

Curriculum Vitae Monica Soncini

Biographical Sketch

Monica Soncini has a Master degree in Electronic Engineering (1996) and obtained her PhD degree in Bioengineering in 2001. She is currently working as Associate Professor at the Department of Electronic, Information and Bioengineering of Politecnico di Milano. She is involved in the research activities of the Biomechanics Research Group and she operates in *Micro and Biofluid Dynamics Laboratory and Computational Biomechanics Laboratory*.

Monica Soncini main research activities are in the field of biomechanics at the molecular level (cytoskeleton, amyloid proteins and peptides and nuclear pore complex) and in the field of tissue engineering and regenerative medicine. In the field of molecular biomechanics/biophysics she was involved into two European projects (FP6) focused on active biomimetic systems (STREP2004 and MarieCurieEST2004) and she is now contributing to ERC-grant NICHOID for investigating mechanotransduction mechanisms at the nuclear pore level. Another recent field of research at the molecular level is the investigation of small peptides aggregation and stability properties. In the field of tissue engineering and regenerative medicine she was involved in several research projects with the aim of developing culture systems for aortic homograft recellularisation, cardiac tissue regeneration (PRIN2006, CARIPLO2008), pericardium and bladder decellularization, urinary bladder regeneration (PRIN2008, as Unit PI), perfusion systems for stem cells expansion (CARIPLO2006), and ex vivo culture systems for the analysis of cellular mechanisms at the base of saphenous vein graft arterialization (RF-GR-2011 as Unit PI). In the last years the activities are focused on tissue culture systems for vascular native or engineered tissues. Two of the bioreactor systems developed in the last year are under evaluation by Technology Transfer Office of the Politecnico di Milano for patenting.

Monica Soncini is Lecturer of Cellular Bioengineering, Politecnico di Milano since 2005. Member of the Bioengineering PhD School Committee, Politecnico di Milano since 2011. Supervisor of 7 PhD students. She is author of more than 180 publications; 61 peer reviewed international papers (Scopus H-index 19, 1188 citations).

Personal Information

Family name, First name: *Soncini Monica*

Researcher unique identifier: *Scopus Author ID 7003304186*

Date of birth: *5th of July 1971*

Nationality: *Italy*

URL for web site: *biomech.polimi.it*

Redaelli Alberto

Scopus Author ID 7005302872 06/02/1966

Education

2001 Ph.D. in Bioengineering, Department of Electronics, Information and Bioengineering, Politecnico di Milano, Milano, Italy

1996 M.Sc. in Electronic Engineering, Politecnico di Milano, Milano, Italy

Current position

Monica Soncini

Associate Professor

Dipartimento di Elettronica Informazione e Bioingegneria, Politecnico di Milano

2015-now Associate Professor, Department of Bioengineering and Department of Electronics, Politecnico di Milano.

Previous positions

2006-2014 Assistant Professor, Department of Bioengineering (2006-2012) and Department of Electronics, Information and Bioengineering (2012-2014), Politecnico di Milano.

2001-2006 Postdoctoral Fellow, Department of Bioengineering, Politecnico di Milano.

Teaching activities

2008-now Cellular Bioengineering (MSc level, 10 credits) – Politecnico di Milano.

2018-now Seminars in Biomedical Engineering (coordinator, PhD level, 5 credits) – Politecnico di Milano.

2016-now Transplantation and tissue engineering (MSc level, 1 credits) - Medical Biotechnologies and Molecular Medicine, Università degli Studi di Milano.

2012-2015 Cell therapies and tissue engineering (MSc level, 2 credits) - Medical Biotechnologies and Molecular Medicine, Università degli Studi di Milano.

2005-2007 Cellular Bioengineering (MSc level, 5 credits) – Politecnico di Milano.

2003-2006 Cellular and Molecular Biomechanics (PhD level, 7.5 credits) Politecnico di Milano.

2003-2004 Cellular Mechanics and Tissue Engineering (MSc level, 5 credits) – Politecnico di Torino.

2004 Molecular Biomechanics (MSc level, 2.5 credits) – Politecnico di Milano.

Honours

2017 Mentor of the PhD Thesis by G.S. Ugolini “ulti-layer micro devices for advanced cell culture applications”, which received the GNB Award.

