EUROPEAN CURRICULUM VITAE FORMAT

PERSONAL INFORMATION

Name	**CHIARA MILANESE, PHD**
E-mail	**chiara.milanese@unicamillus.org**
Nationality	Italian
ORCID	0000-0001-8696-2603

PUBLICATIONS

Total number of publications in peer-review journals:	**30**
Total number of citations (Scopus):	**1218**
H index (Scopus):	**19**

FIELD OF INTEREST

My interests as Senior Research Scientist revolve around the biology of the nervous system and its alterations in aging and related diseases, such as neurodegenerative disorders and cancer.
By working with a variety of biological systems, ranging from pre-clinical animal models to primary cell cultures and IPSC derived from patients' biological specimens, I am actively involved in studying DNA damage repair and transcriptional stress given their proven role in aging and in neuronal degeneration.
In addition, as indicated by my publication record, I am also actively engaged in biomarker research, particularly through the use of unsupervised algorithms to correlate bioenergetic metabolic variables and clinical measures, to ultimately achieve stratification of Parkinson's disease patients.

WORK EXPERIENCE

2024- present	Associate Professor of Applied Biology (Bio-13). Departmental Faculty of Medicine, Saint Camillus International University of Health and Medical Sciences, Rome, Italy
2020- present	Senior Scientist, Genome instability and metabolism reprogramming in aging Lab, IFOM ETS - The AIRC Institute of Molecular Oncology, Milan, Italy
2019- present	Senior Scientist, Department of Molecular Genetics, Erasmus MC University, Rotterdam, the Netherlands (Hospitality Agreement)
2012 - 2019	Senior Scientist, Department of Molecular Genetics, Erasmus MC University, Rotterdam, the Netherlands
2008- 2012	Postdoctoral Fellow, Pittsburgh Institute for Neurodegenerative Diseases (PIND), University of Pittsburgh School of Medicine (UPMC), Pittsburgh, PA, USA
2006 - 2008	Postdoctoral Fellow, Department of Neuroscience "Rita Levi Montalcini", University of Torino, Italy

EDUCATION AND TRAINING

2020	Italian National Habilitation as Associate Professor in the discipline of Molecular Biology (05/E2)
2020	Italian National Habilitation as Associate Professor in the discipline of Applied Biology (05/F1)
2018	Italian National Habilitation as Associate Professor in the discipline of Comparative Anatomy and Cytology (05/B2)
2005	PhD in Neuroscience, Department of Neuroscience, University of Torino, Torino, Italy
2000	Laurea (Italian M.S.) in Medical Biotechnology (110/110 cum Laude), University of Torino, Torino, Italy

TEACHING EXPERIENCE

RESEARCH SUPERVISOR

2020-2024 Supervisor in biochemistry, cellular and molecular biology at the IFOM-ETS, Milan, Italy:

- 2 PhD students and a visiting undergraduate MD Student at the Normale University of Pisa

2012-2019 Supervisor in cellular and molecular biology at the Erasmus MC University, Rotterdam, The Netherlands:

- 6 undergraduate students
- 2 PhD students
- 1 Post-Doctoral Fellow

2008- 2011 Supervisor in cellular and molecular biology and animal models at the University of Pittsburgh Medical Center (UPMC), Pittsburgh, PA, USA:

- 2 Junior technicians at the University of Pittsburgh;
- 1 PhD student at the University of Pittsburgh;
- 1 PhD-MD student at the University of Pittsburgh School of Medicine

2006-2008 Supervisor in physiology, cell cultures and molecular biology at the Department of Neuroscience, University of Torino, Torino, Italy

- 1 PhD student at the University of Torino, Italy.

