

## List of talk topics

1)

**Title:** Quantitative Vascular Evaluation: From Laboratory Experiments to Point-of-Care Patient (Experimental Approach)

**Keywords:** Arterial wall, Vascular mechanics, Elastin, Collagen, Smooth Muscle, Endothelium

**Abstract:** The approach adopted by our group aimed at enlarging and encouraging the creation of an interdisciplinary team to develop research activities in the field of arterial mechanics, by means of the synergy between different institutions from Argentina, Uruguay, France and Spain. This talk illustrates the evolution of our knowledge of the arterial mechanics from the initial start times to the present. Several techniques focused on this topic throughout our history are discussed.

2)

**Title:** Quantitative Vascular Evaluation: From Laboratory Experiments to Point-of-Care Patient (Clinical Approach)

**Keywords:** vascular function, hypertension, flow mediated dilation, central pressure, stiffness, vascular age

**Abstract:** To aid in patient-specific risk stratification and diagnosis, assessment of arterial structural and functional changes associated to a vascular disease in both early and advanced stages has been proposed, in order to limit the progression or revert vascular alterations. To this end, an interdisciplinary international partnership constituted by research institutions from France, Argentina, Uruguay and Spain was established, with the objective of contributing to the evaluation and follow-up of factors involved in the of cardiometabolic diseases and human aging

3)

**Title:** Engineering Education in Biology and Medicine. A new paradigm that takes into account the thoughts of Favaloro, Houssay, Pasteur and the Medici family.

**Keywords:** traslational engineering education, conscious-technology, creativity, interoperability, humanism, global challenges facing humanity

**Abstract:** The synergy between Engineering and Biology, which evolves as fast as both of these disciplines do, allows us to offer top-of-the-line foundations to generate strong interactions industrial and welfare entities associated to health and living systems fields. We propose to articulate these specialties based on the premise that new professionals must face different situations or crises due to the so-called islands of excellence. Often, the effort of retaining the lectures of teachers conspires against analysis, logic and reasoning; a university education that does not stimulate the critical mind and does not teach how to think is not higher education, but training to submission. We are revising the programs of biomedical engineering education and the application of new pedagogic paradigms where critical thinking is the key: a holistic challenge which consists in a new way of teaching, learning, innovating, communicating and shearing with a creative attitude that represents quality of perception. We must redesign Engineers to work in a hybrid world where technology, science, humanism and other tendencies fuse and interconnect. In consequence, engineering becomes a profession whose limits are not specified, and where technology becomes science, art and management, widening the scope of its institutional mission. On the basis that an increasingly educated and Internet-connected generation is rising up against the abuse of power and threats that hang over our entire planet, we propose a new paradigm which takes into account the thoughts of Favaloro as well as those of the nobel laureate Bernardo Houssay, and the legacies of Louis Pasteur and the Medici Family, to enhance Engineering Education in Biology and Medicine, and thus encouraging faculty with this approach and motivating students and stimulating their creativity and their innovative ability throughout a conscious-technology curricula with humanistic motivation and global vision