

DR ALICIA MATTIAZZI

2013 RECIPIENT OF THE ISHR DISTINGUISHED LEADER AWARD (2013; SAN DIEGO, CA)

Dr Mattiazzi is Consultant Professor of Physiology and Biophysics at the Faculty of Medicine of the University of La Plata and Superior Investigator of the National Research Council of Argentina (CONICET). Previously she was professor and chairman of the Department of Physiology and Biophysics at the Faculty of Medicine of La Plata University and Director of the Cardiovascular Research Center in La Plata, Argentina. After retiring from these positions, she continues to perform active research at the Cardiovascular Research Center and postgraduate teaching activities. She was the founder and is the present Director of the Magister of Biomedical Research at the Faculty of Medicine, University of La Plata.

Dr Alicia Mattiazzi is not only regarded as an outstanding leader of South American cardiovascular research but is also widely recognised by her peers for her continuous efforts to promote cardiovascular and physiological research throughout the Latin American Scientific community. She has been an active member of the ISHR, contributing to most of the ISHR World Congresses and, in 2001, serving on the scientific program committee of the XVII World Congress of the ISHR in Winnipeg, Canada.

Closer to home, Dr Mattiazzi served the Latin American Section of the ISHR (LAISHR) for many years, acting in different positions, including President and Past-President. During this time, she worked to promote the ISHR bylaws throughout Latin

America and to attract new members. Dr Mattiazzi organized five annual LAISHR meetings, including a satellite meeting to the XVIII ISHR World Congress in Brisbane, Australia (2004). She was deeply involved in the other four meetings as a member of the organizing or scientific program committee. In all these meetings, Dr Mattiazzi has upheld the highest standards, putting together solid scientific programs and encouraging the participation of young investigators and students. These meetings set a new standard for scientific reporting of cardiovascular research in Latin America and through them, Dr Mattiazzi successfully promoted the integration of heart research groups within Latin America and around the world.

Dr Mattiazzi worked most of the time in La Plata, but spent extensive periods of time working in different outstanding laboratories outside Argentina, mainly in Sweden and the USA. She published more than 100 papers in high profile journals throughout her career and her main research interests have been cardiac mechanics and the regulation of cardiac contractility and relaxation induced by physiological, pathophysiological and pharmacological interventions in intact myocardial preparations and isolated cells, including stimulation frequency, α and β adrenergic agents, Angiotensin II, acidosis, and ischemia-reperfusion injury.



A major contribution of Dr Mattiazzi and her colleagues was to demonstrate the relevance of the phosphorylation of the Thr¹⁷ residue of phospholamban (PLN), the Ca²⁺-calmodulin-dependent protein kinase II (CaMKII) site, in the modulation of myocardial relaxation and contractility under β -adrenoceptor stimulation. These results were described in a series of papers, the first of which appeared in the early 1990s (Vittone *et al.*, *Am J Physiol*, 1990). By the use of phosphorylation site-specific antibodies combined with the quantification of ³²P incorporation into PLN and the simultaneous measurement of mechanical activity, she and her group further demonstrated that cAMP (Ser¹⁶)- and Ca²⁺-calmodulin (Thr¹⁷)-dependent pathways of PLN phosphorylation can occur independently of each other in the intact heart. The most representative of this series of papers were those published in *J Biol Chem*, (Mundiña-Weilenmann *et al.*, 1996, Vittone *et al.*, 1998).

In subsequent work, she envisaged the role of CaMKII-dependent phosphorylations in different pathophysiological conditions, including ischemia/reperfusion, acidosis and arrhythmias. In a series of publications, she demonstrated the dual effect of CaMKII-dependent phosphorylations (beneficial or detrimental), in the reversible and irreversible ischemia/reperfusion injury, respectively (For example, Said *et al.*, *Am J Physiol*, 2003), as

