

# Lucía Castelli

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## Education

- Universidad Argentina de la Empresa**, University Degree in Biotechnology Jul 2020 - Sep 2025
- 5-year degree with Thesis, equivalent to a combined Bachelor–Master program. Final grade average: 81.1%.
  - **Teaching experience:** *Molecular Biology and Physiology* lectures and laboratory sessions (2022).
  - **STEM Outreach:** Led public scientific events, fairs and laboratory workshops (2022); Member at the “Fishroom” Team, managing the aquarium and science communication (2020 - 2021); Microbiology Technician in interdisciplinary short film, “*Proyecto Divergente*” (2022); Research Testimony (2024).
- University of Applied Sciences Upper Austria**, Academic Exchange Sep 2023 - Feb 2024
- Excelled at BSc. and MSc. (e.g. Scientific Programming) courses, with an average of 1.11 (1 = 100%).

## Research

- Institute of Experimental Biology and Medicine (IBYME-CONICET), Functional & Molecular Glycomics Laboratory**, Student Researcher Jan 2024 - Aug 2025
- Thesis project: identification of glycogenetic biomarkers for early detection of colitis-associated colorectal cancer in ulcerative colitis patients. Supervisors: Karina V. Mariño, PhD., Joaquín P. Merlo, PhD.
  - Performed large-scale RNA-seq and microarray analyses; validated with RT-qPCR in AOM/DSS murine models. Developed a web application and an R package for differential expression analysis.

## Projects

- **Recreating ‘Single-cell transcriptomics and epigenomics unravel the role of monocytes in neuroblastoma bone marrow metastasis’** ([rpubs.com/lcastelli/neuroblastoma](https://rpubs.com/lcastelli/neuroblastoma), *in progress*): Reproducing analyses from *Fetahu et al. (Nat Commun 2023)* to develop educational resources. Focus: tumor cell plasticity, microenvironment signaling, and macrophage reprogramming.
- **DEGs Visualizer** ([lcastelli.shinyapps.io/degsv](https://lcastelli.shinyapps.io/degsv)): Interactive Shiny app for differential expression analysis.

## Awards & Funding

- **Ernst Mach Grant for studying at an Austrian University of Applied Sciences (€6.750)**, Austria’s Agency for Education and Internationalisation (OeAD, Sep 2023 - Feb 2024).
- **Top in Argentina Award: English as a First Language (2016)**, ESSARP/Cambridge — Best score in the country for the IGCSE Exam, Outstanding Learner Awards (2016).

## Certificates

- **Bioinformatics for single-cell "omics": 14th Latin American and Caribbean Congress of Immunology:** "Pre-Congress and 3rd Franco-Austral Course on Bioinformatics Applied to Immunology" (2024).
- **Programming:** *Harvard University/edX*— CS50AI (AI with Python, *in progress*), CS50R (R, 2024), CS50x (Computer Science, 2023); *CIIPME-CONICET*— Data Analysis with Jamovi (2023); *ISCB SC Argentina*— R for Biological Data Analysis (2023).
- **Languages:** *Cambridge*— Certificate in Advanced English (CAE), C2 level due to A\* score (2017); IGCSE in Mathematics, Environmental Management, ICT, English and Spanish as a First Language, History (2016). *FH OÖ*— B1.1 German (2024). *UniWien Sprachzentrum*—C1.1 German (expected, Jan 2026).

## Industry

- Bayer Argentina (Crop Science, Regulatory Science)**, Intern Sep 2022 - Aug 2023
- Performed statistical analysis on GM crop resistance data, with Bayesian models for allele frequency trials.
  - Managed regulatory documentation, and international insect collection/export protocols. Designed databases and BI dashboards for efficient data management and visualization.
  - Member of DEI committees: BLEND (LGBTQ+ & Allies) and GROW (Women’s Advancement).

## Skills & Technologies

- **Programming & IT:** R, Python, C, Bash, SQL, JavaScript, HTML/CSS, Tableau, MS Office.
- **Molecular Biology:** DNA/RNA extraction, PCR, RT-qPCR, gel electrophoresis, Western blot, ELISA.
- **Cell Culture:** Bacterial, yeast, and mammalian cell lines; aseptic techniques and transfection.
- **Other Laboratory Skills:** Microscopy (light/fluorescence), chromatography, spectrophotometry, titration.
- **Languages:** Spanish (native), English (C2), German (B1; C1.1 expected by Jan 2026).