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Education:

1984 "Laurea" in Physics, 110/110 e lode, Universita' di Genova, Italy
1988 "Dottorato di Ricerca" in Physics, Universita' di Genova, Italy

Positions:

2002- Full professor in Physiology, International School for Advanced Studies (SISSA), Trieste, Italy
2001- 2002 "Primo Ricercatore", Sezione di Trieste Istituto di Genetica Biochimica ed Evoluzionistica, C.N.R., Trieste, Italy
1997 -2000 "Primo Ricercatore", Istituto di Cibernetica e Biofisica, C.N.R., Genova, Italy
1988 -1997 "Ricercatore", Istituto di Cibernetica e Biofisica, C.N.R., Genova, Italy
1987-1988 Research Associate, Department of Physiology, Duke University, Durham, U.S.A.

Academic Responsibilities:

2013- Director of the Master Course in Science Communication at SISSA. Trieste
2002-2012 Coordinator of the PhD Program in Neuroscience of the International School for Advanced Studies, SISSA, Trieste.
2005-2012 Member of the Administrative Council of the International School for Advanced Studies, SISSA, Trieste

Editorial Board:

1995-present Advisory Editorial Board, Journal of General Physiology
2001-present Advisory Editorial Board, Journal of Comparative Physiology A
2012 Peer Review Board, Journal of Visualized Experiments

Scientific Societies:

2014-2016 Past President of the European Chemoreception Research Organization, ECRO
2012-2014 President of the European Chemoreception Research Organization, ECRO
2010-2012 President Elect of the European Chemoreception Research Organization, ECRO
2008-now Member of the Selection Committee for postgraduate fellowship of the Organization for Women in Science for the Developing World (OWSDW) of the Academy of Sciences for the Developing World (TWAS).

International Evaluation Committees:

2010-2014 Member of the Scientific Advisory Board of the Max-Planck-Institute of Biophysics, Frankfurt, Germany.
2009 Reviewer for the Deutsche Forschungsgemeinschaft Priority Program on "Integrative analysis of olfaction"
2009 Member of the visiting committee for research evaluation of an INRA laboratory for the French Agency for Evaluation of Research and Higher Education (AERES).

Invited speaker at International Meetings and Courses:

1993 11th International Biophysics Congress, International Union of Pure and Applied Biophysics. Symposium on Biophysics of Sensory Cells. Budapest, Hungary
1995 Physiological Society Meeting. Symposium on Ion channels gated by cyclic nucleotides". London
1995 International School of Biophysics, XXIII Course "Neurobiology", Erice, Italy
1996 Advanced Summer Course "Fish Chemoreception", Oristano, Italy
1996 International School of Biophysics: "From Structure to Information in Sensory Systems", Casamicciola d'Ischia, Italy
1997 Joint Israeli-Italian Workshop on "Transduction Mechanisms and Synaptic Function", Erice, Italy
1997 International School of Biophysics, XXVI Course "Neuronal Circuits and Networks", Erice, Italy
1997 International Symposium on Olfaction and Taste XII. Symposium on "Mechanisms of Sensory Transduction". San Diego, USA

- 1997 Physiological Society Meeting. Symposium on "Peripheral and Central Mechanisms of Sensory Coding". Cambridge, England
- 1998 Meeting Schwerpunktprogramme "Molecular Sensory Physiology", Deutsche Forschungsgemeinschaft, Schloss Reisenburg, Germany
- 1998 Life Sciences Conference. "Sensory Physiology Symposium". Godz Martuljek, Slovenia
- 1999 13th International Biophysics Congress, International Union of Pure and Applied Biophysics, Symposium "Sensory Systems", New Delhi, India
- 2000 Biophysical Society Meeting. Symposium on "Sensational molecules: Mechanisms of sensory transduction", New Orleans, USA
- 2001 International School of Pure and Applied Biophysics: "Biophysics of Ion Channels and Channelopathies", Venezia, Italy
- 2002 PhD Programme in Biomedicine, Instituto Gulbenkian de Ciencia, Oeiras, Portugal
- 2002 European Workshop on "Channelomics", Ulm, Germany
- 2003 International School of Pure and Applied Biophysics: "Biophysics of Sensory Transduction", Venezia, Italy
- 2004 Congresso della Societa' Italiana di Fisica, Sessione di Biofisica, Brescia
- 2004 International Course on "Neuronal Systems Biology", Trieste, Italy
- 2005 PhD Program in Neuroscience, University of Copenhagen. 'Cells, molecules and coding in sensory systems', Copenhagen, Denmark
- 2005 Workshop on "Genes, Development and the Emergence of Behavior, ICTP" Trieste
- 2005 Life Sciences Conference. Symposium on "Sensory Physiology". Lipica, Slovenia
- 2005 Corso di Orientamento Universitario, Scuola Normale Superiore di Pisa, Camigliatello Silano
- 2005 Joint Meeting of the British and the Italian Physiological Societies. Symposium on "Calcium Signaling: from Physiology to Pathology". Palermo, Italy
- 2006 31st International FEBS Congress. st Symposium on "Signaling Through Ion Channels". Istanbul, Turkey
- 2008 Workshop on "Genes, Development and the Emergence of Behavior, ICTP" Trieste
- 2008 Leopoldina Symposium on "Molecular Medicine of Sensory Systems", Tubingen, Germany

