

*Mariarosa AB, Marina Melone Biographical Sketch*

<p>NAME  <b>MARIAROSA ANNA BEATRICE NAMED  MARINA, MELONE</b></p>		<p>CURRENT WORK POSITION:  -Associate Professor of Neurology at the University of Campania Luigi Vanvitelli,  -Affiliated Professor at the Sbarro Institute for Cancer Research and Molecular Medicine, College of Science and Technology, Temple University, Philadelphia, USA  -Director of a Care Unit/Centre for the Diagnosis and Treatment of Rare Neurological Diseases</p>	
<p>CURRENT ADDRESS:  University Hospital Luigi Vanvitelli 2nd Division of Neurology, Center for Rare Diseases Building 10, Via Sergio Pansini, 5 80131 Naples Italy Phone +39 081 566 6810/6790; Fax +39 081 566 6805  Email: <a href="mailto:marina.melone@unicampania.it">marina.melone@unicampania.it</a></p>			
<p>AREAS OF EXPERTISES (LS2; LS3; LS5):  •Adult &amp; Pediatric Neurology  •Basic and Translational Neurosciences  •Neuropathology &amp; Neurobiology  •Rare Neurological diseases, NeuroGenetics</p>		<ul style="list-style-type: none"> <li>•Neuro- and myo-degenerative disorders</li> <li>•Bioactive Nutraceuticals and Functional foods</li> <li>•Biotechnology, Nanocarriers, targeted-drug delivery system</li> </ul>	
<p>EDUCATION/TRAINING</p>			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
High School liceo-ginnasio “Antonio Genovesi”, Naples Italy	High school Diploma	1971	Humanities studies
Department of Pharmacology, School of Medicine, University of Naples “Federico II” Italy	Undergraduate student	1973-77	Neuropharmacology
School of Medicine, University of Naples “Federico II”, Italy	MD, Summa cum laude	1977	Medical and surgical studies
School of Medicine, University of Naples “Federico II”, Italy	Internal Physician	1977-80	Neurology
School of Neurology University of Naples “Federico II”, Italy	Graduate Degree in Neurology	1977-81	Neurology
INSERM UR 523/153 & Institut de Myologie Faculté de Médecine Paris VI (UFR Pitié-Salpêtrière), Paris France	Researcher	1979-80	Neuromuscular Diseases
École Normale Supérieure, Laboratory of Molecular Neurobiology, & Institut L. Pasteur, Paris France	Visiting Scientist	1984, 1986, 1987	Molecular, Cellular and Medical Aspects of cholinergic neurotransmission

