator: C. Ginja
- 2018 to 2022 €239,458. WOOF - Tracing the origins and evolutionary paths of the Iberian and the Maghreb Dog. (FCT PTDC/HAR-ARQ/29545/2017) and COMPETE2020, Portugal (POCI-01-0145-FEDER-029545). Principal investigator: AE Pires; Co-PI: C. Ginja
- 2015 to 2020 €50,000. ARADO - Archaeogenetics of animal domestication and improvement. Investigador FCT – projecto exploratório (FCT IF/00866/201). Principal Investigator: C. Ginja
- 2018 to 2022 € 1,031,574 (total) €79,982 (Portugal). OPTIBOV - Genetic Characterisation of Cattle populations for optimized performance in African ecosystems. H2020 Food Security Sustainable Agriculture and Forestry Marine Maritime and

- Inland Water Research and the Bioeconomy, Bélgica (H2020 EU-Africa LEAP AGRI 326 , LEAPAgri/0003/2017). Principal investigator: R Croojimans; PI of the Portuguese Team: C. Ginja
- 2016 to 2018 €197,696. ARCHAIC-The archaeogenetics of Iberian cattle: investigating their origins, evolution and improvement. (FCT PTDC/CVTLIV/2827/2014) and COMPETE2020, Portugal (POCI-01-0145-FEDER-016647). Principal Investigator: C. Ginja
- 2017 to 2022 €1,199,319. ZOOMWEST- Zooarchaeology and Mobility in the Western Mediterranean: husbandry production from the Late Bronze Age to the Late Antiquity. European Research Council, Bélgica (ERC-2016-STG-716298). Principal investigator: S. Valenzuela-Lamas; C. Ginja researcher, responsible for WP3-ancient DNA analysis
- 2015 to 2018 €509,042. Arctic Ark – Human-animal adaptations to the Arctic environment: natural and folk selection practices. Academy of Finland (Grant n. 286040). Principal Investigator: J. Kantanen (University of Eastern Finland); C. Ginja (Researcher)
- 2015 to 2017 €22,220. CoChange - Coastal societies in a changing world: A diachronic and comparative approach to the Prehistory of SW Europe from the late Palaeolithic to the Neolithic. Ministerio de Economía y Competitividad. Gobierno de España (HAR2014-51830-P). Principal Investigator: P. Arias (Universidad Cantabria, Spain); C. Ginja (Researcher)
- 2012 to 2015 €101,160. HDI-Horse Domestication in Iberia – What else is there to be known?. FCUL, Lisbon, Portugal (FCT PTDC/HIS-ARQ/120183/2010). Principal Investigator: C. Luis (FCUL); C. Ginja (Researcher)
- 2011 to 2014 €187,900. A phylochronological approach to refine the understanding of the origins and evolutionary trajectories of cattle. EU Framework Programme for Research and Innovation Marie Skłodowska-Curie Actions, Bélgica (DFRH/WIKIA/15/2011). Principal Investigator: C. Ginja
- 2010 to 2013 €102,000. Tracing back animal domestication in Iberia: Clues from zooarchaeology and DNA analysis”, FCUL, Lisbon, Portugal (FCT PTDC/HIS-ARQ/100225/2008). Principal Investigator: A.E. Pires; C. Ginja (Researcher)

PUBLICATIONS (LAST 5 YEARS)

Edited books and book chapters

- Ajmone-Marsan, P.; Boettcher, P.; Colli, L.; **Ginja, C.**; Kantanen, J.; Lenstra, J.A.. Genomic characterization of animal genetic resources – Practical guide. Rome, Itália: Food and Agriculture Organization of the United Nations - FAO, 2023. <https://doi.org/10.4060/cc3079en>.
- Ureña, I.; Guimarães, S.; Davis, S.; Detry, C.; da Fonseca, R.; Dussex, N.; Simões, Luciana; et al. "An Archaeogenetics Study of Cattle Bone from seventeenth century Carnide, Lisbon, Portugal". In *Cattle and People: Interdisciplinary approaches to an ancient relationship*, editado por Wright, Lizzie; **Ginja, C.**, 169-181. Atlanta, GA, Estados Unidos: Lockwood Press, 2022. <https://doi.org/10.5913/archbio04.08>
- Detry, C.; Valenzuela-Lamas, S.; Davis, Simon J.M.; Pires, A.E.; Ginja, C.. "On the improvement of cattle (*Bos taurus*) in the cities of Roman Lusitania: some preliminary results". In *Cattle and People: Interdisciplinary approaches to an ancient relationship*, editado por Wright, Lizzie; **Ginja, C.**, 91-110. Atlanta, GA, Estados Unidos: Lockwood Press, 2022. <https://doi.org/10.5913/archbio04.05>
- Wright, L.; **Ginja, C.**. *Cattle and People: Interdisciplinary Approaches to an Ancient Relationship*. Columbus, GA, Estados Unidos: Lockwood Press. 2022. <https://www.isdistribution.com/BookDetail.aspx?aId=146160>

