

Personal information



FILIPPO MARTINELLI BONESCHI, MD MS PHD

Date of birth 1971-08-30
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Nationality Italian

Occupational field Neurology

Work experience

Dates 6/2017-ongoing
Name and address of employer University of Milan, Via Festa del Perdono 58, Milan
Type of business or sector University
Occupation or position held Assistant Professor of Neurology
Main activities and responsibilities Clinical activity (assistant in the Neurology department; out-patient activities; vice-director of MS centre; emergency room consultant), research activity, didactic activity

Dates 6/2017-ongoing
Name and address of employer IRCCS Policlinico San Donato Milanese, Piazza Edmondo Malan, 2, San Donato Milanese MI
Type of business or sector University Hospital
Occupation or position held Assistant Professor of Neurology with clinical activity
Main activities and responsibilities Clinical activity (assistant in the Neurology department; out-patient activities; vice-director of MS centre; emergency room consultant)
02/2006-05/2017

Dates:
Name and address of employer Ospedale San Raffaele, Department of Neurology and Neurorehabilitation, Via Olgettina 58, Milan
Type of business or sector Neurology department
Occupation or position held Physician scientist
Main activities and responsibilities Clinical activity (assistant in the Neuro-Rehabilitation department; out-patient activities; emergency room consultant)
02/2006-ongoing

Dates 02/2006-05/2017

Name and address of employer	Scientific Institute San Raffaele, Institute of Experimental Neurology (INSPE), Via Olgettina 58, Milan
Type of business or sector	Research Centre, IRCCS
Occupation or position held	Head of laboratory; group leader (from September 2015)
Main activities and responsibilities	Research activity (head of the Laboratory of Human Genetics of Neurological Diseases leading a group of 10 scientists)
Dates	12/2004-8/2005
Name and address of employer	Serono Genetics Institute (SGI), Department of biostatistics and genetic epidemiology, Evry, Francia
Type of business or sector	Pharmaceutical company
Occupation or position held	9-month stage
Main activities and responsibilities	Research activity (statistical and bioinformatic analysis of whole-genome association data performed on arrays platform)
Dates	2/2003-2/2006
Name and address of employer	Scientific Institute San Raffaele, Unit of Human Molecular Genetics (Prof.Casari), Via Olgettina 58, Milan
Type of business or sector	Human genetic research
Occupation or position held	PhD student
Main activities and responsibilities	Research activity (wet-lab genotyping and statistical analysis of variants associated with rare monogenic neurological diseases)
Dates	2/2003-2/2006
Name and address of employer	Scientific Institute San Raffaele, Department of Neurology (Prof. Comi), Via Olgettina 58, Milan
Type of business or sector	Neurology department
Occupation or position held	Fellowship
Main activities and responsibilities	Clinical activity (in-patient, out-patient and emergency room activity); Research activity (epidemiological studies in Multiple Sclerosis)
Dates	7/2000-9/2001
Name and address of employer	Gertrude H. Sergievsky Center, Columbia University, New York, NY
Type of business or sector	Human genetic research
Occupation or position held	Post-doctoral fellowship
Main activities and responsibilities	Research activity (linkage analysis in multiplex families of epilepsy enrolled in the "Epilepsy Family Study").
Dates	1996-2002
Name and address of employer	Scientific Institute San Raffaele, Department of Neurology, Via Olgettina 58, Milan
Type of business or sector	Neurology department
Occupation or position held	Resident in Neurology
Main activities and responsibilities	Clinical activity (in-patient, out-patient and emergency room activity); Research activity (epidemiological studies in Multiple Sclerosis; clinical investigator in clinical trials in Multiple Sclerosis)
Dates	1994-1996
Name and address of employer	Scientific Institute Ospedale Policlinico, Department of Neurology (prof. Nereo Bresolin), University of Milan, Via Francesco Sforza 35, 20122 Milan
Type of business or sector	Neurology department
Occupation or position held	Student fellowship
Main activities and responsibilities	Clinical activity; Research activity (genotype-phenotype correlation in individuals with

Duchenne Muscular Dystrophy)

Dates 1993-1994
Name and address of employer University of Milan, Department of Neurophysiology
Type of business or sector Medical school
Occupation or position held Student fellowship
Main activities and responsibilities Research activity (study of the modifications of the spinal neuronal excitability in humans)

Dates 1992
Name and address of employer Rotterdam Erasmus University, Department of cell biology and genetics
Type of business or sector Medical school
Occupation or position held 2-month stage
Main activities and responsibilities Research activity (wet lab work)

International research collaborations

- 2009-ongoing: Full member of the strategic group of the International Consortium of Genetics of Multiple Sclerosis (IMSGC; <https://www.imsgc.org/>)
- 2012-ongoing: Full member of the strategic group of the Immunochip consortium
- Lombardia GENS consortium for the genetics of cerebrovascular disorders
- 2006: Scientific board "Mind: the essence of humanity", Future of Science, Fondazione Veronesi
- 10/3/2012: Global Copaxone Advisory Board/Expert Panel Pharmacogenomics New York
- 2014/2015: Italian ambassador of the American Academy of Neurology
- 2015-2016: Scientific Director of Istituto Cura Familiae, Lodi
- 2016-ongoing: Full member del gruppo strategico del Consorzio Internazionale MULTIPLEMS (MULTIPLEMS; <http://www.multiplems.eu/>)
- 30/1/2017: Advisory Board Aubagio, Sanofi Genzyme
- 8/6/2017: Advisory Board on cladribine tablet proposal, Merck-Serono