- 2008 18th European Chemoreception Research Organization Congress, Symposium on “Transduction in Chemosensory Systems of the Nasal Cavity”, Portorose, Slovenia
- 2009 II Hispano-Italian Workshop on the Molecular Biology and Biophysics of Ion Channels, Alicante, Spain
- 2010 XV Conferenza Annuale della Associazione Italiana Sensori e Microsistemi (AISEM 2010), Messina, Italy
- 2010 20th European Chemoreception Research Organization Congress, Symposium on “Olfactory Transduction Proteins and Genes”, Avignon, France
- 2010 102nd International Titisee Conference, "Sensory transduction, the gateway to perception: mechanisms and pathology" Titisee, Black Forest, Germany
- 2011 Physiology 2011, Symposium on “The anoctamin (TMEM16) gene family: Calcium-activated chloride channels come of age”, Oxford, UK, 2011
- 2011 8th World congress of IBRO, Workshop on “Odorants, receptors and glomeruli”, Firenze, Italy, 2011
- 2011 Frankfurt Olfaction MiniSymposium FOMS-2, Frankfurt, Germany, 2011
- 2012 FEPS 2012, Federation of European Physiological Societies Congress, Symposium on “Calcium Activated Cl Channels in Health and Disease”, Santiago De Compostela, Spain
- 2013 67th Annual Meeting and Symposium of the Society of General Physiologists, “The Enigmatic Chloride Ion: Transport, Regulation, and Roles in Physiology”, Woodshole, MA, USA

Organization of International Schools:

- 2002 International Center for Theoretical Physics: School and Conference on “Chemical Senses: Molecules to Perception”, Directors A. Menini and S. Firestein, 20-31 May 2002, Trieste, Italy.
- 2012 FENS-IBRO SfN School on “Chemical Senses: Neurobiology and Behavior”, Directors A. Menini and S. Simon, 3-8 June 2012, Bertinoro, Italy.

National and International Grants:

- 1989-1991 NATO Collaborative Research Grant CRG-890435 "Characterization of odorant-activated ion channels"
- 1992-1994 NATO Collaborative Research Grant CRG-920582 "The cellular basis of olfactory transduction"

- 1992-1995 EC ESPRIT Basic Research Action SSS 6961 "Smart Sensory Systems"
- 1994-1996 National Science Foundation Cooperative Research Project "Sensory transduction in olfactory receptor cells"
- 1994-1997 Human Frontiers Science Program Research Grant RG-62/94 B "Sensory Transduction: The cyclic Nucleotide Cascade"
- 1996 Japan Society for the Promotion of Science "Role of calcium ions in the response to odorants of olfactory receptor cells"
- 1996-1999 EC BIOTECHNOLOGY BIO4 CT96 0593 "Molecular Events in Phototransduction and Chemotransduction"
- 2001-2003 NATO Collaborative Linkage Grant LST.CLG.978303 "Olfactory coding in vertebrates"
- 2003-2007 Coordinator of the Project "Functional genomics of the adult and developing brain" EC "LIFE SCIENCES, GENOMICS and BIOTECHNOLOGY for HEALTH" LSHG-CT-503221
- 2004-2005 Scientific Supervisor of a Marie Curie European Reintegration Grant EC MERG-CT-2004-505935 "Olfactory coding: temporal patterns of mitral cells responses to odorants"
- 2005-2007 Scientific Responsible of Research Unit of the PRIN Project: "Cyclic nucleotide and hyperpolarization-activated channels (HCN channels)"
- 2006-2011 Member of the SISSA Research Unit of the Italian Institute of Technology. Sub-project: "Functional and structural genomics of olfaction"
- 2007-2009 Scientific Responsible of Research Unit of the PRIN Project: "Cellular mechanism regulating neuroregeneration in mammalian olfactory epithelium"
- 2010-2012 Coordinator of the PRIN Project: "Calcium-activated chloride channels in olfaction: from genes to behavior"
- 2013-2016 Coordinator of the PRIN Project: "Integrated analysis of molecular and cellular mechanisms underlying signal processing by sensory systems in health and disease."

