

Clàudia Fontserè Alemany

(+34) 664 32 88 51

claudia.fontsere@sund.ku.dk / claudiafontser@gmail.com

Education

- 2016 – 20 **PhD in Biomedicine** *Genomic analysis of wild and captive chimpanzee populations from non-invasive samples using target capture methods.* Co-supervised by Dr. Tomas Marquès-Bonet and Dr. Esther Lizano
Institute of Evolutionary Biology (UPF-CSIC), Barcelona, ES
- 2014 – 16 **MSc in Bioinformatics** Universitat Pompeu Fabra, Barcelona, ES
- 2010 – 14 **BSc in Human Biology** Universitat Pompeu Fabra, Barcelona, ES

Professional experience

- 2024-present MSCA **Postdoctoral fellow** at Shyam Gopalakrishnan group, Section for Evolutionary Hologenomics, Globe. University of Copenhagen, Copenhagen, DK. *Topic: conservation genomics, genetic rescue, population genomics.*
- 2022-2024 **Postdoctoral researcher** at Tom Gilbert group and Hernán E Morales-Villegas, Section for Evolutionary Hologenomics, Globe. University of Copenhagen, Copenhagen, DK. *Topic: genomics of extinction, population genomics, historical DNA*
- 2021-2022 **Postdoctoral researcher** at Tomas Marques-Bonet group, Comparative Genomics Lab. Institute of Evolutionary Biology (UPF-CSIC), Barcelona, ES. *Topic: conservation genomics of endangered species*
- 2017, 2018 **Research stay (4 month)** Mimi Arandjelovic - Primatology department. Max Planck Institute for Evolutionary Anthropology, Leipzig, DE. *Topic: NGS library preparation*
- 2018 **Research stay (3 month)** Tom Gilbert - Section for Evolutionary Genomics. University of Copenhagen, Copenhagen, DK. *Topic: population genetics*
- 2016, 2014 **MSc, Bsc internships.** Institute of Evolutionary Biology (UPF-CSIC), Barcelona, ES. *Topic (MSc): chimpanzee ex-situ conservation; Topic (BSc): genomic inversions in great ape genomes*

Grants and Awards

- 2023 Horizon Europe Marie Skłodowska-Curie Action (MSCA) Postdoctoral Fellowship.
- 2023, 2024 SMBE2023 symposium organizer – Ferrara (IT) & SMBE2024 symposium organizer – Puerto Vallarta (MX)
- 2020 Doctoral Thesis Excellent CUM LAUDE proposed for the Extraordinary award
- 2019 Travel award for SMBE Manchester
- 2015 – 2019 PhD fellowship by “la Caixa” Foundation
- 2014 – 2016 Excellence master scholarship by Fundació Catalunya-La Pedrera

List of Publications

Peer Reviewed (6 first-author papers, 5 corresponding author; * indicates co-first authorship, * indicates corresponding author)

