

Curriculum vitae of Luigia Santella



Born on 10th February 1957 in Marigliano (Naples), Italy
Italian citizenship

Current Position and Professional Address:

Research Director and Group Leader at the Research Infrastructures for Marine Biological Resources (RIMAR), Stazione Zoologica Anton Dohrn, Napoli (SZN), Italy; Coordinator of Morpho-Functional Analyses and Bioimaging Unit (AMOBIO) at RIMAR Department.

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<http://www.szn.it/index.php/en/staff/list-of-personnel/359-santella-luigia/441-santella-luigia>

Research interests and activity

Dr. Santella's research focuses on the molecular mechanisms of signal transduction in marine invertebrate oocytes and eggs during meiotic maturation and fertilization. Over the past 20 years, her research has placed special emphasis on the intracellular Ca²⁺ swings during these processes. She has investigated nuclear calcium signaling by exploiting the large size of the nucleus of starfish oocytes, and she has provided evidence for an independent regulation of calcium in this cytoplasmic compartment. Dr Santella's work with starfish and sea urchin oocyte/egg which are optimally suited for the microinjection of substances and imaging analyses, has established that the Ca²⁺ wave in fertilized eggs is the combined result of the action of the second messengers NAADP and InsP₃, which play distinct roles in initiating and propagating the Ca²⁺ wave induced by the sperm. Another Ca²⁺-linked second messenger, cADPr, might instead have a modulatory role. She has also demonstrated that certain Ca²⁺ signals originate and propagate in specific subcellular domains such as the nucleus and the subplasmalemmal regions.

Her more recent work has led to the new concept that the patterns of Ca²⁺ signaling in the cell and the activity of the channels that permit the entrance of Ca²⁺ from the outside medium into the cell are significantly modulated by the actin cytoskeleton.

Dr. Santella has been active in promoting International collaborations and exchanges, as well as in stimulating education through Advanced Courses in foreign Academic Institutions. She has also been involved in the organization of International Symposia. She is regularly invited as a speaker at Symposia and Congresses in Europe, USA, and Asia. Since 1993, she has been a yearly visitor to the Asamushi Research Center for Marine Biology in Japan to perform work during the local breeding season of starfish, and as a lecturer in the EMBO and NSF-sponsored educational programs in Latin America.

<https://www.journals.elsevier.com/biochemical-and-biophysical-research-communications/news/meet-the-bbrc-editors-luigia-santella-calcium-in-the-meiotic>

Education and Research Career:

Degree (Laurea) in Biological Sciences (Summa cum laude), University of Naples Federico II, (28/01/1982) under the supervision of Prof. Alberto Monroy.

Research fellow at the Cell Biology Laboratory, Stazione Zoologica Anton Dohrn (SZN), Naples (1983-1988).

Researcher at the Cell Biology Laboratory of the same institute (1988-2004).

Primo ricercatore at the Cell Biology Laboratory SZN (2000-2004).

Research Director in the same Institute since 2004.

Head of the Cell Signalling Laboratory of the same Institute (2005-2008).

Group leader at the Cellular and Developmental Biology Laboratory of the SZN (2008-2018)

Head of the Cellular and Developmental Biology Laboratory of the same Institute (Aug 1-Nov 30, 2014).
Group Leader in the Biology and Evolution of Marine Organisms Section of the SZN (2015-2018).
Coordinator Morpho-Functional Analysis and Bioimaging Unit at the SZN (2015-2019).

Scientific recognition:

2015 (June)	Editor of Biochemical Biophysical Research Communications (BBRC).
2015	Member of the Scientific Committee of the European Calcium Society.
2014	Member of the Editorial Board of Zoological Letters, the official Journal of the Zoological Society of Japan funded in 1878.
2014	Member of the Editorial Board of Zygote.
2004-2009	Member of the Editorial Board of Physiological Reviews.
2004	Member of <i>Academia Europaea</i> .
2003	ICRO/UNESCO Executive Committee Member.