Fundings

- 2017-2022. **Principal Investigator (PI)**. Project supported by the European Community (H2020-SC1-PM-01-2016). **Project title: MultipleMS. Multiple manifestations of genetic and non-genetic factors in Multiple Sclerosis disentangled with a multi-omics approach to accelerate personalized medicine.** Budget of my Unit: 269.000 €.
- 2016-2017. **Principal Investigator (PI)**. Project supported by Fondazione Italiana Sclerosi Multipla (FISM). **Project title: Genomic and functional evaluation of the role of the TNFSF14-TNFRSF14 pathway in susceptibility to multiple sclerosis.** Total budget: 195.000 € (budget of my Unit: 62.000 €).
- 2017-2020: **Principal Investigator (PI)**. Project supported by the European Community (H2020-MSCA-ITN-2016, Marie Skłodowska-Curie Innovative Training Networks). **Project title: PAIN-net, Molecule-to-man pain network.** Budget of my Unit: 256.000 € (refused due to change of affiliation).
- 9/2013-9/2016: **Investigator (PI)**. Project supported by European Community (FP7-HEALTH-2013-INNOVATION-1). **Project title: PROPANE STUDY.** Probing the role of sodium channels in painful neuropathies. Budget of my Unit: 600.000 €.
- 9/2015-9/2017: **Project coordinator (PC)**. Project supported by the Italian Ministry of Health. **Project title: An integrated genomic, transcriptomic and epigenomic approach in multiplex multiple sclerosis families.** Total budget: 450.000 € (budget of my Unit: 180.000 €).
- 2011-6/2015: **Principal Investigator (PI)**. Project supported by Fondazione Cariplo. **Project title: Search for genes involved in the susceptibility to Multiple Sclerosis (MS): a replication and follow-up study of genetic markers identified in an Italian case-control whole-genome association study.** Total budget: 300.000 € (budget of my Unit: 150,000 €).
- 2012-9/2014: **Principal Investigator (PI)**. Project supported by Fondazione Italiana

Sclerosi Multipla (FISM). **Project title: Fine-Scale mapping of Multiple Sclerosis loci in the Continental Italian population: from tag genetic markers identified in Genome Wide Association studies to causal variants.** Total budget: 150.000 € (budget of my Unit: 50,000 €).

- 2011-2013: **Principal Investigator (PI)**. Project supported by Merck-Serono. **Project title: From target identification to response to Interferon drugs: A pharmacogenomic approach for IFNB treatment in multiple sclerosis.** Budget of my Unit: 330.000 €.
- 2009-2012: **Project coordinator (PC)**. Progetto Giovani Ricercatori supported by the Italian Ministry of Health. **Project title: Identification of genetic factors involved in primary progressive Multiple Sclerosis: a model of neurodegeneration.** Total budget: 600.000 € (budget of my Unit: 400.000 €).
- 2009-2012: **Co-project coordinator (PC)**. Progetto Speciale Fondazione Italiana Sclerosi Multipla (FISM). **Project title: Immunochip.** Total budget: 200.000 € (budget of my Unit: 100.000 €).
- 2010-2011: **Principal Investigator (PI)**. Project supported by the European Community. **Project title: Point-Of-Care MONitoring and Diagnostics for Autoimmune Diseases (POCEMON).** Budget of my Unit: 143.721 €.
- 2009-2010: **Principal Investigator (PI)**. Project supported by Fondazione Cariplo. **Project title: Novel pharmacological and diagnostic biomarkers in Alzheimer's Disease.** Total budget: 190.000 € (budget of my Unit: 65.000 €).
- 2008-2009: **Principal investigator (PI)**. Project supported by *Fondazione Italiana Sclerosi Multipla* (FISM). **Project title: Genetic and transcriptional analysis of DPP1 a novel candidate gene in primary progressive Multiple Sclerosis.** Total budget: 25.000 €.
- 2002-2003: **Principal Investigator (PI)**. Research Training Fellowship Epilepsy Foundation (refused financial support). Total budget: 20.000 \$

Titles and awards

- 1996: Medical Degree (110 cum laude) at University of Milan
- 1999: De Visart prize – University of Milan
- 2006: Best communication award – European Neurological Society (ENS) 16th meeting
- 2013: Best poster presentation award - Italian Neurological Society (SIN), 44th meeting
- 2014: Best poster presentation award - Italian Neurological Society (SIN), 45th meeting

Education and training

Dates	2003-2006
Name and type of organisation providing education and training	Scientific Institute San Raffaele, PhD program in Molecular Medicine
Title of qualification awarded	PhD in Neuroscience
Dates	1997-2002
Name and type of organisation providing education and training	University of Milan, Faculty of Medicine, Residency in Neurology
Title of qualification awarded	Neurologist
Dates	2000-2001
Name and type of organisation providing education and training	Joseph L. Mailman School of Public Health of Columbia University, New York, NY
Title of qualification awarded	Master of Science in Epidemiology and Biostatistics

Dates 1990-1996
Name and type of organisation providing education and training University of Milan, Faculty of Medicine
Title of qualification awarded Medical doctor

Dates 1984-1990
Name and type of organisation providing education and training Classical studies high school G. Berchet, Milan
Title of qualification awarded Classical studies High school degree

Military service 3/1999-1/2000: Clinical care of patients affected with multiple sclerosis (Italian Multiple Sclerosis Foundation, FISM)

Personal skills and competences

Mother tongue(s) **ITALIAN**

Other language(s)

ENGLISH
• Understanding EXCELLENT
• Speaking EXCELLENT
• Writing EXCELLENT

FRENCH
• Understanding GOOD
• Speaking GOOD
• Writing GOOD

Social skills and competences Ability of team work in clinical and research environment. Capacity of an olistic approach to patients and excellent ability to interact with patients. Lover of team sports. Strong interest and knowledge in humanistic science. Previous political experience.

Organisational skills and competences Excellent organizational skills in clinical and research environment. Ability to integrate clinicians and researchers with different skills to work on common projects. He worked as head of the Laboratory of Human Genetics of Neurological Diseases which include scientists with different background (residents in neurology, PhD students, biotechnologists, statisticians, informaticians and bioinformaticians), and responsible of the training of residents in neurology. Coordinator of the "Progresso" Italian consortium and of a multicentric italian study of familial cases with Multiple Sclerosis; experience as coordinator of several national and International projects.

Technical skills and competences Excellent skills in epidemiology and biostatistics. Excellent ability to use statistical analysis software (SPSS, STATA). Good skills to use statistical packages for analysis of array data of genome-wide association and genome-wide expression studies (Plink, Haploview, R including Bioconductor). General knowledge of bioinformatic programs (BLAST, Repeatmasker, GSEA, Webgestalt, Metacore, Cytoscape). Excellent skills in using analysis software of Illumina arrays (GenomeStudio package). Basic knowledge of analysis software of sequencing data. Basic programming in perl language.