LECTURES AND COURSES

2012-2019	Lecture Assistant for “Genetics and Molecular analysis of tumors”; Faculty of Medicine, Erasmus MC University, Rotterdam, the Netherlands
2012-2019	Lecture Assistant for “Cell cycle and cancer”; Faculty of Medicine, Erasmus MC University, Rotterdam, the Netherlands
2006-2008	Exam assistant for the exam board in Human Physiology, Faculty of Medicine, University of Torino, Torino, Italy

REFEREE AND MEMBER OF THE COMMISSION IN PHD DISSERTATIONS

2024	PhD Thesis evaluation for the XXXVI Cycle PhD Course in “Cellular and Molecular Biotechnologies”. PhD Candidate: Margherita Alfonsetti; University if Teramo, Teramo, Italy
2021	PhD Thesis evaluation for the XXXIII Cycle PhD Course in “Biotecnologie cellular e molecolari”. PhD Candidate: Mariano Catanesi; University if Teramo, Teramo, Italy
2019	Committee Member for the PhD candidate Amanda J. Edison, Department of Biological Sciences, University of Bergen, Bergen, Norway
2019	PhD Thesis evaluation for the XXXI Cycle PhD Course in “Biotecnologie cellular e molecolari”. PhD Candidate: Michele D’Angelo; University if Teramo, Teramo, Italy
2015	Committee Member for the PhD XXVIII Cycle Section BASU. PhD Candidate: Luana Barone, University of Tor Vergata, Department of Science, Rome, Italy

MEMBERSHIP AWARDS AND HONORS

2018	Fondazione Umberto Veronesi Award – anno 2018
2016	Member of the ECE Get Started Program at the Erasmus Center for Entrepreneurship, Erasmus University, Rotterdam, The Netherland
2015	Gordon Research Conference in Parkinson’s Disease Travel Award
2013	EMBO Meeting 2013 Travel Award
2001	Telethon pre-doctoral research fellowship Award

PROFESSIONAL COURSES

2021	PSC Maintenance and Cell Quality Training Course, STEMCELL Technologies
2015	“Get Started Program” Entrepreneurship course at the Erasmus Center for Entrepreneurship, Erasmus University, Rotterdam, The Netherlands
2011	Microarray and Next-Generation Sequencing Data Analysis Training Course (PARTEK)”, Rotterdam, The Netherlands
2010	“Survival Skills & Ethics Workshop: Research administration”, Pittsburgh, PA, USA
2009	“Annual Responsible Conduct of Research Symposium for Emerging Investigators”, Pittsburgh, PA, USA
2008	“Course in Scientific Leadership and Management”, Pittsburgh, PA, USA

EDITORIAL ACTIVITY

2016- present	Peer reviewer activity for Aging Cell, Cellular Physiology and Biochemistry, Cell death and Disease, Antioxidant and Redox Signaling, Frontiers in Cellular Neuroscience, International Journal of Neuroscience, Neurobiology of Disease
2012-2018	Ad hoc grant reviewer for the Italian Ministry of Health projects “Ricerca Finalizzata/Giovani ricercatori Calls 2012-2018

INVITED SEMINARS (SELECTED)

2018	“Defective DNA repair and protein aggregation in neurodegenerative diseases”, MGC meeting, Leiden, The Netherlands
2015	"Nitrite administration ameliorates mitochondrial bioenergetics and is neuroprotective in cellular and vertebrate models of Parkinson’s disease". Gordon Research Conference “Parkinson’s Disease”, Colby Sawyer College, Boston, MA, USA.

2015	"Nitrite-derived NO is neuroprotective in Parkinson disease", MGC Meeting, Rotterdam, The Netherlands
2015	"Zebrafish as a model to study nitrite neuroprotection in Parkinson's disease", 66th SIF (Societa' Italiana di Fisiologia) National Congress, Genova, Italy
2014	"Fibroblasts from skin biopsies as a tool for biomarker discovery in Parkinson's disease", SFRR-E Meeting Paris 2014, Paris, France
2014	"Effetti neuroprotettivi del nitrite nel morbo di Parkinson", Rimed Symposium-Ismett, Palermo, Italy
2013	"Nitrite administration ameliorates mitochondrial bioenergetics and is neuroprotective in cellular and vertebrate models of Parkinson's disease", XX World Congress on Parkinson's disease and Related Disorders, Geneva, Switzerland
2012	"Zebrafish as a model to study neurodegeneration", CEREBRAD meeting, Tarragona, Spain
2009	"Quantification of oxidative damage in a Zebrafish model of Parkinson's disease." Pittsburgh Institute for Neurodegenerative Diseases-PIND, Pittsburgh, PA USA
2006	Cloning and functional characterization of adhesion molecules expressed in the *Helix pomatia* nervous system". European Brain Institute-EBRI, Rome, Italy

