

**FOR YOUNG PRACTITIONER REPRESENTATIVE**  
**For a Two-Year Term 1 January 2020 – 31 December 2021**



**MARIANNA LAVIOLA** (GSM'15-M'17) was born in a small town in South Italy in 1984. After completed my secondary school, I moved to Milano to obtain my Bachelor and Master Degrees in Biomedical Engineering at Politecnico di Milano (Italy).

At same University, I also achieved a PhD in Bioengineering at Department of Electronics, Information and Bioengineering. The thesis focused on the non-invasive assessment of diaphragm in patients affected by neuromuscular diseases and patients underwent thoracic surgery by ultrasonography and opto-electronic plethysmography.

In October 2013, I relocated to Czech Republic for 2 years to complete my first post-doc at Czech Technical University in Prague at Faculty of Biomedical Engineering. During the post-doc, I studied the use of the high frequency oscillation ventilation in animal model (pigs) of acute distress respiratory syndrome, concentrating on hemodynamic stability and gases exchange.

Since January 2016, I am a research fellow at University of Nottingham (United Kingdom) at School of Medicine, Division of Clinical Neuroscience - Anaesthesia and Critical Care group. My actual project, funded by the Engineering Physical Society Research Council, is on development of a computer simulator of pulmonary and cardiovascular systems to investigate apnoea during severe hypoxemia and to develop new ventilation strategies in critical illness. I currently supervise PhD and master students and I am mentor for research staff.

I am passionate in science communication, running, CrossFit, baking cakes and reading novels.

**Position Statement:** I would like to serve on EMBS Administrative Committee as Young Professional Representative and be more involved in the EMBS, because this Society totally represents my studies, job and what I am and I feel that I need to contribute to it.

I am research fellow at University of Nottingham (United Kingdom) with 6 years of experience after the completion of my PhD and I am a mentor of research staff and PhD students at same University. Moreover, I am currently running three voluntary activities involving inspiration of young people in science. In particular, I am a STEM Ambassador UK for the Midlands – to enhance young people's STEM education; Project Manager at Native Scientist in Nottingham – to coordinate workshops to bring together scientists and pupils that speak two or more languages and AISUK (Association of Italian Scientists in United Kingdom) member – to organise events for Italian Junior Researchers (from undergraduates to post-docs) in Nottingham.

Due to the above activities, I believe that I have the right expertise and abilities to represent the views of young professional within the EMBS. This could be done for example during board discussions, ensuring decisions take account of the issues and ways of working of this important group of EMBS members and engineering professionals.

As representative volunteer, I will a) engage young professionals (e.g. graduate and/or PhD students) in activities such as conferences, workshops, plenary sessions, webinars and publications that are relevant in their particular area of interest; b) invite to be active members within the EMBS; c) encourage to build collaborative relationships and knowledge exchange through different Higher Institutions; d) inform on funding opportunities, scholarships and awards and e) promote upcoming and past events through communication media.

Being my research interest on computational modelling of pulmonary and cardio-vascular system, I have already requested to be part to the EMBS Technical Committee of Cardiopulmonary Systems. At same time, I have contacted Dr Nicolas Chbat - the Committee Chair, for a meeting at the EMBC 2019 in order to discuss my possible contributions to the this Technical Committee and in general to the Society. I am also already reviewer for the IEEE Journal of Biomedical and Health Informatics and in the last year, I reviewed 2-3 research articles. I am keen to be a reviewer also for the papers of next EMB conference or other conferences organized by EMBS and contribute to the organization of them.

Although I am a quite new EMBS member, I feel that I have the experience, skills and willingness to be the future EMBS Young Professional Representative.



**AHMED METWALLY** (GSM'15-M'17) is a postdoctoral scholar at Stanford University. He is currently working on developing novel machine learning methods for longitudinal multimodal biomedical data fusion (omics and wearable sensors data) to early detect cardiometabolic diseases and personalize their treatments. Ahmed received his Ph.D. in Bioinformatics/Bioengineering and MS in Computer Science, both from the University of Illinois at Chicago (UIC) in 2018. Prior to that, he received his B.Sc. (graduated with top of class honors), and a M.Sc. in Biomedical Engineering from Cairo University, in 2010 and 2014, respectively. During his Ph.D. studies, he squeezed in two industry internships at Thermo Fisher Scientific, where he worked on developing computational methods for targeted sequencing immunotherapy panels. Additionally, Ahmed was elected to serve as the international IEEE EMBS student representative and administrative committee member (2017-2019). Ahmed has received numerous scientific, scholarly awards including the NIH CCTS Pre-doctoral Translational Scientist fellowship, UIC Chancellor's research award, first-place award at the UIC Engineering Research Forum, second-

place award at Stanford Health++ Hackathon, Scientific Excellence Award at the UIC Department of Medicine, UIC Impact Scholar honor, second place award at the ISCB GLBIO'17 conference, along with travel awards from NSF, IEEE, ISCB, UIUC, DAAD, APBioNET, ICTP, and LinkSCEEM.

**Position Statement:** As the immediate past international IEEE EMBS Student Representative, I have first-hand experience serving on various committees within EMBS. It was apparent to me that the Young Professional (YP) community is the most vulnerable group within our society. Currently, as a member of YP community group, I share similar challenges and career questions facing a majority of the YP community. For example, this stage of a professional's career is filled with continued thoughts on what career direction to take and for me/others, two ponderings: 1) how to leverage that career to meaningfully and positively impact society and humanity over the long haul using our engineering/scientific research insights; 2) How to establish a scientific/professional reputation, proving our scientific prowess in a challenging and dynamic work environment. These career musings and work/efforts toward achieving our research goals serve as sources of both inspiration and frustration for early career professionals (both in academia and industry). Moreover, while similarities exist, there are unique challenges faced by different regions, genders and work domains; hence each group will require a tailored approach in order to adequately address these needs so that more engineers/scientists can thrive and succeed.

If I get elected as EMBS YP representative, I will focus on things that matter the most to our YP community and will thus make the most meaningful impact on our careers. I'll start by building a diverse (gender/geographic) team of EMBS YP representatives with a wide range of expertise (academic and industry). This would ensure that whatever your background is, your voice would be heard and can be acted on. As a team, we will work on providing resources, mentorship, and opportunities for EMBS YP communities through development of a career webinar series, building a peer collaboration platform, and launching a mentorship platform that will match mentees with mentors who can be a good fit for career aspirations. With the power of globalization, opportunities exist in many regions in the world, and thus, international collaboration/mentorship programs can provide access to out-of-the-box insights that would benefit all of us. I also plan to empower local/regional YP communities within all active IEEE EMBS chapters by establishing meetings/forums for a more collaborative and productive environment. Moreover, as biomedical engineers, the core of our work lies in solving unmet clinical and biological needs. Thus, with our leadership team, I plan to establish and strengthen collaborative channels/partnerships with physician-scientist organizations such as APSA and clinical organizations such as the AMA to open a dialog and tap into a flow of unmet needs ideas/data/problems that can benefit all members of EMBS YP community.