SUMMARY CV

Professor Martinelli-Boneschi has been appointed as associate professor of Neurology at the University of Milan, and he got clinical appointment at the IRCCS Policlinico Ospedale San Donato Milanese starting the first of June 2018 where he is creating a Laboratory of Genomics of Neurological Diseases. In 20 years of work, he set up a large biobank of more than 3000 patients affected with Multiple Sclerosis (MS), 1000 patients affected with Alzheimer's disease (AD) and other neurological diseases, and he obtained several prestigious grants including the Progetto Giovani Ricercatori funded by the Italian Ministry of Health aimed at the discovery of genetic risk factors involved in the risk of developing a rare form of MS called progressive primary, other fundings from the Cariplo Foundation, the Italian Multiple Sclerosis Foundation and 3 grants from the European Union. He is also a full member of the strategic group of the International Multiple Sclerosis Genetics Consortium (IMSGC), and he significantly contributed to the results and publications of the whole-genome association studies and custom arrays that contributed to the identification of more than 200 genetic risk factors implicated in MS risk. He is co-author of more than 135 publications in indexed journals, of which 14 as first author and 17 as the last author, and he is the reviewer of several scientific journals (PlosOne, Neurological Sciences, Journal of Neurology, Journal of Medical Genetics, Neurogenetics, European Journal of Neurology, Acta Neurologica Scandinavica, Acta Neuropathologica Communications, and Science Advances) and referees of funding institutions (Italian Foundation of Multiple Sclerosis (FISM), Multiple Sclerosis Society, Flaunders Research Foundation FWO, South African Medical Research Council), and he participated as an expert in several panels in national and international conferences including the American Academy of Neurology and ECTRIMS and advisory boards of pharmaceutical companies. The main scientific interests of prof. Martinelli Boneschi are the application of omics technologies to genetic risk factor discovery in neurological diseases and to biomarker discovery in treatment response in several neurological diseases, such as Interferon beta, Glatiramer Acetate, Teriflunomide and Fingolimod in Multiple Sclerosis and acetylcholinesterase inhibitors in Alzheimer's disease. He recently obtained fundings from the European Union for a project aimed at the identification of biomarkers involved in the response to the treatment of Multiple Sclerosis (MultipleMS, H2020-SC1-PM-01-2016), where he is responsible of a work-package aimed to implement clinical guidelines for the use of biomarkers in the treatment of the disease. Professor Martinelli Boneschi has also been the coordinator of an Italian project funded by the Ministry of Health interested in studying the contribution and integration of different omics (genomics, transcriptomics and epigenomics) in MS familial cases. He was also appointed as principal investigator at San Raffaele Hospital of a EU-funded project aimed at understanding the genetic bases and mechanisms of gene regulation in syndromes of painful neuropathy, called PROPANE (Probing the role of sodium channels in painful neuropathies) (HEALTH 2013.2.2.1-5). Professor Martinelli Boneschi always maintained inpatient and outpatient clinical activity in 30% of his time in Multiple Sclerosis Centre, Neurological Department and Emergency Room. He has also been responsible of clinical and research activity of residents, students and post-doc, and more recently he teaches Neurology to medical students and residents in Neurology of the University of Milan.

RESEARCH AND CLINICAL STAFF

- Clinical staff: 1 resident in Neurology
- Research staff: 1 PhD student

ANNEXES

ANNEX 1: ORAL COMMUNICATIONS AND INVITED SPEAKERS
ANNEX 2: PUBLICATIONS
ANNEX 3: TEACHING ACTIVITY

ANNEX 1: ORAL COMMUNICATIONS AND INVITED SPEAKERS

- **Martinelli Boneschi F. Medicina di precisione nelle malattie neurologiche: il presente ed il futuro.** Meeting Genzyme. Milan, 18th September 2017.
- **Martinelli Boneschi F. La farmaco-genomica della SM nel trattamento personalizzato.** Meeting CAM Modelli di interazione gene-ambiente. Monza, 5th June 2017.
- **Martinelli Boneschi F. La farmaco-genomica della SM nel trattamento personalizzato.** Meeting BEMS (Best evidences in Multiple Sclerosis). Milan, 10-11th May 2017
- **Martinelli Boneschi F. Background genetico.** Approfondimenti monotematici nella Sclerosi Multipla, XX^o edizione. Fattori genetici ed ambientali: esistono strategie di prevenzione. Gallarate, 24th March 2017.
- **Martinelli Boneschi F. Genetics of Multiple Sclerosis.** 7th International Course of Neuroepidemiology: Methods and Clinical Applications. Erice, 4th March 2017
- **Martinelli Boneschi F. Possiamo prevenire la Sclerosi Multipla? Il ruolo dei fattori di rischio ambientali I farmaci per la forma progressiva di Sclerosi Multipla: speranza lecita.** Meeting "Vitamina D, probiotici e Sclerosi Multipla". Milano, 12th November 2016.
- **Martinelli Boneschi F. Uso di biomarcatori nella pratica clinica dei pazienti con Sclerosi Multipla.** Meeting Biogen Milano. Convegno Vitamina D, probiotici e Sclerosi Multipla. Milan, 7th November 2016.
- **Martinelli Boneschi F. Role of neuroinflammation in Multiple Sclerosis: lessons learned from genetic studies.** Seminario "Neuroinflammation in CNS health and disease", Center of excellence on neurodegenerative diseases. Milan, 19th October 2016.
- **Martinelli Boneschi F. I farmaci per la forma progressiva di Sclerosi Multipla: speranza lecita.** Convegno Vivere la Sclerosi Multipla in una nuova era farmacologica, auditorium CAM. Monza, 14th June 2016.
- **Martinelli Boneschi F. Assetto genetico e risposta a terapie.** Convegno Sclerosi Multipla Update 2016. Rimini, 13th May 2016.
- **Martinelli Boneschi F. Comorbidità e scelta terapeutica.** Congresso BEMS (Best evidences in Multiple Sclerosis). Milano, 5-6th May 2016.
- **Martinelli Boneschi F. Application of Open-Array technology in GWAS studies & pharmacogenomics.** Ospedale San Raffaele, Milano, 14th April 2016.
- **Martinelli Boneschi F. Personalized medicine in Multiple Sclerosis: Hope or reality.** Workshop "An integrative systems biology approach to understand inflammation in multiple sclerosis". University Piemonte Orientale, Novara, 12th April 2016.
- **Martinelli Boneschi F, Sorosina M, Ferrè L, Clarelli F, Martinelli V, Esposito F, Comi G. Clinical response to Nabiximols (Sativex®) on spasticity and pain is paralleled by a downregulation of immune-related pathways in Multiple Sclerosis patients.** 13th International Congress of Human Genetics, Kyoto, 5th April 2016.
- **Martinelli Boneschi F. Co-chairman session of pharmacogenetics 1.** 13th International Congress of Human Genetics, Kyoto, 5th April 2016.
- **Martinelli Boneschi F. Il ruolo dei fattori genetici nella SM. SM 2 steps.** Ospedale San Donato, Milano, 27th February 2016.
- **Martinelli Boneschi F. Genes and environment in Multiple Sclerosis.** Neuro-club. Ospedale San Raffaele, Milano, 26th February 2016.
- **Martinelli Boneschi F. Riabilitazione motoria e Sclerosi Multipla: per quali pazienti?.** Associazione Italiana Sclerosi Multipla, Milano, 20th February 2016.
- **Martinelli Boneschi F. Fattori di rischio, epidemiologia e costi sociali.** Diagnosi e trattamento della Sclerosi Multipla- up-to-date. Ospedale San Carlo, Milano, 2nd February 2016.
- **Martinelli Boneschi F. Mens sana in corpore sano: prevenzione delle malattie neurodegenerative.** Curae Familiae, Lodi, 13th January 2016.
- **Martinelli Boneschi F. Role of genomics and transcriptomics in pharmacogenomics.** 2nd Insubria Autumn School on Neuroimmune Pharmacology. Varese, 16-20th November 2015.
- **Martinelli Boneschi F. Farmacogenomica della Sclerosi Multipla. Conferenza didattica.** 26th Congress of the Italian Neurological Society (SIN), Genova, 12th October 2015.
- **Martinelli Boneschi F. Treatment with Nabiximols (Sativex) induces short-term and long-term transcriptional changes at peripheral level in patients with multiple sclerosis.** 26th Congress of the Italian Neurological Society (SIN), Genova, 12th October 2015.
- **Martinelli Boneschi F. NGS: application in Neurodegenerative diseases.** A.O. "Card. G. Panico di Tricase (LE), 15th October 2015.