PUBLICATIONS

- Rauch G., Gambale F., Spadavecchia L., Gagna P.G., Menini A. & Gaggero E. (1986). A microcomputer based system for data acquisition and analysis of step-like current jumps due to the opening of single ionic channels in model membranes. Int. J. Bio-Medical Computing 19:9-22.

- Menini A., Gambale F., Rauch G. & Gorio A. (1986). Ionic transport through channels in lipid model membranes. in: *Physics in Environmental and Biomedical Research*. Eds. S.Onori & E.Tabet. World Scientific Publ., Singapore. pp 585-587.
- Gambale F., Menini A. & Rauch G. (1987). Effects of calcium on the gramicidin A single channel in phosphatidylserine membranes: screening and blocking. *Eur. Biophys. J.* 14:369-374.
- Torre V., Rispoli G., Menini A. & Cervetto L. (1987). Ionic selectivity, blockage and control of light-sensitive channels. *Neuroscience Research Suppl.* 6:S25-S44.
- Menini A. & Rispoli G. (1988). The effect of cadmium on the light-sensitive current in isolated rods of the tiger salamander. *Exp. Biol.* 48, 5-11.
- Rispoli G. & Menini A. (1988). The blocking effect of l-cis-diltiazem on the light-sensitive current of isolated rods of the tiger salamander. *Eur. Biophys. J.* 16, 65-71.
- Menini A., Rispoli G. & Torre V. (1988). The ionic selectivity of the light-sensitive current in isolated rods of the tiger salamander. *J. Physiol.* 402, 279-300.
- Cervetto L., Menini A., Rispoli G. & Torre V. (1988). The modulation of the ionic selectivity of the light-sensitive current in isolated rods of the tiger salamander. *J. Physiol.* 406, 181-198.
- Forti S., Menini A., Rispoli G. & Torre V. (1989). Kinetics of phototransduction in retinal rods from the newt *Triturus cristatus*. *J. Physiol.* 419, 265-295.
- Forti S., Menini A., Rispoli G., Spadavecchia L. & Torre V. (1990). Light adaptation in retinal rods from the newt. in: *Sensory Transduction* Eds. A. Borsellino, L. Cervetto & V. Torre. Plenum Press pp. 205-226.
- Torre V., Forti S., Menini A. & Campani M. (1990). Model of phototransduction in retinal rods. In: *Cold Spring Harbor Symposia on Quantitative Biology* Vol.55, pp. 563-574.
- Menini A. & Nunn B.J. (1990). The effect of pH on the cyclic GMP-activated conductance in retinal rods. in: *Sensory Transduction* Eds. A.Borsellino, L.Cervetto & V.Torre. Plenum Press pp. 175-181.
- Menini A. (1990). Currents carried by monovalent cations through cyclic GMP-activated channels in excised patches from salamander rods. *J. Physiol.* 424, 167-185.
- Colamartino G., Menini A. & Torre V. (1991). Blockage and permeation of divalent cations through the cyclic GMPactivated channel from retinal rods. *J. Physiol.* 440, 189-206.
- Picco C. & Menini A. (1993). The permeability of the cGMP-activated channel to organic cations in retinal rods of the tiger salamander. *J. Physiol.* 460, 741-758.
- Firestein S., Picco C. & Menini A. (1993) The relation between stimulus and response in isolated olfactory receptor cells of the tiger salamander. *J. Physiol.* 468, 1-10. (Short paper of high interest for a general public).

