

**BIOGRAPHICAL SKETCH**

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**NAME: Marco Mongillo, MD, PhD**

eRA COMMONS USER NAME (credential, e.g., agency login):

**POSITION: Associate Professor, Department of Biomedical Sciences, School of Medicine, University of Padova**

**EDUCATION/TRAINING**

<b>INSTITUTION AND LOCATION</b>	<b>DEGREE (if applicable)</b>	<b>Start Date MM/YYYY</b>	<b>Completion Date MM/YYYY</b>	<b>FIELD OF STUDY</b>
Faculty of Medicine, University of Padova, Padova, Italy	MD	09/1994	07/2001	$\beta$ -adrenergic signaling in heart cells
University of Padova, Padova, Italy	PhD	10/2001	4/2005	Signaling regulation in cardiac and skeletal muscles
Imperial College, London, UK	Post-Doc	2/2005	08/2006	Nuclear Medicine Imaging in Cardiology
Columbia University, New York, NY	Post-Doc	09/2006	10/2008	Molecular Cardiology of stress dependent arrhythmias

**A. Positions, Scientific Appointments and Honors****Positions and Employment**

2020-present: Coordinator, Degree Course in Biology of Human and Environmental Health, University of Padova.

2015-present: Associate Professor, General Pathology and Pathophysiology, University of Padova.

2009-present: Board Member, Veneto Institute of Molecular Medicine, Padova, Italy.

2009-present: Principal Investigator, Veneto Institute of Molecular Medicine, Padova, Italy.

2007-2015: Assistant Professor, General Pathology and Pathophysiology, University of Padova.

2006-2008: Postdoctoral Research Fellow, Andrew Marks Lab, Dept of Physiology and Cellular Biophysics, Columbia University. College of Physicians and Surgeons. New York, USA

2005: Clinical Fellow in Cardiology, Hammersmith Hospital, Imperial College, London.

2003-2005: Clinical Staff, Emergency Room, Hospital of Feltre, Italy

**Honors and Prizes**

2016: Guido Tarone Award, European Society of Cardiology.

2006: Norman Alpert Award, European Society of Cardiology and American Heart Association.

2006: Value in People Award, Imperial College London.

**Peer review involvement**

- Editorial Board: Aging, Frontiers in Electrophysiology (review editor), Frontiers in Cardiology (guest editor), Progress in Biology and Biophysics.

- Reviewer for more than 20 journals including Nature, Science, Nat Comm, Cell Met, J Clin. Invest, J. Physiol., British J. Pharmacol, PNAS, EMBO J, J Biol Chem, EMBO Mol. Med., Cell Death & Diff., Cell Reports, Physiology, Current Biology, J Neurosciences.

**B. Funding**

2021-2023	SID grant, UNIPD	39000€/year
2015-2018	Excellence project, Cariparo Foundation; Partner PI	150000 €/year
2014-2016	CNR:PREMIALE 2012 Ambienti, stili di vita.	40000 €/year

2009-2014	EU FP7 HEALTH-2009-2.4.2-2 (EUTrigTreat).	157.000 €/year.
2011-2014	Telethon Grant, GGP11224	75.000 €/year
2010-2012	Progetto Ateneo, Università di Padova	24.000 €/year
2009-2012	Fondazione Cariparo, progetto Dottorati	18.000 €/year.

### C. Contributions to science

To date, I have published **58 papers** in International Journals with Impact Factor, on topics concerning the cellular biophysics of cAMP signaling in heart cells and the physiology and pathophysiology of cardiac stress responses, in relations to the sympathetic nervous system.

The impact of my work is summarized by an **h-index of 30** (Scopus), and **>5000 cumulative citations** of my work.

