

CURRICULUM VITAE OF MICHELA MATTEOLI

- **Full Professor of Pharmacology**
- **Director of the CNR Institute of Neuroscience**
- **Head of Neurocenter, Humanitas Research Hospital**



EDUCATION

July 1979 : Maturita' classica , Liceo Classico, Pontedera (Pisa)

July 1983 : Laurea in Biological Sciences - Faculty of Mathematical, Physical and Natural Sciences, University of Pisa. Graduates "Magna cum laude".

July 1989 : PhD Degree (Dottorato di Ricerca), University of Pisa

PROFESSIONAL CAREER

Since December 2016: Head of Humanitas Neurocenter

Since October 2015: Full Professor of Pharmacology, Humanitas University (on leave)

Since July 2014: Director of the Italian CNR Institute of Neuroscience

2013-2016: Director of the Neuroscience Program, Humanitas Clinical and Research Center, Milano

2011-2015: Full Professor of Pharmacology, Biometra Dept. University of Milano

2002-2011: Associate Professor of Pharmacology, Dept of Medical Pharmacology, University of Milano

1997-2002: Senior Researcher - CNR- Center of Cellular and Molecular Pharmacology

1991- 1997: Researcher - National Research Council (CNR), Center of Cytopharmacology

1989 - 1991 : Postdoctoral fellow, Yale University School of Medicine - Dept. of Cell Biology.

1988- 1991: Researcher - CNR Istituto Fisiologia Centri Nervosi - Milano (on leave June 1989-June 1991)

1986-1988 : PhD student - CNR Center of Cytopharmacology and Dept. of Medical Pharmacology.

1983-1986 : Graduate student - Dept. of Physiology and Biochemistry University of Pisa

HONORS AND AWARDS

- 2016: Special Award from Sapio for contributions to Italian research (Rome, Montecitorio)
- 2015: Recipient of Atena Prize for scientific achievements (Rome, Campidoglio)
- 2014: Elected member of EMBO
- 2013: Recipient of the mid-career Nature Mentoring Award (Rome, Quirinale)
- 2012: Member of the Academia Europaea, due to outstanding achievements as a researcher
- 2009: Selected Lombardy Representative for European Network of Female Entrepreneurship Ambassadors (EUROPEAN COMMISSION ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL)
- 1989: European Molecular Biology Organization (EMBO) - long term fellow
- 1989: International Brain Research Organization (IBRO) - MacArthur travel fellow

PARTICIPATION TO INTERNATIONAL SCIENTIFIC BOARDS

- Since 2015: Member of the international Scientific Advisory Board, Center of Psychiatry and Neurosciences, Paris-Descartes University.
- Since 2013: member of the International Scientific Advisory Board (SAB) of the Paris School of Neuroscience - (ENP).
- Since 2013: member of the International Scientific Committee of the Umberto Veronesi Foundation
- Since 2013 Member of the Scientific Committee of the Centro di Cultura Scientifica A. Volta.
- 2014-2017: Member of the Advisory Committee of the Armenise Harvard-Italy Foundation
- Since 2015: International Expert for Russian Science Foundation (RSF)
- 2014: Member of the Panel for Science Foundation Ireland (SFI)
- Past Member, Board of Directors of the Center of Excellence for Neurodegenerative Diseases, Milano
- Past Member, Board of Directors of the Italian Society for Neuroscience
- Since 1992: Member of several national and international Committees for PhD School final examinations

INVITATIONS AS A SPEAKER TO INTERNATIONAL MEETINGS (selected, last 10 years)

