

Curriculum Vitae – Chiara Barbieri

Name: **Chiara**
Surname: **Barbieri**
Nationality: **Italian**
Date of birth: **12/07/1983**
Email: **barbieri.chiara@gmail.com**
Personal website: **chiarabarbieri.com**



Current position

Feb/18 - Present **Senior Postdoctoral position (Oberassistent) at University of Zurich.** Genetic and linguistic analysis of South American prehistory, Coevolution of genes and languages in human populations.

Higher education

2010 – 2013 **PhD in Molecular Anthropology**, University of Bologna, Italy, and Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.
Title of Dissertation: *Comparing genetic and linguistic diversity in African populations with a focus on the Khoisan of southern Africa*. Final score: excellent with mention.

2005 – 2008 **Master Degree in Biodiversity and Evolution**, University of Bologna, Italy. Title of Dissertation: *Patterns of mtDNA variation in Uros, Aymara and Quechua populations of Lake Titicaca (Peru)*. Final score: 110 out of 110 with Honors.

2002 – 2005 **Bachelor Degree in Natural Sciences**, University of Bologna, Italy.

Academic Career

Jul/15 – Jan/18 **Postdoctoral position at Max Planck Institute for the Science of Human History.** Genetic and linguistic analysis of South American prehistory, Coevolution of genes and languages in human populations, Dynamics of language barriers and language shifts.

Dec/14 - Jun/15 **Postdoctoral position at Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.** Project “Refining the Y chromosome phylogeny with southern African sequences”.

Jul/13 - Oct/14 **Postdoctoral position at University of Bologna**, within the ERC grant “LanGeLin: Meeting Darwin’s last challenge: toward a global tree of human languages and genes”.

Sep/09 - Apr/13 **PhD position at Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.** Project “Comparing genetic and linguistic diversity in African populations with a focus on the Khoisan of southern Africa”.

Scientific experiences and training

Jan/19	Fieldwork in Chile. Human sample collection with the Mapuche communities. Field organization and project coordination.
Dec/18	Symposium organization. “New Methods and Discoveries in Human Archaic Admixture”. University of Zurich.
Apr/16 - May/16	Visiting guest at the Institut für Rechtsmedizin - Charité - Universitätsmedizin Berlin. Y chromosome analysis in the Forensic Genetic department.
Dec/15	Workshop co-organization. “A cross-disciplinary prehistory of Andean Civilisation”. With Paul Heggarty. Max Planck Institute for the Science of Human History, Jena.
Nov/15 - Dec/15	Fieldwork in Peru. Human sample collection in the northern coast. Field organization and project coordination.
Jan/15 - Feb/15	Fieldwork in Peru. Human sample collection in the Chachapoyas province. Field organization and project coordination.
Oct/13 and Dec/13	Fieldwork in Italy. Human sample collection among local populations.
Nov/09 – Dec/09	Fieldwork in Botswana. Human sample collection among native populations.
Oct/08 – Jul/09	Internship at Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany, on project “Population relationships and language change in Burkina Faso”.
Jun/08 – Aug/08	Internship on Molecular Anthropology, Parc Recerca Biomèdica de Barcelona (PRBB), Barcelona, Spain. Lab analysis for the <i>Genographic Project</i> (National Geographic, IBM)
Aug/07 – Feb/08	Laboratory experience on Molecular Anthropology, University of Bologna, Italy
Apr/07 – Jun/07	Fieldwork in Peru - Human sample collection and anthropometrical measurements among native populations of the highlands and of the jungle.
Jun/06 and Jul/07	Paleo-archaeological excavations at Isernia-La Pineta, Italy. Collaboration with University of Ferrara, Italy.

Talks and conference presentations

April 2019	Zurich, Switzerland – Ringvorlesung der Kommission UZH Interdisziplinär. <u>Invited seminar</u> : “Genetic footprints of pre- and post-colonial contact in the Americas”.
March 2019	Heidelberg, Germany – EMBO-EMBL symposium Reconstructing the Human Past - Using Ancient and Modern Genomics. Talk and poster: “Gene-Language mismatches in global human history”.
March 2019	Fribourg, Switzerland – <u>Invited lecture</u> : “Genes and Languages: bridging our biological and cultural history”.
March 2019	Zurich, Switzerland – Inaugural workshop of the Center for the Interdisciplinary Study of Language Evolution. Talk: “Language-Gene mismatches in global human history”.

