Marta Bortoletto – Curriculum vitae

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CURRENT POSITION:

Assistant Professor since 01/2025 Molecular Mind Laboratory, IMT School for Advanced Studies Lucca, Lucca, Italy

Steering Committee of Italian Society of Psychophysiology and Cognitive Neuroscience (SIPF) (since 2021) and delegate of the Italian Reproducibility Network (ITRN)

PREVIOUS RESEARCH EXPERIENCE:

- **Group Leader/Head** 01/2021 – 31/2024 Neurophysiology Lab, IRCCS San John of God Fatebenefratelli, Brescia, Italy

  Project Coordinator - "Italian Ministry of Health (IMH) - ricerca corrente": "Neurophysiological mechanisms of therapeutic effects of non-invasive stimulation techniques"; "Neurophysiological markers associated with cognitive decline"; "Application of Neurophysiological techniques to prevent, diagnose, and treat mental disorders"; "Neurophysiological markers of cortical connectivity associated with cognitive functioning in pathological brain".

  Scientific chief of Technological Transfer, IRCCS San John of God Fatebenefratelli, Brescia, Italy (since 01/2022).
- **Aggregate professor** of Neurophysiology, School of Medicine, University of Brescia. 2021- 2024
- **Senior researcher** 01/2013 – 12/2020, Neurophysiology Lab, IRCCS San John of God Fatebenefratelli

  Project Coordinator - "IMH - ricerca corrente": "Markers of cortical reactivity and connectivity in dementia: a neurophysiological multimodal approach"; "Development of new markers from cortical reactivity and connectivity"; "Cortical Plasticity and connectivity: induction and monitoring through non-invasive brain stimulation".

  Adjunct Post-doctoral research fellow (11/2012 – 12/2014) at Queensland Brain Institute, University of Queensland, Australia.
- **Senior Post-doc** 05/2010 - 12/2012, Neurophysiology Lab, IRCCS San John of God Fatebenefratelli

  Principal Investigator- "IMH - ricerca corrente": "Cortical Plasticity and connectivity: induction and monitoring through non-invasive brain stimulation".

  Visiting research associate 2012: Cognitive Neuroscience Group at the School of Psychology and Queensland Brain Institute, University of Queensland, Australia.
- **Post-doc** 03/2008 - 04/2010, Cognitive Neuroscience Group at the School of Psychology and Queensland Brain Institute, University of Queensland, Australia.
- **Post-doc** 03/2007 – 02/2008, Cognitive Neuroscience Unit at the IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia.

17/06/2025

- **PhD student** 01/2004 – 03/2007
  Psychophysiology Laboratory, University of Padova.
  Visiting student, 03/2006 – 09/2006 Howard Florey Institute at the University of Melbourne, Australia.
  Visiting student, 03/2004 – 09/2004 Institute of Cognitive Neuroscience, University College London, UK.

HIGHER EDUCATION AND QUALIFICATIONS:

2020/01/08	National scientific qualification for associate professor in General Psychology, Psychobiology and Psychometry (11/E1)
2019/12/30	National scientific qualification for associate professor in physiology (05/D1)
2007	PhD in Psychobiology, University of Padova. PhD Thesis: Role of the supplementary motor area in the preparation of self-initiated voluntary movements
2003	MSc in Psychology, with honours, University of Padova.

RESEARCH ACTIVITY:

My research interest is focused on the effective connectivity in the motor system and its role in behavioral performance, from basic motor functions to higher cognition. My activity started by investigating the neurophysiological mechanisms of action preparation and action observation with ERPs and fMRI, and continued on mechanisms of plasticity and effective connectivity, and the role of motor representations in joint actions. In this process, I have built thorough expertise in several neurophysiological techniques (EEG/ERPs, EMG, TMS, tDCS, tACS) and approached various neuroimaging techniques (fMRI, MRI, DTI), and then I have directed my efforts at implementing the methodology of TMS-EEG technique to study effective connectivity. In my recent work, I am combining TMS-EEG with DTI and fMRI to demonstrate the feasibility of studying in-vivo interhemispheric signal propagation in the motor system and in higher functional networks. These results have been published in highly regarded journals. My work is having a great impact in the field, as shown by the over 100 citations for some publications, and fosters the adoption of good practices for more transparent and higher quality research, to overcome the reproducibility crisis in neuroscience.

Individual contribution to big team science collaborative initiatives

- Founder of the Team for TMS-EEG (T4TE) initiative, a big team science collaboration focused on improving the application of the TMS-EEG coregistration technique, that involves more than 30 groups from 4 continents. This initiative has been presented in a letter to the editor of Brain Stimulation (Bortoletto et al 2022) and on the website www.T4TE.org.
- Leader, among 4, of the NIBS-BIDS proposal to develop a standardized format for non-invasive brain stimulation data through the submission of the proposal to extend the brain imaging data structure (BIDS) (see BEP 37 on https://bids.neuroimaging.io/get_involved).
- Participation in 3 more big team science initiatives:
  - EEGmanypipelines https://www.eegmanypipelines.org/
  - TACS challenge multicentric study https://osf.io/gz84a/
  - The big TMS data collaboration https://www.bigtmsdata.com/

Other national and international collaborations:

- Prof Carlo Miniussi, CIMeC, University of Trento, IT
- Dott. Agnese Zazio, Neurophysiology Lab, IRCCS San John of God Fatebenefratelli, IT
- Prof. Guido Barchiesi and Prof Corrado Sinigaglia, Department of Philosophy, University of Milan, IT
- Dott. Elisa Canu, Università Vita-Salute San Raffaele, Milan, IT
- Fabio Masina, University of Padua, IT
- Leo Tomasevic, University of Regensburg Department of Psychiatry and Psychotherapy, DE
- Davide Momi, Wu Tsai Neurosciences Institute, Stanford University, Stanford, USA