FUNDING INFORMATION

2023-2025	*Collaborator in* "The mitochondrial-STING pathway in chemotherapy induced peripheral neuropathy". AIRC IG2023-29227
2021-2023	*Collaborator* in "Novel Parkinson's Disease therapy targeting iron- related cell death and alpha synuclein aggregation. [e1114370]". EUREKA-Eurostars
2019-2023	*Collaborator* in "Orthogonal validation of mitochondrial anomalies in patient's derived multiple cellular system". Grant ID 18340, Micheal J. Fox Foundation (MJFF) for Parkinson's research
2018	*PI* in "Repositioning Sodium Nitrite for Parkinson's disease treatment", Fondazione Veronesi Research grant -2175
2015-2017	*Co-Investigator* in: "Transferrin Receptor 2 as a Target to Halt Iron Overload in Parkinson's Disease". Micheal J. Fox Foundation (MJFF) for Parkinson's research
2014-2017	*PI* in "Zebrafish as a redox-sensitive model to study redox homeostasis and to identify new potential treatments for PD". Ri.MED Foundation Research Grant Program
2011-2013	*Participating staff scientist* in "Cognitive and Cerebrovascular Effects Induced by Low Dose Ionizing Radiation". FP7-Fission
2008-2011	*PI* in "Training and Research activity at the University of Pittsburgh Medical Center Fellowship". Ri.MED Foundation Research Program

MOTHER TONGUE **Italian**

OTHER LANGUAGES

English

• Reading skills	excellent
• Writing skills	excellent
• Verbal skills	excellent

French

• Reading skills	good
• Writing skills	good
• Verbal skills	good

PUBLICATIONS

First author publications: 14
Corresponding author: 3

PEER REVIEWED BOOK CHAPTER

Milanese C. and Mastroberardino PG.
Genes, Aging, and Parkinson's Disease in Oxidative Stress and Redox Signalling in Parkinson's Disease. Oxidative Stress and Redox Signalling in Parkinson's Disease published by The Royal Society of Chemistry, doi.org/10.1039/9781782622888-00389

PEER REVIEWED ARTICLES

Barnhoorn, S*., **Milanese, C***., Li, T., Dons, L., Ghazvini, M., Sette, M., Farina, S., Sproviero, D., Payan-Gomez, C., Mastroberardino, P.G. Orthogonal analysis of mitochondrial function in Parkinson's disease patients. (2024) *Cell Death and Disease*, 15 (4). DOI: 10.1038/s41419-024-06617-6. *** Equal contribution**.

Altintas, D.M., Gallo, S., Basilico, C., Cerqua, M., Bocedi, A., Vitacolonna, A., Botti, O., Casanova, E., Rancati, I., **Milanese, C**., Notari, S., Gambardella, G., Ricci, G., Mastroberardino, P.G., Boccaccio, C., Crepaldi, T., Comoglio, P.M. The PSI Domain of the MET Oncogene Encodes a Functional Disulfide Isomerase Essential for the Maturation of the Receptor Precursor. (2022) International Journal of Molecular Sciences, 23 (20). DOI: 10.3390/ijms232012427

Vandervore, L.V., Schot, R., **Milanese, C**., Smits, D.J., Kasteleijn, E., Fry, A.E., Pilz, D.T., Brock, S., Börklü-Yücel, E., Post, M., Bahi-Buisson, N., Sánchez-Soler, M.J., van Slegtenhorst, M., Keren, B., Afenjar, A., Coury, S.A., Tan, W.-H., Oegema, R., de Vries, L.S., Fawcett, K.A., Nikkels, P.G.J., Bertoli-Avella, A., Al Hashem, A., Alwabel, A.A., Tlili-Graiess, K., Efthymiou, S., Zafar, F., Rana, N., Bibi, F., Houlden, H., Maroofian, R., Person, R.E., Crunk, A., Savatt, J.M., Turner, L., Doosti, M., Karimiani, E.G., Saadi, N.W., Akhondian, J., Lequin, M.H., Kayserili, H., van der Spek, P.J., Jansen, A.C., Kros, J.M., Verdijk, R.M., Milošević, N.J., Fornerod, M., Mastroberardino, P.G., Mancini, G.M.S. TMX2 Is a Crucial Regulator of Cellular Redox State, and Its Dysfunction Causes Severe Brain Developmental Abnormalities. (2019) American Journal of Human Genetics, 105 (6), pp. 1126-1147. DOI: 10.1016/j.ajhg.2019.10.009