2010 1st prize in the PhD Student Competition, Tissue and Cellular Biomechanics Session, ASME Summer Bioengineering Conference 2010.

2009 Honourable mention in the PhD Student Competition, Biofluids and Biotransport Session, ASME Summer Bioengineering Conference 2009.

2007 Mentor of the MSc Thesis by M. Cantini “Microfluidynamic analysis and optimization of the oxygen transport in scaffolds aimed at culturing hematopoietic stem cells”, which received the GNB Award.

2001 Best Poster Award, Cardiovascular Mechanics Session, ASME Summer Bioengineering Conference 2001.

1998 Best Poster Award, Conference of the European Society of Biomechanics 1998

Organisation of scientific meetings

2020 Member of the Organizing and Scientific Committee of the 26th European Society of Biomechanics Conference, Milan 12-15 July 2020, organized by Francesco Migliavacca, Alberto Redaelli and Manuela Galli.

2020 Co-organizer of the Molecular Biomechanics Track of the 26th European Society of Biomechanics Conference, Milan 12-15 July 2020, organized by Francesco Migliavacca, Alberto Redaelli and Manuela Galli.

2018 Member of the Reviewer Committee of the “VI National Congress of Bioengineering” to be held in Milano, Italy, 25-27 June 2018.

2015 Co-organizer of the Tissue Engineering & Biomaterials Theme of the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), Milan 25-29 August 2015, organized by Sergio Cerutti, Paolo Bonato, Nigel Lovell and Luca Mainardi.

2015 Chair of the Session Advanced technologies for cell and tissue engineering at the 37th Annual

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- International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), Milan 25-29 August 2015.
- 2014 Co-Organizer of the Molecular-Level Biomechanics Track of the 7th World Congress of Biomechanics, Boston 6-11 July 2014, organized by Roger Kamm and Jay Humphrey.
- 2010 Member of the Scientific Board of the “II National Congress of Bioengineering”, which took place in Torino, 8-10 July 2010
- 2006 Co-chair of the section “Biomedicine Miniaturization” in the track “Bioengineering and Biomedical Technology” of the “8th Biennial ASME Conference of Engineering Systems Design and Analysis”, Torino, Italy, 4-6 July 2006.

Institutional responsibilities

- 2016-now Member (and from 2019 Coordinator) of the Committee for the Admissions to the Biomedical Engineering MSc, Politecnico di Milano.
- 2011-now Member of the Bioengineering PhD School Board.
- 2003-2007 **Coordinator of the teaching activities** of the 3 Editions of the Post Graduate Master “**Engineering in surgery**” sponsored by funded by Regione Lombardia (1st edition) and sponsored by Biomedical Companies (2nd and 3rd editions).

Memberships of scientific societies

- Member of the European Society of Biomechanics (ESB)
- Member of Tissue Engineering and Regenerative Medicine International Society (TERMIS)
- Academic Editor for the peer review journal PLoSOne (from 2012).

Patents

- 2019 Gianfranco Beniamino Fiore, Monica Soncini, Marco Piola, Maurizio Pesce, Marco Agrifoglio. “Dispositivo di condizionamento per condizionare un tratto esposto di un vaso sanguigno e metodo”. National Application number 102019000012537 deposited July 22, 2019.
- 2006 Montevecchi F.M., Mantero, S., Redaelli A., Soncini M. “Bone prostheses with multilayer interface”. US Patent Application US 2006/0089722 A1, 27 April 2006.
- 2003 Redaelli A., Soncini M., Susini G. “System and method for the evaluation of the indexes of volemic status”. US patent, Patent n° US 6,585,658 B2, 1 July 2003.