Research stages abroad:

July-August 1983	Marine Biological Station, Woods Hole, Mass., USA working on the identification of mRNA in the axoplasm of the squid giant axon (collaboration with Drs. Antonio Giuditta and Tim Hunt).
Oct-Nov 1987	Marine Biological Laboratory Arago, Banyuls-sur-mer (France), working on the embryogenesis of Cephalopods (collaboration with Dr. Jurg Marthy).
May 1989	Electron Microscopy Division, University of Ulm, (Germany) to become acquainted with techniques (Freeze etching) for the localization of gap junctions in Ascidian embryos in early stages of development.
June 1989	Department of Cell Biology, University of Siena, (Italy) working on fertilization of Ascidians eggs (collaboration with Dr. Floriana Rosati).
April 1991	Cornell University, New York, NY (USA) (<i>In Vitro</i> Fertilization Center), to study fertilization in mammalian oocytes (collaboration with Dr. J. Cohen).
July 1997	Department of Physiology of the University of Freiburg (Germany) to acquire experience in computer programs to be used for the monitoring of intracellular calcium with the confocal microscope (collaboration with Dr. Roland Nitschke).
September 1993 onward	Initiation of a collaboration with Prof. Keiichiro Kyojuka (Asamushi Research Center for Marine Biology, Graduate School of Life Science, Tohoku University, Japan) on the role of calcium in the maturation of starfish oocytes (supported by a grant from the Yamada Foundation and by the Japanese Society for the Promotion of Science, JSPS). Afterwards, Visiting Scientist at the Asamushi Laboratory (hosting scientist Prof. Keiichiro Kyojuka), with yearly visits of about two months from 1993 to present.

Research Grants:

- Japanese Society for Promotion of Science (JSPS) Fellowship (1995 and 1998).
- Goho Life Science International Foundation, Japan (1996).
- Regione Calabria, Italy (1997).
- Italian National Research Center (CNR) fellowship, 1997.
- Telethon Foundation Research Grant. N. 963 (1999-2002).
- Italian Ministry of University and Scientific M.I.U.R. (P.R.I.N) (2000-2004).
- European Community (Directorate G-XII) (2002-2005).
- Regione Campania, Progetto A (2005).
- Japanese Society for Promotion of Science (JSPS) (2004, 2008).
- Association of European Marine Biological Laboratories (2009).
- Progetto Premiale StarTregg 2011-2014 (MIUR, Ministry of Education, University and Research).
- Nakano Foundation, Japan (2013, 2014).
- Tohoku University, Japan (2013, 2014, 2015, 2016, 2018).
- ASSEMBLE Plus Project, European Union's Horizon 2020 research and innovation programme grant No 730984 (2018).

Organizer of International Symposia

- 2019 **Santella L.** International Symposium and BBRC Editorial Meeting. Naples, Italy.
- 2013 **Santella, L.** and Chun JT. (2013) International Symposium on *The dynamically active egg: The legacy of Ernest Everett Just* (held to celebrate the 130th anniversary of the birth of Ernest Everett Just), Naples, 13 May.
https://web.archive.org/web/20140819203234/http://www.szn.it/SZNWeb/cmd/ShowArchivItem?TYPE_ID=EVENTI&ITEM_ID=22541&LANGUAGE_ID=1
Essay on the meeting published by W. Malcolm Byrnes
<http://www.howard.edu/newsroom/blogs/20130611WalkingintheFootstepsofErnestEverettJustattheStazioneZoologicaInNaplesCelebrationofaFriendship.html>
- 2009 **Santella L,** De Natale G, Baffioni C, Cavalli A. *Academia Europaea 21st Annual Conference Risks, Environment and Sustainable Development* Napoli, Italy.
- 2004 **Santella L,** Cattaneo E, Rizzuto R, Carafoli E. (2004) EMBO Workshop on *Calcium Signalling and Disease*, Capri, Italy.
- 1997 **Santella L,** Bachs O, Nicotera P, Carafoli E. (1997) First European Conference on *Calcium Signalling in the Cell Nucleus*, Baia Paraelios, Italy. Reports on the Conference have appeared in **Cell** (92:17-23, 1998) and in **Cell Calcium** (22:313-319, 1997).

