



IEEE EMBS Technical Community on Cardiopulmonary Systems and Physiology-Based Engineering

July 2024 in Orlando, Florida

Mini-symposium

Investigating Sex-Based Differences in Cardiopulmonary Structure and Control

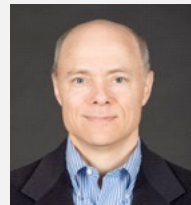
This mini-symposium is organized and provided by the IEEE-EMBS Technical Community on Cardiopulmonary Systems and Physiology-Based Engineering. Although there is almost a parity in the global population of women and men, outside of clinical trials it is uncommon to find sex-balanced samples of subjects in most research studies, and it is less likely to find a targeted analysis of sex-based differences in experimental outcomes. The objective of this session is to provide a series of research presentations that provide examples of sex-based differences in the structure and/or control of the cardiopulmonary system. At the completion of this mini-symposium, attendees should expect to have gained an increased understanding and appreciation of sex-based differences in cardiopulmonary structure and control, and if applicable, feel better motivated to include sex-based analyses in the design and implementation of their future research.



Sex-based differences in respiratory feedback and control

Martha H. Stella, PhD; Assistant Dean of Engineering, The College of New Jersey, Ewing, New Jersey, USA; stella@tcnj.edu

Research Interests: Control of breathing, Exoskeleton robotics, Engineering education and assessment



Predictive modeling of sex-based differences in respiratory feedback and control

Brett F. BuSha, PhD; Professor of Biomedical Engineering, The College of New Jersey, Ewing, New Jersey, USA; busha@tcnj.edu

Research Interests: Control and modeling of cardiopulmonary systems, BioRobotics, Biomedical signal processing, Medical device design



Sex differences in heart energy

Liam Zhong, PhD; Associate Professor, Duke-NUS Medical School, Singapore; zhong.liang@duke-nus.edu.sg

Research Interests: Cardiovascular imaging, mechanics and physiology, Computational modeling, Artificial intelligence



Sex differences in the impact of opioids on respiration and cardiorespiratory outcomes

Azadeh Yadollahi, PhD; Associate Professor, Institute of Biomedical Engineering, University of Toronto, Toronto, Canada; azadeh.yadollahi@uhn.ca

Research Interests: Chronic respiratory disorders, Physiological signal processing, Assessment of body composition, Medical devices for diagnosis and treatment of chronic respiratory disorders