RESEARCH AND PROFESSIONAL EXPERIENCE

A. PERSONAL STATEMENT

After a long clinical training and repeated research stays in Paris, first in myopathology (CNRS and Institute of Myology, Pitié-Salpêtrière University Paris-6), then in neurochemistry and cellular and molecular neurobiology (École Normale Supérieure and Institut Pasteur), I returned permanently to Italy, where I continued my clinical work, particularly in the field of rare neurological diseases, and my research work focused on the development of experimental models to study the pathogenic mechanisms of myogenetic and neurodegenerative diseases. My academic training and research experiences have provided me with an excellent background in multiple neuroscience disciplines and areas of specialisation, including neurology, cellular and molecular neurobiology, neuropathology, neurochemistry and neurogenetics. Therefore, during my work in the field of clinical and experimental neuroscience, I have been able, as a clinician and neuroscientist, to move easily from the laboratory to the clinic and pursue basic and applied research. Over time, my research interests have been directed towards the development of *in vitro* and *in vivo* methodologies to study the major pathological mechanisms of neurodegenerative diseases and the genetic and molecular mechanisms underlying rare neuromuscular and neurological diseases. In the field of fundamental neurobiology, the study of the cellular and molecular biology of stem cells, with a neuronal or glial phenotype, and of their ageing mechanisms, as well as the use of animal models, have enabled me to broaden my knowledge of the physiopathology of the development of the nervous system and of genetically determined neurodegenerative and neurometabolic diseases. In the field of clinical research, I have contributed to the molecular-clinical characterisation of patients with neuro- and myometabolic diseases, in particular mitochondrial, peroxisomal and lysosomal disorders, malformative and developmental diseases, diseases with a genetic predisposition to tumour development, diseases with severe movement disorders such as Huntington's disease and hereditary spastic paraparesis, often revealing new genotype-phenotype correlations. Currently, my research interests focus on the study of the interaction between epigenetics, environment and neurodegenerative diseases. In the field of applied clinical research, I am involved in multidisciplinary collaborative research projects for the synthesis of biomolecules as potential drugs (different strategies for the use of nucleic acids, including antisense oligonucleotides, short RNA inhibitory sequences and aptamers), and for the functional and molecular analysis of new biologically active natural molecules and the optimisation of their transport to the target tissue, with a clinical focus on age-related diseases (neurodegenerative diseases associated with toxic protein aggregates), neglected/rare diseases (Rett syndrome, Huntington's disease, leukodystrophies) and syndromes with a hereditary predisposition to tumour development (Neurofibromatosis 1). In particular, I focused on bioactive molecules capable of modulating autophagic-lysosomal pathways in various neurological and neuromuscular diseases, as well as restoring the molecular mechanism of autophagy in different cell types -mechanisms responsible for different effects on the progression of neurological and neuromuscular disorders. Finally, in the field of nanoscience and nanotechnology applied to biomedicine and life sciences, my research activities have focused on the development of nanostructured polymers as a new platform to minimise the degradation of drugs during their administration, prevent undesirable side effects, promote and maintain and/or increase the bioavailability of drugs in a targeted area, offering the possibility to overcome biological barriers (e.g. intestinal barrier, blood-brain barrier, nasal barrier, eye barrier, lung barrier, skin, etc.).

**B. POSITIONS AND HONORS**

1978: Internship at Division of Neurology “Antonio Cardarelli” Hospital, Naples Italy  
1979-1980 Researcher at INSERM UR 523/153 & Institut de Myologie Faculté de Médecine Paris VI (UFR Pitié-Salpêtrière)  
1983-1990 CNR Researcher, ex lege “285/77”  
1985-1995 Honorary Fellow in Neurology and Psychopathology at the University of Naples  
1985, 1986, 1987 and 1990 Visiting Scientist at École Normale Supérieure, Molecular Neurobiology laboratory, Paris  
1990-present Neurologist Senior at Second Division of Neurology in University of Campania Luigi Vanvitelli  
2002-present Associate Professor of Neurology at University of Campania Luigi Vanvitelli  
2002-present Professor’s Committee of PhD in Neuroscience, University of Campania "Luigi Vanvitelli"  
2010 Member/Advisor of the Neapolitan Women in Science Coordination Board  
2011-2013 Research Associated at Institute of Protein Biochemistry National Research Council (CNR), Naples  
2013-2020 Director of InterUniversity Center for Research in Neurosciences (CIRN)  
2013-present Research Associated at Institute of Biosciences and BioResources, National Research Council (CNR), Naples  
2014, 2016, 2018 National Scientific Qualification (art.16 of the law 30 December 2010, n.240): Full Professor in Applied Biology (05/F1), in Human Anatomy (05/H1), in Science of Health Professions and Applied Medical Technologies (06/N1), Neurology (06/D6)  
2015-present Scientific Consultant, Museo Corporea Fondazione Idis-Città della Scienza Naples, Italy  
2015-present Affiliate Professor at the Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, College of Science and Technology, Temple University, Philadelphia, PA, USA

**C. OTHER EXPERIENCE AND PROFESSIONAL MEMBERSHIP:**

1986- present Member of the Italian Association of Neuropathology & Clinical Neurobiology, European Confederation of Neuropathological Societies (Euro-CNS) and International Society of Neuropathology  
1988- present Member of the Italian Society of Neurology  
2000-present Member of the of the European TREAT-NMD Alliance ([www.treat-nmd.eu](http://www.treat-nmd.eu)) and of the European Huntington’s Disease Network (EHDN) ([www.euro-hd.net](http://www.euro-hd.net)),  
2009-2011 President of Italian Association of Neuropathology & Clinical Neurobiology (2009-2011)