AWARDS:

- 2018 Time-lapse movie on starfish fertilization which will be permanently exhibited at the National Museum of Nature and Science, Ueno, Tokyo as recognition of our discovery on the fertilization of starfish eggs together with Jean Clark and Katsuma Dan.
- 2017 Medal Rotary Club Napoli Nord-Est for public dissemination of Science.
- 2015 Honorable mention, Nikon Instruments Competition on *Small world in motion*. Subject Matter: *Video on intracellular calcium increase and sperm incorporation following fertilization of a starfish egg*.
<https://www.nikonsmallworld.com/people/luigia-santella>
- 2012 ASCB Bruce Alberts Award for Excellence in Science Education to the organizers of the International advanced Courses organized in Brazil and Uruguay of which I am a member of the teaching staff.

Invited Speaker

- 2019 *Calcium binding proteins and Calcium function in health and disease*, Symposium N° 21 (CaBP21) May 16-21, 2020, Shanghai, China.
- 2019 First National Meeting on Marine and Coastal Environment on "*Multidisciplinary Approach to Natural & Anthropized Systems*". June 19-20, Naples, Italy.
- 2018 Seminario Estivo Internazionale on "*In principio*". Letino July 26-29, Italy.
- 2017 The 88th Meeting of the Zoological Society, Japan September 21-23rd.
- 2017 14th International Congress on *Invertebrate Reproduction and Development* from August 28, 2017 to September 2nd, 2017.
- 2015 *School on Molecular and Cell Biology to Unravel the Physiology/Pathology of Diverse Biological Paradigms*. Instituto de Investigaciones Biológicas Clemente Estable (IIBCE), Facultad de Ciencias, Facultad de Medicina, Montevideo, Uruguay, November 14,15, 2015.
- 2015 International Meeting and Course on "*Oocyte Maturation and Fertilization*" , Research Center for Marine Biology, Asamushi, Tohoku University, Asamushi, Aomori, Japan (15-24 June).
- 2014 EMBO-IICBB School of Science from Biochemistry and Molecular Biology. *Approaches to System Biology: Bench to Bedside, Bench to the Field Course*, October 27-November 7, Cuiabá and Poconé, Brazil.
- 2014 Korea-Italy Symposium on *Monitoring of environmental and climate changes by means of marine biology*, June 3, Seoul, Republic of Korea.
- 2013 International Symposium on *The dynamically active egg: The legacy of Ernest Everett*. Stazione Zoologica Anton Dohrn, May 13, Napoli, Italy.
- 2013 1st JAMBIO International Symposium on *Marine Biology - Cell and Evolution* Tokyo Campus University of Tsukuba, February 26-26, Tokyo, Japan.
- 2012 The International Symposium on *The Mechanisms of Sexual Reproduction in Animals and Plants*" November 12-16, Nagoya, Japan.
- 2012 IICBB School of Science *The current Tools in Cell Biology: Probing normal and pathological cell functions* December 3-9, Fortaleza, Brazil.