- December 2018 **Jena, Germany** – Historical linguistics workshop. Invited speaker: “Bridging human genetic diversity and language change”.
- August 2018 **Zurich, Switzerland** – Mini-symposium of the Latin American Center Zurich. Invited speaker: “Genetic fingerprints of human migration and contact in South America”.
- July 2018 **Yokohama, Japan** – workshop “the (co-)evolution of genes, languages, and music from data analyses to theoretical models” Invited speaker: “Matches and mismatches between genes and languages: a case study from South America”.
- July 2018 **Yokohama, Japan** – Meeting of the Society of Molecular Biology and Evolution. Poster presentation: “Genome-wide variation in the Andes, Amazonia and Pacific coast of western South America”.
- June 2018 **Nijmegen, Netherlands** – conference Interdisciplinary Approaches in the Language Sciences. Invited Speaker: “Language and genes: bridging our biological and cultural history”.
- November 2017 **Hinxton, UK** – conference Human Evolution: Fossils, Ancient and Modern Genomes. Poster presentation: “Reconstructing human diffusion and collapse in the Americas”.
- October 2017 **Sao Paulo, Brazil** – Invited talk: “Evidencia genética de expansión y colapso poblacionales en las Américas”.
- October 2017 **Belo Horizonte, Brazil** – symposium “Populating the diverse landscapes of South America”. Invited participant.
- September 2017 **Tübingen, Germany** – Invited talk: “Matches and mismatches between genetic and linguistic diversity”.
- June 2017 **Barcelona, Spain** – workshop Co-evolutionary patterns and transition: Analysing processes of cultural change in cross-cultural and diachronic contexts. Invited talk: “Matches and mismatches between genetic and linguistic diversity: A case-study from the Andes”.
- March 2017 **Nijmegen, The Netherlands** – Invited Lecture at Max Planck Institute for Psycholinguistics “Matches and mismatches between genetic and linguistic diversity”.
- December 2016 **Paris, France**– Workshop “DNA polymorphisms in human populations”. Talk: “Reconstructing human diffusion and collapse in the Americas”
- November 2016 **Tübingen, Germany** – Symposium “New perspectives on the peopling of the Americas”. Invited Talk: “Reconstructing demographic change and population movements through the Amazonia to Pacific corridor”
- August 2016 **Jena, Germany** – Mini African Symposium – Linguistics, Genetics and Archaeology. Invited talk: “The role of West Africa within sub-Saharan genetic diversity”
- July 2016 **Gold Coast, Australia** – Meeting of the Society of Molecular Biology and Evolution. Poster presentation: “Reconstructing human diffusion and collapse in the Americas”
- April 2016 **Berlin, Germany** – Workshop Haploid Markers. Talk: “Y chromosome sequences from southern Africa: diversity, coalescence times, and rate variation”
- January 2016 **Huddersfield, UK** – Invited Lecture: “Insights into African population prehistory - From genetic and linguistic data”

