



## CONTACT INFORMATION

Name Matilde Bongio  
Email [matilde.bongio@gmail.com](mailto:matilde.bongio@gmail.com)  
[matilde.bongio@grupposandonato.it](mailto:matilde.bongio@grupposandonato.it)  
Website [www.matildebongio.com](http://www.matildebongio.com)

## EMPLOYMENT HISTORY

Founder 2017 – Present  
Galeazzi Orthopaedic Institute IRCCS, Milan, Italy  
GoArtS – Galeazzi Art for Science

Postdoctorate 2013 – Present (including two maternity leaves)  
Galeazzi Orthopaedic Institute IRCCS, Milan, Italy  
Cell and Tissue Engineering  
Laboratory Advisor: Dr Matteo Moretti

PhD 2009 – 2013  
Radboud University Nijmegen Medical Center, the Netherlands  
Department of Biomaterials  
Advisor: Dr Prof Jansen JA  
Doctoral thesis: “In vitro and in vivo evaluation of injectable hydrogel-based bone substitute materials”

Visiting scholarship 2010  
Rice University, Houston, Texas Department of Bioengineering  
Advisor: Dr Prof Mikos AG

Fellowship 2008  
European Social Fund  
(ESF) and Lombardy Region University of Pavia, Italy  
Department of Human Anatomy Advisor: Dr Prof Sampaolesi M



## EDUCATION

- Master**                    2005 – 2007  
University of Pavia, Italy  
Faculty of Medicine and Surgery  
Master degree in Medical and Pharmaceutical Biotechnology  
Internship at the Department of Experimental Medicine, Human Anatomy Unit  
Dr Sampaolesi M research group  
Graduation thesis title: “Expression and localization of the recombinant human protein Magic F-1 in mouse embryogenesis and reproductive apparatus”; grading: 110/110 magna cum laude
- Bachelor**                    2002 – 2005  
University of Pavia, Italy  
Faculty of Mathematics, Physics & Natural Sciences  
Bachelor degree in Biotechnology  
Internship at the Department of Experimental Medicine, Human Anatomy Unit  
Advisor: Dr Prof Cusella C  
Graduation thesis title: “O2O3 therapy in a mouse animal model of neurodegeneration: effects on the blood brain barrier”; grading: 109/110

## PROFESSIONAL QUALIFICATIONS (Certifications and Accreditations)

- **Certificate Course on Laboratory Animal Science** – March 2009  
The course on laboratory animal science meets the requirements cited in article 9 of the Wet op de dierproeven (Experiments on Animals Act) and the (European) FELASA category C demands. The certificate leads to a legal recognition to design animal experiments in the Netherland
- **Certificate Advances in Tissues Engineering 2009**, 17<sup>th</sup> annual short course.  
School of continuing studies – Rice University, Houston, Texas

## Computer Skills

- Main Windows software knowledge (Word, Powerpoint, Excel)
- Graphic softwares (Xara, ImajeJ, PhotoShop, Illustrator)
- 3D design and animation (Cinema 4D, AfterEffects)

## CONFERENCES

Bone-tec 2010 International Bone-Tissue-Engineering Congress, 7-10 October, Hannover (Germany) Oral presentation: Injectable hydrogels for bone regeneration

20th Annual Meeting-Netherlands Society of Biomaterials and Tissue Engineering (NBTE) 1-2 December 2011, Lunteren, the Netherlands

Oral presentation: Biomimetic evaluation of synthetic hydrogels: *in vitro* evaluation of cell behaviour

9<sup>th</sup> World Biomaterials Congress, 1-5 June 2012 Chengdu, China

Oral presentation: *In vitro* and *in vivo* evaluation of biomimetic synthetic hydrogels for potential application as injectable bone substitute materials

21st Annual Meeting-Netherlands Society of Biomaterials and Tissue Engineering (NBTE) 6-7 December 2012, Lunteren, the Netherlands

Oral presentation: *In vivo* evaluation of injectable hydrogels for bone regeneration

4th TERMIS World Congress, September 8-11 2015, Boston, USA

Poster presentation: Geometrically controlled micro-vascularized constructs based on electrochemical transfer of endothelial monolayer

## AWARDS

Certificate of recognition for outstanding oral presentation in Bone-tec 2010 International Bone-Tissue-Engineering Congress, Hannover (Germany). Title: Injectable hydrogels for bone regeneration.