- Menini A. & Anholt R. (1994) Cyclic nucleotide activated channels. In: Ion Channels and Ion Pumps. Eds. P.P. Foa and M.F. Walsh, Springer Verlag, New York, NY. pp. 526-548 (Invited Review).
- Torre V. & Menini A. (1994). Selectivity and single channel properties of the cyclic GMP-activated channel in amphibian retinal rods. In: Handbook of membrane channels: molecular and cellular physiology. Ed. C. Peracchia, Academic Press, San Diego, California, pp. 345-358 (Invited Review).
- Menini A. (1995). Cyclic nucleotide-gated channels in visual and olfactory transduction. Biophys. Chem. 55:185-196. (Invited Review).
- Torre V., Ashmore J., Lamb T.D. & Menini A. (1995). Transduction and adaptation in sensory receptor cells. J. Neurosci 15, 7757-7768.
- Menini A., Picco C. & Firestein S. (1995). Quantal-like current fluctuations induced by odorants in olfactory receptor cells. Nature 373, 435-437.
- Gavazzo P., Picco C., Maxia L. & Menini A. (1996). Properties of native and cloned cyclic nucleotide-gated channels from bovine. in: Neurobiology: Ionic Channels, Neurons, and the Brain. Eds. V.Torre & F.Conti. Plenum Press pp. 75-83.
- Picco C. Sanfilippo C., Gavazzo P. & Menini A. (1996). Modulation by internal protons of native cyclic nucleotide-gated channels from retinal rods. J. Gen. Physiol. 108, 265-276.
- Kurahashi T. & Menini A. (1997). Mechanism of odorant adaptation in the olfactory receptor cell. Nature 385, 725-729.
- Gavazzo P., Picco C. & Menini A. (1997). Mechanisms of modulation by internal protons of cyclic nucleotide-gated channels cloned from sensory receptor cells. Proc. R. Soc. Lond. B 264, 1157-1165.
- Menini A., Picco C. & Gavazzo P. (1998). Transduction and adaptation in sensory neuron. In: "From Structure to Information in Sensory Systems" Eds. C. Taddei-Ferretti, C. Musio, World Scientific, pp.82-92.
- Menini A., Picco C. & Gavazzo P. (1998). Responses of isolated olfactory neurons to odorants. In: "Neural Circuits and Networks" Eds. V. Torre, J. Nicholls, Springer Verlag, pp. 85-93.
- Firestein S. and Menini A. (1999) The smell of adrenaline. Nature Neuroscience 2:106-8.
- Menini A. (1999) Calcium signalling and regulation in olfactory neurons. Curr Opin Neurobiol. 9:419-426.
- Gavazzo P., Picco C., Eismann E, Kaupp U.B. and Menini A. (2000) A point mutation in the pore region alters gating, Ca²⁺ blockage and permeation of olfactory cyclic nucleotide-gated channels. J. Gen. Physiol. 12: 311-325.