- 2011 FASEB Summer Research Conferences on *NAD Metabolism & Signaling*, September 4-8, Il Ciocco Lucca, Italy.
- 2011 BIT's 1st Annual World Congress of Marine Biotechnology (WCMB-2011) on *Ocean, Life and Sustainability*, April 25-30, Dalian, China.
- 2011 The 17th International Symposium on *Ca²⁺-binding proteins and Ca²⁺ function in health and disease*, July 16- 21, Beijing, China.
- 2010 NSF-Pan American Advanced Study Institute on *The Function and Regulation of Cytoskeleton*, August 6-8, Buzíos, Brazil.
- 2009 The 16th International Symposium on *Ca²⁺-Binding Proteins and Ca²⁺ Function in Health and Disease*, November 18-25, Pucón, Chile.
- 2009 VII Parnas Conference on *Biochemistry and Molecular Biology*, October 3-7, Yalta, Ukraine.
- 2009 International Symposium on *Myosin V - 21 Years of History*, August 3-14, Rio de Janeiro, Brazil.
- 2009 Gordon Research Conferences on *Fertilization and the Activation of Development*, July 12-17, Holderness School in Plymouth, NH (USA).
- 2009 Gordon Research Conferences on *Calcium Signalling* Il Ciocco, June 21-26, Lucca, Italy.
- 2008 International Symposium on *Emerging roles of NAD and NAD-metabolites in cell signalling*, September 14-17, Hamburg, Germany.
- 2008 Symposium on *Frontiers in Physiology* Royal Danish Academy of Sciences and Letters, May 15-17, Copenhagen, Denmark.
- 2008 First Latino-American School of Biochemistry International Symposium, Molecular and Cell Biology, Montevideo, Uruguay.
- 2007 The 15th Symposium on *Ca²⁺-Binding Proteins and Ca²⁺ Function in Health and Disease*, October 16-21, Canary Islands, Spain.
- 2007 The 6th Parnas Conference, May 30-June 2, Krakow, Poland.
- 2006 International Symposium on "*Proteins as Cellular Nanomachines: Molecular Motors, Channels & Pumps*", July 10-21, Rio de Janeiro, Brazil.
- 2006 *CD38 Ectoenzyme Family*, June 8-10, Torino, Italy.
- 2005 The 35th International Congress of Physiological Sciences San Diego, March 31-April 5, USA.
- 2005 International Symposia on *Ca²⁺-Binding Proteins and Ca²⁺ Function in Health and Disease*, April 5-10, Banff, Canada.
- 2005 5th Parnas Ukrainian-Polish Conference on "*Molecular Mechanisms of Cellular Signalling*" April 26-29, Kyiv, Ukraine.
- 2004 The 4th International Symposium on Molecular and Cell Biology of Egg- and Embryo-Coats, November 8-13, Ise-Shima, Japan.
- 2004 Joint Meeting of the French and the Italian Societies for Photobiology, September 10-11, Pisa, Italy.
- 2004 International Symposium on *Calcium in Health and Disease*, July 5-7, Rovaniemi, Finland.
- 2004 ICRO/EMBO Advanced Course on *Molecular Motors and the Cytoskeleton*, May 3-14, Rio de Janeiro, Brazil.
- 2004 The 29th FEBS Congress, June 26-July 1, Warsaw, Poland.
- 2003 UNESCO-ICRO International Symposium on "*Perspectives in modern molecular and cell biology*", Stazione Zoologica Anton Dohrn, October 25, Napoli, Italy.
- 2002 Centenary Symposium of University of Liverpool, Symposium on "*Signalling the Future*", September 3-6, Liverpool, UK.
- 2002 12th International Symposium on *Ca²⁺-Binding Proteins and Ca²⁺ functions in Health and Disease*, January 29-February 3, Cavalese, Italy.
- 2002 ICRO-UNESCO International Symposium and Training Course on "*Cell Motility, Molecular Motors and the Cytoskeleton*", May 27- June 7, Rio de Janeiro, Brazil.
- 2001 EMBO Workshop on "*Signal-regulated nuclear transport*" August 11-14, Strasbourg, France.
- 2001 13th NIH Calcium Day. "*Calcium in Gene Expression*", May 29, Bethesda, MD USA.
- 2003 3rd Parnas Conference on "*Mechanism of cellular signal transduction and communication*", October 14-18, Lviv, Ukraine.
- 1999 Workshop on "*Nucleocytoplasm interaction in the control of oocyte cell cycle*", Roseto degli Abruzzi, Italy.
- 1999 11th International Symposium on "*Ca²⁺-Binding Proteins and Ca²⁺ functions in Health and Disease*", October 19-23, Kisarazu, Japan.
- 1999 EMBO Workshop on "*Functional Organization of the Cell Nucleus*", August 9-12, Prague, Czech Republic.
- 1999 4th International School of Neurosciences, Montevideo, Uruguay.