22. Hermosilla-Albala N, Silva FE, Cuadros-Espinoza S, **Fontserè C**, [...], Marques-Bonet T, Boubli JP. **Whole genomes of Amazonian uakari monkeys reveal complex connectivity and fast differentiation driven by high environmental dynamism.** *Communications Biology*. 2024; <https://doi.org/10.1038/s42003-024-06901-3>
21. Battilani D, Gargiulo R, Caniglia R, Fabbri E, Ramos-Madriral J, **Fontserè C**, [...] Vernesi C. **Beyond population size: whole-genome data reveal bottleneck legacies in the peninsular Italian wolf.** *Journal of Heredity*. 2024; <https://doi.org/10.1093/jhered/esae041>
20. Sandoval-Velasco M, Dudchenko O, Rodríguez JA, Pérez Estrada C, Dehasque M, **Fontserè C**, [...] Martí-Renom MA, Gilbert MTP, Lieberman Aiden E. **Three-dimensional genome architecture persists in a 52,000-year-old woolly mammoth skin sample.** *Cell*. 2024; <https://doi.org/10.1101/2023.06.30.547175>
19. Yee SW, Ferrández-Peral L, Alentorn P, **Fontserè C**, [...] Giacomini K. **Illuminating the Function of the Orphan Transporter, SLC22A10 in Humans and Other Primates.** *Nature Communications*. 2024; <https://doi.org/10.1038/s41467-024-48569-7>
18. Rasmussen L*, **Fontserè C***+, Soto-Calderón ID, Guillen R, Savage A, Hansen AJ, Hvilsom C, Gilbert MTP. **Assessing the genetic composition of cotton-top tamarins (*Saguinus oedipus*) before sweeping anthropogenic impact.** *Mol Ecol*. 2023; <https://doi.org/10.1111/mec.17130>
17. Sánchez-Barreira F, De Cahsan B, Westbury MV, Sun X, Margaryan A, Fontserè C, [...] Gilbert MTP, Moodley Y. **Historic Sampling of a Vanishing Beast: Population Structure and Diversity in the Black Rhinoceros.** *Mol Biol Evol*. 2023. <https://doi.org/10.1093/molbev/msad180>
16. Riaño G, **Fontserè C***+, de Manuel M, Talavera A, Burriel-Carranza B, Tejero-Cicuendez H, [...] Marques-Bonet T, Carranza S. **Genomics reveals introgression and purging of deleterious mutations in the Arabian leopard (*Panthera pardus nimr*).** *iScience*. 2023; <https://doi.org/10.1016/j.isci.2023.107481>
15. de-Dios T*, **Fontserè C***, Renom P*, Stiller J, [...] Marques-Bonet T, Vila R, Lalueza-Fox C. **Whole-genomes from the extinct Xerces Blue butterfly reveal low diversity and long-term population decline.** *eLife*. 2023; <https://doi.org/10.7554/eLife.87928.1>
14. Urban L, Perlas A, Francino O, Martí-Carreras J, Muga BA, Mwangi JW, Okalebo LB, Stanton JL, Black A, Waipara N, **Fontserè C**, [...] van Oosterhout C. **Real-time genomics for One Health.** *Molecular Systems Biology*. 2023; <https://doi.org/10.15252/msb.202311686>
13. Esteller-Cucala P, Palmada-Flores M, Kuderna LFK, **Fontserè C**, Serres-Armero A, Dabad M, [...] Juan D, Marques-Bonet T. **Y chromosome sequence and epigenomic reconstruction across human populations.** *Communications Biology*. 2023; <https://doi.org/10.1038/s42003-023-05004-9>
12. Sørensen EF, Harris RA, Zhang L, Raveendran M, Kuderna FK, Walker JA, Storer JM, Kuhlwiilm M, **Fontserè C**, [...], Farh KKH, Marques-Bonet T, Munch K, Roos C, Rogers J. **Genome-wide coancestry reveals details of ancient and recent male-driven reticulation in baboons.** *Science*. 2023; <https://doi.org/10.1126/science.abn8153>
11. Alvarez-Estape M, Pawar H, **Fontserè C**, Trujillo AE, [...] Marques-Bonet T. **Past connectivity but recent inbreeding in Cross River gorillas determined using whole genomes from single hairs.** *Genes*. 2023; <https://doi.org/10.3390/genes14030743>
10. **Fontserè C***+, Kuhlwiilm M, Morcillo-Suarez C, Alvarez-Estape M, [...] Arandjelovic M, Marques-Bonet T. **Population dynamics and genetic connectivity in recent chimpanzee history.** *Cell Genomics*. 2022; <https://doi.org/10.1016/j.xgen.2022.100133>