- Picco C., Gavazzo P. and Menini A. (2001) Co-expression of wild-type and mutant olfactory cyclic nucleotide-gated channels: restoration of the native sensitivity to Ca and Mg blockage. NeuroReport. 116: 2363-2367.
- Lagostena L. and Menini A. (2003) Whole-cell recording and photolysis of caged compounds in olfactory sensory neurons isolated from the mouse. Chemical Senses 28:705-16.
- Dean D., Mazzatenta A. and Menini A. (2004) Voltage-activated current properties of male and female mouse vomeronasal sensory neurons. Comp. Physiol. A Neuroethol. Sens. Neural. Behav. Physiol. 190: 491-499.
- Menini A., Lagostena L. and Boccaccio A. (2004) Olfaction: from molecules to the olfactory cortex. News Physiol Sci. 19:101-104.
- Menini A. (2005) L'Olfatto e il Gusto. In: "Fisiologia Medica" Ed. F. Conti, Edi-Ermes, Milano pp. 455-466.
- Shimazaki R., Boccaccio A., Mazzatenta A., Pinato G., Migliore M. and Menini A. (2006) Electrophysiological properties and modeling of murine vomeronasal sensory neurons in acute slice preparations. Chemical Senses 31: 425-435.
- Pifferi S., Boccaccio A. and Menini A. (2006) Cyclic nucleotide gated channels in sensory systems. FEBS Letters 580:2853-2859.
- Boccaccio A., Lagostena L., Hagen V. and Menini A. (2006) Fast adaptation in mouse olfactory sensory neurons does not require the activity of phosphodiesterase. Journal of General Physiology 128: 171-184.
- Pifferi S., Pascarella G., Boccaccio A., Mazzatenta A., Gustincich S., Menini A. and Zucchelli S. (2006) Bestrophin-2 is a candidate calcium-activated chloride channel involved in olfactory transduction. Proceedings of the National Academy of Sciences of the USA 103:12929-12934.
- Khafizov K., Anselmi C., Menini A and Carloni P. (2007) Ligand specificity of odorant receptors. Journal of Molecular Modeling 13(3):401-409.
- Boccaccio A. and Menini A. (2007) Temporal development of CNG and Ca²⁺-activated Cl⁻ currents in isolated mouse olfactory sensory neurons. Journal of Neurophysiology 98(1):153-160.
- Menini A and Pifferi S. (2008) New Whiffs About Chemesthesis. Focus on "TRPM5-Expressing Solitary Chemosensory Cells Respond to Odorous Irritants". Journal of Neurophysiology 99(3):1055-6.
- Pinato G, Rievaj J, Pifferi S, Dibattista M, Masten L and Menini A. (2008) Electroolfactogram Responses from Organotypic Cultures of the Olfactory Epithelium from Postnatal Mice. Chemical Senses 33(4):397-404.
- Dibattista M, Mazzatenta A, Grassi F, Tirindelli R, Menini A. (2008) Hyperpolarization activated cyclic nucleotide-gated channels in mouse vomeronasal sensory neurons. Journal of Neurophysiology 100(2): 576-586
- Kranjc A, Grillo FW, Rievaj J, Boccaccio A, Pietrucci F, Menini A, Carloni P, Anselmi C. (2009) Regulation of Bestrophins by Ca²⁺: a Theoretical and Experimental Study. PLoS ONE 4(3):e4672

- Franceschini V, Bettini S, Pifferi S, Rosellini A, Menini A, Saccardi R, Ognio E, Jeffery R, Poulson R, Revoltella RP (2009) Human cord blood CD133+ stem cells transplanted to *nod-scid* mice provide conditions for regeneration of olfactory neuroepithelium after permanent damage induced by dichlobenil. Stem Cells. 27(4):825-835.
- Pifferi S, Dibattista M, Sgheddu C, Boccaccio A, Al Qteishat A, Ghirardi F, Tirindelli R, Menini A. (2009) Calcium-activated chloride currents in olfactory sensory neurons from mice lacking bestrophin-2. Journal of Physiology 587:4265-4279.
- Tirindelli R, Dibattista M, Pifferi S, Menini A. (2009) From pheromones to behavior. Physiological Reviews 89(3):921-956.
- Pifferi S, Dibattista M, Menini A. (2009) TMEM16B induces chloride currents activated by calcium in mammalian cells. Europ. J. Physiol., Pflugers Arch. 458(6):1023-1038.
- Menini A. (2009) Editor of the book: "The Neurobiology of Olfaction" Frontiers in Neuroscience Series, CRC Press, Taylor and Francis Group, Boca Raton, FL, USA, pp 448.
- Pifferi S, Menini A, Kurahashi T. (2009) Signal Transduction in Vertebrate Olfactory Cilia. In: Menini A, editor. The Neurobiology of Olfaction. Boca Raton (FL): CRC Press; Chapter 8.
- Sgheddu C, Boccaccio A, Dibattista M, Montani G, Tirindelli R, Menini A. (2010) Calcium concentration jumps reveal dynamic ion selectivity of calcium-activated chloride currents in mouse olfactory sensory neurons and TMEM16B/anoctamin2-transfected HEK 293T cells. Journal of Physiology 588:4189-4204.
- Dibattista M, Massimino ML, Maurya DK, Menini A, Bertoli A, Sorgato MC. (2011) The cellular prion protein is expressed in olfactory sensory neurons of adult mice but does not affect the early events of the olfactory transduction pathway. Chem Senses. 36(9):791-797.
- Boccaccio A, Sgheddu C, Menini A. (2011). Flash photolysis of caged compounds in the cilia of olfactory sensory neurons. J. Vis. Exp. 29;(55):e3195. doi: 10.3791/3195.
- Celsi F, D'Errico A, Menini A. (2012) Responses to sulfated steroids of female mouse vomeronasal sensory neurons. Chemical Senses 37(9):849-58.
- Pifferi S, Cenedese V, Menini A. (2012). Anoctamin 2/TMEM16B: a calcium-activated chloride channel in olfactory transduction. Exp Physiol. 97(2):193-199.
- Cenedese V, Betto G, Celsi F, Cherian OL, Pifferi S, Menini A. (2012) The voltage dependence of the TMEM16B/anoctamin2 calcium-activated chloride channel is modified by mutations in the first putative intracellular loop. J Gen Physiol. 139(4):285-94.
- De Palo G, Boccaccio A, Miri A, Menini A, Altafini C. (2012) A dynamical feedback model for adaptation in the olfactory transduction pathway. Biophys J. 102(12):2677-86.
- Dibattista M, Amjad A, Maurya DK, Sgheddu C, Montani G, Tirindelli R, Menini A. (2012) Calcium-activated chloride channels in the apical region of mouse vomeronasal sensory neurons. J Gen Physiol. 140(1):3-15.
- De Palo G, Facchetti G, Mazzolini M, Menini A, Torre V, Altafini C. (2013) Common dynamical features of sensory adaptation in photoreceptors and olfactory sensory neurons. Scientific Reports 2013;3:1251. doi: 10.1038/srep01251.