Research grants and contracts

- 2016-now NanoMedLab Lab (realization of a interdisciplinary laboratory at the Politecnico di milano dedicated to Nanomedicine). PI for DEIB: M. Soncini. Coordinator P. Metrangolo. Total funding: € 130.000.
- 2018-now Grant for an Interdisciplinary PhD Scholarship XXIV Cycle awarded to Pierangelo Metrangolo for CMIC and Monica Soncini for DEIB. Duration: 36 months. Funding: about 70.000 €. Recruited PhD candidate: Dr. Lorenzo Sori.
- 2014-2017 Ricerca Finalizzata Ordinaria 2011 Call (RF-GR-2011) - Project RF-2011-02346867 - “The role of mechanobiology in establishment and progression of intima hyperplasia associated to vein coronary bypass grafts disease”.Coordinator: M. Pesce, Centro Cardiologico Monzino, PI for PoliMI: M. Soncini. Funding for PoliMI: 140.000 €. Duration: 36 months
- 2010-2012 PRIN 2008 Call (PRIN2008)- “Engineering of pelvic surgery: numerical simulation and in vitro regeneration of tissues”, Coordinator: A. Audenino, Politecnico di Torino. PI for PoliMI: M. Soncini. Funding for PoliMI: 42.850 €. Duration: 30 months.
- 2009-2011 Contracts for mechanical tests aimed at characterizing the mechanical properties of decellularized valve leaflets. IRCCS Centro Cardiologico Monzino Funding: about 15.000 €

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2007-2010 Grant for the bursary of a PhD student (Dr. Marco Cantini) recruited at the Scuola Interpolitecnica di Dottorato funded by the Italian Research Ministry. Tutor of the PhD student: Monica Soncini. Duration: 36 months. Funding: 45.000 €.

Monica Soncini was also collaborator as co-investigator in several funded research projects at international and national level:

- Joint call to support the knowledge transfer in advanced materials research "SILKELASTOGRAFT A novel, compliance-matching silk fibroin/polyurethane graft for in situ vascular tissue engineering" 2019-2022.
- ERC grant NICHOID awarded to Prof. M. Raimondi 2015-2020
- Science and Technology Research on Advanced Materials 2008 Call "Nano-micro-structured polymeric matrices for engineered cardiac prototissues" (2009-2011)
- Science and Technology Research on Advanced Materials 2006 Call (CAIPLO 2006) "Micro-structured materials for haematopoietic stem cells culture aimed at cell therapy for neoplasia and immunodeficiency" (2007-2010)
- Ministry of Education, University and Research – PRIN 2006 Call "Cardiac Tissue Engineering" (2006-2008).
- European project FP6 Marie Curie Action EST "Biomimetic Systems" 2005-2008
- European project FP6 - STREP - "Active Biomimetic Systems" 2005-2007

Peer reviewed papers

Author/co-Author in more than 180 publications among peer reviewed papers, Chapters in monographs and Conference proceedings and abstracts.

Peer reviewed papers: 61

Citations: 1188, H-index: 19 (Scopus database).

1. Pietrabissa R., Contro R., Quaglini V., Soncini M., Gionso L., Simion M. Experimental and computational approach for the evaluation of biomechanical effects of dental bridge misfit. *Journal of Biomechanics*, Elsevier Science, Oxford (UK) (ISSN 0021-9290). Vol.33: 1489-1495, 2000.
2. Redaelli A., Soncini M., Montevecchi F.M. Myosin cross-bridge mechanics: geometrical determinants for continuous sliding. *Journal of Biomechanics*, Elsevier Science, Oxford (UK) (ISSN 0021-9290) Vol.34(12): 1607-1617, 2001.
3. Soncini M., Rodriguez y Baena R., Pietrabissa R., Quaglini V., Rizzo S., Zaffe D. Experimental procedure for the evaluation of the mechanical properties of the bone surrounding dental implants. *Biomaterials*, Elsevier Science, Oxford (UK) (ISSN 0142-9612). Vol.23(1): 11-19, 2002.
4. Soncini M., Manfredi G.F., Redaelli A., Attanasio A., Tosoni A., Venturino M., Susini G. A computerized method to measure Systolic Pressure Variation (SPV) in mechanically ventilated patients. *Journal of Clinical Monitoring and Computing*, Kluwer Academic Publisher, Dordrecht (NL) (ISSN 1387-1307) Vol.17(2), 141-146, 2002.
5. Votta E., Maisano F., Soncini M., Redaelli A., Montevecchi F.M., Alfieri O. 3-D computational analysis of the stress distribution on the leaflets after edge-to-edge repair of mitral regurgitation. *Journal of Heart Valve Disease*, ICR Publishers, Northwood (UK), ISSN 0966-8519, Vol.11, 810-822, 2002.
6. Soncini M., Pietrabissa R. Quantitative approach for the prediction of the tooth movement during the orthodontic treatment. *Computer Methods in Biomechanics and Biomedical Engineering*, Taylor and Francis, Oxfordshire (UK) (ISSN 1025-5842). Vol.5(5): 361-368, 2002.
7. Zaffe D., Rodriguez y Baena R., Rizzo S., Brusotti C., Soncini M., Pietrabissa R., Cavani F., Quaglini V. Behavior of bone-titanium interface after push-in testing: A morphological study. *Journal of Biomedical Materials Research PART A*, John Wiley and Sons, New York (NY) (ISSN 1549-3296). Vol.64(2), 365-371, 2003.