Milanese, C., Gabriels, S., Barnhoorn, S., Cerri, S., Ulusoy, A., Gornati, S.V., Wallace, D.F., Blandini, F., Di Monte, D.A., Subramaniam, V.N., Mastroberardino, P.G. Gender biased neuroprotective effect of Transferrin Receptor 2 deletion in multiple models of Parkinson's disease. (2021) Cell Death and Differentiation, 28 (5), pp. 1720-1732. DOI: 10.1038/s41418-020-00698-4

Milanese, C., Mastroberardino, P.G. A perspective on DNA damage-induced potentiation of the pentose phosphate shunt and reductive stress in chemoresistance. (2020) Molecular and Cellular Oncology, 7 (3). DOI: 10.1080/23723556.2020.1733383

Milanese C, Bombardieri C, Sepe S, Barnhoorn S, Payán-Gómez C, Caruso D, Audano M, Pedretti S, Vermeij W, Brandt R, Gyenis A, Wamelink M, de Wit, Janssens RC, Leen R, van Kuilenburg A, Mitro N, Hoeijmakers JH, Mastroberardino PG. DNA damage and transcription stress cause ATP-mediated redesign of metabolism and potentiation of anti-oxidant buffering. *(2019)* Nature Communications, 10 (1). DOI: 10.1038/s41467-019-12640-5

Milanese C, Payán-Gómez C, Galvani M, Molano González N, Tresini M, Nait Abdellah S, van Roon-Mom WMC, Figini S, Marinus J, van Hilten JJ, Mastroberardino PG. Peripheral mitochondrial function correlates with clinical severity in idiopathic Parkinson's disease. (2019) Movement Disorders, 34 (8), pp. 1192-1202. DOI: 10.1002/mds.27723

Milanese C, Payán-Gómez C, Mastroberardino PG. Cysteine oxidation and

redox signaling in dopaminergic neurons physiology and in Parkinson's disease. (2019) Current Opinion in Physiology, 9, pp. 73-78. DOI: 10.1016/j.cophys.2019.04.025

Cerri, S*., **Milanese, C***., Mastroberardino, P.G. Endocytic iron trafficking and mitochondria in Parkinson's disease (2019) International Journal of Biochemistry and Cell Biology, 110, pp. 70-74. DOI: 10.1016/j.biocel.2019.02.009. *** Equal contribution**

Van der Pluijm I, Burger J, van Heijningen PM, IJpma A, van Vliet N, **Milanese C**, Schoonderwoerd K, Sluiter W, Ringuette LJ, Dekkers DHW, Que I, Kaijzel EL, Te Riet L, MacFarlane EG, Das D, van der Linden R, Vermeij M, Demmers JA, Mastroberardino PG, Davis EC, Yanagisawa H, Dietz HC, Kanaar R, Essers J. Decreased mitochondrial respiration in aneurysmal aortas of Fibulin-4 mutant mice is linked to PGC1A regulation. (2018) Cardiovascular Research, 114 (13), pp. 1776-1793. DOI: 10.1093/cvr/cvy150

Milanese C, Cerri S, Ulusoy A, Gornati SV, Plat A, Gabriels S, Blandini F, Di Monte DA, Hoeijmakers JH, Mastroberardino PG. Activation of the DNA damage response in vivo in synucleinopathy models of Parkinson's disease. 2018) Cell Death and Disease, 9 (8). DOI: 10.1038/s41419-018-0848-7

Gardiner SL, **Milanese C**, Boogaard MW, Buijsen RAM, Hogenboom M, Roos RAC, Mastroberardino PG, van Roon-Mom WMC, Aziz NA. Bioenergetics in fibroblasts of patients with Huntington disease are associated with age at onset. (2018) Neurology: Genetics, 4 (5). DOI: 10.1212/NXG.0000000000000275.

