

PERSONAL INFORMATION

Dr. Mara Terzini, Ph.D.



WORK EXPERIENCE

11/2018–Present **Assistant Professor in Industrial Bioengineering**  
Politecnico di Torino, Torino (Italy)

04/2016–11/2018 **Post-doctoral Fellow**  
Politecnico di Torino, Torino (Italy)

*Topic:* Biomedical devices design and simulation and experimental characterization of biological tissues behaviour

EDUCATION AND TRAINING

03/2013–05/2016 **Doctoral Program in Biomedical Engineering** EQF level 8  
Politecnico di Torino, Torino (Italy)  
*Title:* Exploring the mechanical properties of ex vivo human dermis in vitro and in silico

10/2009–12/2012 **Master’s Degree in Biomedical Engineering – Biomechanical curriculum** EQF level 7  
Politecnico di Torino, Torino (Italy)  
*Title:* Human Acellular Dermal Matrix: Biomechanical Behaviour

09/2004–10/2009 **Bachelor’s Degree in Biomedical Engineering** EQF level 6  
Politecnico di Torino, Torino (Italy)  
*Title:* Automated Therapy Management Procedures

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	B2	B1	C1
IELTS 7 (score obtained in November 2008)					

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
[Common European Framework of Reference for Languages - Self-assessment grid](#)

Communication skills

Teaching activities in the following II and III level courses:

**III level courses**

September 2017

“Patient-specific planning of arthroplasty: from CT scans to structural models”, Università degli studi di

Perugia, Summer School "Smarter Engineering for Industry 4.0 – 3rd IEEE Italy Section".

February 2017

"Planning, management and analysis of clinical and laboratory research", Dottorato di Ricerca Interateneo in Bioingegneria E Scienze Medico-Chirurgiche, Politecnico di Torino and Università di Torino

#### II level courses (>300 students)

From a.a. 2014/2015 to current

"Solid Biomechanics", Master course in Biomedical Engineering, Politecnico di Torino

From a.a. 2013/2014 to current

"Design of prostheses and artificial organs", Master course in Biomedical Engineering, Politecnico di Torino

#### Organisational / managerial skills

Since 2018, Dr. Mara Terzini has been Principal Investigator of many Research Contracts:

- MEDICS S.R.L. (2019) - Mechanical evaluation of custom made 3D printed surgical guides
- MT ORTHO S.R.L. (2019) - Mechanical characterization of intervertebral fusion devices
- CEA MEDICAL SA (2019) - Experimental evaluation of the pull-out force of dental implants
- Unimedical Bio.Tech S.r.l. (2019) – Experimental evaluation of the structural behavior of a unilateral external fixator

In addition, since 2013, she coordinated the activities of the Politecnico di Torino Unit for the following Research Projects and Contracts:

#### International Research Project

- MANUNET, Transnational call 2017 (2018-2020), EASy-FIX Engineered Antibacterial Solutions for temporary Fixation devices.

#### National Research Projects

- POR FESR 2014/2020 (2017-2019), M.U.S.Table – Multiple Use Surgical Table.
- POR FESR 2014/2020 (2017-2019), W.D.Plate – Wireless Dynamic Plate.
- Mi.S.E. – Fondo per la crescita sostenibile (2015 – 2019), E.F.I.N. – Expandable Femoral Intramedullary Nail.
- POR FESR 2007/2013 (2012-2014), BBS "Bioactive Bone Substitutes", Asse 1 Innovazione e transizione produttiva Attività I.1.3 – Innovazione e PMI.

#### Research Contracts

- VivacSo S.r.l. (2016-2017) – Mechanical Characterization of an ankle orthosis
- TECHNOLOGIC S.r.l. (2015-2016) – Computational analysis on the influence of DXA parameters on the risk of fracture
- Alea s.a.s. (2015-2016) – Structural integrity analysis of infusion pumps
- EASYFOR MEDICAL DEVICE s.r.l. (2015) – Finite Element Analysis of dental implant geometries
- Citieffe S.r.l. (2011) Experimental analysis of osteosynthesis screw insertion torques

Finally, she is member of the Organizing Committee of the 3° Annual Meeting of Centro 3R "L'era delle 3R: modelli in silico, in vitro e in vivo per promuovere la ricerca traslazionale", Torino, 10-11 June 2021.

#### Job-related skills

Dr. Mara Terzini's scientific and technology transfer activities focus on the bioengineering application of methodological, technological, theoretical and experimental aspects typical of mechanical engineering, and on the study, the design and the functional evaluation of instrumentation, medical devices and systems, tissues and organs using numerical and experimental tools. The methods and techniques developed have found documented application in areas such as biomechanics (*in silico* and *in vitro*) applied to the fields of orthopedics and dentistry, the mechanical characterization of biological tissues/devices and the constitutive modeling of biological tissues.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Digital skills - Self-assessment grid

ADDITIONAL INFORMATION

Honours and awards

**Young Scientist Award for Best Poster** for the contribution: "Development of an animal-free methodology for mechanical performance assessment of engineered skin substitutes", 2nd Centro 3R Annual Meeting, 2019.

**Quality Award 2015** of the Politecnico di Torino Doctoral School for the Ph.D. Thesis: "Exploring the mechanical properties of ex vivo human dermis *in vitro* and *in silico*".

Memberships

- Member of the European Society of Biomechanics (ESB)

Activities for the scientific community

- Member of the Scientific Committee of the 2° National Congress IDBN & III Thematic Conference ESB-ITA '3D printing and Biomechanics', Pavia, 5-7 September 2018.
- Reviewer for the following international journals: Annals of Biomedical Engineering (Springer), Acta Biomaterialia (Elsevier), Medical & Biological Engineering & Computing (Springer), Computer Methods and Programs in Biomedicine (Elsevier), Journal of Functional Biomaterials (MDPI), Microsystem Technologies (Springer), Biomedical Engineering / Biomedizinische Technik (De Gruyter), Applied Science (MDPI), Scientific Reports (Nature), Journal of the Mechanical Behavior of Biomedical Materials (Elsevier), Bioengineering (MDPI), Journal of Clinical Densitometry (Elsevier)