

FOR LATIN AMERICA REPRESENTATIVE
For a Three-Year Term 1 January 2020 – 31 December 2022



ORLANDO AUCIELLO (M'07) graduated with honors with M.S. (1973) and Ph.D (1976) degrees in Physics from the Physics Institute "Dr. Balseiro" (Universidad Nacional de Cuyo-Argentina). EE-University of Córdoba-Argentina (1970). Postdoctoral-McMaster University, Hamilton, Canada (1977-1979); Researcher-University of Toronto-Canada (1979-1984), Associate Professor-NCSU-USA (1984- 1988), Distinguished Scientist-MCNC-USA (1988-1996), Distinguished Argonne Fellow (1996- 2012)-Argonne National Laboratory-USA. Currently, Auciello is Distinguished Endowed Chair Professor-University of Texas-Dallas, Materials Science/Engineering and Bioengineering.

Auciello is directing basic and applied research programs on multifunctional oxide films (ferroelectric /piezoelectric, high-K dielectrics), and nanocarbon films (novel ultrananocrystalline diamond (UNCDTM) and graphene), and applications to industrial, high-tech, and medical devices. The UNCDTM film technology is commercialized for industrial products by Advanced Diamond Technologies, founded by Auciello and colleagues, (2003, profitable in 2014), and by Original Biomedical Implants (OBI-USA, 2013) and OBI-México (2016), founded by Auciello and colleagues, for a new generation of superior medical devices and implants (OBI-México is currently conducting clinical trials to introduce UNCDTM-coated metal dental implants into the México market first and then to the world market). Auciello has edited 31 books and published about 500 articles in several fields, holds 25 patents, He was associate editor of APL (1998-2018) and Integrated Ferroelectrics (2000-present), He was President of the Materials Research Society (2013) Auciello is Fellow of AAAS and MRS, and has numerous Awards.

Position Statement: At the early stage of the 21st Century, the IEEE is a leading scientific society, providing a forum for the exchange of ideas among well-established and young professionals, postdoctoral, and students, using many technologies for the dissemination of information and communication among its members. However, the human factor is still the main asset of the IEEE vibrant society, including members and the highly competent and dedicated staff and volunteers who contribute long hours for the advancement of the society.

Innovative ideas and interdisciplinary research were major factors and will continue to be so for expanding the horizons of the IEEE society, particularly in relation to promoting the idea of integrating fundamental and applied materials science and integration to develop the new generation of devices to impact society worldwide. Research and development are not just the expression of another special interest, but the necessary pathway for the advancement of humankind in the new century.

Two sustaining pillars of the IEEE society are the people and the ideas. Elected officers must stand on these pillars and look far and ahead for new ways of promoting the science and technology that will benefit not only the established members, but also the new generation of scientists and engineers, and very importantly the society as a whole globally. The IEEE Society is doing a great job at expanding the horizons of science and technology among its members, through meetings, publications and professional activities at the state, national, and international levels. However, work is needed to bring the message of the relevance of materials science and integration into devices to the development of new technologies to the public and to federal and state government officials, who will affect the future course of science and technology in the USA and worldwide.

As I did when I was President of the MRS in 2013, I will work to promote a comprehensive discussion on specific courses of action that we should consider for implementation to bring the IEEE society to the forefront of a national and international discourse on the direction of Research and Technological Development, particularly in the field of bio-engineering and bio-technology to develop a new generation of external and implantable medical devices with superior performance to those metallic devices failing today, to improve the quality of life worldwide.



ROBERTO LAVARELLO (GSM'05-M'10-SM'13) received his B.Sc. degree in Electronics Engineering from the Pontificia Universidad Católica del Perú in 2000, and his M.Sc. and Ph.D. degrees in Electrical and Computer Engineering from the University of Illinois at Urbana-Champaign in 2005 and 2009, respectively. He is currently an associate professor at the Department of Engineering of the Pontificia Universidad Católica del Perú and the director of the Medical Imaging Laboratory from the same institution. His research is primarily focused on the formation and processing of images for the non-invasive assessment of pathological conditions. He is a senior member of IEEE and a former Fulbright scholarship recipient. He has served as an Associate Editor for the IEEE Transactions on Biomedical Engineering (2010-2012) and is currently an Associate Editor for the IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control and the IEEE Transactions on Medical Imaging. He is currently a member of the IEEE EMBS Technical Committee on Biomedical Imaging and Image Processing and the Technical Program Committee of the IEEE International Ultrasonics Symposium, and the president of the EMBS Peru Section Chapter.

Position Statement: Latin America is a region with particular healthcare-related challenges. Several deadly infectious diseases such as tuberculosis, malaria and pneumonia remain common and even endemic across several Latin American countries due to the inadequate living conditions of the lower income population. Other diseases such as cervical cancer pose a serious health risk mainly in poor towns not because of a higher incidence rate but because of the lack of trained clinicians who can provide a timely and proper treatment. It is therefore unfortunate and unacceptable that so many treatable diseases result in serious health problems mainly because of poverty-related issues.

A key to overcoming this situation is to more aggressively pursue a synergistic collaboration between clinicians and engineers in order to develop cost-efficient solutions to the aforementioned problems. If elected as an AdCom member representing Latin America, I will work hard to help EMBS become an active element of change by supporting local chapters in coordination with relevant organizations such as the Consejo Regional de Ingeniería Biomédica para América Latina (CORAL) in (1) developing public health policies in collaboration with governmental and non-governmental organizations, (2) developing a closer relationship between industry and academia in the biomedical engineering field, (3) fostering the dissemination of Latin American biomedical engineering developments in conferences, publications, and web-based and social media, and (4) seeking support from IEEE EMBS to promote relevant activities of the Latin American biomedical engineering community.