- 1998 EMBO Workshop on "*Calcium Signals in the Cell Nucleus*", August 20-23, Strasbourg, France.
- 1997 VI Telethon, Scientific Convention, November 16-18, Bologna, Italy.
- 1997 1st European Conference on "*Calcium Signalling in the Cell Nucleus*", October 4-8, Baia Praelios, Calabria (co-organizer of the Conference).
- 1997 10th International Symposium on "*Ca²⁺-Binding Proteins and Ca²⁺ functions in Health and Disease*", June 17-21, Lund, Sweden.
- 1997 4th International Marine Biotechnology Conference, September 22-29, Sorrento, Italy.
- 1996 International Workshop on "*Calcium homeostasis in cardiac cells*", October 11-12, Trento, Italy.
- 1995 European Calcium Club Workshop on "*Heterogeneity of Ca²⁺ microdomains and cell activation*", November 3-4, Como, Italy.
- 1995 International Symposium on "*Mechanisms on oocyte maturation and fertilization*" August 6-11, St. Cruz, CA, USA.
- 1994 13th NIH Calcium Day on "*Calcium regulation in nuclear functions*", December 9, Bethesda, MD, USA.
- 1989 International Symposium on "*Mechanisms of Fertilization: From plants to humans*", October 1-5, Sorrento, Italy.

Teacher at International Advanced Courses in Brazil and Uruguay by the EMBO-IICCBB School of Science. as Faculty member of the International Institute for Collaborative Cell Biology and Biochemistry (IICCBB) since 2002

- 2015 International Course «SCHOOL ON MOLECULAR AND CELL BIOLOGY TO UNRAVEL THE PHYSIOLOGY/PATHOLOGY OF DIVERSE BIOLOGICAL PARADIGMS». Instituto de Investigaciones Biológicas Clemente Estable (IIBCE), Facultad de Ciencias, Facultad de Medicina, Montevideo, Uruguay, November 9-22, 2015.
- 2015 International Marine Biology Course on *Introduction of Marine Invertebrates as tools for studies on oocyte maturation, fertilization and early development*. Research Center for Marine Biology, Asamushi, Tohoku University. June 18-25th.
- 2014 EMBO-IICCBB School of Science-From Biochemistry and Molecular Biology Approaches to System Biology: Bench to Bedside, Bench to the Field Course. Cuiabá and Poconé, Brazil.
- 2012 IICCBB School of Science, International Symposium and Training Course on "*The current Tools in Cell Biology: Probing normal and pathological cell functions*". Fortaleza, Brazil.
- 2010 NSF-Pan American Advanced Study Institute International Training Course on *The Function and Regulation of Cytoskeleton*, August 2-14, Rio de Janeiro, Brazil.
- 2009 EMBO World Practical Course- II International School of Biochemistry, Molecular & Cell Biology- Current tools in cell biology: probing normal and pathological cell functions and IV International Training Course, August 3-14, Rio de Janeiro, Brazil.
- 2006 III International Symposium on Myosin V - International Training Course on *Proteins as Cellular Nanomachines: Molecular Motors, Channels & Pumps*", July 10-21, Rio de Janeiro, Brazil.
- 2004 ICRO/EMBO II International Symposium on Myosin V and Training Course on "*Molecular Motors and the Cytoskeleton*", May 3-14, Rio de Janeiro, Brazil.
- 2002 ICRO-UNESCO International Symposium and Training Course on "*Cell Motility, Molecular Motors and the Cytoskeleton*", May 3- 14, Rio de Janeiro, Brazil.
- 2008 First Latino-American School of Biochemistry, Molecular and Cell Biology, International Course on *Calcium as a second messenger and the Cytoskeleton*, Montevideo, Uruguay.
- 2005 EMBO-ICRO-UNESCO-IUBMB International Course-Symposium on *Calcium Signalling, with special attention to cell motility and the cytoskeleton*, October-November, Montevideo, Uruguay.
- 2004 ICRO-UNESCO Training Course on *Cellular and Molecular Techniques in Marine Invertebrates*, November 9-20, University of Palermo, Italy.
- 2001 ICRO/EMBO Advanced Course on *Cell Signalling*, April 19-25, Shanghai, China.

Seminars at Academic Institutions:

- 2017 Division of Biology, Department of Life Sciences, Graduate School of Arts and Sciences, University of Tokyo, Tokyo, Japan.
- 2016 Dipartimento di Biologia – Università degli Studi di Napoli Federico II.
- 2014 Department of Biochemistry, Chonbuk National University Medical School, 2014. Jeonju, Republic of Korea.
- 2014 Research Center for Marine Biology, Asamushi, Tohoku University, Asamushi, Aomori, Japan.