- **Martinelli Boneschi F. Farmacogenomica e medicina personalizzata. BEMS (Best Evidences in Multiple Sclerosis).** Roma, 6-7th May 2015.
- **Martinelli Boneschi F, Ferrè L, Sorosina M, Mascia E, Nuara A, Martinelli V, Leocani L, Clarelli F, Esposito F, Comi G. Identification of gene networks and pathways associated with Nabiximols in Multiple Sclerosis patients. Oral and platform poster presentation.** American Academy of Neurology (AAN), Washington, 18-25th April 2015.
- **Martinelli Boneschi F. Epidemiology (new classification).** Meet project (MS Education European Talent Network). Milano, 10-12nd December 2014.
- **Martinelli Boneschi F. Genetic epidemiology of Multiple Sclerosis.** 6th International Course of Neuroepidemiology: Methods and Clinical Applications. Erice, 1-7th December 2014
- **Martinelli Boneschi F. Mechanisms of neurodegeneration: what is shared by different diseases and new clues for therapy.** Istituto Neurologico C. Besta. 28th November 2014.
- **Martinelli Boneschi F. Pharmacogenomics and personalized medicine in Multiple Sclerosis.** Lecture in Leuven. 27th November 2014.
- **Martinelli Boneschi F. Immunochip project. From risk factors identification to personalized medicine.** Annual Scientific Congress Italian MS Society and its foundation. 28-29th May 2014.
- **Martinelli Boneschi F. From GWAS to custom array to functional studies in multiple sclerosis and autoimmune disease.** Target Meeting's 3rd world genetics & genomics online conference. 20-22nd May 2014.
- **Martinelli Boneschi F. Can we use genomic data to predict response to treatment.** Top Seminars sclerosi multipla. Sorrento, 22-24th May 2014.
- **Martinelli Boneschi F. Epidemiologia clinica.** MS highlights from AAN: all in one. Milano. 13th May 2014.
- **Martinelli Boneschi F. La genetica.** MS highlights from AAN: all in one. Milano. 13th May 2014.
- **Martinelli Boneschi F. Genetics of Multiple Sclerosis: current and emerging candidates.** EXCEMED. Dubai, 9-10th May 2014.
- **Martinelli Boneschi F. Genes and environment.** Workshop sessions, EXCEMED. Dubai, 9-10th May 2014.
- **Martinelli Boneschi F. Farmacogenomica e trattamento personalizzato.** Biogen Idec Today & tomorrow 2014. Roma, 12nd March 2014.
- **Martinelli Boneschi F. Genetic and environmental complexity in MS.** Neuro-club, Ospedale San Raffaele, Milano, 17th January 2014.
- **Martinelli Boneschi F. Genetic and environmental complexity in MS.** Charcot Foundation, Baveno, 28th November 2013.
- **Martinelli Boneschi F. From GWAS to custom array to functional studies in autoimmune disease.** Illumina User Meeting, Rome, 19th November 2013.
- **Martinelli Boneschi F. Parte specialistica in Neurologia con casi clinici esemplificativi.** Centro Nazionale per la Prevenzione ed il Controllo delle Malattie (CCM), Milan, 30th September 2013, 3rd December 2013, 25th January 2014.
- **Martinelli Boneschi F. Pharmacogenomics.** Changing Milestones, European Preceptorship Programme, Milan, 3rd December 2013.
- **Martinelli Boneschi F. Multiple Sclerosis: from GWAS to functional studies.** Istituto Clinico Humanitas, Milan, 10th July 2013.
- **Martinelli Boneschi F. A pharmacogenetic study on Italian, US and French MS patients reveals an SLC9A9 variant as a novel marker of response to interferon beta.** 23rd Congress of the Italian Neurological Society (SIN). Rimini, 6-9th October, 2012.
- **Martinelli Boneschi F. Genome-wide association study of progressive and bout-onset multiple sclerosis patients.** 23rd Congress of the Italian Neurological Society (SIN). Rimini, 6-9th October, 2012.
- **Martinelli Boneschi F. I nuovi dati di farmacogenetica provenienti da studi con Glatiramer Acetato**
- **Simposio Satellite TEVA, 23rd Congress of the Italian Neurological Society (SIN).** Rimini, 6-9th October, 2012.
- **Martinelli Boneschi F. Genetics and epigenetics of Multiple Sclerosis.** Expert meeting course, Milan, 4th July 2012.
- **Martinelli Boneschi F. Novel molecular targets from genetics and genome-wide association studies.** Top seminar, Baveno, 25th May 2012.
- **Martinelli Boneschi F. Genetics of MS.** II Expert exchange meeting on MS. Milan, 23rd March 2012
- **Martinelli Boneschi F. Application of genomics in the diagnosis and treatment of Multiple Sclerosis.** BEMS meeting, Rome, 12-13th April 2012.
- **Martinelli Boneschi F. Work in progress.** V^o International School of Neuro-epidemiology. Erice, 30th November 2011.

