





Lorenza Garau Paganella

Postdoctoral Scholar, Mechanical Engineering

 Curriculum Vitae available Online  Resume available Online

Bio

BIO

Lorenza was born in Italy in 1997 and is currently a postdoctoral fellow at Stanford University with Prof. Chaudhuri, supported by an SNSF fellowship. Her research focuses on engineering biomaterials to investigate cell–extracellular matrix interactions and mechanotransduction in 2D and 3D cell cultures, aiming to advance biomedical understanding of tissue remodeling and disease.

Lorenza obtained her PhD (2024) in Mechanical and Process Engineering from ETH Zurich, where she developed hydrogel scaffolds and protocols for protein isolation to study cell behavior in engineered microenvironments.

Before her PhD, Lorenza completed her MSc at ETH Zurich and BSc at University of Trieste in Process Engineering, graduating both cum laude. During this time her focus was on biomaterials for drug delivery which she complemented with an internship in Roche. She has worked in interdisciplinary teams combining engineering and biology and is motivated by research that bridges fundamental science with clinical impact.

HONORS AND AWARDS

- Postdoc mobility fellowship, Swiss National Science Foundation (06/2025-05/2027)

STANFORD ADVISORS

- Ovijit Chaudhuri, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Reinforced Polymer-Nanoparticle Hydrogels for Subcutaneous and Sustained Delivery of Trastuzumab** *ADVANCED HEALTHCARE MATERIALS*
Bovone, G., Bernhard, S., Jacquot, G., Mittelheisser, V., Mirjolet, C., Guzzi, E. A., Paganella, L., Liebi, L., Draussin, J., Lopez Navarro, P., Barbe, E., Lefebvre, O., Goetz, et al
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- **Cyclic jetting enables microbubble-mediated drug delivery** *NATURE PHYSICS*
Cattaneo, M., Guerriero, G., Shakya, G., Krattiger, L. A., Paganella, L. G., Narciso, M. L., Supponen, O.
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- **Injectable Senolytic Hydrogel Depot for the Clearance of Senescent Cells** *BIOMACROMOLECULES*
Paganella, L., Bovone, G., Cuni, F., Labouesse, C., Cui, Y., Giampietro, C., Tibbitt, M. W.
2025; 26 (2): 814-824

- **Variations in fluid chemical potential induce fibroblast mechano-response in 3D hydrogels.** *Biomaterials advances*
Garau Paganella, L., Badolato, A., Labouesse, C., Fischer, G., Sanger, C. S., Kourouklis, A., Giampietro, C., Werner, S., Mazza, E., Tibbitt, M. W.
2024; 163: 213933
- **Protein Isolation from 3D Hydrogel Scaffolds.** *Current protocols*
Da Silva Andre, G., Paganella, L. G., Badolato, A., Sander, S., Giampietro, C., Tibbitt, M. W., Dengjel, J., Labouesse, C.
2024; 4 (1): e966
- **Serine protease 35 regulates the fibroblast matrisome in response to hyperosmotic stress.** *Science advances*
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- **Control of hydrostatic pressure and osmotic stress in 3D cell culture for mechanobiological studies.** *Biomaterials advances*
Kourouklis, A. P., Wahlsten, A., Stracuzzi, A., Martyts, A., Paganella, L. G., Labouesse, C., Al-Nuaimi, D., Giampietro, C., Ehret, A. E., Tibbitt, M. W., Mazza, E.
2023; 145: 213241