This is a partial list of papers published in the period 2012-2022. The full papers list is found at:

- Zaglia T, **Mongillo M**. Response to the letter by Zhang et al. "Neuropeptide Y - A potential therapeutic target in cardiac remodeling". *Int J Cardiol.* 2022 Apr 1;352:123. doi: 10.1016/j.ijcard.2022.02.006. Epub 2022 Feb 11.
- Franzoso M, Dokshokova L, Vitiello L, Zaglia T, **Mongillo M**. Tuning the Consonance of Microscopic Neuro-Cardiac Interactions Allows the Heart Beats to Play Countless Genres. *Front Physiol* 2022. Feb 22; 13:841740. doi: 10.3389/fphys.2022.841740.
- Dokshokova L, Franzoso M, Di Bona A, Moro N, Sanchez Alonso JL, Prando V, Sandre M, Basso C, Faggian G, Abriel H, Marin O, Gorelik J, Zaglia T, **Mongillo M**. Nerve growth factor transfer from cardiomyocytes to innervating sympathetic neurons activates TrkA receptors at the neuro-cardiac junction *Journal of Physiology* 2022. DOI: 10.1113/JP282828
- Dokshokova, L, Pianca, N, Zaglia T, **Mongillo M**. Optogenetic Control of Heart Rhythm: Lightly Guiding the Cardiac Pace. *Methods in Molecular Biology*, 2022. 2483, pp. 205-229.
- Müllenbroich MC, Kelly A, Acker C, Bub G, Bruegmann T, Di Bona A, Entcheva E, Ferrantini C, Kohl P, Lehnart SE, **Mongillo M**, Parmeggiani C, Richter C, Sasse P, Zaglia T, Sacconi L, Smith GL. Novel Optics-Based Approaches for Cardiac Electrophysiology: A Review. *Front Physiol.* 2021 Nov 18;12:769586. doi: 10.3389/fphys.2021.769586.
- Borile G, Zaglia T, E Lehnart S, **Mongillo M**. Multiphoton Imaging of Ca<sup>2+</sup> Instability in Acute Myocardial Slices from a RyR2<sup>R2474S</sup> Murine Model of Catecholaminergic Polymorphic Ventricular Tachycardia. *J Clin Med.* 2021 Jun 26;10(13):2821. doi: 10.3390/jcm10132821.
- Stadiotti I, Di Bona A, Pilato CA, Scalco A, Guarino A, Micheli B, Casella M, Tondo C, Rizzo S, Pilichou K, Thiene G, Frigo AC, Pompilio G, Basso C, Sommariva E, **Mongillo M**, Zaglia T. Neuropeptide Y promotes adipogenesis of human cardiac mesenchymal stromal cells in arrhythmogenic cardiomyopathy. *Int J Cardiol.* 2021 Nov 1; 342:94-102.
- Scalco A, Moro N, **Mongillo M**, Zaglia T. Neurohumoral Cardiac Regulation: Optogenetics Gets Into the Groove. *Front Physiol.* 2021 Aug 31; 12:726895.
- Scalco A, Liboni C, Angioni R, Di Bona A, Albiero M, Bertoldi N, Fadini GP, Thiene G, Chelko SP, Basso C, Viola A, **Mongillo M\***, Zaglia T\*. Arrhythmogenic Cardiomyopathy Is a Multicellular Disease Affecting Cardiac and Bone Marrow Mesenchymal Stromal Cells. *J Clin Med.* 2021 Apr 26; 10(9):1871. \*, **co-corresponding**
- Bub G, **Mongillo M**, Smith G, Sacconi L. Novel optics-based approaches for cardiac electrophysiology. *Prog Biophys Mol Biol.* 2020 Aug;154:1-2. doi: 10.1016/j.pbiomolbio.2020.05.001. Epub 2020 May 12.
- Campo A, **Mongillo M**. Imaging Intracellular Ca<sup>2+</sup> in Cardiomyocytes with Genetically Encoded Fluorescent Probes. *Methods Mol Biol.* 2019;1925:111-125.
- Zaglia T, Di Bona A, **Mongillo M**. A Light Wand to Untangle the Myocardial Cell Network. *Methods Protoc.* 2019 May 3;2(2). Review.
- Pianca N, Di Bona A, Lazzeri E, Costantini I, Franzoso M, Prando V, Armani A, Rizzo S, Fedrigo M, Angelini A, Basso C, Pavone FS, Rubart M, Sacconi L, Zaglia T, **Mongillo M**. Cardiac sympathetic innervation network shapes the myocardium by locally controlling cardiomyocyte size through the cellular proteolytic machinery. *J Physiol.* 2019 Jul;597(14):3639-3656. doi: 10.1113/JP276200.
- Prando V, Da Broi F, Franzoso M, Plazzo AP, Pianca N, Francolini M, Basso C, Kay MW, Zaglia T, **Mongillo M**. Dynamics of neuroeffector coupling at cardiac sympathetic synapses. *J Physiol.* 2018 Jun;596(11):2055-2075. doi: 10.1113/JP275693.
- Li M, Sala V, De Santis MC, Cimino J, Cappello P, Pianca N, Di Bona A, Margaria JP, Martini M, Lazzarini E, Pirozzi F, Rossi L, Franco I, Bornbaum J, Heger J, Rohrbach S, Perino A, Tocchetti CG, Lima BHF, Teixeira MM, Porporato PE, Schulz R, Angelini A, Sandri M, Ameri P, Sciarretta S, Lima-Júnior RCP, **Mongillo M**, Zaglia T, Morello F, Novelli F, Hirsch E, Ghigo A. Phosphoinositide 3-Kinase Gamma Inhibition Protects From Anthracycline Cardiotoxicity and Reduces Tumor Growth.