- **Martinelli Boneschi F. Genetic factors in multiple sclerosis: GWAS discovery and missing heritability.** Illumina user meeting. Nice, 18th October 2011.
- **Martinelli Boneschi F. Analisi genetica e trascrittomiche di DPP6: un nuovo gene candidato nella SMPP.** Convegno Scientifico FISM. Roma, 26th May 2011
- **Martinelli Boneschi F. Geni e cervello.** Porte aperte alle Neuroscienze. Scientific Institute San Raffaele, Milan, 16th October 2010.
- **Martinelli Boneschi F, Esposito F, et al. Genome-wide association study and two-stage replication phase in primary progressive multiple sclerosis.** 20th Congress of the European Neurological Society (ENS). Berlin, 20th July 2010.
- **Martinelli Boneschi F, Esposito F, Brambilla P, et al. Replication phase of a whole-genome association study in progressive forms of multiple sclerosis.** 19th Congress of the Italian Neurological Society (SIN). Padova, 24th November, 2009.
- **Martinelli Boneschi F. Geni e cervello.** Porte aperte alle Neuroscienze. Scientific Institute San Raffaele, Milan, 17th October 2009.
- **Martinelli Boneschi F. Genetica della Sclerosi Multipla. Stato dell'arte.** V Congresso Nazionale SISMEC. Pavia, 16-19th September 2009.
- **Martinelli Boneschi F, Esposito F, et al. Replication phase of a whole-genome association study in progressive forms of multiple sclerosis.** 19th Congress of the European Neurological Society (ENS). Milan, 23rd June, 2009.
- **Martinelli Boneschi F. Genome-wide screening methodological aspects.** Top seminars. Baveno, 5/6/2009
- **Martinelli Boneschi F. Work in progress.** IV^o International School of Neuro-epidemiology. Erice, 29th November 2008.
- **Martinelli Boneschi F, Vivo P, Ciccone B, Rossi P, Judica E, Comola M, Griso G, Crisci C, Corsi M, Gatti R, Comi G. Comparison of the efficacy of an in-patient and out-patient rehabilitation strategy in subjects with Multiple Sclerosis.** 18th Congress of the Italian Neurological Society (SIN). Napoli, 20th October 2008.
- **Martinelli Boneschi F, Esposito F, Rodegher ME, Martinelli V, Colombo B, Moiola L, Rossi P, Ghezzi A, Coniglio G, Capra R, Collimedaglia L, Wells T, Wojcik J, Abderrahim H, Comi G. Identification of novel potential susceptibility genes: results of a whole-genome study in primary progressive Multiple Sclerosis.** 18th Congress of the European Neurological Society (ENS). Nice, 7-11th June 2008.
- **Martinelli Boneschi F. Lo screening genetico della Sclerosi Multipla primaria progressiva.** Advanced Neurology Course. Palermo, 5th June 2008.
- **Martinelli Boneschi F. Definizione del profilo genomico della Sclerosi Multipla.** VII^o corso di formazione avanzata "Nanomedicina: dalle nanostrutture alla terapia personalizzata". Collegio Ghislieri. Pavia, 10th April 2008.
- **Martinelli Boneschi F. Contributo alla genomica nella prevenzione e nella terapia della Sclerosi Multipla.** Sclerosi Multipla 2008: nuove prospettive. Brescia, 6th March 2008.
- **Martinelli Boneschi F. Multifactorial determination – The case of Multiple Sclerosis.** PhD course in Neurogenetics at the Scientific Institute San Raffaele. 25th February 2008.
- **Martinelli Boneschi F, Esposito F, Rodegher ME, Rossi P, Moiola L, Colombo B, Radaelli M, Collimedaglia L, Ghezzi A, Coniglio G, Capra R, Martinelli V, Comi G. Risk of Multiple Sclerosis in first-degree relatives of MS probands.** 18th Congress of the Italian Neurological Society (SIN). Firenze, 16th October 2007.
- **Martinelli Boneschi F. Candidate-gene and genome-wide association studies for complex traits.** III^o International School of Neuro-epidemiology. Erice, 20th November 2007.
- **Martinelli Boneschi F, Esposito F, Wojcik J, Collimedaglia L, Ghezzi A, Coniglio G, Capra R, Rodegher ME, Martinelli V, Wells T, Abderrahim H, Comi G. First whole-genome scan association study in primary progressive Multiple Sclerosis.** Congress of the European Committee for treatment and research in multiple sclerosis (ECTRIMS). Praga, 12th October 2007.
- **Martinelli Boneschi F. Primary Progressive Multiple Sclerosis.** Genetic of MS and other leukoencefalopathies- Sero Symposia International. Istanbul, 15th September 2007.
- **Martinelli Boneschi F. Association study.** Top seminars Sclerosi Multipla, Sanofi Aventis. Palermo, 8th June 2007.
- **Martinelli Boneschi F. Cellule staminali come terapia nella Sclerosi Multipla.** Convegno Scientifico La Sclerosi Multipla: update. Cosenza, 12th May 2007.
- **Gironi M & Martinelli Boneschi F. Ongoing pilot study of LDN in MS: Preliminary findings. NCI Conference: Low-dose opioid blockers. Endorphins and met-enkephalin: promising compounds for unmet medical needs.** Washington, 20th April, 2007.