Albarella, U.; Detry, C.; Gabriel, S.; **Ginja, C.**; Pires, A.E.; Tereso, J.. Themes in Old World Zooarchaeology: From the Mediterranean to the Atlantic. Oxford, Reino Unido: Oxbow books. 2021.
<https://www.oxbowbooks.com/oxbow/themes-in-old-world-zooarchaeology.html>

Refereed Journals

- Ginja, C.**; Guimarães, S.; Da Fonseca, R.R.; Rasteiro, R.; Rodríguez-Varela, R.; Simões, L.G.; Belarte, M.C.; Kallala, N.; Torres, J.R.; Sanmartí, J.; Arruda, A.M.; Detry, C.; Davis, S.; Matos, J.; Götherström, A.; Pires, A.P.; Valenzuela-Lamas, S. "Genomic Analyses of Iron Age Cattle Specimens from Althiburos, Tunisia, Support an Independent and Local Origin of African Taurine Cattle in the Maghreb". Preprint na revista electrónica Sneak Peek (2023): <http://dx.doi.org/10.2139/ssrn.4135722>. *In press*, accepted for publication in iScience.
- Gaspar, D.; Usié, A.; Leão, C.; Guimarães, S.; Pires, A.E.; Matos, C.; Ramos, A. Marcos; **Ginja, C.** "Genome-wide assessment of the population structure and genetic diversity of four Portuguese native sheep breeds". *Frontiers in Genetics* 14 (2023): <http://dx.doi.org/10.3389/fgene.2023.1109490>.
- Gonzalez-Prendes, R.; **Ginja, C.**; Kantanen, J.; Ghanem, N.; Kugonza, D.R.; Makgahlela, M.L.; Groenen, Martien A.M.; Crooijmans, R.P.M.A. "Integrative QTL mapping and selection signatures in Groningen White Headed cattle inferred from whole-genome sequences". *PLoS ONE* 17: 10 (2022): e0276309.
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0276309#ack>.
- Moraes, C.; Pereira, H.M.; Requicha, J.F.; Alves, L.; Alexandre-Pires, G.; de Jesus, S.; Guimarães, S.; **Ginja, C.**; Detry, C.; Ramalho, M.; Pires, A.E. "The Facial Reconstruction of a Mesolithic Dog, Muge, Portugal". *Applied Sciences* 12: 10 (2022): 4867.
<http://dx.doi.org/10.3390/app12104867>.
- Pereira, H.M.; Requicha, J.F.; Alves, L.; Gonçalves, D.; Correia, J.B.; Alexandre-Pires, G.; Jesus, S.; Viegas, C.; Ramalho, M.; **Ginja, C.**; Detry, C.; Pires, A.E. "The potential of computed tomography in odontology: application to a Mesolithic dog". *Journal of Archaeological Science: Reports* 45 (2022): 103552.
<https://doi.org/10.1016/j.jasrep.2022.103552>.
- Blaschikoff, L.; Daza-Perea, A.; Requicha, J.; Detry, C.; Rasteiro, R.; Guimarães, S.; Ureña, I.; Serra, O.; Schmidt, R.; Valera, A.; Almeida, N.J.; Porfírio, E.; Santos, A.B.; Delicado, C.; Simões, F.; Matos, J.A.; Amorim, I.R.; Petrucci-Fonseca, A.; Davis, S.J.M.; Muñoz-Mérida, A.; Götherström, A.; Fernández-Rodríguez, C.; Cardoso, J.L.; **Ginja, C.**; Pires, A.E. "A multidisciplinary study of Iberian Chalcolithic dogs". *Journal of Archaeological Science: Reports* 42 (2022): 103338. <https://doi.org/10.1016/j.jasrep.2022.103338>
- Revidatti, M.A.; Gama, L.T.; Martín Burriel, I.; Cortés Gardyn, O.; Cappello Villada, J. S.; Carolino, M.I.; Cañón, F.J.; **Ginja, C.**; Sponenberg, P.; Vicente, A.P.; Zaragoza, P.; Delgado, J.V.; Martínez, A.; the BioPig Consortium. "On the origins of American Criollo pigs: A common genetic background with a lasting Iberian signature". *PLOS ONE* 16: 5 (2021): e0251879. <http://dx.doi.org/10.1371/journal.pone.0251879>.
- Ginja, C.**; Gama, L.T.; Cortés, O.; Burriel, I.M.; Vega-Pla, J.L.; Penedo, C.; Sponenberg, P.I.; Cañón, J.; Sanz, A.; Egito, A.A.; Alvarez, L.A.; Giovambattista, G.; Agha, S.; Rogberg-Muñoz, A.; Lara, M.A.C.; BioBovis Consortium; Delgado, J.V.; Martínez, A. "The genetic ancestry of American Creole cattle inferred from uniparental and autosomal genetic markers". *Scientific Reports* 9: 1 (2019): <http://dx.doi.org/10.1038/s41598-019-47636-0>.
- da Fonseca, R. R.; Ureña, I.; Afonso, S.; Pires, A.E.; Jørsboe, E.; Chikhi, L.; **Ginja, C.** "Consequences of breed formation on patterns of genomic diversity and differentiation: the case of highly diverse peripheral Iberian cattle". *BMC Genomics* 20: 1 (2019): <http://dx.doi.org/10.1186/s12864-019-5685-2>.
- Pires, A.E.; Detry, C.; Chikhi, L.; Rasteiro, R.; Amorim, Isabel R.; Simões, F.; Matos, J.; Petrucci-Fonseca, F.; Ollivier, M.; Hänni, C.; Cardoso, J.L.; Arias; Mariana Diniz, P.; Araújo, A.C.; Bicho, N.; Sousa, A.C.; Moreno-García, M.; Arruda, A.M.;