- September 2015 **London, UK** – Meeting of the European Society for the study of Human Evolution (ESHE). Talk: “Paleolithic signatures from European glacial refugia revealed by mtDNA genomes”
- May 2015 **Leipzig, Germany** – Workshop “Speaking (of) Khoisan: a symposium reviewing southern African prehistory”. Invited speaker.
- February 2015 **Leipzig, Germany** – The Human Mutation Rate Meeting. Poster presentation: “Estimating the TMRCA of the Y chromosome phylogeny with new sequence data from southern Africa”
- June 2014 **Halle, Germany** – Workshop “The Claims of Descent: Science, Representation, Race and Redress in 21st Century South Africa”. Invited speaker. Talk “The use of the “ethnolinguistic” unit in genetic and linguistic research”
- April 2014 **Leicester, UK** – EMBO congress “Human evolution in the genomic era: Origins, populations and phenotypes”. Talk and poster: “Language contact and genetic variation in South America: the case of the Peruvian Yanasha”
- October 2013 **Boston, USA** – Meeting of the American Society of Human Genetics. Poster presentation: “Y chromosomal sequences from southern Africa allow direct comparison of paternal and maternal prehistories”
- August 2013 **Leipzig, Germany** – Workshop on Language diversity and prehistory. Invited speaker. Talk: “Prehistorical relationships in the Americas inferred through population genetics”
- September 2012 **Firenze, Italy** – Incontro Nazionale Giovani Antropologi. Invited speaker. Talk: “Variabilità genetica e linguistica a confronto in popolazioni Khoisan africane”
- June 2012 **Dublin, Ireland** – Meeting of the Society of Molecular Biology and Evolution. Poster presentation: “mtDNA genomes of Khoisan populations deciphered under a linguistic and social anthropological perspective”
- November 2011 **Leipzig, Germany** – Symposium on Population Prehistory of the Andes: A Cross-Disciplinary Conspectus. Invited presentation.
- October 2011 **Berlin, Germany** – Workshop on Methodology in Linguistic Prehistory. Invited speaker. Barbieri C. & Pakendorf B. “Integrating molecular data into the linguistic perspective on Khoisan prehistory”
- July 2010 **Lyon, France** – *SMBE meeting*. Poster presentation: “Complete mtDNA genome and Y chromosome data from West Africa: demographic history and population contact in Burkina Faso”
- June 2009 **Split, Croatia** - 6th ISABS Conference on Human Genome Project Based Applications in Forensic Science, Anthropology and Individualized Medicine. Talk and poster: “mtDNA variability in native Andean populations: the case of Lake Titicaca”
- April 2008 **La Sapienza University, Rome, Italy** - *Recent Issues in Archaeogenetics and Molecular Anthropology*. Talk: “mtDNA divergence of Aymara from the Quechua and Uros populations of Lake Titicaca”

Grants and awards

- June 2017 Post-Ph.D. Research Grant from the Wenner-Gren Foundation (20,000 \$)
- February 2015 Grant for fieldwork in Peru from the Department of Linguistics, Max Planck Institute for Evolutionary Anthropology, Leipzig (1500 €)

September 2013	Award for Best PhD thesis from the Italian Association of Genetics (800 €)
June 2011	Scholarship for tuition fees of Summer Institute in Statistical Genetics from University of Washington, Seattle, USA. (1200 \$)
June 2009	Split, Croatia - 6th ISABS Conference on Human Genome Project Based Applications in Forensic Science, Anthropology and Individualized Medicine. Recipient of Young Investigator Award (500 €)
April 2007	Grant from University of Bologna for fieldwork in Peru (1000 €)

Teaching experience

2018: Block course BIO373, Next Generation Sequencing for Evolutionary and Ecological Genomics - University of Zurich.

2016-2017: Tutor for the Spring School of Quantitative Methods/Masterclass, MPI SHH Jena. Introduction to Genetics and phylogenetic reconstruction.

From 2008 to 2017: Yearly involved in seminars and lectures for University of Leipzig and University of Bologna about Human Genetics, Physical Anthropology, Human Anatomy, Osteology, Human Ecology, Statistical Genetics and Molecular Anthropology, with laboratory sessions.

Professional Memberships

American Society of Human Genetics, European Society for the study of Human Evolution, Society for Molecular Biology and Evolution, Associazione Antropologica Italiana, Associazione Genetisti Italiani, Società Italiana di Biologia Evoluzionistica, Registro degli Antropologi Forensi Italiani.

Other academic activity and qualifications

Reviewer for PLOS ONE, American Journal of Physical Anthropology, European Journal of Human Genetics, Molecular Biology and Evolution, American Journal of Human Biology, AIMS Genetics, Quaternary International, Human Heredity, American Journal of Human Genetics, BMC Genomics.

Ad hoc reviewer for PhD thesis, master thesis and grants. Member of PhD review committees. Supervisor for master students and visiting scientists (laboratory and computational analysis).

Associate editor for the Journal of Language Evolution.

