Anna Tommasi, Ph.D. Student (XXXX cycle)

PROJECT TITLE:

"New archaeogenomic insights from modern and ancient genomes"

"Nuove conoscenze archeogenomiche dall'analisi di genomi moderni e antichi"

SUPERVISOR:

Professor Alessandro Achilli

REVIEWER:

Professor Ornella Semino

Anna Tommasi

Nationality: Italian

WORK EXPERIENCE

1 MAY 2024 – 31 JUL 2024 Pavia, Italy

SCHOLARSHIP HOLDER FOR THE RESEARCH PROJECT ON "ARCHEOGENOMIC ANALYSIS OF MODERN AND ANCIENT SICILIAN SAMPLES" UNIVERSITY OF PAVIA

- DNA extraction and sequencing
- NGS data analysis on modern and ancient DNA
- Phylogenetic and phylogeographic analyses
- Usage of statistics softwares
- Bayesian analyses with softwares Beauti e BEAST.
- Active participation in writing the scientific article resulting from the research work; of which I am a co-author

1 APR 2024 – 29 MAY 2024 Pavia, Italy

TUTOR OF THE COURSE "MOLECULAR GENETICS METHODOLOGIES" UNIVERSITY OF PAVIA

- Student assistance during laboratory experience
- Lectures in coordination with the professor in charge of the course

21 NOV 2021 – 15 DEC 2023 Pavia, Italy

THESIS INTERNSHIP PROF. ALESSANDRO ACHILLI

- DNA extraction
- PCR
- Quantification
- Capillary electrophoresis
- Gel electrophoresis
- DNA purification for Sanger sequencing
- Library preparation for NGS sequencing
- NGS data analysis
- Sequences alignment with Sequencher, Muscle and MAFFT softwares
- Maximum parsimony tree building using MtPhyl and MEGA softwares
- In-depth knowledge of mitochondrial DNA

1 MAR 2023 – 1 JUN 2023 Pavia, Italy

TUTOR OF THE COURSE "MOLECULAR GENETICS METHODOLOGIES" UNIVERSITY OF PAVIA

- Student assistance during laboratory experience
- Lectures in coordination with the professor in charge of the course

1 DEC 2022 – 1 FEB 2023 Pavia, Italy

TUTOR OF THE COURSE "GENETICS" UNIVERSITY OF PAVIA

EDUCATION AND TRAINING

1 OCT 2021 – 15 DEC 2023 Pavia, Italy

MASTER'S DEGREE IN MOLECULAR BIOLOGY AND GENETICS University of Pavia

Website https://web.unipv.it/ | **Field of study** Molecular Biology and Genetics | **Final grade** 108/110 |

Thesis Refining the genetic history of Sicily through modern and ancient mitogenomes

1 OCT 2018 – 21 SEP 2021 Ferrara, Italy

BACHELOR DEGREE IN BIOLOGICAL SCIENCES University of Ferrara

Website https://www.unife.it/it | **Field of study** Scienze Biologiche | **Final grade** 105/110 |

Thesis Correlazione tra la differenziazione del gene MFSD12 e l'evoluzione della pigmentazione della pelle

13 SEP 2013 – 7 JUL 2018 Verona, Italy

HIGH SCHOOL DIPLOMA (CLASSICAL STUDIES) Liceo Classico Scipione Maffei

Website https://www.liceomaffeivr.edu.it/

LANGUAGE SKILLS

Mother tongue(s): **ITALIANO**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2
GERMAN	A2	A2	A2	A2	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Bash-Scripting | R and RStudio | Basic Knowledge of python | Basic knowledge of NextFlow

PUBLICATIONS

2022

Unlocking Horse Y Chromosome Diversity

This review provides a comprehensive overview of the current state of knowledge on the trends and prospects of male-specific Y chromosome region (MSY) variation in equines, which was first assembled in 2018. Indeed, it shows that compared with 12 other mammalian species, horses are now the most represented, with 56 MSY genes documented. However, in contrast to the high mitochondrial DNA variability observed in many horse breeds from different geographic areas, modern horse populations demonstrate extremely low Y chromosome genetic diversity. In fact, selective pressures exerted by breeders using pedigree data (not always error-free) as a predictive tool are the main cause of this lack of variation in the Y chromosome. Nonetheless, it is highlighted that the detailed phylogenies obtained by the recent genotyping of the Y chromosome in many equine breeds around the world have helped to resolve genealogical, forensic and population issues that lead to reevaluating Y chromosome as a powerful genetic marker, to avoid the loss of biodiversity as a result of selective breeding practices and to better understand the historical development of equine breeds.

Cardinali et al., Unlocking Horse Y Chromosome Diversity, Genes 2022, 13, 2272

CONFERENCES AND SEMINARS

12 JUN 2023 – 13 JUN 2023 Cortona

The ancient DNA revolution: from the initial attempts to the Nobel Prize

6 APR 2024 – 7 APR 2024 Salice Terme, Pavia

National theoretical-practical course in Criminalistics and Forensic Science: crime scene reconstruction