- 2013 Research Center for Marine Biology, Asamushi, Tohoku University, Asamushi, Aomori, Japan.
2013 Institute of Cellular and Organismic Biology, Academia Sinica, Taipei, Taiwan.
2013 Institute of Zoology National University of Taiwan, Taipei Taiwan.
2012 Research Center for Marine Biology, Asamushi, Tohoku University, Asamushi, Aomori, Japan.
2012 Department of Life Science, Institute for Biomolecular Science, Gakushuin University, Tokyo, Japan
2010 Research Center for Marine Biology, Asamushi, Tohoku University, Asamushi, Aomori, Japan.
2008 Department of Biophysical Genetics, Kanazawa University Graduate School of Medicine, Kanazawa, Japan.
2007 Department of Molecular Physiology and Biophysics Baylor College of Medicine, Houston, TX, USA.
2005 Department of Pharmacology, University of Oxford, UK.
2003 Asamushi Marine Biological Station, Tohoku University, Aomori, Japan
2003 Division of Molecular Neurobiology, the Institute of Medical Science, Tokyo.
2003 Department of Biology Graduate School of Arts and Sciences University of Tokyo 3-8-1 Komaba, Meguro-ku, Tokyo.
2003 Department of Cell Biology, University of Rochester, New York.
2003 Institute of Physiology, Albert-Ludwigs-University, Freiburg, Germany.
2002 Institute of Physiology, University of Halle, Germany.
2002 Dipartimento di Chimica Biologica, Università degli Studi di Padova, Italy.
2001 Dipartimento di Neuroscienze e di Scienze del Comportamento, Università di Napoli, Italy.
2000 Nencki Institute of Experimental Biology Department of Molecular and Cellular Neurobiology, Warsaw, Poland.
1999 Dipartimento di Biologia Evolutiva, Università di Napoli, Napoli, Italy.
1998 Nencki Institute of Experimental Biology Department of Molecular and Cellular Neurobiology, Warsaw, Poland.
1997 Institute of Physiology, University of Freiburg, Germany
1997 Department of Toxicology, University of Konstanz, Germany.
1997 Institute of Zoology and Cell Biology, University of Zurich, Switzerland.
1996 Asamushi Marine Biological Station, Tohoku University, Aomori, Japan.
1996 Department of Molecular Neurobiology, Institute of Medical Science University of Tokyo, Japan.
1995 International Institute of Genetics and Biophysics (IIGB), Naples, Italy.
1995 Department of Evolutive and Comparative Biology, University of Naples, Italy.
1994 Department of Anatomy and Cell Biology, Emory University, Atlanta, GA, USA.

Contribution to education

Teaching

- 2017 Open University/SZN Course on Signal Transduction
2013 Open University/SZN Course on Signal Transduction
2013 Lessons for PON25 BioForU (Formazione) "*Oocytes and eggs of starfish to study meiotic maturation and fertilization*".
2005 Corso di Microscopia Confocale, Olympus, University of Naples, Italy.
2005 Open University/SZN Course on Gene expression Signal Transduction
2003 Open University/SZN Course on Calcium and Gene Transcription Regulation
2001 Open University Course, Stazione Zoologica Anton Dohrn Napoli, Italy
1999 Corso teorico-pratico SIBBM su Trasduzione del segnale: dal recettore al nucleo, Stazione Zoologica, Napoli.
1991 Convegno Regionale di Microscopia Elettronica, Istituto Internazionale di Genetica e Biofisica (IIGB), Napoli.

OUTREACH

- 2018 Conference Città della Scienza "*Re-Image-neration*" Sala Averroè.
2017 Conference at the Stazione Zoologica Anton Dohrn on "*Il processo della fecondazione: una nuova interpretazione del fenomeno*" for the Rotary E-Club of Italy South 2100 members.
2015 Conference at the Stazione Zoologica Anton Dohrn on "*Noi siamo figli delle stelle marine*" for the Rotary E-Club of Italy South 2100 members.

