

Emanuele Pirana

Passionate, hard-working, outgoing and sociable. I am an ambitious and determined student, curious and open to learning to keep improving.

EDUCATION AND TRAINING

PhD in Genetics, Molecular and Cellular Biology

[01/10/2026 – Present]
PhD project title: Engineering of a Modular Enzyme Inhibitor for Cardiac Arrhythmias (ERC advanced: Nanobody-Targeted Camk2d Inhibition for Cardiac Arrhythmias "Nab Heart". Grant Agreement n. 101198414). Molecular Cardiology Laboratory (Prof. Silvia G. Priori)
Supervisor: Prof. Silvia G. Priori
Co-supervisor: Prof. Francesca Magnani

Master's degree in molecular biology and genetics

[04/10/2024 – 21/07/2026]
Grade: 110/110 cum laude
Thesis: Computational and biochemical characterization of the C-terminal tail of cardiac CASQ unveils its regulatory role in the Ca^{2+}-dependent assembly.
Thesis internship (01/10/2024 – 21/07/2026):

Molecular Cardiology Laboratory (Prof. Silvia G. Priori). Biochemical and structural studies of the cardiac protein CASQ2 with the integration of computational approaches, carried out in collaboration with the Biomolecular Engineering Lab at the Politecnico of Milan (Prof. Alfonso Gautieri), including molecular dynamics simulations, protein-protein docking and molecular design.

Bachelor's degree in biotechnology

[26/09/2021 – 22/07/2024]
Grade: 110/110 cum laude
Thesis: The polymerization of cardiac Calsequestrin: a study using spectrophotometer and light scattering methods
Thesis internship (01/11/2023 – 30/06/2024):
Carried out at the Molecular Cardiology Laboratory (Prof. Silvia G. Priori).

LANGUAGE SKILLS:

Mother tongue: Italian
Other languages: English (B2)

EXTRA-CURRICULAR ACTIVITIES:

Passionate about ski mountaineering, mountaineering and running, which helps me improve my focus on my goals. Interested in assembling personal-computer hardware, and use of 3D printers.

ACADEMIC E-MAIL:

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FORMATIVE EXPERIENCE

Tutoring activity at the University of Pavia providing laboratory and teaching support for the Plant Molecular Biology and Molecular Biology courses of the Biotechnology degree program. Assisted students during practical laboratory sessions and supported the teaching staff in preparing and running experiments.
Participation in the FEBS 2025 congress (05/07/2025–09/07/2025) and in the "Instruct Course on Electron Tomography and Subtomogram Averaging" workshop (09/12/2025–12/12/2025).

LABORATORY SKILLS

Experienced in protein expression and purification, biochemical and biophysical characterization of proteins using size-exclusion chromatography, dynamic light scattering, mass photometry, turbidimetric and thermal-stability assays, SAXS and Western blot. Skilled in standard molecular biology techniques (primer design, PCR, bacterial transformation) and in computational methods, including molecular dynamics simulations (NAMD, VMD), protein modelling and design (Rosetta, AlphaFold, CABS-dock) and structural analysis and visualization (ChimeraX, PyMOL).

PUBLICATIONS

Marabelli, C.; Santiago, D. J.; Pirana, E.; Antonio, C. D.; Canciani, A.; Bolognesi, M.; Forneris, F.; Priori, S. G. Cardiac Calsequestrin Is a Physiological Dimer That Polymerizes through a Ca^{2+}-Triggered Cooperative Switch. bioRxiv April 7, 2026, p 2026.04.04.716468. https://doi.org/10.64898/2026.04.04.716468.

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