

Carolina Monzó

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Data analyst and computational biologist

Professional Summary

Passionate bioinformatician and data analyst with 9+ years of experience in cross-sectional and longitudinal phenotypic and omic data analysis. Expert in developing software tools for bioinformaticians using Python and R. Experienced in wet-lab experiments and statistical analysis for biological research questions.

Education

- 2019–2022 **Ph.D. in Natural Sciences**, *Universität zu Köln*, Germany, Cum laude
Thesis: The effect of Dietary Restriction on the Microbiome and the Adaptive Immune System in Mouse Ageing
Supervisors: Prof. Dame Linda Partridge and Prof. Andreas Beyer
Location: Max Planck Institute for Biology of Ageing
- 2016–2018 **M.Sc. in Bioinformatics**, *Universitat de València*, Spain, Outstanding
- 2014–2015 **Postgraduate Diploma in Medical Genetics**, *Universitat de València*, Spain
- 2010–2014 **B.Sc. in Biology**, *Universitat de València*, Spain

Professional Experience

- 2024–Present **Marie Skłodowska-Curie Actions Postdoctoral Fellow**, *Institute for Integrative Systems Biology (I2SysBio)*, Valencia, Spain
- Design and develop tools for long-reads transcriptomics data analysis
 - Supervise PhD and MSc students
 - Design studies and apply for independent funding
 - Represent postdocs in the institute board
 - Member of the training committee
 - Co-lead the Junior Hub on Bioinformatics and Computational Biology of CSIC
- 2022–2024 **Postdoctoral Researcher**, *Institute for Integrative Systems Biology (I2SysBio)*, Valencia, Spain
- Design and develop tools for single-cell multi-omics data simulation and analysis
 - Supervise MSc students, organize seminars, manage social media
 - Design studies and collaborate in funding applications
- 2019–2022 **Ph.D. Student**, *Max Planck Institute for Biology of Aging*, Cologne, Germany
- 2017–2018 **Senior Technician**, *Health Research Institute (INCLIVA)*, Valencia, Spain
- 2017–2017 **Bioinformatics Technician**, *Health in Code*, Valencia, Spain

Grants & Funding

- 2025–Present **JAIE Intro 2025**, *CSIC*, Principal Investigator
- Grant for developing software for differentiating between technical noise and transcript divergency in long-reads transcriptomics
- 2025–Present **Oxford Nanopore Grant**, *Oxford Nanopore Technologies*, Principal Investigator
- Grant for Oxford Nanopore PromethION P2 Solo pack including sequencer and reagents. Investigating RNA degradation patterns using Nanopore long-read sequencing
- 2024–2026 **Marie Skłodowska-Curie Actions Postdoctoral Fellowship**, *European Commission*, Principal Investigator
- Grant for deciphering the role of RNA biological noise in aging using long-reads transcriptomics
- 2020–2023 **National plan 2020**, *Ministry of Science*, Contributor

Awards

Best Highlight talk: 1st prize, SQANTI-reads.

Best Flash talk: 2nd prize, RNA transcript divergency in aging.

Best PhD Thesis: 2nd prize.

Best poster: 1st prize, MOSim.

Technical Skills

Languages: Python, R, Bash, Git

Software Development: Bioconductor packages, bioinformatics pipelines, statistical analysis tools

Computing: high-performance computing, AWS infrastructure

Data Analysis: Transcriptomics, genomics, metabolomics, proteomics, statistical modeling **Experimental**

Design: Mouse and tissue-based experiments, nucleic acid analysis

Technologies: Illumina sequencing, PCR, nucleic acid extraction, libraries preparation

Publications

Total Publications: 19 peer-reviewed articles and 1 book chapter

Selected Publications:

- Nature Reviews Genetics - Review on long-read transcriptomics approaches
- Briefings in Bioinformatics - Bioinformatics methodology development on single-cell multi-omics data
- Cell Reports - Immune cell profiling in aging mouse models

Software Development

2024– **SQANTI3 and SQANTI-reads**, *Co-author*

Present Bioinformatics tool for long-read transcriptomics analysis

2022–2024 **MOSim**, *Author*

Multi-omics simulation software for bulk and single-cell data

Leadership & Management

- **Coordinator of Junior BCBHub-CSIC** - Leading junior researchers
- **Board member of I2SysBio** - Institutional governance and strategic planning
- **Board member of BCBHub** - Community leadership in computational biology
- **Member of I2SysBio Training Committee** - Educational program development and oversight

Conference Presentations

Total: 12 talks and 44 posters at National and International Conferences (2016–2025)

Teaching & Mentoring

Thesis Supervision

- PhD Thesis: 1
- MSc Thesis: 14

Organization of Workshops & Training

- Workshop: Long-reads transcriptomics Summer School 2025
- Workshop: Long-read transcriptomics workflows and applications 2024
- Workshop "CSIC4CSIC" 2024
- Adopt a bioinformatician (BCBHub mentoring program) 2025

For complete details, publications, courses, and interactive content:

<https://carolinamonzo.github.io/>