9. Alvarez-Estape M, **Fontserè C**, Serres-Armero A, [...] Marques-Bonet T, Moreno E, Lizano E. Insights from the rescue and breeding management of Cuvier's gazelle (*Gazella cuvieri*) through whole genome sequencing. *Evolutionary Applications*. 2021; <https://doi.org/10.1111/eva.13336>
8. **Fontserè C***, Frandsen P*, Hernandez-Rodriguez J, Niemann J, [...] Kuhlwilm M, Hughes D, Marques-Bonet T. The genetic impact of an Ebola outbreak on a wild gorilla population. *BMC genomics*. 2021; <https://doi.org/10.1186/s12864-021-08025-y>
7. Kuhlwilm M, **Fontserè C**, Han S, Alvarez-Estape M, Marques-Bonet T. HuConTest: Testing human contamination in great ape samples. *Genome Biology and Evolution*. 2021; <https://doi.org/10.1093/gbe/evab117>
6. Orkin JD, Montague MJ, Tejada-Martinez D, de Manuel M, Del Campo J, Hernandez SC, Di Fiore A, **Fontserè C**, [...] Melin AM. The genomics of ecological flexibility, large brains, and long lives in capuchin monkeys revealed with fecalFACS. *Proceedings of the National Academy of Sciences*. 2021; <https://doi.org/10.1073/pnas.2010632118>
5. **Fontserè C**, Alvarez-Estape M, Lester J, Aranjelovic M, Kuhlwilm M, [...] Marques-Bonet T, Hugues D, Lizano E. Maximizing the acquisition of unique reads in noninvasive capture sequencing experiments. *Molecular Ecology Resources*. 2021; <https://doi.org/10.1111/1755-0998.13300>
4. Frandsen P*, **Fontserè C***, Nielsen SV, Hanghøj K, Castejon-Fernandez N, Lizano E, [...] Marques-Bonet T, Hvilsom C. Targeted conservation genetics of the endangered chimpanzee. *Heredity*. 2020; <https://doi.org/10.1038/s41437-020-0313-0>
3. **Fontserè C***, de Manuel M*, Marques-Bonet T and Kuhlwilm M. Admixture in Mammals and How to Understand Its Functional Implications. *BioEssays*. 2019; <https://doi.org/10.1002/bies.201900123>
2. White LC, **Fontserè C**, Lizano E, Hughes DA, Angedakin S, Arandjelovic M, [...] Marques-Bonet T, Langergraber KE, Vigilant L. A roadmap for high-throughput sequencing studies of wild animal populations using non-invasive samples and hybridization capture. *Molecular Ecology Resources*. 2019; <https://doi.org/10.1111/1755-0998.12993>
1. Solis-Moruno M, de Manuel M, Hernandez-Rodriguez J, **Fontserè C**, [...] Marques-Bonet T. Potential damaging mutation in LRP5 from genome sequencing of the first reported chimpanzee with the Chiari malformation. *Scientific Reports*. 2017; <https://doi.org/10.1038/s41598-017-15544-w>

Preprints and Under Review

Ostridge HJ, **Fontserè C**, [...] Andres AM. Local genetic adaptation to habitat in wild chimpanzees. *BioRxiv*. 2024; <https://doi.org/10.1101/2024.07.09.601734>

Barrat C, Gratton P, Marta S, Onstein R, **Fontserè C**, [...] Kühl H. Chimpanzee behavioural diversity is spatially structured and negatively associated with genetic variation. *Preprint available at Research Square*. 2023; <https://doi.org/10.21203/rs.3.rs-3358458/v1>

Outreach

Podcast interview for "La Mare de la Ciència" Podcast: "Genòmica per conservar el Ximpanzés" (in Catalan) (2021) <https://open.spotify.com/episode/6cvHpqkLGrkzEWOZLNA7r8?si=bc37467c273c4478>

Outreach article: "When genomics helps save chimps" at Ellipse (PRBB, *Barcelona, ES*) (2020) <https://ellipse.prbb.org/when-genomics-helps-save-chimps/>

Podcast interview for Heredity Podcast: "Targeted conservation genetics of the endangered chimpanzee" (2020) <https://overcast.fm/+B6TCs5F9A>

Participation in "**Interview a scientist**" to bring science closer to primary school students (PRBB, *Barcelona, ES*) (2018)

Leadership, mentoring, management, and other expertise

Leader and main organizer of 1st Globe Symposium: Origin, Evolution and Ecology of life at Globe Institute *Copenhagen, DK* (2024)

Core Member of the Diversity Programme at Globe Institute *Copenhagen, DK* (2023-present)

Peer Review for *Molecular Ecology*, *Molecular Ecology Resources*, *Molecular Biology and Evolution*, *Cell Genomics*, *Heredity*, *PCI Genomics* (2021-present)

Symposium organizer for SMBE 2024 *Puerto Vallarta, MX* (2024): "Pushing the Frontiers of Conservation Genomics"

Symposium organizer for SMBE 2023 *Ferrara, IT* (2023): "New Frontiers in Conservation Genomics"

Member of a PhD student's 1st year assessment committee *Copenhagen, DK* (2023)

Organizer of Science Café at Globe Institute *Copenhagen, DK* (2023-2024)