- 2014 Conference Città della Scienza “Fecondazione di uova di stella di mare” on La Scienza è donna.
2015 TV show for the Italian National Television (RAI2). Cronache Animali
2014 TV show for the Italian National Television (RAI2). Cronache Animali

Training activity and Committees

Member of the PhD OPEN University/SZN Committee
Supervisor of National and International PhD students
Supervisor of National and International postdoctoral fellows

Reviewer of applications to Granting Agencies:

The Wellcome Trust, London, UK
The Third World Academy of Sciences

Service as a Referee for:

Advances in Experimental Medicine and Biology, Biochemical and Biophysical Research Communications, Biochimica et Biophysica Acta, Cell Calcium, Development, Development Growth and Differentiation, Experimental Cell Research, Genes & Development, International Journal of Developmental Biology, Journal of Biological Chemistry, Journal of Cellular and Molecular Medicine, Journal of Experimental Biology, Journal of Membrane Biology, Molecular Brain Research, Nucleus, Pflügers Archives European Journal Physiology, The EMBO Journal, The Journal of Physiology, International Journal of Molecular Sciences, Zygote, FEBS Letters.

Collaborations

Prof. Keiichiro Kyojuka, Research Center for Marine Biology, Asamushi, Tohoku University, Asamushi, Aomori, Japan (1993- to present date).
Prof. Jean Marie Lehn, Institut de Science et d'Ingénierie Supramoléculaires, Strasbourg, Cedex (2014-).
Prof. Uh-Hyun Kim, Department of Biochemistry, Chonbuk National University Medical School, Jeonju, Republic of Korea (2013-).
Prof. Jolanta Barańska, The Nencki Institute of Experimental Biology, Warsaw, Poland (2001-2003).
Prof. Ernesto Carafoli, Department of Biochemistry, University of Padova, (1997-2001).
Dr. Brian Dale, Cell Biology Laboratory, SZN (1980-1992)
Prof. Alberto Monroy, Cell Biology Laboratory, SZN (1980-1986)

Publications

Author of 75 papers on ISI journals and of 13 book chapters with 3426 citations (Google Scholar October 2019, 880 of which since 2014) h-index 33; i10-index 59.

Special Issues organizer:

Special Issue on *Waves in Fertilization, Cell Division and Embryogenesis*. (2018). In: **Frontiers in Cell and Developmental Biology**. Santella L, Gordon R. (Eds). (in preparation).
Special issue on *Actin cytoskeleton dynamics in the regulation of the cell function*. (2018). In: **Biochem Biophys Res Commun**. Santella L, Mabuchi I. (Eds). 506: 307-422.
Special issue on *Fertilization and early development*. (2013) In: **Biochem Biophys Res Commun**. Santella L, Lennarz W J. (Eds). 450: 1133-1230.

1. **Santella L**, Limatola N, Chun JT. (2019) Revisiting the cellular and molecular aspects of oocyte maturation and fertilization: the role of the actin cytoskeleton. Submitted
2. Santella L. (2019) Polyspermy preventing mechanisms in sea urchin eggs: new developments of an old problem. **Biochem Biophys Res Commun** (in press).
3. Limatola L, Vasilev F, **Santella L**, Chun JT. (2019) Nicotine induces polyspermy in sea urchin eggs through a non-cholinergic pathway modulating actin dynamics. **Sci. Rep** (under revision).