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8. Redaelli A., Vesentini S., Soncini M., Vena P., Mantero S., Montevecchi F.M. Possible role of decorin glycosaminoglycans in fibril to fibril force transfer in relative mature tendons - a computational study from molecular to microstructural level. *Journal of Biomechanics*, Elsevier Science, Oxford (UK) (ISSN 0021-9290). Vol.36(10) 1555-1569, 2003.
9. Redaelli A. Maisano F., Soncini M., Alfieri O., Montevecchi F.M. Hemodynamics and mechanics following partial left ventriculectomy: a computer modeling analysis. *Medical Engineering and Physics* Elsevier Science, Exeter (UK) (ISSN 1350-4533). Vol.26(1); 31-42, 2004.
10. Soncini M., Redaelli A., Montevecchi F.M. Myosin head mechanical performance under different conformational change mechanisms. *Journal of Biomechanics*, Elsevier Science, Oxford (UK) (ISSN 0021-9290). Vol.37(7), 1031-1041, 2004.
11. Redaelli A., Botorel E., Votta E., Soncini M., Morbiducci U., Del Gaudio C., Balducci A., Grigioni M. 3-D simulation of the SJM bileaflet valve opening process: fluid-structure interaction study and experimental validation. *Journal of Heart Valve Disease*, ICR Publishers, Northwood (UK) (ISSN 0966-8519). Vol.13: 804-813, 2004.
12. Costantino M.L., Bagnoli P., Dini G., Fiore G.B., Soncini M., Corno C., Acocella F., Colombi R. A numerical and experimental study of compliance and collapsibility of preterm lamb tracheae. *Journal of Biomechanics*, Elsevier Science, Oxford (UK) (ISSN 0021-9290). Vol.37: 1837-1847, 2004.
13. Costantino M.L., Bagnoli P., Dini G., Fiore G.B., Soncini M., Corno C., Acocella F., Colombi R. Pressure drop vs. flow relationship in isolated preterm lamb tracheae. *Journal of Applied Biomaterials and Biomechanics*, Wichtig, Milano (I) (ISSN 1722-6899) Vol.2(3): 177-182, 2004.
14. Soncini M., Vandini L., Redaelli A. Finite element analysis of a knee joint replacement during a gait cycle. *Journal of Applied Biomaterials and Biomechanics*, Wichtig, Milano (I) (ISSN 1722-6899). Vol.2: 45-54, 2004.
15. Maisano F., Redaelli A., Soncini M., Votta E., Arcobasso L., Alfieri O. An annular prosthesis for the treatment of functional mitral regurgitation: finite element model analysis of a dog bone-shaped ring prosthesis. *Annals of Thoracic Surgery*. Vol.79: 1268-1275, 2005.
16. Vesentini S., Soncini M., Zaupa A., Silvestri V., Fiore G.B., Redaelli A. Multi-scale analysis of the Toraymyxin adsorption cartridge. Part I: molecular interaction of polymyxin B with endotoxins. *International Journal of Artificial Organs*, Wichtig, Milano (I) (ISSN 0391-3988). Vol.29(2): 239-250, 2006.
17. Fiore G.B., Soncini M., Vesentini S., Penati A., Visconti G., Redaelli A. Multi-scale analysis of the Toraymyxin adsorption cartridge. Part II: Computational fluid-dynamic study. *International Journal of Artificial Organs*, Wichtig, Milano (I) (ISSN 0391-3988). Vol.29(2): 251-260, 2006.
18. Soncini M., Votta E., Zinicchino S., Burrone V., Fumero R., Mangini A., Lemma M., Antona C., Redaelli A. Finite element simulations of the physiological aortic root and valve sparing corrections. *Journal of Mechanics in Medicine and Biology*, World Scientific Publishing Company (ISSN 0219-5194) Vol.6(1): 91-99, 2006.
19. Soncini M., Vesentini S., Ruffoni D., Orsi M., Deriu M.A., Redaelli A. Mechanical response and conformational changes of alpha-actinin domains during unfolding: a molecular dynamics study. *Biomechanics and Modeling in Mechanobiology*, Springer Berlin/Heidelberg (ISSN 1617-7959). Vol.6(6): 399-407, 2007.
20. Deriu M.A., Enemark S., Soncini M., Montevecchi F.M., Redaelli A. Tubulin: from atomistic structure to supramolecular mechanical properties. *Journal of Materials Science*, Springer Netherlands (ISSN 0022-2461) Vol.42: 8864-8872, 2007.