Milanese C#, Tapias V, Gabriels S, Cerri S, Levandis G, Blandini F, Tresini M, Shiva S, Greenamyre JT, Gladwin MT, Mastroberardino PG. Mitochondrial complex I reversible S-nitrosation improves bioenergetics and is protective in Parkinson's disease. AMitochondrial Complex i Reversible S-Nitrosation Improves Bioenergetics and Is Protective in Parkinson's Disease. (2018) Antioxidants and Redox Signaling, 28 (1), pp. 44-61. DOI: 10.1089/ars.2017.6992. **# Co-corrisponding author.**

Zambetti NA, Ping Z, Chen S, Kenswil KJG, Mylona MA, Sanders MA, Hoogenboezem RM, Bindels EMJ, Adisty MN, Van Strien PMH, van der Leije CS, Westers TM, Cremers EMP, **Milanese C**, Mastroberardino PG, van Leeuwen JPTM, van der Eerden BCJ, Touw IP, Kuijpers TW, Kanaar R, van de Loosdrecht AA, Vogl T, Raaijmakers MHGP. Mesenchymal Inflammation Drives Genotoxic Stress in Hematopoietic Stem Cells and Predicts Disease Evolution in Human Pre-leukemia. Mesenchymal Inflammation Drives Genotoxic Stress in Hematopoietic Stem Cells and Predicts Disease Evolution in Human Pre-leukemia. (2016) Cell Stem Cell, 19 (5), pp. 613-627.DOI: 10.1016/j.stem.2016.08.021

Sepe S., **Milanese C**., Gabriels S., Derks K.W. J, Payan-Gomez C., van Ijcken W.F.J., Rijksen Y.M.A., Nigg A.L, Moreno S, Cerri S., Blandini F., Hoeijmakers J.H.J., and Mastroberardino P.G. (2016). Inefficient DNA Repair Is an Aging-Related Modifier of Parkinson's Disease. 2016) Cell Reports, 15 (9), pp. 1866-1875. DOI: 10.1016/j.celrep.2016.04.071.

Cervellati, C., Sticozzi, C., Romani, A., Belmonte, G., De Rasmo, D., Signorile, A., Cervellati, F., **Milanese, C**., Mastroberardino, P. G., Pecorelli, A., Savelli, V., Forman, H. J., Hayek, J., and Valacchi, G. (2015) Impaired enzymatic defensive activity, mitochondrial dysfunction and proteasome activation are involved in RTT cell oxidative damage. *(2015) Biochimica et Biophysica Acta - Molecular Basis of Disease, 1852 (10), pp. 2066-2074. DOI: 10.1016/j.bbadis.2015.07.014*

Mastroberardino, P. G., Ambrosi, G., Blandini, F., **Milanese, C**., and Sepe, S. (2014) Fibroblasts from skin biopsies as a tool for biomarker discovery in Parkinsons disease. *Free Radic Biol Med* 75 Suppl 1, S10

Ambrosi, G., Ghezzi, C., Sepe, S., **Milanese, C**., Payan-Gomez, C., Bombardieri, C. R., Armentero, M. T., Zangaglia, R., Pacchetti, C., Mastroberardino, P. G., and Blandini, F. (2014) Bioenergetic and proteolytic defects in fibroblasts from patients with sporadic Parkinson's disease. *Biochim*

Biophys Acta 1842, 1385-1394. DOI 10.1016/j.bbadis.2014.05.008

Sepe, S., Payan-Gomez, C., **Milanese, C**., Hoeijmakers, J. H., and Mastroberardino, P. G. (2013) Nucleotide excision repair in chronic neurodegenerative diseases. *DNA repair* 12, 568-577. DOI: 10.1016/j.dnarep.2013.04.009

Milanese, C., Sager, J. J., Bai, Q., Farrell, T. C., Cannon, J. R., Greenamyre, J. T., Burton, E. A. (2012). Hypokinesia and reduced dopamine levels in zebrafish lacking β- and γ1-synucleins. *2012) Journal of Biological Chemistry, 287 (5), pp. 2971-2983.* DOI: 10.1074/jbc.M111.308312. **[Featured on the cover of the January 27, 2012 issue of JBC]**

