

ASTRA CLELIA BERTELLI

Undergraduate student
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EDUCATION

University of Pavia

Undergraduate student, first year of Biological Sciences’ Bachelor’s degree course.

IUSS – University School for Advanced Studies

Undergraduate student, first year of Biomedical Sciences’ triennial course.

Collegio Ghislieri – Merit-based residential college in Pavia

Undergraduate student.

Liceo Camillo Golgi – Senior High School

Humanities senior high school program. Senior high school diploma pursued with 100/100 *cum laude*.

SCHOLARSHIPS AND AWARDS:

- ❖ Excellent junior high school students’ municipal scholarship (2017)
- ❖ Literary award “Scrivi un racconto breve: Altri possibili mondi”: first prize (2017)
- ❖ Drama award “Rassegna di teatro sociale, Liceo Camillo Golgi”: second prize (2018)
- ❖ Excellent senior high school students’ Lombardia scholarship “Dote Scuola – Merito” (2021)
- ❖ Literary award “Sirmione in Love”: first prize in the U18 poetry section (2021)
- ❖ Literary award “Certamen Dantesco”: first prize (2022)
- ❖ IUSS student scholarship for having passed the entrance exam with 96/100 grading (2022)
- ❖ Excellent senior high school (with diploma) students’ Valle Camonica scholarship (2022)
- ❖ Excellent senior high school (with diploma) students’ Lombardia scholarship “Dote Scuola – Merito” (2023)
- ❖ Excellent senior high school (with diploma) students’ municipal scholarship (2023)
- ❖ Collegio Ghislieri student scholarship following the admission at IUSS School for Advanced Studies (2023)

WORKING EXPERIENCES

Bioinformatics researcher at Naturhistorisches Museum Wien (October 2024-March 2025)

Leveraging genomics and quantitative archeological data to shed light over potential connections between *Drosophila melanogaster* demographic history and human migrations in Europe.

Foundation Engineer at Criad LTD (April 2024-Present)

Empowering architects and designers through an AI-based workflow to ease the path from abstract ideas to concrete project development.

IT assistant at University of Pavia (February-May 2024)

Creating cloud-based development environments for students based on GitHub CodeSpaces and on GitPod Workspaces.

Bioinformatics intern at Naturhistorisches Museum Wien (Summer 2023)

Python software developer for genetic data management and analysis in the field of phylogenesis and biodiversity protection.

“La Gazza” - cultural periodical magazine (2020-Present)

Contributor with my own column (“Attualletteratura”, which concerns the intersections between literature and current worldly events), I publish once every six months.

“Engramma” – classical culture periodical magazine (2021)

As intern, I worked on proofreading and editing of several editions of this review. I was also trained with the basics of online publishing.

Istituto Comprensivo “Giuseppe Bonafini” – Junior High school (2020)

As intern, I worked as a teaching assistant, and I was required to organize and hold lectures on Iliad, UN organization, climate change, cell biology and Dante’s *Divina Commedia*.

Ferramenta “Stella Alpina” – hardware store (2019-2020)

As an employee during the summer of 2019, I worked in data analysis and collection of stock products. In the second summer, I was employed as sales manager.

SCIENTIFIC ACTIVITY AND RESEARCH

2024

- ❖ *Footprints of worldwide adaptation in structured populations of D. melanogaster through the expanded DEST 2.0 genomic resource* (Nunez et al., 2024) A paper on advancing the understanding of *Drosophila melanogaster* evolution over space and time, with the release of an expanded version of DEST and new analyses on vinegar flies large-scale genomic data (<https://www.biorxiv.org/content/10.1101/2024.11.10.622744v1>)

2022-23

- ❖ *Primati, DNA e AI: il future del potere?* A review paper published on 8th May 2023 on the links between genetics, primatology, AI and the development of future political powers.
- ❖ Presenting student at Ghislieri Scienza Poster Presentation Night (16th December) with a poster on the research paper *Effects of HIV infection and Antiretroviral treatments on pregnancy rates in the Western Cape Province of South Africa* (2020) by Leigh and colleagues.
- ❖ Presentation of research work: “*Epi de(r)mou: sulla nostra pelle?*” on social, demographical and cultural impact of HIV/AIDS (IUSS – Biomedical History Exam research presentation, 16th January 2023)
- ❖ Presentation of research work: “*Plants in space: an overview of the potentialities and the risks*”, a review of Bioinformatics studies with collection data on *A. thaliana* adaptations in spaceflight and microgravity condition, assessing biological changes that can shape our future use of plants in space (University of Pavia – Botany Exam research presentation, 30th April 2023)
- ❖ Presentation of the resumé of the research paper *CRISPR-Cas9 Gene Editing for Sickle Cell Disease and β -Thalassemia* (2021) by Frangoul et al. (IUSS – Tissue Engineering Exam research presentation, 26th April 2023)

