

# CURRICULUM VITAE

## PERSONAL INFORMATION

---

### **FEDERICA MEZZANI**

Actual position: Contract researcher, Dept. of Mechanical and Aerospace Engineering, Sapienza University of Rome

Key figures: *h*-index (Scopus): 36; journal published papers: 69

## SHORT RESUME

---

The candidate graduated with honour in Mechanical Engineering in 2011. Her several international experiences include the internship at BMW for her master thesis, the research activity at the University of Auckland (NZ), a collaboration within the Virgo project for the gravitational wave discovery. In this context, she was awarded with the Special Breakthrough prize in Fundamental Physics and the Gruber Cosmology prize. During her PhD at Sapienza, University of Rome, she developed the experimental campaign related to her thesis at Technion, Israel Institute of Technology in Haifa. Awarded Doctor in Theoretical and Applied Mechanics at the Faculty of Engineering, Dept. of Mechanical and Aerospace Engineering in 2019, she is currently a post-doc researcher working in the same department on the project "MINOR: new generation demining method", which earned her the L'Oréal-Unesco Foundation prize "For Women In Science" 2019. She is currently also a member of the "Nuovo Rinascimento" taskforce within the Presidency of the Council of Ministers.

## WORK EXPERIENCE

---

- September 2020 – To date** Contract Professor  
**"Sapienza" University of Rome**, Department of Mechanical and Aerospace Engineering, Rome, Italy  
Web site: <http://www.uniroma1.it>  
Course: Mechanical Background for the students of Erasmus+ programme
- April 2020 – To date** Member of the Task Force "Donne per il Nuovo Rinascimento"  
**Department for Equal Opportunities (Presidency of the Council of Ministers)**  
Goals: analysis of the impact of COVID-19 epidemic on different sectors; promotion of women worker's rights and gender equality (focus on STEM sectors); report editing and plan proposals
- September 2019 – To date** Researcher  
**"Sapienza" University of Rome**, Department of Mechanical and Aerospace Engineering, Rome, Italy  
Web site: <http://www.uniroma1.it>  
Within the project "MINOR: MINE Overall Recognition" (funded by L'Oréal-Unesco prize "For Women In Science" 2019), aimed at the localization of antipersonnel mines through a swarm of autonomous drones, equipped with new generation sensors, the performed activities include: development of machine learning techniques to identify buried antipersonnel mines from GPR data acquisitions, experimental campaign
- March 2014 – August 2019** Researcher  
**"Sapienza" University of Rome**, Department of Mechanical and Aerospace Engineering, Rome, Italy  
Web site: <http://www.uniroma1.it>  
Within the Applied Mechanics group of the department, the activities are mainly focused on the dynamics of unconventional structures, such as elastic metamaterials.  
**"Sapienza" University of Rome**, Physics Department, Rome, Italy  
Web site: <https://www.ego-gw.it>  
In the context of the research and the successful discovery of Gravitational Waves, main activities were the design, the structural and dynamic analyses and the complete realization of Power and Signal recycling payloads for the Advanced Virgo Interferometer  
Business or sector: Astrophysics and Structural Engineering
- March 2018 – June 2018** Visiting Researcher  
**Technion - Israel Institute of Technology**, Department of Mechanical Engineering  
Web site: <http://www.technion.ac.il>  
The activity is devoted to the experimental campaign on a twin-system composed by two identical waveguides, part of the focus of the PhD thesis on elastic metamaterials  
Supervisor: Prof. Izhak Bucher  
Business or sector: Mechanics of Vibrations
- November 2017** Visiting Researcher  
**Ecole Centrale Supélec**, Laboratoire Mécanique des Sols, Structures et Matériaux (MSSMat)  
Web site: <http://www.centralesupelec.fr>