**D. RESEARCH PROJECTS FUNDED (SELECTION, FROM 2010):**

Principal Researcher (PI)/Scientific Director:

- Nutri-epigenetics and physical activity: a natural help for Neurofibromatosis type 1 (TRANSITION) PROGRAMME VALERE (VANviteLli pEr la RicErca: VALERE) 2019
- "Innovative micro/nanoformulates for the valorisation of bioactive molecules, useful for the health and wellbeing of the population, obtained from waste products from the fishing industry" MISE Project - Sustainable Growth Fund - Call "HORIZON2020" PON I&C 2014-2020
- MISSION MEM: Modern Innovative Healthcare Solutions in Improving Outcomes iN MEM (Metabolic Inherited Diseases). Campania Region Objectives of a priority nature and of national importance pursuant to Article 1, paragraphs 34 and 34 bis, of Law 662/96. Project Line 4: Chronic Disease Management - 3) Development and implementation of PDTAs for chronic pathologies with a high care impact and new structured methods for their governance in Rare Diseases.
- Nanotechnologies for the Controlled Release of Bio-Active Molecules, Cooperative Technological

Transfer Projects and First Industrialisation Projects for Innovative High Potential Enterprises, POR CAMPANIA FESR 2007/2013

-Neurodegeneration and Neuroprotection: Role of Neuroglobin expression induced by estrogen [Research projects of national interest (PRIN 2010-2011)]

**E. RESEARCH AWARDS/GRANTS (SELECTION):**

1979 Institut National de la Santé et de la Recherche Médicale (INSERM), France

1980 Association Claude Bernard pour le Développement des Recherches Biologiques et Médicales - Hôpitaux de l'Assistance Publique Paris

1986 European Science Foundation

1987 Association des Myopathes de France (AMF)

2006 Telethon Foundation, France

2004 & 2010-11 Italian Ministry of Universities and Research (MIUR)

2015, 2017 Campania Region, Italy

2017 Italian Ministry of Economy and Development (MISE)-Funds for Sustainable Growth - Call "HORIZON2020" PON I&C 2014-2020

2020 Sebetia-Ter International Prize

2020 National Cenacle of Culture and Science 'Women's Talent' Award

**F. SCIENTIFIC PRODUCTION/EDITORIAL ACTIVITIES:**

Author/(co-)author of over 200 scientific manuscripts, including abstracts, book chapters and full-length articles published in national and international peer-reviewed journals - PubMed list available at <https://pubmed.ncbi.nlm.nih.gov/term=melone+m&sort=date&size=50> and other information available at ORCID ID 0000-0002-7213-9277; Web of Science ResearcherID N-6788-2015; Scopus AuthorID 7003296889

Expert peer reviewer of Publons, and *ad hoc* reviewer of Lancet, Journal of Cellular Physiology, European Journal of Neurology, Journal of Neuroscience Research, Gene Therapy, Cellular & Molecular Biology Letters, Annals of Neurology, Neurological Science, International Journal of Molecular Sciences, Genes, Biochemical Pharmacology, Neuroscience. She is guest editor of the special issue of Nutrients: Dietary Curcumin and Human Health. She serves on the editorial board of Genes, as Section Editor-in-Chief of 'Human Genomics and Genetic Diseases' Austin Aging Research and American Journal of Rare Disorders: Diagnosis & Therapy (AJRDDT). She is a reviewer for public funding bodies/institutions [MIUR Scientific Independence of young Researchers (SIR) programme, and Ministry of Health Finalised Research].

**G. OTHER SKILLS AND QUALIFICATIONS:**

As part of her Curriculum Vitae, Mariarosa AB, Marina Melone has participated in the organisation of national and international conferences and has been invited to give keynote lectures in various scientific and cultural contexts. In addition, she has been involved in various Third Mission activities, participating in international awareness-raising events on major themes (rare diseases, brain week, unistem day, role of women in research, etc.), in order to offer her contribution to the support of the knowledge society. The activities of the Third Mission were aimed at both the valorisation of neuroscience research, particularly in relation to the university-industry relationship, and the dissemination of neuroscientific knowledge, including initiatives with socio-cultural and educational value.