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21. Enemark S., Deriu M.A., Soncini M., Redaelli A. Mechanical model of the tubulin dimer based on molecular dynamics simulations. *Journal of Biomechanical Engineering - Transactions of the ASME*, ASME-Amer Soc Mechanical Eng, New York (NY) (ISSN 0148-0731). Vol.130(4): 041008/1-7, 2008.
22. Votta E., Caiani E., Veronesi F., Soncini M., Montevecchi F.M., Redaelli A. Mitral valve finite element modelling from ultrasound data: a pilot study for a new approach to understand mitral function and clinical scenarios. *Philosophical Transactions of the Royal Society A - Mathematical Physical and Engineering Science*, Royal Soc, London, England (ISSN:1364-503X). Vol.366(1879): 3411-34, 2008.
23. Aprodu I., Redaelli A., Soncini M. Actomyosin Interaction: Mechanical and Energetic Properties in Different Nucleotide Binding States. *International Journal of Molecular Sciences*, Molecular Diversity Preservation International, Basel, Switzerland (ISSN 1422-0067). Vol.9(10): 1927-1943, 2008.
24. Aprodu I., Soncini M., Redaelli A. Mechanical characterization of the motor proteins - a molecular dynamics approach. *Macromolecular Theory and Simulations*, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim (ISSN: 1022-1344). Vol.17: 376-384, 2008.
25. Aprodu I., Soncini M., Redaelli A. Interaction forces and interface properties of KIF1A kinesin- $\alpha\beta$ tubulin complex assessed by molecular dynamics. *Journal of Biomechanics*, Elsevier Science, Oxford (UK) (ISSN 0021-9290). Vol.41: 3196-3205, 2008.
26. Soncini M., Votta E., Zinicchino S, Burrone V., Mangini A., Lemma M., Antona C., Redaelli A. Aortic root performance after valve sparing procedure: a comparative finite element analysis. *Medical Engineering and Physics*, Elsevier Science, Exeter (UK) (ISSN 1350-4533). Vol.31: 234-243, 2009.
27. Cantini M., Fiore G.B., Redaelli A., Soncini M. Numerical fluid-dynamic optimization of microchannel-provided porous scaffolds for the co-culture of adherent and non-adherent cells. *Tissue Engineering Part A*, Mary Ann Liebert, Inc., publishers, New Rochelle, NY (ISSN: 1937-3341). Vol.15(3): 615-623, 2009.
28. Soncini M., Votta E., Aprodu I., Enemark S., Redaelli A., Deriu M.A., Montevecchi F.M. Microtubule-kinesin mechanics by molecular modelling. *Biophysical Reviews and Letters*, World Scientific Publishing Company (ISSN: 1793-0480). Vol.4(1-2): 45-61, 2009.
29. Deriu M.A., Soncini M., Orsi M., Patel M., Essex J.W., Montevecchi F.M., Redaelli A. Anisotropic elastic network modeling of entire microtubules. *Biophysical Journal*, Cell Press, Cambridge, MA (ISSN: 0006-3495). Vol.99(7): 2190-2199, 2010.
30. Fiore G.B., Soncini M., Vesentini S., Redaelli A. Mechanisms of polymyxin B endotoxin removal from extracorporeal blood flow: hydrodynamics of sorption. *Contributions to nephrology*, Karger, Switzerland (ISSN 0302-5144) Vol.167: 55-64, 2010.
31. Vesentini S., Soncini M., Fiore G.B., Redaelli A. Mechanisms of polymyxin B endotoxin removal from extracorporeal blood flow: molecular interactions. *Contributions to nephrology*, Karger, Switzerland (ISSN 0302-5144) Vol.167: 45-54, 2010.
32. Aprodu I., Soncini M., Montevecchi F.M., Redaelli A. Mechanical characterization of actomyosin complex by molecular mechanics simulations. *Journal of Applied Biomaterials and Biomechanics* Wichtig, Milano (I) (ISSN 1722-6899). Vol.8(1): 20-27, 2010.
33. Vismara R., Soncini M., Talò G., Dainese L., Guarino A., Redaelli A., Fiore G.B. A Bioreactor with Compliance Monitoring for Heart Valve Grafts. *Annals of Biomedical Engineering*, Springer Netherlands (ISSN: 0090-6964). Vol.38(1): 100-108, 2010. doi: 10.1007/s10439-009-9803-1.
34. Deriu M.A., Bidone T.C., Mastrangelo F., Di Benedetto G., Soncini M., Montevecchi F.M., Morbiducci U. Biomechanics of actin filaments: a computational multi-level study. *Journal of Biomechanics*, Elsevier Science, Oxford (UK) (ISSN 0021-9290). Vol.44(4): 630-636, 2011.