- **Martinelli Boneschi F. Screening genomico: contributo genetico alla sclerosi multipla primariamente progressiva.** 17th Congress of the Italian Neurological Society (SIN). Bari, 14-18th October, 2006.
- **Martinelli Boneschi F., Esposito F, Comi G. et al. Clinical and epidemiological features of a sample of 217 MS patients affected by progressive course of disease: a multicentric Italian study.** 17th Congress of the Italian Neurological Society (SIN). Bari, 14-18th October, 2006.
- **Martinelli Boneschi F, Esposito F, Rodegher ME, Martinelli V, Colombo B, Leone M, Ghezzi A, Pilato V, Coniglio G, Capra R, Toniolo D, Comi G. Clinical characteristics and familial risk of a sample of 217 Italian patients affected with progressive multiple sclerosis: a multicentre Italian study.** 16th Congress of the European Neurological Society (ENS). Lausanne, 27-31st May 2006.
- **Martinelli Boneschi F. Candidate-gene and genome-wide approaches in the study of the genetics of multiple sclerosis: the case of primary progressive.** Top seminars Sclerosi Multipla – Sanofi Aventis. Napoli, 4-6th May, 2006.
- **Martinelli Boneschi F. General concepts in genetics and pharmacogenomics and the treatment of multiple sclerosis.** Invited lectures at the “Beaumont Hospital” & at the “Adelaide & Meath Hospital”. Dublin, 31st March, 2006.
- **Martinelli Boneschi F. Un progetto di Screening genetico.** Congresso Associazione Italiana Studio Emiplegia Alternante (AISEA) – Working Session – Studio clinico dei disturbi del movimento caratteristici della emiplegia alternante. Perugia, 19-21st March 2004
- **Martinelli Boneschi F. Predictors of rehabilitation responsiveness in patients with multiple sclerosis.** 19th Congress of the European Committee for treatment and research in multiple sclerosis (ECTRIMS). Milan, 17-20th September 2003.
- **Martinelli Boneschi F. Familial Hemiplegic Migraine and Alternating Hemiplegia of Childhood: Distinct entities or part of the same spectrum?.** Congresso Associazione Italiana Studio Emiplegia Alternante (AISEA). Foligno, 28-30th March 2003.
- **Martinelli Boneschi F., Winawer M, Pedley T, Hauser WA, Ottman R. Predictors of febrile seizures (FS) in families with multiple individuals with epilepsy: an example of multivariate logistic regression model under a generalized estimating equation approach (GEE).** XI^o Convegno Nazionale di Neuroepidemiologia. Baveno, 23-26th March 2002.
- **Martinelli Boneschi F., Leocani L., Comi G. The value of multimodal evoked potentials in monitoring the natural evolution of the disease in Multiple Sclerosis.** X^o Convegno Nazionale di Neuroepidemiologia - Taormina, 23-26th March 2000.
- **Martinelli Boneschi F. La prognosi delle forme all'esordio: i risultati dello studio ETOMS.**
- Approfondimenti monotematici sulla Sclerosi Multipla – 3^o incontro: La prognosi della Sclerosi Multipla. Gallarate, 3rd March 2000.
- **Martinelli F., Rovaris M. and Filippi M. Effects of mitoxantrone on clinical and MRI evolution in patients with multiple sclerosis.** Multiple Sclerosis Group – VII Cochrane Colloquium – Roma, 10th October 1999.
- **Martinelli F. Epidemiological evaluation of clinical history in Duchenne Muscular Distrophy.** Invited Speech Update in Neurogenetics 1997 - World Federation of Neurology (WFN), Neurogenetics Research Group Meeting. Washington, 10th May 1997.

ANNEX 2: PUBLICATIONS AND PATENTING

- Publications on peer-reviewed journals: 135 (14 first author, 17 last author)
- Publication of book chapter: 1
- H-index: 30 (SCOPUS); 39 (google scholar)

