

Silvia Ghirotto

Personal Information

Date and Place of Birth: December 12, 1984, Rovigo, Italy

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Education

2009-present Ph.D. in Evolutionary Biology, University of Ferrara.

(Supervisor: Prof. Guido Barbujani).

2008 Master Degree in BioMolecular Science at University of Ferrara, with final mark 110/110 cum laude. (Supervisor: Prof. Guido Barbujani. Thesis (in Italian): Relazioni genealogiche tra Sardi nuragici e popolazioni moderne: stima di parametri evolutivi.)

2006 Degree in Biological Science at University of Ferrara, with final mark 110/110 cum laude. (Supervisor: Prof. Guido Barbujani. Thesis (in Italian): Relazioni genealogiche tra sequenze mitocondriali neandertaliane, cro-magnon ed europee moderne.)

2003 Diploma di Perito Chimico Industriale (General Certificate of chemistry engineer) with final mark 95/100 at "Istituto Tecnico Industriale Statale F.Viola " of Rovigo.

Work experiences

2009-present Research fellowship at the Department of Biology and Evolution, University of Ferrara, for Biostatistical Analysis of Clinical Data.

Additional coursework

- 2011 *Python for computational science*. Courses and Schools, CINECA HPC (Bologna, Italy).
- 2011 *Computational Molecular Evolution*. Wellcome Trust Advanced Course, at the Wellcome Trust Genome Campus, Hinxton, Cambridge.
- 2008 *Dal C alla programmazione ad oggetti in C++*. Courses and Schools, CINECA HPC (Bologna, Italy).

Additional experiences

- 2010 Research fellowship at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany. (for the DAAD (the German Academic Exchange Service) program)

Memberships

- Italian Society for Evolutionary Biology (SIBE).
Society for Molecular Biology and Evolution (SMBE)

Contributed presentation

- 2010 **Silvia Ghirotto**, Francesca Tassi, Andrea Benazzo, Guido Barbujani. No evidence of Neandertal admixture in Cro-Magnoid and modern European mitochondrial genomes. Oral presentation in: "Società Italiana di Biologia Evoluzionistica 2010", Milano (Italy).
- 2010 **Silvia Ghirotto**, Francesca Tassi, Andrea Benazzo, Guido Barbujani. Testing for the genealogical relationship among Modern, Cro-Magnoid and Neandertal Europeans by approximate bayesian computation. Poster in: "Society for Molecular Biology and Evolution 2010", Lyon (France).
- 2009 **Silvia Ghirotto**, Stefano Mona, Andrea Benazzo, Francesco Papparazzo, David Caramelli, and Guido Barbujani. Inferring Genealogical Processes from Patterns of Bronze-Age and Modern DNA variation in Sardinia. Poster in: "Federazione Italiana delle Scienze della vita 2009", Riva del Garda (Italy).

Journal articles

Silvia Ghirotto, Luca Penso-Dolfi and Guido Barbujani. 2011. *Genomic evidence for an African expansion of anatomically-modern humans by a Southern route*. *Human Biology*. 83, 477-489.

Silvia Ghirotto, Francesca Tassi, Andrea Benazzo, Guido Barbujani. 2011. *No evidence of Neandertal admixture in Cro-Magnoid and modern European mitochondrial genomes*. *American Journal of Physical Anthropology*. doi: 10.1002/ajpa.21569.

Guido Barbujani and **Silvia Ghirotto**. 2010. *Origin of the Tuscans*. Standard Article in: "ENCYCLOPEDIA OF LIFE SCIENCES".

Silvia Ghirotto, Stefano Mona, Andrea Benazzo, Francesco Pappalardo, David Caramelli, Guido Barbujani. 2010. *Inferring Genealogical Processes from Patterns of Bronze-Age and Modern DNA variation in Sardinia*. *Molecular Biology and Evolution*. 27, 875-86.

Silvia Guimaraes, **Silvia Ghirotto**, Andrea Benazzo, Lucio Milani, Martina Lari, Elena Pilli, Elena Pecchioli, Francesco Mallegni, Barbara Lippi, Francesca Bertoldi, Sauro Gelichi, Antonella Casoli, Elise M. S. Belle, David Caramelli, Guido Barbujani. 2009 *Genealogical discontinuities among Etruscan, Medieval and contemporary Tuscans*. *Molecular Biology and Evolution*. 26, 2157-66

Elise M. S. Belle, Andrea Benazzo, **Silvia Ghirotto**, Vincenza Colonna, Guido Barbujani. 2009. *Comparing models on the genealogical relationships among Neandertal, Cro-Magnoid and modern Europeans by serial coalescent simulations*. *Heredity*. 102, 218-25.

Research Skills

Computer: Knowledge of Windows, and Unix operating system. Experience in working with High Performance Computing facilities. Knowledge of R statistical package. Basic knowledge of Python and C.

Population Genetics: Arlequin, Clustal, DnaSp, Network, MEGA. Experience in phylogenetic and simulation programs, and in implementing ABC techniques (for contemporary and serial sampling).

Simulation: IM, Beast, Simcoal, SerialSimcoal, Bayesian SerialSimcoal, ABCToolbox.

Research Interest

My research interests are in population genetics models of evolution to study human population history by Approximate Bayesian Computation techniques for both contemporary and serial sampling. I analyze modern and ancient human DNA data in order to highlight, if any, genealogical relationships between modern and ancient populations testing alternative models of evolution. I'm also interested in phylogenetics inference of demographics and evolutionary parameters; in ancient DNA; in molecular evolution; selection; coalescent theory and stochastic processes.