Circulation. 2018 Aug 14;138(7):696-711. doi: 10.1161/CIRCULATIONAHA.117.030352.

-Zaglia T, Ceriotti P, Campo A, Borile G, Armani A, Carullo P, Prando V, Coppini R, Vida V, Stølen TO, Ulrik W, Cerbai E, Stellin G, Faggian G, De Stefani D, Sandri M, Rizzuto R, Di Lisa F, Pozzan T, Catalucci D, and **Mongillo M**. Content of the Mitochondrial Calcium Uniporter (MCU) in cardiomyocytes is regulated by microRNA-1 in physiologic and pathologic hypertrophy. PNAS 2017.

-Zaglia T, **Mongillo M**. Cardiac sympathetic innervation, from a different point of (re)view. J Physiol. 2017 Jun 15;595(12):3919-3930. doi: 10.1113/JP273120.

-Pianca N, Zaglia T, **Mongillo M**. Will cardiac optogenetics find the way through the obscure angles of heart physiology? Biochem Biophys Res Commun. 2017 Jan 22;482(4):515-523. doi: 10.1016/j.bbrc.2016.11.104.

-Zaglia T, Di Bona A, Chioato T, Basso C, Ausoni S, **Mongillo M**. Optimized protocol for immunostaining of experimental GFP-expressing and human hearts. Histochem Cell Biol. 2016 Oct;146(4):407-19. doi: 10.1007/s00418-016-1456-1.

-Corrado D, Zorzi A, Cerrone M, Rigato I, **Mongillo M**, Bauce B, Delmar M. Relationship Between Arrhythmogenic Right Ventricular Cardiomyopathy and Brugada Syndrome: New Insights From Molecular Biology and Clinical Implications. Circ Arrhythm Electrophysiol. 2016 Apr;9(4):e003631. doi: 10.1161/CIRCEP.115.003631. Review.

-Franzoso M, Zaglia T, **Mongillo M**. Putting together the clues of the everlasting neuro-cardiac liaison. Biochim Biophys Acta. 2016 Jul;1863(7 Pt B):1904-15. doi: 10.1016/j.bbamcr.2016.01.009. Epub 2016 Jan 14. Review.

-Bang C, Antoniades C, Antonopoulos AS, Eriksson U, Franssen C, Hamdani N, Lehmann L, Moessinger C, **Mongillo M**, Muhl L, Speer T, Thum T. Intercellular communication lessons in heart failure. Eur J Heart Fail. 2015 Nov;17(11):1091-103. doi: 10.1002/ejhf.399. Epub 2015 Sep 23. Review.