ISHR MEETINGS CALENDAR

- **August 2, 2014.** XXII Annual Meeting of the Latin American Section. Iguazu Falls, Brazil. Inquiries: Jose Mill, jgmill@npd.ufes.br, Website: <http://ishr.sitepx.com/>
- **November 28-29, 2014.** XXXI Annual Meeting of the Japanese Section. Nagoya, Japan. Inquiries: Toyooki Murohara, murohara@med.nagoya-u.ac.jp
- **June 7-10, 2015.** XXXV Annual Meeting of the North American Section. Seattle, WA. Inquiries: Charles Murry, murry@u.washington.edu
- **July 2-5, 2015.** XXXIII Annual Meeting of the European Section. Bordeaux, France. Inquiries: Pierre Dos Santos, pierre.dossantos@wanadoo.fr
- **August, 2015.** XXXVIII Annual Meeting of the Australasian Section. Melbourne, Australia.
- **April 18-21, 2016.** XXII World Congress of the ISHR. Buenos Aires, Argentina.

well as the necessary and determinant role played by the phosphorylation of Thr¹⁷ of PLN in the contractile and intracellular Ca²⁺ recovery of the stunned heart (Valverde *et al.*, *Cardiovasc Res*, 2006). She also showed the importance of CaMKII-dependent phosphorylations at the sarcoplasmic reticulum level, as main players in the cascade of events that leads to apoptosis and necrosis in ischemia/reperfusion (Vila-Petroff *et al.*, *Cardiovasc Res*, 2007; Salas *et al.*, *J Mol Cell Cardiol*, 2010) and in acidosis, ischemia/reperfusion and digitalis-induced arrhythmias (Said *et al.*, *Am J*

Physiol, 2008, and *J Mol Cell Cardiol*, 2011, Gonano *et al.*, *Circulation: Arrhythmias and Electrophysiology*, 2011). Dr Mattiazzi and her colleagues also showed for the first time, how oxidative stress resets the Ca²⁺-dependence of CaMKII to extremely low (sub-physiological) Ca²⁺ levels, to promote myocyte death across different species (Palomeque *et al.*, *Circ Res*, 2009). This novel and previously unrecognized mode of CaMKII activation constitutes a new paradigm in the intracellular signalling pathways mediated by CaMKII which may be relevant

to a large number of diseases in which reactive oxygen species are increased.

Based on her accomplishments, Dr Mattiazzi has been invited to give numerous national and international lectures and seminars. She is a fellow of the AHA and the ISHR and has received numerous awards, among which are the Guggenheim Fellowship, the Bernardo Houssay Award for outstanding scientific career and the International Women Association Award. ■

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tions of striated muscles through the expression of a family of intronic microRNAs. The dual functions of myosin genes, encoding both protein and microRNA, serve as a paradigm for the integration of microRNAs with complex cellular processes. In the course of these studies, Dr Olson uncovered a central role for the heart in the control of systemic energy homeostasis and metabolism via a microRNA regulatory circuit, providing a new entry point into the pathways of obesity and metabolic syndrome.

The many genes and regulatory mechanisms discovered by Dr Olson have established new principles of gene

regulation and have provided novel therapeutic targets for normalizing cardiac function in the settings of congenital and acquired heart disease. Toward that end, Dr Olson has cofounded several biotechnology companies to advance studies from his lab toward clinical applications.

Dr Olson is a member of the American Academy of Arts and Sciences, the U.S. National Academy of Sciences, and the Institute of Medicine. His awards include the Pasarow Award in Cardiovascular Medicine, the Pollin Prize in Pediatric Research, and the Passano Prize. In 2009, the French Academy of Science awarded Dr Olson the Fondation Lefoulon-Dela-

lande Grand Prize for Science. He is also a recipient of the Basic Research Prize, the Research Achievement Award and the Inaugural Distinguished Scientist Award from the American Heart Association. In 2013, Dr Olson received the March of Dimes Prize in Developmental Biology.

Dr Olson has trained successive generations of students and postdoctoral fellows, many of whom are emerging as leaders in cardiovascular medicine. In his spare time, Dr Olson plays guitar and harmonica with the Transactivators, a rock 'n' roll band inspired by the Texas icon, Willie Nelson, who established the Professorship that Olson holds. ■