- Bergami M, Vignoli B, Motori E, Pifferi S, Zuccaro E, Menini A, and Canossa M. (2013) TrkB signaling directs the incorporation of newly-generated periglomerular cells in the adult olfactory bulb. Journal of Neuroscience 33(28):11464-78.
- Maurya DK, Menini A (2014) Developmental expression of the calcium-activated chloride channels TMEM16A and TMEM16B in the mouse olfactory epithelium. Dev Neurobiol. Jul;74(7):657-75.
- Franceschini V, Bettini S, Pifferi S, Menini A, Siciliano G, Ognio E, Brini AT, Di Oto E, Revoltella RP. (2014) Transplanted human adipose tissue-derived stem cells engraft and induce regeneration in mice olfactory neuroepithelium in response to dichlobenil subministration. Chemical Senses 39(7):617-29. 23.
- Betto G, Cherian OL, Pifferi S, Cenedese V, Boccaccio A, Menini A. (2014) Interactions between permeation and gating in the TMEM16B/anoctamin2 calcium-activated chloride channel. J Gen Physiol. 143(6):703-18.
- Francia S, Pifferi S, Menini A, Tirindelli R. (2014) Vomeronasal Receptors and Signal Transduction in the Vomeronasal Organ of Mammals. In: Mucignat-Caretta C, editor. Neurobiology of Chemical Communication. Boca Raton (FL): CRC Press; 2014. Chapter 10.
- Lorenzon P, Redolfi N, Podolsky MJ, Zamparo I, Franchi SA, Pietra G, Boccaccio A, Menini A, Murthy VN, Lodovichi C. (2015) Circuit formation and function in the olfactory bulb of mice with reduced spontaneous activity. Journal of Neuroscience 35(1):146-60.
- Cenedese V, Mezzavilla M, Morgan A, Marino R, Ettore CP, Margaglione M, Gasparini P, Menini A. (2015) Assessment of the olfactory function in Italian patients with type 3 von Willebrand disease caused by a homozygous 253 Kb deletion involving VWF and TMEM16B/ANO2. PLoS One 10(1):e0116483.
- Cherian OL, Menini A, Boccaccio A. (2015) Multiple effects of anthracene-9-carboxylic acid on the TMEM16B/anoctamin2 calcium-activated chloride channel. Biochim Biophys Acta 1848(4):1005-13.
- Amjad A, Hernandez-Clavijo A, Pifferi S, Maurya DK, Boccaccio A, Franzot J, Rock J, Menini A. (2015) Conditional knockout of TMEM16A/anoctamin1 abolishes the calcium-activated chloride current in mouse vomeronasal sensory neurons. J Gen Physiol. 145(4):285-301.