- Fernández-Rodríguez, C.; Porfirio, E.; **Ginja, C.** "The curious case of the Mesolithic Iberian dogs: An archaeogenetic study". *Journal of Archaeological Science* 105 (2019): 116-129. <http://dx.doi.org/10.1016/j.jas.2019.03.002>.
- Upadhyay, M.; Bortoluzzi, C.; Barbato, M.; Ajmone-Marsan, P.; Colli, L.; **Ginja, C.**; Sonstegard, T.S.; Bosse, N.; Lenstra, J.A.; Groenen, M.A.M.; Crooijmans, R.P.M.A. "Deciphering the patterns of genetic admixture and diversity in southern European cattle using genome-wide SNPs". *Evolutionary Applications* 12: 5 (2019): 951-963. <http://dx.doi.org/10.1111/eva.12770>.
- Bruno-de-Sousa, C.; Cox, C.J.; Brito, L.; Pavão, M.M.; Pereira, H.; Ferreira, A.; **Ginja, C.**; Campino, L.; Bermejo, R.; Parente, M.; Varela, J. "Improved phylogeny of brown algae *Cystoseira* (Fucales) from the Atlantic-Mediterranean region based on mitochondrial sequences". *PLOS ONE* 14 1 (2019): e0210143. <http://dx.doi.org/10.1371/journal.pone.0210143>.
- Pires, A.E.; Detry, C.; Fernández-Rodríguez, C.; Valenzuela-Lamas, S.; Arruda, A. M.; De Grossi Mazzorin, J.; Ollivier, M.; Hänni, C.; Simões, C.; **Ginja, C.** "Roman dogs from the Iberian Peninsula and the Maghreb – A glimpse into their morphology and genetics". *Quaternary International* 471 (2018): 132-146. <http://dx.doi.org/10.1016/j.quaint.2017.11.044>.
- Sevane, N.; Cortés, O.; Gama, L.T.; Martínez, A.; Zaragoza, P.; Amills, M.; Bedotti, D. O.; Bruno de Sousa, C.; Cañon, J.; Dunner, D.; **Ginja, C.**; Lanari, M.R.; Landi, V.; Sponenberg, P.; Delgado, J.V.; The BioGoat Consortium. "Dissection of ancestral genetic contributions to Creole goat populations". *Animal* 12: 10 (2018): 2017-2026. <http://dx.doi.org/10.1017/s1751731117003627>.

JOURNAL SCIENTIFIC COMMITTEES

- | | |
|-----------------|--|
| 2021 to present | Review editor for <i>Evolutionary and Population Genetics</i> , scientific journals 'Frontiers in Ecology and Evolution' and 'Frontiers in Genetics', Frontiers. |
| 2020 to present | Member of the editorial board, scientific journal 'Animals', MDPI. |
| 2020 to present | Member of the editorial board, scientific journal 'Animal Genetics', Wiley. |
| 2029 to present | Review editor for <i>Livestock Genomics</i> , scientific journals 'Frontiers in Genetics' and 'Frontiers in Veterinary Science', Frontiers. |

MEMBERSHIP PROFESSIONAL ORGANIZATIONS

- | | |
|-----------------|--|
| 2015 to present | International Council for Archaeozoology: Archaeozoology, Genetics, Proteomics and Morphometrics Working Group (ICAZ/AGPM) |
| 2014 to present | International Society for Animal Genetics (ISAG) |
| 2005 to present | Sociedade Portuguesa de Recursos Genéticos Animais (SPREGA) |
| 1998 to present | Associação Portuguesa de Engenheiros Zootécnicos (APEZ) |