



Luigia Santella

Research Director at the Department of Biology and Evolution of Marine Organisms
Coordinator Morpho-Functional Analysis and Bioimaging Unit
Stazione Zoologica Anton Dohrn
Villa Comunale
80121 Napoli - Italy

Tel.: +39 081 5833289
Fax: +39 081 7641355
E-mail: santella@szn.it
www.szn.it

Research interests

Dr. Santella's research has focused on the molecular mechanisms of signal transduction linked to the physiological changes in oocytes and eggs during meiotic maturation and fertilization, and in early embryos as well. Over the past 20 years, her research has placed special emphasis on the intracellular Ca^{2+} swings during these processes. Her work with starfish and sea urchin model systems has established that the Ca^{2+} wave in fertilized eggs can be recapitulated by combined effects of second messengers such as NAADP and $InsP_3$ that play distinct roles in initiating and propagating the sperm-induced Ca^{2+} wave, while the other Ca^{2+} -linked second messenger cADPr might instead have a modulatory role. She has also demonstrated that certain Ca^{2+} signals can originate and propagate in specific subcellular domains such as the nucleus and the subplasmalemmal regions. Her more recent work on starfish oocytes and eggs, which are optimally suited for microinjection and imaging analyses, has pioneered the new concept that the patterns of intracellular Ca^{2+} signaling and the Ca^{2+} ion channel activities are significantly modulated by the actin cytoskeleton. Dr. Santella has been active in promoting International collaboration and intellectual exchanges, as well as in stimulating education in foreign universities. She has also been involved in the organization of highly successful International symposia. She is regularly invited as a speaker at symposia and congresses in numerous countries in Europe, USA, and Asia. Since 1993, she has been a yearly visiting scientist to the Research Center for Marine Biology, Asamushi, Tohoku University, Japan to perform seasonal work, and has lectured in the EMBO and NSF-sponsored educational programs in Brazil and Uruguay. She is member of the *Accademia Europaea*.