Italian habilitation as associated professor in Anthropology and Human Genetics. Abilitazione Scientifica Nazionale: 05/B1, valid until 05/04/24; 05/I1, valid until 26/07/24

Publications

Bajić V, **Barbieri C**, Hübner A, Güldemann T, Naumann C, Gerlach L, Berthold F, Nakagawa H, Mpoloka SW, Roewer L, Purps J, Stoneking M, Pakendorf B. 2018. Genetic structure and sex-biased gene flow in the history of southern African populations. *Am J Phys Anthropol*. doi:10.1002/ajpa.23694

Tucci S, Vohr SH, McCoy RC, Vernot B, Robinson MR, **Barbieri C**, Nelson BJ, Fu W, Purnomo GA, Sudoyo H, Eichler EE, Barbujani G, Visscher PM, Akey JM, Green RE. 2018. Evolutionary history and adaptation of a human pygmy population of Flores Island, Indonesia. *Science* (80-) 361:511–516.

Arias L, **Barbieri C**, Barreto G, Stoneking M, Pakendorf B. High-resolution mitochondrial DNA analysis sheds light on human diversity, cultural interactions, and population mobility in Northwestern Amazonia. 2018. *American Journal of Physical Anthropology*; 165(2): 238-255

Barbieri, Chiara, Sandoval JR, Valqui J, Shimelman A, Ziemendorff S, Schröder R, Geppert M, Roewer L, Gray R, Stoneking M, Fujita R and Heggarty P. 2017. Enclaves of genetic diversity resisted Inca impacts on population history. *Scientific Reports*, 7: 17411

Bortolini, E., Pagani, L., Crema, E.R., Sarno, S., **Barbieri, C.**, Boattini, A., Sazzini, M., Da Silva, S.G., Martini, G., Metspalu, M. and Pettener, D., 2017. Inferring patterns of folktales diffusion using genomic data. *Proceedings of the National Academy of Sciences*, p.201614395.

Stefania Sarno, Alessio Boattini, Luca Pagani, Marco Sazzini, Sara De Fanti, Andrea Quagliariello, Guido Alberto Gnecci Ruscone, Etienne Guichard, Graziella Ciani, Eugenio Bortolini, **Chiara Barbieri**, Elisabetta Cilli, Rosalba Petrilli, Ilia Mikerezi, Luca Sineo, Miguel Vilar, Spencer Wells, Donata Luiselli, Davide Pettener. 2017. Ancient and recent admixture layers in Sicily and Southern Italy trace multiple migration routes along the Mediterranean. *Scientific Reports*, 7(1), p.1984.

Alessio Boattini, Stefania Sarno, Carla Bini, Valeria Pesci, **Chiara Barbieri**, Sara De Fanti, Andrea Quagliariello, Luca Pagani, Qasim Ayub, Gianmarco Ferri, Davide Pettener, Donata Luiselli, Susi Pelotti. 2016. Mutation rates and discriminating power for 13 Rapidly-Mutating Y-STRs between related and unrelated individuals. *Plos One*. 11 (11) pp: e0165678

Malaspinas AS, Westaway MC, Muller C, Sousa VC, Lao O, Alves I, Bergström A, Athanasiadis G, Cheng JY, Crawford JE, Heupink TH, Macholdt E, Peischl S, Rasmussen S, Schiffels S, Subramanian S, Wright JL, Albrechtsen A, **Barbieri C**, et al. 2016. A genomic history of Aboriginal Australia. *Nature*. Sep 21.

Barbieri, Chiara, Alexander Hübner, Enrico Macholdt, Shengyu Ni, Sebastian Lippold, Roland Schröder, Sununguko W. Mpoloka, Josephine Purps, Lutz Roewer, Mark Stoneking, Brigitte Pakendorf. 2016. Refining the Y chromosome phylogeny with southern African sequences. *Human Genetics*, 135 (5), 541–553

Sara De Fanti*, **Chiara Barbieri***, Stefania Sarno, Federica Sevini, Dario Vianello, Erika Tamm, Ene Metspalu, Mannis van Oven, Marco Sazzini, Claudio Franceschi, Davide Pettener, Donata Luiselli (*first authors contributed equally). 2015. Fine dissection of human mitochondrial DNA haplogroup HV lineages reveals Paleolithic signatures from European glacial refugia. *PLoS ONE* 10(12): e0144391.

Barbieri, Chiara, Paul Heggarty, Daniele Yang Yao, Gianmarco Ferri, Sara De Fanti, Stefania Sarno, Graziella Ciani, Alessio Boattini, Donata Luiselli, and Davide Pettener. 2014. Between Andes and Amazon: The genetic profile of the Arawak-speaking Yaneshá. *American Journal of Physical Anthropology*, 155: 600–609.