- Title of the project: Granular metamaterials: a novel use of an ancient component in the reduction of noise and vibrations
- October 2012 – May 2013** Researcher  
**University of Auckland**, New Zealand  
*Web site: <http://www.auckland.ac.nz>*
- Wave propagation through standard materials and porous materials using WFE method (collaboration with Autoneum [www.autoneum.com](http://www.autoneum.com)). The candidate is also Teaching Assistant for the Statics and dynamics course
- Supervisor: Prof. Brian Mace  
 Business or sector: Structural engineering
- September 2016 – June 2018** Project Manager of the Remote Lab project  
**“Sapienza” University of Rome**, Department of Mechanical and Aerospace Engineering, Rome, Italy  
*Web site: <http://www.uniroma1.it>*
- The project consists in the realization of a network of laboratories remotely accessible, for educational purpose. The project involves 6 departments and 12 professors. The labs include a wind gallery, a space debris observatory, a 3D printer, a real-scale reproduction of a suspension system of a formula type vehicle
- Business or sector: Education
- March 2017 – June 2017** Project Engineer within the Secure Platform project  
**“Sapienza” University of Rome**, Department of Mechanical and Aerospace Engineering, Rome, Italy  
*Web site: <http://www.uniroma1.it>*
- Technical and scientific support in the development of the on-board systems of rescue vehicles. Attention was focused on the concept design and the development of the operative functions (collaboration with Fincantieri)
- Business or sector: Naval Engineering
- March 2017 – May 2017** Project Engineer within the Prematic project  
**Sapienza Innovazione** – viale Regina Elena 291, 00161, Rome  
*Web site: [www.sapienzainnovazione.it](http://www.sapienzainnovazione.it)*
- In this project (realization of a PRE-analytic automATIC machinery for environmental analyses), activities were focused on the complete design of the line flows
- Business or sector: Environment Engineering
- April 2015 – November 2015** Innovation technology assistant  
**Allianz Global Assistance**, Milan, Italy  
*Web site: <http://www.allianz-assistance.it>*
- Product Engineer and Innovation Technology Consultant within AGA Innovation Lab and Follow Me project.  
 Main activities: market analysis, prototyping, process analysis and product launch
- Business or sector: Assistance
- October 2010 – March 2011** Project Engineer – Visiting student  
**BMW Group Munich**, Germany
- Master thesis: Analysis of a MINI convertible local static and dynamic stiffness related to the shock absorber system
- NVH structural investigations were conducted at BMW labs both on shock absorber systems and on full vehicles to analyse the static and dynamic behaviour of the single component, hence to improve the NVH and the global performances of a Mini convertible Cooper S.
- Business or sector: Automotive

## EDUCATION AND TRAINING

---

- November 2015- February 2019** PhD Student in Applied Mechanics  
 Sapienza, University of Rome  
 Via Eudossiana 18, 00184, Rome, Italy  
*Web site: <http://www.uniroma1.it>*
- The focus of this PhD is the study of elastic Metamaterials in which the long-range interactions, due to magnetic inclusions, redefine the concept of wave propagation in structures.

February 2015 –  
December 2015

II Level Master “Inventive Engineering”

Master 110 cum laude/110

Sapienza, University of Rome  
Via Eudossiana 18, 00184, Rome, Italy  
<https://web.uniroma1.it/masterie/english-version/english-version>

The aim of the program is to train new actors in the development of advanced technology in multidisciplinary content, with a strong aptitude for inventive capacity, the technological development of a new product, to strategies targeted to the protection of intellectual property, market and financial sustainability of the new-found technology

January 2009 –  
November 2011

M. Sc. Mechanical Engineering

Master degree 110 cum laude / 110

Sapienza, University of Rome  
Via Eudossiana 18, 00184, Rome, Italy  
Web site: <http://www.uniroma1.it>

## PERSONAL SKILLS

---

<i>Mother tongue</i>	Italian
<i>Other languages</i>	English (Fluent)
<i>Communication skills</i>	I have always had good communication skills improved by experiences as Business Plan reporter for Formula SAE team and a tutor at University of Auckland
<i>Managerial skills</i>	Good attitude to manage projects and lead teams (Remote Lab project) Excellent attitude to work under pressure (Virgo project)
<i>Job-related skills</i>	During my stay at BMW, I demonstrated an excellent attitude towards time management to deliver reports with no delay and to arrange punctually test session run by technicians
<i>Computer skills</i>	Good competence of Microsoft Office tools, Solidworks and Inventor Autodesk, Autocad, Ansys Workbench
<i>Other skills</i>	Fascinated by the automotive world, I had an active role in the Formula SAE team while studying for my degree. I am an eclectic person and I have always been able to manage my studies and job experiences to develop my several interests. My greatest passion is travelling, I like sports, especially those related to a natural environment as climbing, sailing, and hiking. I enjoy attending art exhibitions, ballets, and concerts.

## AWARDS

---

2019 L’Oréal-Unesco Foundation For Women In Science Italia

2017 Avvio alla Ricerca

2016 Special Breakthrough prize in Fundamental Physics

2016 Gruber Cosmology prize