

Sara Marchetti

📍 Monza e Brianza (Italy)

✉ [sara.marchetti1@unimib.it](mailto:sara.marchetti1@unimib.it)

Nationality: Italian

### Postdoctoral Researcher (March 2021 – on going)

Prof. Anita Colombo, Department of Earth and Environmental Sciences, University of Milano – Bicocca  
Inhalation toxicity of PM aggregated pollutants of emerging concern: NPs, MPs and bioaerosol

### WORK EXPERIENCES

- October 2017 – on going** Contract professor for the following academic years: 2017-2018, 2020-2021  
Prof. Anita Colombo, Department of Earth and Environmental Sciences, University of Milano - Bicocca  
Laboratories on cytology and comparative anatomy, degree course in Biological Sciences
- October 2017 – on going** Type D tutorship (tutor associated with courses) for the following academic years: 2017-2018, 2018-2019, 2019-2020, 2020-2021  
Prof. Anita Colombo, Department of Earth and Environmental Sciences, University of Milano - Bicocca  
Tutorship in cytology and comparative anatomy to students of bachelor degree in Biological Sciences
- September 2017 – on going** Laboratory Activities - PLS (Piano Lauree Scientifiche)  
Prof. Anita Colombo, Department of Earth and Environmental Sciences, University of Milano - Bicocca  
Tutoring in histological and microscope activities for high school students
- February 2020 – February 2021** Postdoctoral Research Fellow  
Prof. Paride Mantecca, Department of Earth and Environmental Sciences, University of Milano – Bicocca  
Chemical and biological analysis of fine and ultrafine particulate samples from various processes, including the production of industrial asphalts
- April – June, 2020** Didactic tutor for a student with DSA  
Prof. Anita Colombo, Department of Earth and Environmental Sciences, University of Milano - Bicocca  
Tutoring to finalize the writing of the thesis for bachelor degree in Biological Sciences for a student with DSA
- April – June 2019** Visiting PhD student at Norwegian Institute of Public Health (NIPH), Air Pollution and Noise Department, Infection Control and Environmental Health Division – Oslo, Norway

February – April 2019	Visiting PhD student at National Institute of Occupational Health (STAMI), Chemical and Biological Work Environment Department, Toxicology and Biological Work Environment Section – Oslo, Norway
April – September 2016	Postgraduate Research Fellow Prof. Marina Camatini, Department of Earth and Environmental Sciences, University of Milano – Bicocca Analysis of the biological effects of ultrafine particles (UFP) produced by different sources
November 2015 – March 2016	Postgraduate Research Internship Dr. Silvia Coco, Department of Experimental Medicine, School of Medicine, University of Milano - Bicocca Isolation and molecular characterization of microvesicles released by Human and Murine Mesenchymal Stem Cells for neurodegenerative disease studies

## EDUCATION

January 31 <sup>st</sup> , 2020	Ph.D. in Biology and Biotechnologies with the label of "Doctor Europaeus" Biological-environmental interactions Curriculum, University of Milano-Bicocca Thesis: A case study on Combustion-Derived Particles: evaluation of the biological effects on human pulmonary cell lines (Tutor: Prof. Anita Colombo)
March 27 <sup>th</sup> , 2015	Master Degree in Biotechnology in Medicine, University of Milano-Bicocca Thesis: Effects of microvesicles released from Bone Marrow - derived Mesenchymal Stem Cells in a mouse model of Alzheimer's disease (Supervisor: Dr. Silvia Coco) - Mark 109/110
November 15 <sup>th</sup> , 2012	Bachelor Degree in Biotechnologies, University of Milano-Bicocca Thesis: Characterization of an animal model of Multiple Sclerosis on the basis of the clinical trend of the disease (Supervisor: Dr. Mariarosaria Miloso) - Mark 95/110

## PERSONAL SKILLS

Native Language	Italian
Other Languages	English (B2 European Level)
Personal and Social Skills	Broad-minding, Team-working, Determining, Willing to learn, Flexibility
Job Related Skills	<ul style="list-style-type: none"> <li>▪ Excellent knowledge of cells culture and maintenance. Excellent knowledge of different cell types: purified primary bone marrow mesenchymal stem cells (BM-MSCs), primary microglial cells, and A549, BEAS-2B, HBEC3-KT and</li> </ul>

HPMEC-ST1.6R cell lines. Preparation of BM-MSCs from mice and rats, BM-MSC osteogenic and adipogenic lineage differentiation assay, isolation of microvesicles from different cell types. Cell viability and cytotoxicity tests. Working capacity in sterility in laboratories with biosafety level 1 and 2 (BL1 and BL2)

- Good knowledge of different molecular and biochemical techniques: DNA, RNA and protein extraction and quantification, ELISA assay, DNA bulky adducts detection, Western blot, Real-Time PCR, Droplet Digital PCR (ddPCR), COMET analysis/single cell gel electrophoresis (SCGE)
- Good knowledge of cytofluorimetric analysis
- Good knowledge of histological, immunohistological and immunofluorescence techniques for analysis on cell monolayers and rodent sections (including quantification and statistical analysis). Good ability in biological and material sample preparation for microscope analysis. Good use of vibratome, cryostat and microtome
- Good knowledge of Optical (light and fluorescence) and Confocal microscope. Good knowledge of IncuCyte Zoom Live Cell Imaging and DotSlide systems
- Good knowledge of particulate matter (PM) sampling and manipulation for biological investigations and physico-chemical characterization
- Knowledge of air quality monitoring using personal "portable" monitors capable of measuring the exposure at a personal scale
- Statistical Analysis (ANOVA, Tukey's Test)
- Tutor and correlator for bachelor and master thesis (Biological Sciences and Environmental Sciences and Technologies)

Other skills

- Fire prevention officer
- Italian Red Cross volunteer

Driving Patent

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## ADDITIONAL INFORMATION

Publications

- **Marchetti S.**, Mollerup S., Gutzkow K. B., Rizzi C., Skuland T., Refsnes M., Colombo A., Øvrevik J, Mantecca P., Holme J. A. "*Biological effects of combustion-derived particles from different biomass sources on human bronchial epithelial cells*" In press on Toxicology in Vitro
- **Marchetti S.**, Bengalli R., Floris P., Colombo A., Mantecca P. "*Combustion-derived particles from biomass sources differently promote epithelial to mesenchymal transition on A549 cells*" Arch Toxicol. 2021, Jan 22. doi:10.1007/s00204-021-02983-8
- Pacitto A., Stabile L., Morawska L., Nyarku M., Torkmahalleh A. M., Akhmetvaliyeva Z., Andrade A., Dominski F. H., Mantecca P., Shetaya W. H., Mazaheri M., Jayaratne R., **Marchetti S.**, Hassan S. K., El-Mekawy A., Mohamed E. F., Frattolillo A., Buonanno G. "*Daily submicron particle doses received by populations living in different low- and middle-income countries*" Environ Pollut. 2021 Jan; 269, 116229. doi:10.1016/j.envpol.2020.116229

- **Marchetti S.**, Hassan S. K., Shetaya W. H., El-Mekawy A., Mohamed E. F., Mohammed A., El-Absawy A. A., Bengalli R., Colombo A., Mantecca P. "Seasonal variation in the biological effects of PM<sub>2.5</sub> from Greater Cairo" *Int. J. Mol. Sci.* 2019, 20, 4970; doi:10.3390/ijms20204970
  - Elia C. E., Tamborini M., Rasile M., Desiato G., **Marchetti S.**, Swuec P., Mazzitelli S., Clemente F., Anselmo A., Matteoli M., Malosio M. L., Coco S. "Intracerebral Injection of Extracellular Vesicles from Mesenchymal Stem Cells exerts reduced A $\beta$  plaque burden in early stages of a preclinical model of Alzheimer's disease" *Cells* 2019, 8, 1059. doi:10.3390/cells8091059
  - Bengalli R., Zerboni A., **Marchetti S.**, Longhin E., Camatini M., Mantecca P. "In vitro pulmonary and vascular effects induced by different diesel exhaust particles" *Toxicol Lett.* 2019 Feb 1; 306:13-24. doi:10.1016/j.toxlet.2019.01.017
  - **Marchetti S.**, Longhin E., Bengalli R., Avino P., Stabile L., Buonanno G., Colombo A., Camatini M., Mantecca P. "In vitro lung toxicity of indoor PM<sub>10</sub> from a stove fuelled with different biomasses" *Sci Total Environ.* 2019 Feb 1; 649:1422-1433. doi:10.1016/j.scitotenv.2018.08.249
  - **Marchetti S.**, Longhin E., Bengalli R., Buonanno G., Colombo A., Mantecca P., Camatini M. "Combustion-derived particles from different fuels induce different cytotoxic effects on A549 cells" *Chem Eng Trans.* 2018; 65, 811-816 doi:10.3303/CET1865136
  - Bengalli R., Longhin E., **Marchetti S.**, Proverbio M. C., Battaglia C., Camatini M. "The role of IL-6 released from pulmonary epithelial cells in diesel UFP-induced endothelial activation" *Environ Pollut.* 2017 Dec; 231 (Pt 2): 1314-1321. doi:10.1016/j.envpol.2017.08.104
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- Elia C., Tamborini M., Rasile M., Desiato G., Swuec P., **Marchetti S.**, Mazzitelli S., Clemente F., Anselmo A., Matteoli M., Malosio M. L., Coco S. "Extracellular Vesicles from Mesenchymal Stem Cells reduce A $\beta$  plaque burden in early stages of Alzheimer's disease" 5<sup>th</sup> NeuroMI International Meeting: Food for brain: promoting health and preventing diseases (Milan, Italy, November 20-22, 2019)
  - **Marchetti S.**, Holme J. A., Mantecca P., Colombo A., Øvrevik J., Mollerup S. "Toxicity of combustion-derived particles emitted from different biomass sources in human bronchial epithelial cells" 55<sup>th</sup> Congress of the European Societies of Toxicology (Helsinki, Finland, September 8-11, 2019). *Toxicology Letters* 314S1 (2019) S1-S309
  - **Marchetti S.**, Hassan S. K., Colombo A., Camatini M., Mantecca P. "Effetti citotossici dell'esposizione a particelle fini su cellule alveolari umane" PM2018, VIII Convegno Nazionale sul Particolato Atmosferico (Matera, Italy, May 23-25, 2018)
  - Bengalli R., **Marchetti S.**, Longhin E., Zerboni A., Casadei S., Gualtieri M., Camatini M., Mantecca P. "Effetti biologici di particelle ultrafini derivate da diverse sorgenti" PM2018, VIII Convegno Nazionale sul Particolato Atmosferico (Matera, Italy, May 23-25, 2018)
  - Mantecca P., Hassan S.K., El-Absawy A. A., Shetaya W. H., El-Mekawy A., Mohamed E. F., Mohammed A. M. F., Bengalli R., **Marchetti S.**, Zerboni A., Longhin E., Camatini M. "Comparative toxicity of airborne fine and ultrafine particles from different regions and emission sources" 10<sup>th</sup> Congress of

Congress  
Communications

Toxicology in Developing Countries and 12<sup>th</sup> Serbian Congress of Toxicology (Belgrade, Serbia, April 18-21, 2018)

- **Marchetti S.**, Longhin E., Bengalli R., Buonanno G., Colombo A., Mantecca P., Camatini M. "*Particulate emissions from the combustion of pellet, charcoal and wood induce different cytotoxic responses in A549 cells*" Proceeding of Abstracts 11<sup>th</sup> International Conference on Air Quality - Science and Application (Barcelona, Spain, March 12-16, 2018). doi:10.18745/PB.19829
- Bengalli R., **Marchetti S.**, Zerboni A., Longhin E., Mantecca P., Camatini M. "*Bronchial and vascular effects induced by different diesel particles emission sources*" Proceeding of Abstracts 11<sup>th</sup> International Conference on Air Quality - Science and Application (Barcelona, Spain, March 12-16, 2018). doi:10.18745/PB.19829
- Mantecca P., Bengalli R., **Marchetti S.**, Zerboni A., Longhin E., Camatini M. "*Cytotoxic and genotoxic effects of combustion-derived particles from different emission sources*" 6<sup>th</sup> International WeBIOPATR Workshop & Conference (Belgrade, Serbia, September 6-8, 2017)
- **Marchetti S.**, Longhin E., Bengalli R., Buonanno G., Colombo A., Mantecca P., Camatini M. "*Comparative biological effects induced in A549 cells by combustion-derived particles from different biomass sources*" 53<sup>rd</sup> Congress of the European Societies of Toxicology (Bratislava, Slovak Republic, September 10-13, 2017). Toxicology Letters, Volume 280, Supplement 1, 20 October 2017, Page S265. doi:10.1016/j.toxlet.2017.07.938
- Bengalli R., Longhin E., **Marchetti S.**, Zerboni A., Mantecca P., Camatini M. "*In vitro vascular effects induced by different diesel exhaust ultrafine particles (DEP)*" 53<sup>rd</sup> Congress of the European Societies of Toxicology (Bratislava, Slovak Republic, September 10-13, 2017). Toxicology Letters, Volume 280, Supplement 1, 20 October 2017, Page S265. doi:10.1016/j.toxlet.2017.07.939
- Elia C. A., **Marchetti S.**, Losurdo M., Saccomano A., Filipello F., Rasile M., Tamborini M., Matteoli M., Coco S. "*Extracellular vesicles isolated from Bone Marrow Mesenchymal Stem Cells induce an anti-inflammatory phenotype in microglia exposed to Human Abeta 1-42*" Second International Meeting of the Milan Center for Neuroscience (NeuroMI): Prediction and Prevention of Dementia: New Hope (Milan, July 6-8, 2016). J Alzheimers Dis. 2016 Jun 24;53 Suppl 1: S1-S74. doi:10.3233/JAD-169002
- Elia C., Mazzitell S., Filipello F., **Marchetti S.**, Rasile M., Tamborini M., Coco S., Matteoli M. "*Microvesicles from Mesenchymal Stem Cells induce an anti-inflammatory phenotype of microglia exposed to human Abeta 1-42*" The 12<sup>th</sup> International Conference on Alzheimer's & Parkinson's Diseases (Nice, France, 18-22 March 2015). Neurodegener Dis 2015; 15: (suppl 1): 1-1969. doi:10.1159/000381736

Participation to Congresses, Courses and Workshops

- "Managing Air Quality & Health Risk" Workshop, National Research Centre, March 2021
- Fire prevention officer training course – High risk level (16 hours), University of Milano-Bicocca (in cooperation with Comando Provinciale dei Vigili del Fuoco - Milano), October 2020
- "Workshops on Academic Writing and Publishing", University of Milano-Bicocca, February 2020

- Training course for tutors associated with the courses organized by University of Milano-Bicocca (November/December 2019)
- NANO-DAY IV Conference, University of Milano-Bicocca, December 2019
- "OPEN DAY DELLE 3Rs (Refinement, Reduction, Replacement)", University of Milano-Bicocca, October 2018
- "Fundamentals of Biostatistics", University of Milano-Bicocca, July 2018
- Aria e Salute Conference, University of Milano-Bicocca, November 2017
- "CEC 1 - Advances in *in vitro* models to study pulmonary toxicity of particles, chemicals and pharmaceuticals", 53<sup>rd</sup> Congress of the European Societies of Toxicology (Bratislava, Slovak Republic), September 2017
- "Scanning and Transmission Electron Microscopy", University of Milano-Bicocca, May/June 2017
- "Good laboratory practices in BSL2: some practical tips about protocols and procedures", University of Milano-Bicocca, January 2017
- NanoSimposio Congress, University of Milano-Bicocca, November 23<sup>rd</sup>, 2016
- "New frontiers in the chimico-physical properties of Biomolecular Systems", University of Milano-Bicocca, September 2016
- "Phenotypic Assays Workshop: Label-Free & Cell Imaging", November 2014
- "Training Course on Confocal Microscopy (entry level)", Humanitas Research Hospital, Milan, February 2014
- "Il risultato della ricerca e la sua brevettabilità", University of Milano-Bicocca, February 2012
- "Il prodotto cosmetico, problematiche tecniche e regolatorie", Milan, January 2012

Milan, March 2021

Signature

A handwritten signature in blue ink that reads "Sara Mancetti". The signature is written in a cursive, slightly slanted style.