4. Limatola L, Chun JT, **Santella L.** (2019) Effects of salinity and pH of seawater on the reproduction of *Paracentrotus lividus*. **Reg. Studies in Marine Science** (in press).
5. Limatola N, Vasilev F, Chun JT, **Santella L.** (2019) Sodium-mediated fast electrical depolarization does not prevent polyspermic fertilization in *Paracentrotus lividus* eggs. **Zygote** 27: 241-249.
6. Limatola N, Vasilev F, Chun JT, **Santella L.** (2019) Altered actin cytoskeleton in ageing eggs of starfish affects fertilization process. **Exp Cell Res.** 381:179-190.
7. **Santella L**, Limatola N, Vasilev F, Chun JT. (2018) Maturation and fertilization of echinoderm eggs: Role of actin cytoskeleton dynamics. **Biochem Biophys Res Commun** 506: 361-371. *Special issue on Actin cytoskeleton dynamics*. L. Santella and I. Mabuchi eds.
8. Vasilev F, Limatola N, Park DR, Kim UH, **Santella, L.** Chun JT. (2018) Disassembly of subplasmalemmal actin filaments induces cytosolic Ca²⁺ increases in *Astropecten aranciacus* eggs. **Cell Physiol Biochem Cell Physiol Biochem** 48:2011-2034.
9. Musacchia F, Vasilev F, Borra M, Biffali E, Sanges R, **Santella L**, Chun JT. (2017) De novo assembly of a transcriptome from the eggs and early embryos of *Astropecten aranciacus*. **PLoS ONE** 12 (9), e0184090.
10. Ruocco N, Costantini M, **Santella L.** (2016) New insights into negative effects of lithium on sea urchin *Paracentrotus lividus* embryos. **Sci Rep** 6, 32157.
11. **Santella L**, Limatola N, Chun JT. (2016) The fertilization process: a new way to look at an old phenomenon.
<http://atlasofscience.org/the-fertilization-process-a-new-way-to-look-at-an-old-phenomenon/>
12. **Santella L**, Dale B. (2015) Assisted yes, but where do we draw the line? **Reprod Biomed Online** 31:476-8.
13. Limatola N, Chun JT, Kyojuka K, **Santella L.** (2015) Novel Ca²⁺ increases in the maturing oocytes of starfish during the germinal vesicle breakdown. **Cell Calcium** 58:500-10.
14. **Santella L**, Limatola N, and Chun JT. (2015) Calcium and actin in the saga of awakening oocytes. **Biochem Biophys Res Commun** 460:104-113. *Special Tribute Issue on Ca²⁺ and Metabolism*. C. Klee, K. Mikoshiba and S. Orrenius eds.
15. Yazaki I, Tsurugaya T, **Santella L**, Chun JT, Amore G, Kusunoki S, Asada A, Togo T, and Akasaka K. (2015) Ca²⁺ influx-linked protein kinase C activity regulates the-catenin localization, micromere induction signalling and the oral–aboral axis formation in early sea urchin embryos. **Zygote** 9:1-21.
16. Chun JT, Limatola N, Vasilev F, and **Santella L.** (2014) Early events of fertilization in sea urchin eggs are sensitive to actin-binding organic molecules. **Biochem Biophys Res Commun** 450:1166-74. *Special issue on Fertilization and Early Development*. Santella L and Lennar WJ Editors.
17. Chun JT, Vasilev F, and **Santella L.** (2013) Antibody against the actin-binding protein depactin attenuates Ca²⁺ signaling in starfish eggs. **Biochem Biophys Res Commun** 441:301-307.
18. **Santella L**, Vasilev F, and Chun JT. (2012) Fertilization in echinoderms. **Biochem Biophys Res Commun** 425:588-94. *Special Tribute Section: Honoring William J. Lennarz*.
19. Vasilev F, Chun JT, Gragnaniello G, Garante E, and **Santella L.** (2012) Effect of ionomycin on egg activation and early development in starfish. **PLoS ONE** 7(6):e39231.
20. **Santella L**, and Chun JT. (2011). Actin, more than just a housekeeping protein at the scene of fertilization. **Sci China Life Sci** vol. 54:733-743. *Special issue on The 17th Ca²⁺-binding Proteins and Ca²⁺ Function in Health and Disease (Beijing, China 2011)*.
21. Chun JT, Puppo A, Gragnaniello G, Garante E, and **Santella L.** (2010). The biphasic increase of PIP2 in the fertilized eggs of starfish: new roles for actin polymerization and Ca²⁺ signaling. **PLoS ONE** 5:e14100.
22. Kyojuka K, Chun JT, Puppo A, Gragnaniello G, Garante E, **Santella L.** (2009) Guanine nucleotides in the meiotic maturation of starfish oocytes: regulation of the actin cytoskeleton and of Ca²⁺ signaling. **PLoS ONE.** 4:e6296.
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