Barbieri, Chiara, Mário Vicente, Sandra Oliveira, Koen Bostoen, Jorge Rocha, Mark Stoneking, Brigitte Pakendorf. 2014. Migration and interaction in a contact zone: mtDNA variation among Bantu-speakers in southern Africa. *PLoS One*: 9(6):e99117.

Macholdt, Enrico, Vera Ledo, **Chiara Barbieri**, Sununguko W. Mpoloka, Hua Chen, Montgomery Slatkin, Brigitte Pakendorf, and Mark Stoneking. 2014. Tracing Pastoralist Migrations to Southern Africa with Lactase Persistence Alleles. *Current Biology* 24, no. 8: 875-879.

Giuliani, Cristina, **Chiara Barbieri**, Mingkun Li, Laura Bucci, Daniela Monti, Giuseppe Passarino, Donata Luiselli, Claudio Franceschi, Mark Stoneking, and Paolo Garagnani. 2014. Transmission from centenarians to

their offspring of mtDNA heteroplasmy revealed by ultra-deep sequencing. *AGING* 6, no. 5.

Barbieri, Chiara, Tom Güldemann, Christfried Naumann, Linda Gerlach, Falko Berthold, Hiroshi Nakagawa, Sununguko W. Mpoloka, Mark Stoneking, and Brigitte Pakendorf. 2014. Unraveling the complex maternal history of Southern African Khoisan populations. *American Journal of Physical Anthropology*, 153:435–448.

Barbieri, Chiara, Vicente, Mário, Rocha, Jorge, Mpoloka, Sununguko W., Stoneking, Mark, Pakendorf, Brigitte. 2013. Ancient substructure in early mtDNA lineages of southern Africa. *The American Journal of Human Genetics*, 92.2: 285-292.

Pickrell, Joseph K., Patterson, Nick, **Barbieri, Chiara**, Berthold, Falko, Gerlach, Linda, Lipson, Mark, Loh, Pong-Ru, Lachance, Joseph, Güldemann, Tom, Kure, Blesswell, Wata Mpoloka, Sununguko, Nakagawa, Hiroshi, Naumann, Christfried, Mountain, Joanna, Bustamante, Carlos, Berger, Bonnie, Tishkoff, Sarah, Henn, Brenna, Stoneking, Mark, Reich, David & Brigitte Pakendorf. 2012. The genetic prehistory of southern Africa. *Nature Communications* 3:1143. DOI: 10.1038/ncomms2140 (published 16 October 2012)

Barbieri, Chiara, Anne Butthof, Koen Bostoen, and Brigitte Pakendorf. 2013. Genetic perspectives on the origin of clicks in Bantu languages from southwestern Zambia. *European Journal of Human Genetics*: 21:430–436.

Barbieri, Chiara, Mark Whitten, Klaus Beyer, Henning Schreiber, Mingkun Li, and Brigitte Pakendorf. 2012. Contrasting maternal and paternal histories in the linguistic context of Burkina Faso. *Molecular Biology and Evolution* 29:1213–1236

de Filippo Cesare*, **Chiara Barbieri***, Mark Whitten, Sununguko W Mpoloka, Ellen Gunnarsdóttir, Koen Bostoen, Terry Nyambe, Klaus Beyer, Henning Schreiber, Peter de Knijff, Donata Luiselli, Mark Stoneking, Brigitte Pakendorf. 2011. (*first authors contributed equally). Y-chromosomal variation in Sub-Saharan Africa: insights into the history of Niger-Congo groups. *Molecular Biology and Evolution* 28(3): 1255-1269

Barbieri, Chiara, Paul Heggarty, Loredana Castri, Donata Luiselli, Davide Pettener. 2011. Mitochondrial DNA variability in the Titicaca basin: Matches and mismatches with linguistics and ethnohistory. *American Journal of Human Biology*, 23: 89–99.

Invited contributions

Barbieri, Chiara. In press. Genetic Exchanges in Transitional Environments of South America. In Heggarty, P and Pierce, A (eds) *Rethinking the Andes-Amazonia 'Divide': A Cross-Disciplinary Exploration*.