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35. Asnaghi M.A., Candiani G., Farè S., Fiore G.B., Petrini P., Raimondi M.T., Soncini M., Mantero S. Trends in biomedical engineering: Focus on regenerative medicine. *Journal of Applied Biomaterials and Biomechanics*. Vol.9(2): 73-86, 2011.
36. Mangini A., Lemma M.G., Soncini M., Votta E., Contino M., Vismara R., Redaelli A., Antona C. The aortic interleaflets triangles annuloplasty: a multidisciplinary appraisal. *European Journal of Cardio-Thoracic Surgery*, Elsevier Science, Oxford (UK) (ISSN 1010-7940). Vol.40(4): 851-857, 2011.
37. Forvi E., Bedoni M., Carabalona R., Soncini M., Mazzoleni P., Rizzo F., O'Mahony C., Morasso C., Cassarà D.G., Gramatica F. Preliminary technological assessment of microneedles-based dry electrodes for biopotential monitoring in clinical examinations. *Sensors and Actuators A: Physical*. Vol.180: 177-186, 2012.
38. Piola M., Soncini M., Prandi F., Polvani G., Fiore GB, Pesce M. Tools and procedures for ex vivo vein arterialization, preconditioning and tissue engineering: a step forward to translation to combat the consequences of vascular graft remodeling. *Recent Pat Cardiovasc Drug Discov*. Bentham Science, Sharjah (UAE) (ISSN 1574-8901) Vol.7(3): 186-195, 2012. doi: 10.2174/157489012803832838.
39. Apicella A., Soncini M., Deriu M.A., Natalello A., Bonanomi M., Dellasega D., Tortora P., Regonesi M.E., Casari C.S. A hydrophobic gold surface triggers misfolding and aggregation of the amyloidogenic josphin domain in monomeric form, while leaving the oligomers unaffected. *PLoS ONE Public Library of Science* (ISSN 1932-6203). Vol.8(3): e58794, 2013. doi: 10.1371/journal.pone.0058794.
40. Vinci M.C., Tessitore G., Castiglioni L., Prandi F., Soncini M., Santoro R., Consolo F., Colazzo F., Micheli B., Sironi L., Polvani G., Pesce M. Mechanical compliance and immunological compatibility of fixative-free decellularized/cryopreserved human pericardium. *PLoS ONE Public Library of Science* (ISSN 1932-6203). Vol.8(5): e64769, 2013. doi: 10.1371/journal.pone.0064769.
41. Ugolini G.S., Gautieri A., Redaelli A., Soncini M. Structural analysis and ion translocation mechanisms of the muscle-type acetylcholine receptor channel. *Journal of Applied Biomaterials and Functional Materials*. Vol.11(1): 53-60, 2013. doi: 10.5301/JABFM.5000148.
42. Piola M., Soncini M., Cantini M., Sadr N., Ferrario G., Fiore G.B. Design and functional testing of a multi-chamber perfusion platform for three-dimensional scaffolds. *Scientific World Journal, Tissue Engineering Section*, Article number:123974, 2013. doi: 10.1155/2013/123974
43. Pietronave S., Zamperone A., Oltolina F., Colangelo D., Follenzi A., Novelli E., Diena M., Pavesi A., Consolo F., Fiore G.B., Soncini M., Prat M. Mono and biphasic electrical stimulation induces a pre-cardiac differentiation in progenitor cells isolated from human heart. *Stem Cells and Development*, Mary Ann Liebert, Inc., New Rochelle, NY (USA) (ISSN 1547-3287). Vol.23(8): 888-898, 2014. doi: 10.1089/scd.2013.0375
44. Pavesi A., Soncini M., Zamperone A., Pietronave S., Medico E., Prat M., Fiore G.B. Electrical conditioning of adipose-derived stem cells in a multi-chamber culture platform. *Biotechnology and Bioengineering* John Wiley and Sons Inc. (ISSN 0006-3592). Vol.111(7): 1452-1463, 2014. doi: 10.1002/bit.25201.
45. Prandi F., Piola M., Soncini M., Colussi C., D'Alessandra Y., Penza E., Agrifoglio M., Vinci M.C., Polvani G., Gaetano C., Fiore G.B., Pesce M. Adventitial vessel growth and progenitor cells activation in an ex vivo culture system mimicking human saphenous vein wall strain after coronary artery bypass grafting. *PLoS ONE Public Library of Science* (ISSN 1932-6203). Vol.10(2), e0117409, 2015, doi: 10.1371/journal.pone.0117409.
46. Santoro R., Consolo F., Spiccia M., Piola M., Kassem S., Prandi F., Vinci M.C., Forti E., Polvani G., Fiore GB, Soncini M., Pesce M. Feasibility of pig and human-derived aortic valve interstitial cells seeding on fixative-free decellularized animal pericardium. *J Biomed Mater Res B Appl Biomater*, Wiley Periodicals, Inc. (ISSN 1552-4973). Vol.104(2): 345-356, 2016. doi: 10.1002/jbm.b.33404.

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47. Consolo F., Brizzola S., Tremolada G., Grieco V., Riva F., Acocella F., Fiore G.B. and Soncini M. A dynamic distention protocol for whole-organ bladder decellularization: histological and biomechanical characterization of the acellular matrix. *Journal of Tissue Engineering and Regenerative Medicine* (ISSN 1932-6254). Vol.10(2): E101-E112. doi: 10.1002/term.1767.
48. Piola M., Prandi F., Bono N., Soncini M., Penza E., Agrifoglio M., Polvani G., Pesce M., Fiore G.B. A compact and automated ex-vivo vessel culture system for the pulsatile pressure conditioning of human saphenous veins. *Journal of Tissue Engineering and Regenerative Medicine* (ISSN 1932-6254). Vol.10(3): E204-E215. doi: 10.1002/term.1798.
49. Ugolini G.S., Rasponi M., Pavesi A., Santoro R., Kamm R.D., Fiore G.B., Pesce M., Soncini M. On-chip assessment of human primary cardiac fibroblasts proliferative responses to uniaxial cyclic mechanical strain. *Biotechnology and Bioengineering*, John Wiley and Sons Inc. (ISSN 0006-3592). Vol.113(4): 859-869, 2016. doi: 10.1002/bit.25847.
50. Piola M., Prandi F., Fiore G.B., Agrifoglio M., Polvani G., Pesce M., Soncini M. Human Saphenous Vein Response to Trans-wall Oxygen Gradients in a Novel Ex Vivo Conditioning Platform. *Annals of Biomedical Engineering* Kluwer Academic Publishers (ISSN 0090-6964). Vol.44: 1449-1461, 2016. doi: 10.1007/s10439-015-1434-0.
51. Piola M., Vismara R., Tasca G., Lucherini F., Redaelli P., Soncini M., Romagnoni C., Mangini A., Antona C., Fiore G.B. Design of a simple coronary impedance simulator for the in vitro study of the complex coronary hemodynamics. *Physiological Measurements*. IOP Publishing (ISSN 1361-6579 online). Vol.37(12): 2274-2285, 2016. doi: 10.1088/1361-6579/37/12/2274.
52. Piola M., Ruitter M., Vismara R., Mastrullo V., Agrifoglio M., Zanobini M., Pesce M., Soncini M., Fiore G.B. Full Mimicking of Coronary Hemodynamics for Ex-Vivo Stimulation of Human Saphenous Veins. *Annals of Biomedical Engineering* Kluwer Academic Publishers (ISSN 0090-6964). Vol. 45(4): 884-897, 2017. doi: 10.1007/s10439-016-1747-7.
53. Bono N., Meghezi S., Soncini M., Piola M., Mantovani D., Fiore G.B. A Dual-Mode Bioreactor System for Tissue Engineered Vascular Models. *Annals of Biomedical Engineering* Kluwer Academic Publishers (ISSN 0090-6964). Vol. 45(6): 1496-1510, 2017. doi:10.1007/s10439-017-1813-9.
54. Apicella A., Marascio M., Colangelo V., Soncini M., Gautieri A., Plummer C.J.G. Molecular dynamics simulations of the intrinsically disordered protein. *Journal of Biomolecular Structure and Dynamics*, Taylor & Francis Group (ISSN:0739-1102, E-ISSN:1538-0254). Vol. 35(8): 1813-1823, 2017. doi: 10.1080/07391102.2016.1196151.
55. Ugolini G.S., Pavesi A., Rasponi M., Fiore G.B., Kamm R., Soncini M. Human cardiac fibroblasts adaptive responses to controlled combined mechanical strain and oxygen changes in vitro. *eLife* eLife Sciences Publications (ISSN:2050-084X) Vol.6: e22847, 2017. doi: 10.7554/eLife.22847
56. Suchý T., Šupová M., Bartoš M., Sedláček R., Piola M., Soncini M., Fiore G.B, Sauerová P., Kalbáčková, M. Dry versus hydrated collagen scaffolds: are dry states representative of hydrated states? *Journal of materials science. Materials in medicine* Springer Nature (ISSN:0957-4530, E-ISSN:1573-4838) Vol. 29(2): 20, 2018. doi:10.1007/s10856-017-6024-2.

Monica Soncini

Associate Professor

Dipartimento di Elettronica Informazione e Bioingegneria, Politecnico di Milano

57. Kenagy R.D., Kikuchi S., Evanko S., Ruitter M.S., Piola M., Longchamp A., Pesce M., Soncini M., Deglise S., Fiore G.B., Haefliger J., Schmidt T., Majesky M.W., Sobel M., Wight T.N. Versican is differentially regulated in the adventitial and medial layers of human vein grafts. *PLoS ONE* Public Library of Science (ISSN 1932-6203) Vol.13(9): e0204045, 2018. doi: 10.1371/journal.pone.0204045.
58. Strobel H.A., Hookway T., Piola M., Fiore G.B., Soncini M., Alsberg E., Rolle M. Assembly of tissue engineered blood vessels with spatially-controlled heterogeneities. *Tissue Eng Part A*. Mary Ann Liebert (ISSN:1937-3341, E-ISSN:1937-335X) Vol.24(19-20): 1492-1503, 2018. doi: 10.1089/ten.TEA.2017.0492.
59. Bersini S., Gilardi M., Ugolini G.S., Sansoni V., Talò G, Perego S., Zanotti S., Ostano P., Mora M., Soncini M., Vanoni M., Lombardi G., Moretti M. Engineering an Environment for the Study of Fibrosis: A 3D Human Muscle Model with Endothelium Specificity and Endomysium. *Cell Reports* Elsevier (ISSN:2211-1247). Vol.25(13): 3858-3868.e4, 2018. doi: 10.1016/j.celrep.2018.11.092.
60. Sauerova P., Suchy T., Supova M., Bartos M., Klima J., Juhasova J., Juhas S., Kubikova T., Tonar Z., Sedlacek R., Piola M., Fiore G.B., Soncini M., Hubalek Kalbacova M. Positive impact of dynamic seeding of mesenchymal stem cells on bone-like biodegradable scaffolds with increased content of calcium phosphate nanoparticles. *Molecular Biology Reports*. Springer Nature (ISSN: 0301-4851 E-ISSN: 1573-4978). Published on-line 10 June 2019. doi: 10.1007/s11033-019-04903-7.
61. Donnalaja F., Jacchetti E., Soncini M., Raimondi M.T. Mechanosensing at the nuclear envelope by nuclear pore complex stretch activation and its effect in physiology and pathology. *Frontiers in Physiology* (ISSN=1664-042X). Vol.10, Article Number: 896 (15 pages), 2019. DOI=10.3389/fphys.2019.00896.