- 2017: EMBO Keynote Lecture, the Mediterranean Neuroscience Society, St Julian, Malta
- 2017: FENS Satellite Meeting, Pécs, Hungary
- 2017: École des Neurosciences Paris Île de France, 10th year International Meeting
- 2015: SINS Plenary Lecture, Cagliari, October 2015
- 2015: Falan Course on New roles for glial cells in health and disease, Rio de Janeiro, July 7th
- 2015: Gordon Conference on Endocannabinoids, Il Ciocco, May 24-29
- 2015: American Society for Neurochemistry, Atlanta USA, March 13-17
- 2015: IBRO Meeting, Rio De Janeiro, 6-12 July
- 2015: EMBO conference on Neural Development, Academia Sinica, Taipei, Taiwan, Dec. 4-7.
- 2014: Lincei Academy, Rome "Dai segnali intracellulari alla coscienza"
- 2013: Neurex Workshop "Synaptic release", Strasbourg, France
- 2013: Singapore/Italy joint workshop on Cellular and Molecular Medicine, Singapore
- 2012: EUSynapse Alumni Meeting, Seville, Spain
- 2011: Gordon Conference on Neurotrophic Factors, Newport, RI, USA
- 2011: 8th IBRO World Congress of Neuroscience - Florence, July 14-18, 2011 – Symposium organizer
- 2011: Glial cells in (patho)physiology ISN Satellite meeting, Ljubljana, Slovenia
- 2011: "The Synapse from physiology to pathology" ISN Satellite meeting, Stresa, Italy
- 2010: 13th Annual Armenise-Harvard Foundation Symposium
- 2010: SYNAPSE Symposium, satellite European Neuroscience Meeting FENS, Amsterdam
- 2009: International Neuroscience Winter Conference, Sölden Austria
- 2008: First European Synapse Meeting, Bordeaux, France
- 2008: International Meeting "Mechanism(s) of Exocytosis 2008", Ljubljana, Slovenia
- 2008: Gordon Conference "Cell Biology of the Neuron", New London, NH, USA
- 2007: Symposium "Exocytotic release from astrocytes" 7th IBRO World Congress of Neuroscience, Melbourne, Australia

GRANTS

2017-2019: Fondazione Pisa (Studio traslazionale dell'infiammazione nell'invecchiamento, PI)
2017-2019 AIRC (Targeting glioblastoma cells by drug-loaded polymeric nanocarriers, PI)
2017- 2019 Regione Lombardia-CNR (AMANDA, partner)
2017-2018 Vodafone (Piattaforma digitale per diagnosi di difetti neurologici e neuropsichiatrici - PI)
2017-2019 Fondazione Veronesi (Targeting brain tumor cells by drug-loaded polymeric nanoparticles, PI)
2016-2018 Cariplo (A systematic molecular study of neuroimmune mechanisms in aging, PI)
2015-2017 Italian Ministry of Health (Microfluidic integration of a blood-brain barrier model, Referent)
2015-2017 Cariplo (Role of the NFAT signaling pathway in aging and neurodegeneration, Partner)
2014-2015 European Center of Nanotechnology (Nanocomposite for Human Glioblastoma, PI)
2014-2015 Progetto CNR Aging (A low-copper diet as a preventive strategy for Alzheimer's disease, PI)
2013-2015 Telethon (Mutant prion protein and calcium channels, PI)
2013-2015 MIUR (Excitatory/inhibitory balance in the central nervous system, Partner)
2012-2013 Cariplo (Toxicology of chronic exposure to engineered silver nanoparticles, Partner)
2012-2015 G. Vollaro Foundation (Radiotherapy and Glioblastoma, PI)
2011-2014 Ministry of Health (SNAP25 heterozygous mice as models for ADHD, PI)
2010-2013 EC Community Large-scale integrating project, Synaptic Protein Networks EUROSPIN, Partner
2009-2012 CARIPLO (A micro biodevice for the assessment of neuroprotective factors in PD, Partner)
2009-2011 CARIPLO (Physiopathological role of prion protein in modulation of calcium channels, Partner)
2009-2011 Compagnia S. Paolo (The synapsins and membrane trafficking in nerve terminals, Partner)
2009-2010 PRIN 2008 (Sinapsine e traffico di membrane nelle terminazioni nervose. Partner)
2008-2010 Compagnia S. Paolo (Meccanismi della trasmissione dell'informazione nel SNC, Partner)
2006-2009: CARIPLO (Brain on a chip), PI
2005-2007 COFIN2005, Partner
2005-2009: EC Integrated Project (EUSynapse, Partner)
2003-2006: National Project FIRB Neuroscienze (Project Coordinator).
2001-2004: "International Human Frontier Science Program" Research Grant , Partner
2000-2003: EC Project Quality of Life and Management of Living Resources, Partner
1998-2000 Telethon Italia (grant 1042), PI
1998-2000: European Community Biotechnology Program BIO4-98-0408 , Partner
1997-1999 II Progetto Sclerosi Multipla, Istituto Superiore di Sanita' (progetto n. 61), PI.
1995-1997 Telethon Italia (Grant n.672), PI.
1995-1998: "International Human Frontier Science Program" Research Grant (PI).
1993-1994 CNR Italy-USA Bilateral Project, PI
1992: NATO Collaborative Research Grant (PI)

EDITORIAL ACTIVITY

Member of the Editorial Board of the following journals: Brain Cell Biology (Journal of Neurocytology) (2005-2009); Frontiers in Neuroscience (since 2008); European Journal of Neuroscience (Scientific Review Associate) (2008-2012); Archives Italiennes de Biologie - A Journal of Neuroscience (since 2009); European Journal of Neurodegenerative Diseases. (since 2014)