- ❖ Primary research interests: Evolutionary Bioinformatics, Comparative Genomics, Population Genetics, Python tool-building for DNA comparison and variant assessment, AI and ML applied to biological systems, biodiversity conservation, genetic data management, phylogenetics

CULTURAL EXPERIENCES AND VOLUNTEERING

2023

- ❖ Winner of Lifebilty prize with a short novel on transgender women in science and climate change (May)
- ❖ Participant in “Teddy Rocks Math Essay” Competition with an essay titled *The strange case of cocaine, bacteria and diabetes*, on the mathematical equation (the logistic one) which links the three phenomena of drug addiction, population growth and progression of type II diabetes. (February)

2022

- ❖ Participant in the High School Students’ Debate Olympics with other fellow students: finalist in the regional phase of the competition (February-April)
- ❖ Participant in the High School Students’ drama contest “Scrivere il teatro” organized by the Italian Center for the International Theater Institute, with other fellow students, with the play “Fiore di cera” on transgender people’s rights (April – May)
- ❖ Volunteer organizer and educator at Junior Summer Camp in Borno (Brescia, Lombardia, Italy; July-August)
- ❖ Participant in classes on Bioinformatics, Population Genetics and Philosophy Theories of Probability in Collegio Ghislieri (October-December)
- ❖ Participant as auditor student in 4th Ghislieri Research Day (12th November), *No cancer cell is an island* conference by Giulia Biffi (Cambridge University, 22nd November)
- ❖ Organizer of *Mathpetizer – Ghislieri Math contest* (17th December)

2021

- ❖ Participant in the High School Students’ drama contest “Legalità e merito” organized by LUISS – Guido Carli University of Rome, with other fellow students, with the modern adaptation of the play *Hyppolitus* by Euripides, concerning the eco-crimes of mafia.
- ❖ Volunteer organizer and educator at Junior Summer Camp in Borno (Brescia, Lombardia, Italy; July-August).
- ❖ Participant in the Senior High School Students Orientation Course organized by Scuola Normale Superiore of Pisa (11th – 17th July)

2020

- ❖ Theater laboratory experience with *Bacchae* by Euripides (November 2019-February)
- ❖ Volunteer organizer and educator at Junior Summer Camp in Borno (Brescia, Lombardia, Italy; July-August).
- ❖ Volunteer soccer trainer at G.S. Borno (October-December)

2019

- ❖ Theater laboratory experience with *Miles Gloriosus* by Plautus (November 2018-June): with other fellow students, we took part in *II Rassegna di teatro sociale – Liceo Golgi* (Breno, Brescia, Italy; April), *Settimana del teatro classico* (Lovere, Brescia, Italy; April) and *XXV Festival Internazionale del Teatro Classico dei Giovani* (Palazzolo Acreide, Siracusa, Sicily; May – June).
- ❖ Volunteer organizer and educator at Junior Summer Camp in Borno (Brescia, Lombardia, Italy; July-August).

2018

- ❖ Theater laboratory experience with *Lysistrata* by Aristophanes (November 2017-June): with other fellow students, we took part in *I Rassegna di teatro sociale – Liceo Golgi* (Breno, Brescia, Italy; April), *Settimana del teatro classico* (Lovere, Brescia, Italy; April) and *XXIV Festival Internazionale del Teatro Classico dei Giovani* (Palazzolo Acreide, Siracusa, Sicily; May – June).
- ❖ Volunteer organizer and educator at Junior Summer Camp in Borno (Brescia, Lombardia, Italy; July-August).

SERVICE AND SCHOLASTIC CITIZENSHIP

- ❖ Students' representative in the schoolyears 2018-19, 2019-20 and 2021-22

LANGUAGES AND COMPUTER CODING

Languages:

Italian (native)

English (near native)

German (beginner)

French (beginner)

Computer coding:

Python (upper-intermediate expert)

Bash (upper-intermediate expert)

C (intermediate expert)

R (beginner)

REFERENCES

- ❖ Professor Nebojša Todorović
Department of Comparative Literature, Yale University
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