Reviewer for "Youth and Science" 25+ high-schools science project - Fund. Catalunya La Pedrera (2022, 2023)

Organization of a workshop for secondary schools "Ecosystems and invasive species". Barcelona Zoo and Teatre Nacional de Catalunya (TNC), *Barcelona, ES* (2022)

Supervision and mentoring graduate students at Comparative Genomics Lab *Barcelona, ES* (2020-present)

Co-supervision of the Master Thesis "Study of a captive gorilla population". Màster Interuniversitari d'Antropologia Biològica (UB-UAB) *Barcelona, ES* (2019)

Organization of Seminars (2017), **Group Meetings** (2016-2018) and **Journal Club** (2019-2020) at Comparative Genomics Lab and Institute of Evolutionary Biology *Barcelona, ES*

Management of genomic sequencing data at Comparative Genomics Lab *Barcelona, ES* (2021)

Member of the Diversity committee at Institute of Evolutionary Biology *Barcelona, ES* (2020-2021)

Elected PhD Student Representative at Institute of Evolutionary Biology *Barcelona, ES* (2018-2019)

Organization of Open Day activities PRBB, *Barcelona, ES* (2015, 2016)

Teaching Experience

Introduction to aDNA course (2024). American Museum of Natural History (AMNH). *New York City, US*.

- Lecturer in a 5-day course.

Bioinformatics Msc: "Genomes and systems" - Universitat Pompeu Fabra (UPF), *Barcelona, ES*

2021: Co-coordinator

2019: Assistant

Primateology Msc: "Conservation genetics" - Universitat de Girona (UdG), *Girona, ES*

2020 - 2024: Invited Lecturer

Biomedical Engineering Bsc: "Cell molecular Biology II" - Universitat Pompeu Fabra (UPF), *Barcelona, ES*

2021: Assistant

Languages

| **Spanish:** Native

| **Catalan:** Native

| **English:** Proficient (C1 level)

| **Danish:** Low (A2 level)

Professional Skills

Operating systems: MacOS, Linux, Windows

Programming: R, Bash

Office suites: MS Office, LibreOffice

Graphics: Illustrator, R data visualization

Text processing: Vim, Markdown

Next generation sequencing:

- DNA extraction, library preparation and hybridization capture (blood, tissue, and fecal samples)
- Genomic data processing and analysis (modern, non-invasive, and ancient DNA)

Oxford Nanopore Sequencing:

- Library preparation
- Sequencing MinION-Mk1B/C
- Adaptive Sampling

Conference proceedings, workshops, and training

Oral presentation

Nanopore Community Meeting: "Sequencing of noninvasive samples as a tool for the conservation of endangered species"
Oxford Nanopore Technologies-Online (2021)

XXVII International Primatology Society congress: "The genetic impact of an Ebola outbreak on a wild gorilla population"
Nairobi (Kenya) (2018)

XVI Meeting of Evolutionary Biology: "Admixture, genetic diversity and relatedness in captive chimpanzee populations"
Societat Catalana de Biologia. Barcelona (ES) (2016)

Posters

SMBE meeting 2023: "Assessing the genetic composition of cotton-top tamarins before sweeping anthropogenic impact".
Ferrara (IT) (2023)

SMBE meeting 2019: "Genetics of the PanAf project: chimpanzee diversity from fecal samples". *Manchester (UK) (2019)*

Human Evolution: Fossils, Ancient and Modern Genomes: "Impact of Ebolavirus on Western Lowland Gorilla Diversity"
Hinxton (UK) (2017)

15TH RECOMB CG Comparative Genomics Satellite Conference: "Impact of Ebolavirus on Western Lowland Gorilla Diversity"
Barcelona (ES) (2017)

Attending

Conservation Genomics at the Population Level Conference *Hinxton (UK) (2022)*

Genetic Admixture: Inference and Evolutionary Consequences. Collège de France, *Paris (FR) (2022)*

Workshops and training

SLIM course (Globe Institute). *Copenhagen, DK (2024)*

Project management for scientists (PRBB Intervals). *Barcelona, ES (2021)*

Leadership programme for junior women in science (UPF-CEXS and PRBB Intervals Edition). *Barcelona, ES (2021)*

Theatrical interpretation techniques for oral scientific communication (PRBB Intervals). *Barcelona, ES (2017)*