1. Malhotra S, Sorosina M, Río J, Peroni S, Midaglia L, Villar LM, Álvarez-Cermeño JC, Schroeder I, Esposito F, Clarelli F, Zettl UK, Lechner-Scott J, Spataro N, Navarro A, Comi G, Montalban X, **Martinelli-Boneschi F**, Comabella M. **NLRP3 polymorphisms and response to interferon-beta in multiple sclerosis patients.** *Mult Scler.* 2017 Nov 1;1352458517739137. IF: 4.671.
2. Mahurkar S, Moldovan M, Suppiah V, Sorosina M, Clarelli F, Liberatore G, Malhotra S, Montalban X, Antigüedad A, Krupa M, Jokubaitis VG, McKay FC, Gatt PN, Fabis-Pedrini MJ, Martinelli V, Comi G, Lechner-Scott J, Kermodé AG, Slee M, Taylor BV, Vandenbroeck K, Comabella M, **Boneschi FM**; Australian and New Zealand Multiple Sclerosis Genetics Consortium (ANZgene), King C. **Response to interferon-beta treatment in multiple sclerosis patients: a genome-wide association study.** *Pharmacogenomics J.* 2017 Jul;17(4):312-318. IF: 2.350.
3. Kapetis D, Sassone J, Yang Y, Galbardi B, Xenakis MN, Westra RL, Szklarczyk R, Lindsey P, Faber CG, Gerrits M, Merckies IS, Dib-Hajj SD, Mantegazza M, Waxman SG, Lauria G; **PROPANE Study Group.** **Network topology of NaV1.7 mutations in sodium channel-related painful disorders.** *BMC Syst Biol.* 2017 Feb 24;11(1):28. IF: 2.303.
4. Trudu M, Rampoldi L, Schaeffer C, Riba M, Ikehata M, Brambilla P, Messa P, **Martinelli Boneschi F** and Rastaldi MP. **Early involvement of cellular stress and inflammatory signals in the pathogenesis of tubulointerstitial kidney disease due to UMOD mutations".** *Scientific Reports* 2017 Aug 7;7(1):7383. IF: 5.47.
5. Clemente N, Comi c, Raineri D, Cappellano G, Vecchio D, Orilieri E, Gigliotti CL, Boggio E, Chiara Dianzani C, Sorosina M, **Martinelli-Boneschi F**, Caldano M, Bertolotto A, Ambrogio L, Sblattero D, Cena T, Leone M, Dianzani U and Chiocchetti A. **Role of Anti-Osteopontin Antibodies in Multiple Sclerosis and Experimental Autoimmune Encephalomyelitis.** *Front Immunol.* 2017 Mar 23; 8:321. IF: 6.429.
6. Rocca MA, Valsasina P, Leavitt VM, Rodegher M, Radaelli M, Riccitelli GC, Martinelli V, **Martinelli-Boneschi F**, Falini A, Comi G, Filippi M. **Functional network connectivity abnormalities in multiple sclerosis: Correlations with disability and cognitive impairment.** *Mult Scler.* 2017 Mar 1:1352458517699875. IF: 4.671.
7. Dianzani C, Bellavista E, Liepe J, Verderio C, Martucci M, Santoro A, Chiocchetti A, Luca Gigliotti C, Boggio E, Ferrara B, Riganti L, Keller C, Janek K, Niewianda A, Fenoglio C, Sorosina M, Cantello R, Kloetzel PM, Stumpf MP, Paul F, Ruprecht K, Galimberti D, **Martinelli Boneschi F**, Comi C, Dianzani U, Mishto M. **Extracellular proteasome-osteopontin circuit regulates cell migration with implications in multiple sclerosis.** *Sci Rep.* 2017 Mar 9;7:43718. IF: 5.47.
8. **F Martinelli-Boneschi**, M Colombi, M Castori, G Devigili, R Eleopra, RA Malik, M Ritelli, N Zoppi, C Dordoni, M Sorosina, P Grammatico, H Fadavi, MM Gerrits, R Almomani, CG. Faber, ISJ Merckies, D Toniolo, M Cocca, C Doglioni, SG Waxman, SD. Dib-Hajj, MM Taiana, J Sassone, R Lombardi, D Cazzato, A Zauli, S Santoro, M Marchi, G Lauria on behalf offfor the INGI Network Brain (2017). **COL6A5 variants in familial neuropathic chronic itch.** *Brain.* 2017 Mar 1;140(3):555-567. IF: 10.292.
9. Riva N*, Clarelli F*, Domi T, Cerri F, Gallia F, Trimarco A, Brambilla P, Lunetta C, Lazzerini A, Lauria G, Taveggia C, Iannaccone S, Nobile-Orazio E, Comi G, D'Antonio M, **Martinelli-Boneschi F***, Quattrini A*. **Unraveling gene expression profiles in peripheral motor nerve from amyotrophic lateral sclerosis patients: insights into pathogenesis.** *Sci Rep.* 2016 Dec 16;6:39297. * These authors contributed equally to the work. IF: 5.47.
10. Forna L, Ferpozzi V, Montagna M, Rossi M, Riva M, Pessina F, **Martinelli Boneschi F**, Borroni P, Lemon RN, Bello L, Cerri G. **Functional characterization of the left ventrolateral premotor cortex in humans; a direct electrophysiological approach.** *Cerebral Cortex* 2016 Dec 5. IF: 8.825.
11. International Multiple Sclerosis Genetics Consortium. Antel J, Ban M, Baranzini S, Barcellos L, Barizzone N, Beecham A, Berge T, Bernardinelli L, Booth D, Bos S, Buck D, Butkiewicz M, Celius EG, Comabella M, Compston A, Dedham K, Cotsapas C, D'Alfonso S, De Jager P, Dubois B, Duquette P, Fontaine B, Gasperi C, Gil E, Goris A, Gourraud PA, Graetz C, Gyllenberg A, Hadjigeorgiou G, Hafler D, Hribko D, Haines J, Harbo H, Hauser S, Warty S, Hawkins C, Hemmer B, Henry R, Hintzen R, Horakova D, Ivinson A, Howard M, Jelcic I, Kaskow B, Kira JI, Kleinova P, Kockum I, Kucerova K, Lill C, Luessi F, Malhotra S, Martin R, **Martinelli F**, Matsushita T, McCabe C, McCauley J, Mescheriakkova J, Mitrovic M, Moen SM, Montalban X, Muhlau M, Nakamura Y, Oksenberg J, Olsson T, Oturai A, Palotie A, Patsopoulos N,

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 13. George MF, Briggs FB, Shao X, Gianfrancesco MA, Kockum I, Harbo HF, Celius EG, Bos SD, Hedström A, Shen L, Bernstein A, Alfredsson L, Hillert J, Olsson T, Patsopoulos NA, De Jager PL, Oturai AB, Søndergaard HB, Sellebjerg F, Sorensen PS, Gomez R, Caillier SJ, Cree BA, Oksenberg JR, Hauser SL, D'Alfonso S, Leone MA, **Martinelli Boneschi F**, Sorosina M, van der Mei, Taylor BV, Zhou Y, Schaefer C, Barcellos LF. **Multiple sclerosis risk loci and disease severity in 7,125 individuals from 10 studies.** *Neurology Genetics*. 2016 Aug 4;2(4):e87. IF: N/A Citation index: 0.
 14. Clarelli F, Mascia E, Santangelo R, Mazzeo S, Giacalone G, Galimberti D, Fusco F, Zuffi M, Fenoglio C, Franceschi M, Scarpini E, Forloni G, Magnani G, Comi G, Albani D, **Martinelli Boneschi F**. **CHRNA7 Gene and Response to Cholinesterase Inhibitors in an Italian Cohort of Alzheimer's Disease Patients.** *J Alzheimers Dis*. 2016; 52(4):1203-8. IF: 3.920. Citation index: 0.
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- Martinelli-Boneschi F**, Oksenberg JR, Olsson T, Oturai A, Saarela J, Søndergaard HB, Spurkland A, Taylor B, Winkelmann J, Zipp F, Haines JL, Pericak-Vance MA, Spencer CC, Stewart G, Hafler DA, Ivinson AJ, Harbo HF, Hauser SL, De Jager PL, Compston A, McCauley JL, Sawcer S, McVean G et al. **Class II HLA interactions modulate genetic risk for multiple sclerosis.** *Nat Genet.* 2015; 47(10):1107-13. IF: 31.616. Citation index: 8.
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BOOK CHAPTER

Martinelli Boneschi F, Comi G. Assessing functional decline in neurological diseases clinical trials: Duration of follow-up: The case of multiple sclerosis. Frontiers of Neurology and Neuroscience, volume 39, S Karger AG, Medical and Scientific Publishers, 4009 Basel, Switzerland.