ACTIVITY AS REFEREE

grant referee: - National Science Foundation; Human Frontier Science Program Organization (research grants and fellowships); The Israel Science Foundation; Research Council for Earth and Life Sciences in the Netherlands; Ministero Italiano dell'Università e della Ricerca Scientifica; Telethon Italia; Comitato di Indirizzo per la Valutazione della Ricerca in Italia (CIVR); German-Israeli Foundation for Scientific Research and Development; Federazione Italiana Sclerosi Multipla; European Research Council (advanced ERC grants); Agence Nationale de la Recherche

manuscript referee: - Science, Nature, PNAS, EMBO Journal, Neuron, TINS, Journal of Cell Biology, Journal of Neuroscience, Journal of Neurobiology, Journal of Neurocytology, Journal of Cell Science, Journal of Neurochemistry, Journal of Comparative Neurology, European Journal of Cell Biology, European Journal of Neuroscience, Neuroscience, Exp Cell Research, FEBS Letters, PLoS One

TECHNOLOGY TRANSFER ACTIVITY

2008-2014: Responsible of the Cell Model Platform, Fondazione Filarete for Technology Transfer, Milano

From 2007 to 2014: President and Co-founder of Neuro-Zone srl (www.neuro-zone.com)

2008: Provincia di Milano "Bando Imprese Creative e Innovative" ranked 1st (Scientific Coordinator)

2008: FIXO (SME financing from Ministero del Lavoro) (Scientific Coordinator)

2007: Regione Lombardia, Misura INTEC 3 (SME financing for innovative project in the field of biotechnology and advanced materials) (Scientific Coordinator)

2007: MIUR Financing for Applied Entrepreneurship Research Projects (Scientific Coordinator)

2009: NeuroZone: Semifinal Winner of the Eurecan European Venture Contest Award. Selected among 120 award-winning high tech companies celebrated in Düsseldorf at the European Venture Summit

Patents: Co-owner (25%) European Patent. 09154389.2 dep. 05-03-2009; Coowner (10%) European patent, under deposition

OUTREACH ACTIVITIES (last 3 years)

-2015-2017: Lectures for promoting neuroscience in Italian high schools, Progetto Zanichelli

-October 2016 TEDxCNR, Roma "La prevenzione delle malattie del cervello inizia sempre troppo tardi"

https://www.youtube.com/watch?v=_ih05A0Ypkg

-September 2016 "Cervello e differenze di genere" Museo della Scienza e della tecnologia, Milano.

-September 2015 "Mi ricordo, cervello e neuroscienze" Museo della Scienza e della tecnologia, Milano.

-October 2015: Elisir, RaiTre, La notte dei Ricercatori

-September 2015: "Food and brain: feeding the mind" Expo Milano –"Me and we – Women for Expo"

-June 2015: I meccanismi della memoria - Rai Uno, Unomattina.

-June 2014: Palazzo Marino, Colloqui per la Scienza "Eccellenze e Integrazione: occasioni per Milano".

-March 2014: La Sapienza, Roma. The future of Science, Fondazione Veronesi, I segreti della longevità.

-March 2014: Verona, InfinitaMente, "Yes we can, con le nostre sinapsi che cambiano".

-March 2014: BrainForum, Milano. Le sinapsi come magazzino della memoria.

PUBLICATIONS

Total number of publications: 140

H index: 53 (Google scholar) (<http://www.topitalianscientists.org>)

number of citations: > 10,000 (Google scholar)

Average IF/publication: around 7

Selection of most relevant publications:

- 1) Verderio C., Coco S., Fumagalli G. and Matteoli M. (1994) Spatial changes in calcium signaling during the establishment of neuronal polarity. **J. Cell Biol.**, 126: 1527-1536.
- 2) Verderio C., Coco S., Fumagalli G. and Matteoli M. (1995) Calcium-dependent glutamate release during neuronal development and synaptogenesis: different involvement of w-aga-iva and w-ctx-gvia sensitive channels. **Proc. Natl. Acad. Sci.**, 92: 6449-6453.
- 3) Matteoli M., Verderio C., Rossetto O., Iezzi N., Coco S., Schiavo G. and Montecucco C. (1996) Synaptic vesicle endocytosis mediates the entry of tetanus neurotoxin into hippocampal neurons. **Proc. Natl. Acad. Sci.**, 93: 13310-13315.
- 4) Verderio C., Coco S., Bacci A., Rossetto O., De Camilli P., Montecucco C. and Matteoli M. (1999) Tetanus toxin blocks the exocytosis of synaptic vesicles clustered at synapses, but not of synaptic vesicles in isolated axons. **J. Neurosci.**, 19: 6723-6732.
- 5) Bacci A., Coco S., Pravettoni E., Schenk U., Armano S., Frassoni C., Verderio C., De Camilli P. and Matteoli M. (2001) Chronic blockade of glutamate receptors enhances presynaptic release and down-regulates synaptophysin-synaptobrevin interaction. **J. Neurosci.**, 21: 6588-6596
- 6) Verderio C., Pozzi D., Pravettoni E., Inverardi F., Schenk U., Coco S., Proux-Gillardeaux V., Galli T., Rossetto O., Frassoni C. and Matteoli M. (2004) SNAP-25 modulation of calcium dynamics underlies differences in GABAergic and glutamatergic responsiveness to depolarization. **Neuron**, 41: 599-610
- 7) Berghuis P, Rajnicek AM, Morozov YM, Ross RA, Mulder J, Urban GM, Monory K, Marsicano G, Matteoli M, Canty A, Irving AJ, Katona I, Yanagawa Y, Rakic P, Lutz B, Mackie K, Harkany T. (2007) Hardwiring the brain: endocannabinoids shape neuronal connectivity. **Science**. 316 (5828):1212-6
- 8) Pozzi D, Condliffe S, Bozzi Y, Chikhiladze M, Grumelli C, Proux-Gillardeaux V, Takahashi M, Franceschetti S, Verderio C, Matteoli M.(2008) Activity-dependent phosphorylation of Ser187 is required for SNAP-25-negative modulation of neuronal voltage-gated calcium channels. **Proc Natl Acad Sci U S A**. 105(1):323-8.
- 9) Menna E, Disanza A, Cagnoli C, Schenk U, Gelsomino G, Frittoli E, Hertzog M, Offenhauser N, Sawallisch C, Kreienkamp HJ, Gertler FB, Di Fiore PP, Scita G, Matteoli M. (2009) Eps8 regulates axonal filopodia in hippocampal neurons in response to brain-derived neurotrophic factor (BDNF). **PLoS Biol.**7(6):e1000138. Epub 2009
- 10) A Senatore, S Colleoni, C Verderio, E Restelli, R Morini, S B. Condliffe, IBertani, S Mantovani, M Canovi, E Micotti, G Forloni, A C. Dolphin, M Matteoli, M Gobbi, and R Chiesa (2012) Mutant Prion Protein Suppresses Glutamatergic Neurotransmission in Cerebellar Granule Neurons by Impairing Membrane Delivery of Voltage-gated Calcium Channel $\alpha_2\delta$ -1 Subunit. **Neuron** 26;74(2):300-13.

- 11) R Tomasoni, D Repetto, R Morini, F Gardoni, M Di Luca, E Turco, P Defilippi and M. Matteoli (2013) SNAP-25 REGULATES SPINE FORMATION THROUGH POSTSYNAPTIC BINDING TO p140Cap. **Nature Comm**, 19;4:2136.
- 12) E Menna, S Zambetti, R Morini, Aa Donzelli, D Calvigioni, A Disanza, C, V Cappello, G Fossati, C Regondi, C Frassoni, M Francolini, M Sala, G Scita, M Fahnstock and M. Matteoli (2013) Eps8 controls dendritic spine density and synaptic plasticity through its actin-capping activity.. **EMBO J** 12;32(12):1730-44.
- 13) A. Verkhratsky, M. Matteoli*, V. Parpura, Jean-Pierre Mothet & Robert Zorec (2016) Astrocytes as endocranial secretory cells: Idiosyncrasies of vesicular secretion. **EMBO J**. 2016 Feb 1;35(3):239-57.
- 14) R Tomasoni, R Morini, J P. Lopez-Atalaya, I Corradini, A Canzi, M Rasile, C Mantovani, D Pozzi, C Garlanda, Al Mantovani El Menna, A Barco and M. Matteoli (2017) Lack of IL-1R8in neurons causes hyperactivation of IL-1 receptor pathway and induces MeCP2-dependent synaptic defects. **eLife**, e21735. doi: 10.7554/eLife.21735
- 15) I. Corradini, E. Focchi, M. Rasile, R. Morini, G. Desiato, R. Tomasoni, Mi. Lizier, E. Ghirardini, D. Morone, I. Barajon, F. Antonucci, D, Pozzi and M. Matteoli (2017) Maternal immune activation delays excitatory-to-inhibitory GAV^BA switch in the offspring **Biol. Psy** in press