-Zaglia T, Pianca N, Borile G, Da Broi F, Richter C, Campione M, Lehnart SE, Luther S, Corrado D, Miquerol L, **Mongillo M**. Optogenetic determination of the myocardial requirements for extrasystoles by cell type specific targeting of Channelrhodopsin-2. PNAS 2015 Aug 11;112(32):E4495-504. doi: 10.1073/pnas.1509380112. Epub 2015 Jul 23

-Varanita T, Soriano ME, Romanello V, Zaglia T, Quintana-Cabrera R, Semenzato M, Menabò R, Costa V, Civiletto G, Pesce P, Viscomi C, Zeviani M, Di Lisa F, **Mongillo M**, Sandri M, Scorrano L. The opa1-dependent mitochondrial cristae remodeling pathway controls atrophic, apoptotic, and ischemic tissue damage. Cell Metab. 2015 Jun 2;21(6):834-44. doi: 10.1016/j.cmet.2015.05.007.

-Baysa A, Sagave J, Carpi A, Zaglia T, Campesan M, Dahl CP, Bilbija D, Troitskaya M, Gullestad L, Giorgio M, **Mongillo M**, Di Lisa F, Vaage JI, Valen G. The p66ShcA adaptor protein regulates healing after myocardial infarction. Basic Res Cardiol. 2015 Mar;110(2):13. doi: 10.1007/s00395-015-0470-0.

-Borile G, de Mauro C, Urbani A, Alfieri D, Pavone FS, **Mongillo M**. Multispot multiphoton Ca<sup>2+</sup> imaging in acute myocardial slices. J Biomed Opt. 2015 May;20(5):51016. doi: 10.1117/1.JBO.20.5.051016.

-Perino A, Beretta M, Kilić A, Ghigo A, Carnevale D, Repetto IE, Braccini L, Longo D, Liebig-Gonglach M, Zaglia T, Iacobucci R, **Mongillo M**, Wetzker R, Bauer M, Aime S, Vercelli A, Lembo G, Pfeifer A, Hirsch E. Combined inhibition of PI3K $\beta$  and PI3K $\gamma$  reduces fat mass by enhancing  $\alpha$ -MSH-dependent sympathetic drive. Sci Signal. 2014 Nov 18;7(352):ra110. doi: 10.1126/scisignal.2005485.

-Castaldi A, Zaglia T, Di Mauro V, Carullo P, Viggiani G, Borile G, Di Stefano B, Schiattarella GG, Gualazzi MG, Elia L, Stirparo GG, Colorito ML, Pironti G, Kunderfranco P, Esposito G, Bang ML, **Mongillo M**, Condorelli G, Catalucci D. MicroRNA-133 modulates the  $\beta$ 1-adrenergic receptor transduction cascade. Circ Res. 2014 Jul 7;115(2):273-83. doi: 10.1161/CIRCRESAHA.115.303252.

-Zaglia T, Milan G, Ruhs A, Franzoso M, Bertaggia E, Pianca N, Carpi A, Carullo P, Pesce P, Sacerdoti D, Sarais C, Catalucci D, Krüger M, **Mongillo M\***, Sandri M\*. Atrogin-1 deficiency promotes cardiomyopathy and premature death via impaired autophagy. J Clin Invest. 2014 Jun;124(6):2410-24. doi: 10.1172/JCI66339. \*: corresponding author

-Di Benedetto G, Scalzotto E, **Mongillo M**, Pozzan T. Mitochondrial Ca<sup>2+</sup> uptake induces cyclic AMP generation in the matrix and modulates organelle ATP levels. Cell Metab. 2013 Jun 4;17(6):965-75. doi: 10.1016/j.cmet.2013.05.003.

-Zaglia T, Milan G, Franzoso M, Bertaggia E, Pianca N, Piasentini E, Voltarelli VA, Chiavegato D, Brum PC, Glass DJ, Schiaffino S, Sandri M, **Mongillo M**. Cardiac sympathetic neurons provide trophic signal to the heart via  $\beta$ 2-adrenoceptor-dependent regulation of proteolysis. Cardiovasc Res. 2013 Feb 1;97(2):240-50. doi: 10.1093/cvr/cvs320.

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