PATENTING

Patenting number WO2010094525: **GENETIC MARKERS FOR DIAGNOSING PRIMARY PROGRESSIVE FORMS OF MULTIPLE SCLEROSIS.**

ANNEX 3: TEACHING ACTIVITY

- **Professor of Neurology, Faculty of Medicine** – Linea F, San Donato – University of Milan – Academic years: 2017-ongoing
- **Professor of Neurology, residency school of Radiology**- University of Milan –Academic years: 2017-ongoing.
- **Professor of Neurology, residency school of Neurology**- University of Milan -Academic years: 2017-ongoing.
- **Contract professor of the residency school of Neurology** - San Raffaele Scientific Institute - Università Vita e Salute - **Course of neuroepidemiology and genetic epidemiology** – Academic years: 2009-2017
- **Contract professor of the Faculty of Medicine and Faculty of Biotechnology** - San Raffaele Scientific Institute - Università Vita e Salute - **Course of neuroepidemiology and genetic epidemiology**. Academic years: 2009/2010 and 2011/2012.
- **Tutor of clinical activities in the Department of Neurology to medical students** - Università Vita-Salute San Raffaele – Academic years: 2009-2017.
- **3-day seminars “practical applications in statistics”**- PhD course of Human Physiology - University of Milan – Academic years: 2004-2012.
- **Tutor of clinical activities in the Department of Neurology to medical students (10 residents in Neurology)**- Università Vita-Salute San Raffaele - Academic years: 2004-2017.
- **Coexaminer "Italian multicenter genome-wide association study in primary progressive multiple sclerosis"** - Thesis of residency in Neurology of dr. Federica Esposito - Università Vita-Salute San Raffaele - Academic year: 2006-2007.
- **Coexaminer “ Validazione di uno score di appropriatezza metodologica in studi di associazione su tutto il genoma: applicazione alla malattia di Alzheimer”**- 3-year degree in biotechnology by dr. Laura Maiorino – Università Vita-Salute San Raffaele - Academic year: 2008-2009
- **Coexaminer "Genetic factors implicated in Alzheimer's disease (AD) and risk of conversion from mild cognitive impairment to AD"** - PhD in molecular medicine by dr. Sara Lupoli- Università Vita-Salute San Raffaele – Academic year: 2009-2010
- **Coexaminer "Discovery of genetic factors involved in multiple sclerosis susceptibility and treatment response"** - PhD in molecular medicine by dr. Federica Esposito - Università Vita-Salute San Raffaele - Academic year: 2009-2010
- **Coexaminer "Identification of significant single nucleotide polymorphisms (SNPs) in acute coronary syndromes: a candidate-gene approach"** – Degree thesis by dr. Francesco Ancona – Faculty of Medicine - Università Vita-Salute San Raffaele - Academic year: 2010-2011
- **Coexaminer "Validazione di un modello genetico predittivo di risposta al glatiramer acetato nella Sclerosi Multipla"** - Thesis of residency in Neurology of dr. Giulia Pavan - Università Vita-Salute San Raffaele - Academic year: 2010-2011
- **Member of the discussion panel of the PhD dissertation “Genetics of premature ovarian failure and early menopause”** - Open University, Milton Keynes United Kingdom – Academic year: 2011-2012
- **Supervisor “A genome-wide association study in progressive vs bout-onset multiple sclerosis”** - Master in Genetic and Molecular Epidemiology by dr. Ferdinando Clarelli – University of Pavia - Academic year: 2011-2012
- **Coexaminer " Identification of genes, pathways and networks involved in disease severity and age at onset in primary progressive Multiple Sclerosis"**-Thesis of residency in Neurology of dr. Giacomo Giacalone – University Vita-Salute San Raffaele - Academic year: 2012-2013.
- **Coexaminer "Studio di farmacogenomica sulla risposta a lungo termine all'Interferone Beta in pazienti affetti da Sclerosi Multipla"** - Thesis of residency in Neurology of dr. Giuseppe Liberatore – University Vita-Salute San Raffaele - Academic year: 2012-2013.
- **Supervisor “An SLC9A9 variant influences the disease activity in interferon-treated multiple sclerosis patients”** – PhD dissertation of International of PhD program in Molecular Medicine of dr. Melissa Sorosina – Experimental Neurology Programme- University Vita-Salute San Raffaele - Academic years: 2012-2013.
- **Coexaminer "Genetic susceptibility in familial multiple sclerosis: a next-generation sequencing study in two italian multiplex families"** - Degree thesis in Medicine by dr. Matteo Pagnesi - Faculty of Medicine - University Vita-Salute San Raffaele - Academic year: 2014-2015.
- **Coexaminer "Studio di farmacogenomica sulla risposta a lungo termine all'Interferone Beta in pazienti affetti da Sclerosi Multipla"** - Degree thesis in molecular and cellular biotechnologies by dr. Silvia Peroni –

University Vita-Salute San Raffaele - Academic year: 2015-2016.

- **Counter-thesis supervisor "Identificazione di varianti patogenetiche in geni rari associati a hereditary breast and ovarian cancer (HBOC) tramite Next Generation Sequencing (NGS) "** - Degree thesis in molecular and cellular biotechnologies by dr. Anna Maria Salibra – University Vita-Salute San Raffaele - Academic year: 2015-2016.

OTHER ACTIVITIES

- Referee of peer-reviewed journals (PlosOne, Neurological Sciences, Journal of Neurology, Journal of Medical Genetics, Neurogenetics, European Journal of Neurology, Acta Neurologica Scandinavica, Acta Neuropathologica Communications, Science Advances)
- Editorial board of Case Reports in Neurological Medicine
- Referee of National and International funding agencies (Italian Foundation of Multiple Sclerosis (FISM), Multiple Sclerosis Society, Flauders Research Foundation FWO, South African Medical Research Council),

TRAINING COURSES

- Analisi of microarrays: algorithms of clustering (prof. Paolo Provero). Scuola di Bioinformatica – Fondazione per le biotecnologie - University of Torino – 8/2010.
- 2nd course in next Generation Sequencing (course director: dr. J Veltman)– European School of Genetic Medicine - Bertinoro, 17-20/5/2013.
- RNA-seq Workshop. An introductory course to RNA-seq (prof. Raffaele Calogero) – University of Torino - 17-19/3/2015.

Milano, 2/2/2018

Filippo Martinelli Boneschi

