Election ISBF Board of Directors 2024

Passport photograph:

Name: Paola Serena Ginestra

Affiliation: University of Brescia, Department of Mechanical and Industrial Engineering

Field of research: 3D printing, Additive Manufacturing and Material forming for biomedical applications, Biomanufacturing

Research and other activities:

Bachelor's degree in Biomedical Engineering and Master's degree in Biomechanical Engineering followed by a PhD in Mechanical Engineering on Biofabrication and Biomanufacturing Technologies.

My main research topic has been tissue engineering and especially scaffolds/prostheses and ortheses design and production by conventional technologies and 3D printing. The main cellular phenotypes that have been taken into account have been induced pluripotent stem cells (iPSCs), cardiomyocytes, neurons, osteoblasts and macrophages. The main technologies that have been used include: electrospinning, material extrusion, photolithography, stereolithography, laser powder bed fusion, aerosol jet printing and bioprinting. The main biocompatible materials involved in the production of components have been bio-based polymers, resins, metals and especially hydrogels and bioinks [1,2].

In recent years, my main activity has been based on the development of materials for bioprinting of cell-laden bioinks in order to obtain a 3D structure that promotes cell vitality and proliferation. Moreover, bioprinting and culture of mini-brain organoids has been a high impact research of our lab.

My expertise is defined by the participation of different Boards and Committee that strengthened my capacity to look at every situation with a multi-purpose and multi-disciplinary point of view. My academic path has also opened up my collaborations with very different interests and scientific topics (i.e. mechanical technology and biology) which allowed me to deal with diverse terms, necessities and priorities, understanding that every vision offers a new opportunity.

I am strongly motivated to be part of the Board of Directors of the International Society of Biofabrication. The topics and members of this society would enrich my experience in the biomedical aspects and would allow me to enhance the importance of this field of research in my Institution that does not already include a degree course in Bioengineering. My class is title "Production Technologies for Biomanufacturing" and it is part of the Master's Degree in Mechanical Engineering at the University of Brescia, Italy. I am the only Biomedical Engineer currently enrolled in this University. I am constantly working to learn how to involve and promote young researchers' work in academic and non-academic societies that can contribute in different activities and help the society promotion and recognition. I am collaborating with Dr. Cho's group at the POSTECH in South Korea since 2019, firstly thanks to the award for "Young Italian Researchers in Korea" promoted by the Italian Embassy in Korea, and then thanks to our PhD exchange program that ended in a publication in Biofabrication Journal [1].

Activities in Cirp-BioM: *Organizer of the V Cirp Biomanufacturing Conference in Italy (June 2022). Participation to the Cirp Biomanufacturing Conference as Scientific Committee since 2024. Participation as speaker and co-author since 2015.*

Activities in other Symposia on Biomanufacturing and Biofabrication: Co-organizer of MS01: ADDITIVE MANUFACTURING (ESAFORM); Bioprinting and Biofabrication Open Session (ISM); Biofabrication Open Session (ISIEA); Keynote on Bioprinting (Materials Science Conference Singapore).

Member in other professional associations: Member of the Italian Association of Manufacturing Technologies (A.I.TE.M.); Board of directors of the European Society of Material Forming (Esaform); Board of directors of the Italian Association of Fixed Term Researchers in Academia (ArteD); Member of the Italian University Council (CUN).

Participation in ISBF conferences: since 2022

Papers published in Biofabrication:

[1] Kong J.S., Kim J.J., Riva L., **Ginestra** P.S., **Cho D.-W.** In vitro three-dimensional volumetric printing of vitreous body models using decellularized extracellular matrix bioink (2024) Biofabrication, 16 (4), art. no. 045030, DOI: 10.1088/1758-5090/ad6f46

[2] Seiti M., **Ginestra** P., Ferraro R.M., Ceretti E., Ferraris E. Nebulized jet-based printing of bio-electrical scaffolds for neural tissue engineering: a feasibility study (2020) Biofabrication, 12 (2), art. no. 025024, DOI: 10.1088/1758-5090/ab71e0

Other relevant activities: Promotion of the Biofabrication Conference and Activities with the PhDs and Young Researchers; Collaborations with Biofabrication Board of Directors and Reviewer for the Biofabrication Journal.