College of Dental Sciences 2011, Research Report Radboud University Nijmegen Medical Center. Highlight on results of imagination: Line 2 - Wound Healing around the implant. "Biomimetic modification of synthetic hydrogels: *in vitro* evaluation of cell behavior".

## ACADEMIC ACTIVITIES

Supervision of several Bachelor and Master students (Biomedical Sciences, Medical Biology, Dentistry) during their research projects.

Lecturing Bachelor students of Biology (Radboud University, Nijmegen) on the topic of "Hydrogels for bone regeneration".

Professional service: acting as a reviewer for Scientific Journals and for European Grants.

## LIST OF PUBLICATIONS

Lovati AB, Drago L, Bottagisio M, **Bongio M**, Ferrario M, Perego S, Sansoni V, De Vecchi E, Romanò CL. Systemic and Local Administration of Antimicrobial and Cell Therapies to Prevent Methicillin- Resistant Staphylococcus epidermidis-Induced Femoral Nonunions in a Rat Model. *Mediators Inflamm.* 2016; 2016:9595706. doi: 10.1155/2016/9595706.

Bersini S, Arrigoni C, Lopa S, **Bongio M**, Martin I, Moretti M. Engineered miniaturized models of musculoskeletal diseases. *Drug Discov Today.* 2016; 21(9): 1429–1436. doi: 10.1016/j.drudis.2016.04.015.

**Bongio M\***, Lopa S\*, Gilardi M, Bersini S, Moretti M. A 3D vascularized bone remodeling model combining osteoblasts and osteoclasts in a CaP nanoparticle-enriched matrix. *Nanomedicine (Lond).* 2016; 11(9):1073–91 (\* these authors contributed equally to this work). doi: 10.2217/nnm-2015- 0021

**Bongio M\***, Arrigoni C\*, Talò G, Bersini S, Enomoto J, Fukuda J, Moretti M. Rational design of prevascularized large 3D tissue constructs using computational simulations and biofabrication of geometrically controlled microvessels. *Adv Healthc Mater.* 2016 Jul;5(13): 1617–26. doi: 10.1002/adhm.201500958. (\* these authors contributed equally to this work).

Hayrapetyan A, **Bongio M**, Leeuwenburgh SC, Jansen JA, van den Beucken JJ. Effect of Nano- HA/Collagen Composite Hydrogels on Osteogenic Behavior of Mesenchymal Stromal Cells. *Stem Cell Rev.* 2016; 12(3):352–64. doi: 10.1007/s12015-016-9644-x

Lovati A, **Bongio M\***, Pozzi A\*, Recordati C, Berzero G, Moretti M (2014) A comparative study of diagnostic and imaging techniques for the osteoarthritis of the trapezium. *Rheumatology (Oxford).* 2015 Jan;54(1):96–103. (\* these authors contributed equally to this work).

Nejadnik MR, Yang X, **Bongio M**, Alghamdi HS, van den Beucken JJJ, Huysmans MC, Jansen JA, Hilborn J, Ossipov DA, Leeuwenburgh SCG. Self-healing hybrid

nanocomposites consisting of bisphosphonated hyaluronan and calcium phosphate nanoparticles. *Biomaterials*. 2014; 35(25): 6918–29.

**Bongio M**, Nejadnik MR, Kasper FK, Mikos AG, Jansen JA, Leeuwenburgh SCG, van den Beucken JJJ (2013) Development of an in vitro confinement test to predict the clinical handling of injectable bone substitutes. *Polymer testing*. 32(8):1379–1384. doi: 10.1016/j.polymertesting.2013.08.011

Wang H, **Bongio M**, Farbod K, Nijhuis AWG, van den Beucken JJJ, Boerman OC, van Hest JCM, Li Y, Jansen JA, Leeuwenburgh SCG (2014) Development of organic/inorganic colloidal composite gels made of self-assembling gelatin and calcium phosphate nanoparticles. *Acta Biomater*. 2014 Jan;10(1):508–19. doi: 10.1016/j.actbio.2013.08.036.