Farrell, TC, Cario, CL, **Milanese, C,** Vogt, A, Jeong, JH, Burton, EA. Evaluation of spontaneous propulsive movement as a screening tool to detect rescue of Parkinsonism phenotypes in zebrafish models. *(2011) Neurobiology of Disease, 44 (1), pp. 9-18. DOI: 10.1016/j.nbd.2011.05.016*

Horowitz, M. P*., **Milanese, C.***, Di Maio, R., Hu, X., Montero, L. M., Sanders, L. H., Tapias, V., Sepe, S., van Cappellen, W. A., Burton, E. A., Greenamyre, J. T., and Mastroberardino, P. G. Single-cell redox imaging demonstrates a distinctive response of dopaminergic neurons to oxidative insults. *(2011) Antioxidants and Redox Signaling, 15 (4), pp. 855-871. DOI: 10.1089/ars.2010.3629*. * **Equal contribution**

Cario, CL, Farrell, TC, **Milanese, C**, and Burton, EA. (2011) Automated measurement of zebrafish larval movement. *2011) Journal of Physiology, 589 (15), pp. 3703-3708. DOI: 10.1113/jphysiol.2011.207308*

Giachello, CN, Fiumara, F, Giacomini, C, Corradi, A, **Milanese, C**, Ghirardi, M, Benfenati, F, and Montarolo, PG. MAPK/Erk-dependent phosphorylation of synapsin mediates formation of functional synapses and short-term homosynaptic plasticity. MAPK/Erk-dependent phosphorylation of synapsin mediates formation of functional synapses and short-term homosynaptic plasticity(2010) Journal of Cell Science, 123 (6), pp. 881-893. DOI: 10.1242/jcs.056846

Milanese, C#, Giachello, C., Fiumara, F., Bizzoca, A., Gennarini, G., Montarolo, P. G., and Ghirardi, M. Characterization and role of Helix contactin-related proteins in cultured Helix pomatia neurons. *(2009) Journal of Neuroscience Research, 87 (2), pp. 425-439 DOI: 10.1002/jnr.21849* # **Corrisponding author**

Milanese, C#., Fiumara, F., Bizzoca, A., Giachello, C., Leitinger, G., Gennarini, G., Montarolo, P. G., and Ghirardi, M. F3/contactin-related proteins in Helix pomatia nervous tissue (HCRPs): distribution and function in neurite growth and neurotransmitter release. *(2008) Journal of Neuroscience Research, 86 (4), pp. 821-831. DOI: 10.1002/jnr.21539.* # **Corrisponding author**

Fiumara, F., **Milanese, C**., Corradi, A., Giovedi, S., Leitinger, G., Menegon, A., Montarolo, P. G., Benfenati, F., and Ghirardi, M. (2007) Phosphorylation of synapsin domain A is required for post-tetanic potentiation. *J Cell Sci* 120, 3228-3237. OI: 10.1242/jcs.012005

Fiumara, F, Leitinger, G, **Milanese, C**, Montarolo, PG, and Ghirardi, M. In vitro formation and activity-dependent plasticity of synapses between Helix neurons involved in the neural control of feeding and withdrawal behaviors. *(2005) Neuroscience, 134 (4), pp. 1133-1151. DOI: 10.1016/j.neuroscience.2005.05.021*

Ghirardi, M, Benfenati, F, Giovedi, S, Fiumara, F, **Milanese, C**, and Montarolo, PG. Inhibition of neurotransmitter release by a nonphysiological target requires protein synthesis and involves cAMP-dependent and mitogen-activated protein kinases. *(2004) Journal of Neuroscience, 24 (21), pp. 5054-5062. DOI: 10.1523/JNEUROSCI.5671-03.2004*

Fiumara, F, Giovedi, S, Menegon, A, **Milanese, C**, Merlo, D, Montarolo, PG, Valtorta, F., Benfenati, F., and Ghirardi, M. Phosphorylation by cAMP-dependent protein kinase is essential for synapsin-induced enhancement of neurotransmitter release in invertebrate neurons. (2004) *J Cell Sci* 117, 5145-

5154

ADDITIONAL INFORMATION

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV