

ASIA BADOLATO

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Profile

I am a highly driven biomedical engineer specializing in biohybrid robotics and tissue engineering. I am interested in investigating cell-material interactions along with utilizing biofabrication techniques to improve the development of engineered tissues.

Work experience

January 2024 – present | PhD student at Soft Robotics Lab, ETH Zurich, Zurich, Switzerland.

- Engineered neuromuscular tissues for biohybrid robots.

April 2023 – December 2023 | Research internship in Advanced Cellular Model at Roche Pharma Research and Early Development (pRED) Ophthalmology department, Roche, Basel, Switzerland.

- Contributing to the development of a 3D *in vitro* model for dry age-related macular degeneration using microfluidic systems.

Education

2020 - 2023 | Master's Degree in Engineering of Cells, Tissues, and Biotechnologies at Biomedical Engineering Department, Politecnico di Milano, Milano, Italy.

2015 - 2020 | Bachelor's Degree in Biomedical Engineering at University of Pisa, Pisa, Italy.

2010 - 2015 | Diploma di Maturità Scientifica (High School Degree) at Liceo Scientifico XXV Aprile, Pontedera (PI), Italy.

Laboratory Activity

May 2022 – March 2023 | Master Thesis Project – Development of a 3D *In Vitro* Model to Characterize Fibroblasts Response to Extracellular Stimuli, at Macromolecular Engineering Lab, ETH Zürich, Zurich, Switzerland.

- Mechanical and biological characterization of PEG and GelMA hydrogels to culture dermal fibroblasts for studying the mechanotransduction of osmotic pressure.

March 2022 – May 2022 | Cell Cultures and Biocompatibility Laboratory, Politecnico di Milano, Milano, IT.

2014 | Summer Internship (see publication) – Fluorescence Microscopy of Cancerous Extracellular Microenvironment at Materials Science Engineering, Cornell University, Ithaca (NY), USA.

Skills summary

• Bioengineering related skills

Rheology, Hydrogel fabrication, Bioprinting, Western Blot, qPCR, Cell culture, Fluorescence microscopy, Nanoindentation, Microfluidic systems, Confocal microscopy.

- **Computer skills**

MATLAB, Comsol Multiphysics, ImageJ, Inventor, Fusion 360, Python, Illustrator, Bio-Rad Image Lab Software.

- **Soft skills**

Collaboration and Team Working, Communication, Presentation, Problem Solving, Adaptability, Time Management, Proactivity.

Languages

Mother tongue: Italian | Other Languages: English – Professional proficiency.

Publications

- Da Silva André G., Paganella L. G., Badolato A., Sander S., Giampietro C., Tibbitt M. W., Dengjel J., & Labouesse C.; *Protein isolation from 3D hydrogel scaffolds*; (2024) *Current Protocols*, 4, e966. doi: 10.1002/cpz1.966
- Master's Degree Thesis: A. Badolato; *Development and characterization of a 3D in vitro model to study dermal fibroblasts response to hyperosmotic stresses*. (2023)
- Billeci L., Badolato A., Bachi L., & Tonacci A.; *Machine Learning for the Classification of Alzheimer's Disease and Its Prodromal Stage Using Brain Diffusion Tensor Imaging Data: A Systematic Review*; (2020) *Processes* 8, no. 9: 1071. doi: 10.3390/pr8091071
- Acknowledged in Wang, K., Wu, F., Seo, B.R., Fischbach, Chen, W., Hsu, L. and Gourdon, D.; *Breast cancer cells alter the dynamics of stromal fibronectin-collagen interactions*; *Matrix Biology* (2016) doi: 10.1016/j.matbio.2016.08.001

Other interests

- Contemporary Dance at Pontedera Danza School, Pontedera (PI), IT.
- Piano student at Accademia Musicale Toscana, Pontedera (PI), IT.
- Rhythmic Gymnastics - professional level, at Stella Azzurra, Pontedera (PI), IT.

References

- **Prof. Dr. Mark Tibbitt** - ETH Zürich, Zurich, CH. Email: mtibbitt@ethz.ch
- **Prof. Dr. Delphine Gourdon** - University of Glasgow, Glasgow, UK. Email: delphine.gourdon@glasgow.ac.uk
- **Dr. Giovanna Brancati** - Institute of Human Biology, Roche, Basel, CH. Email: giovanna.brancati@roche.com