Ma J, Yang F, Both SK, Kersten–Niessen M, **Bongio M**, Pan J, Cui FZ, Kasper FK, Mikos AG, Jansen JA, van den Beucken JJJ. Comparison of cell loading methods in hydrogel systems. *J Biomed Mater Res A*. 2014; 102(4): 935–46. doi: 10.1002/jbm.a.34784.

**Bongio M**, Nejadnik MR, Birgani ZT, Habibovic P, Kinard LA, Kasper FK, Mikos AG, Jansen JA, Leeuwenburgh SCG, van den Beucken JJJ (2013) In vitro and in vivo enzyme-mediated biomineralization of oligo(poly(ethylene glycol) fumarate hydrogels. *Macromol Biosci*. 2013; 13(6): 777–88. doi: 10.1002/mabi.201200474.

**Bongio M**, van den Beucken JJJ, Leeuwenburgh SCG, Jansen JA (2012) Pre-clinical evaluation of injectable bone substitute materials. *J Tissue Eng Regen Med*. 2015; 9(3): 191–209. doi: 10.1002/term.1637.

**Bongio M**, van den Beucken JJJ, Nejadnik MR, Leeuwenburgh SCG, Kasper FK, Mikos AG, Jansen JA (2013) Subcutaneous tissue response and osteogenic performance of calcium phosphate nanoparticles-enriched hydrogels in the medullary cavity of guinea pigs. *Acta Biomater*. 2013; 9(3): 5464–74. doi: 10.1016/j.actbio.2012.10.026.

Lopez–Heredia MA, **Bongio M**, V Cuijpers, AJA Winnubst, N van Dijk, , Wolke JG, van den Beucken JJJ, Jansen JA. Processing and in vivo evaluation of multiphasic calcium phosphate cements with dual tricalcium phosphate phases. *Acta Biomater*. 2012; 8(9): 3500–8.

Lopez–Heredia MA, **Bongio M**, Cuijpers VM, van Dijk NW, van den Beucken JJ, Wolke JG, Jansen JA. Bone formation analysis: effect of quantification procedures on the study outcome. *Tissue Eng Part C Methods*. 2012; 18(5): 369–73.

**Bongio M\***, Ronzoni F\*, Conte S, Vercesi L, Cassano M, Tribioli C, Galli D, Bellazzi R, Magenes G, Cusella De Angelis MG, Sampaolesi M (2011) Localization of Magic-F1 transgene, involved in muscular hypertrophy, during early myogenesis. *J Biomed Biotechnol.* 2011:492075. (\* these authors contributed equally to this work).

**Bongio M**, van den Beucken JJJ, Nejadnik MR, Leeuwenburgh SCG, Kinard LA, Kasper FK, Mikos AG, Jansen JA. Biomimetic modification of synthetic hydrogels by incorporation of adhesive peptides and calcium phosphate nanoparticles: in vitro evaluation of cell behavior. *Eur Cell Mater.* 2011; 22: 359–76.

Galli D, Benedetti L, **Bongio M**, Maliardi V, Silvani G, Ceccarelli G, Ronzoni F, Conte S, Benazzo F, Graziano A, Papaccio G, Sampaolesi M, De Angelis MG. In vitro osteoblastic differentiation of human mesenchymal stem cells and human dental pulp stem cells on poly-L-lysine-treated titanium-6-aluminium-4-vanadium. *J Biomed Mater Res A.* 2011; 97(2): 118–26.

**Bongio M**, van den Beucken JJJ, Leeuwenburgh SCG, Jansen JA. Development of bone substitute materials: from ‘biocompatible’ to ‘instructive’ *J Mater Chem.* 2010; 20, 8747–8759.

#### BOOK CHAPTERS

**Bongio M**, SCG, van den Beucken JJJ, Jansen JA (2013) Combining osteochondral stem cells and biodegradable hydrogels for bone regeneration. *Stem cells and Bone disease.* CRC Press.

M Sampaolesi, **M Bongio**, M Cassano, G Coppiello, S Crippa (2010) Cellule staminali XXI secolo (Stem cells XXI century). *Enciclopedia Treccani.*