Methodological rigor of publications

In my research activity, I have dedicated great care in understanding the bases of the reproducibility crisis in neuroscience and in the adoption of good practices for more transparent and higher quality research, as shown in the following publications:

- Completed Registered reports: 2 papers (31, 41)
- IPA Registered reports: 1 paper (https://rr.peercommunityin.org/articles/rec?id=367)
- Pre-registrations: Published:1 paper (35); Ongoing: 4 projects
- Publication of raw data according to FAIR principles: 5 papers (27, 30, 31, 35, 41)
- Open access preprints: 7 published papers (47, 45, 42, 35, 28, 27, 23) and 3 submitted:

Stango A, Zazio A, Barchiesi G, Dognini E, Marcantoni E, Bortoletto M. Immediate TMS-EEG responses reveal motor cortex excitability. https://doi.org/10.1101/2024.08.20.608770

Stango A, Zazio A, Barchiesi G, Bonfiglio N, Bortoletto M. High-frequency sampling rate reduces TMS-pulse artifact duration but not decay artifact: implications for immediate TMS-EEG responses. doi: https://doi.org/10.1101/2025.03.05.641655

Zazio A, Lanza CM, Stango A, Guidali G, Marcantoni E, Lucarelli D, Meloni S, Bolognini N, Rossi R, Bortoletto M. Investigating visuo-tactile mirror properties in Borderline Personality Disorder: a TMS-EEG study. https://doi.org/10.1101/2024.05.29.596200

Publications

47. Lucarelli D, Guidali G, Sulcova D, Zazio A, Bonfiglio NS, Stango A, Barchiesi G, **Bortoletto M** (2025) Stimulation Parameters Recruit Distinct Cortico-Cortical Pathways: Insights from Microstate Analysis on TMS-Evoked Potentials. Brain Topogr. doi: 10.1007/s10548-025-01113-2

46. Cotelli M, Baglio F, Gobbi E, Campana E, Pagnoni I, Cannarella G, Del Torto A, Rossetto F, Comanducci A, Tartarisco G, Calabrò RS, Campisi S, Maione R, Saraceno C, Dognini E, Bellini S, **Bortoletto M**, Binetti G, Ghidoni R, Manenti R. (2025). Smart Digital Solutions for EARLY Treatment of COGNitive Disability (EARLY-COGN^3): A Study Protocol. Brain Sci. doi: 10.3390/brainsci15030239

45. Bertazzoli G, Dognini E, Fried PJ, Miniussi C, Julkunen P, **Bortoletto M** (2025). Bridging the gap to clinical use: A systematic review on TMS–EEG test-retest reliability. Clinical Neurophysiology, doi: 10.1016/j.clinph.2025.01.002.

44. Quaranta, D., L'Abbate, F., Pelosi, A. et al. (2024). Itel MMSE: a short phone screening test for cognitive decline. Italian Validation study by the SINdem Neuropsychology Working Group. Neurol Sci doi: 10.1007/s10072-024-07863-4

17/06/2025

43. A. Brancaccio A, Tabarelli D, Zazio A, Bertazzoli G, Metsomaa J, Ziemann U, **Bortoletto M**, Belardinelli P (2024). Towards the definition of a standard in TMS-EEG data preprocessing, NeuroImage, 301: 120874, DOI: https://doi.org/10.1016/j.neuroimage.2024.120874.

42. Poldrack RA, Markiewicz CJ, Appelhoff S, Ashar YK, Auer T, Baillet S, Bansal S, Beltrachini L, Benar CG, Bertazzoli G, Bhogawar S, Blair RW, **Bortoletto M**, Boudreau M, Brooks TL, Calhoun VD, Castelli FM, Clement P, Cohen AL, Cohen-Adad J, D'Ambrosio S, de Hollander G, de la Iglesia-Vayá M, de la Vega A, Delorme A, Devinsky O, Draschkow D, Duff EP, DuPre E, Earl E, Esteban O, Feingold FW, Flandin G, Galassi A, Gallitto G, Ganz M, Gau R, Gholam J, Ghosh SS, Giacomel A, Gillman AG, Gleeson P, Gramfort A, Guay S, Guidali G, Halchenko YO, Handwerker DA, Hardcastle N, Herholz P, Hermes D, Honey CJ, Innis RB, Ioanas HI, Jahn A, Karakuzu A, Keator DB, Kiar G, Kincses B, Laird AR, Lau JC, Lazari A, Legarreta JH, Li A, Li X, Love BC, Lu H, Marcantoni E, Maumet C, Mazzamuto G, Meisler SL, Mikkelsen M, Mutsaerts H, Nichols TE, Nikolaidis A, Nilsonne G, Niso G, Norgaard M, Okell TW, Oostenveld R, Ort E, Park PJ, Pawlik M, Pernet CR, Pestilli F, Petr J, Phillips C, Poline JB, Pollonini L, Raamana PR, Ritter P, Rizzo G, Robbins KA, Rockhill AP, Rogers C, Rokem A, Rorden C, Routier A, Saborit-Torres JM, Salo T, Schirner M, Smith RE, Spisak T, Sprenger J, Swann NC, Szinte M, Takerkart S, Thirion B, Thomas AG, Torabian S, Varoquaux G, Voytek B, Welzel J, Wilson M, Yarkoni T, Gorgolewski KJ. The Past, Present, and Future of the Brain Imaging Data Structure (BIDS). Imaging Neuroscience (2024) 2: 1–19. DOI: https://doi.org/10.1162/imag_a_00103

41. Guidali G, Zazio A, Lucarelli D, Marcantoni E, Stango A, Barchiesi G, **Bortoletto** M (2023). Effects of transcranial magnetic stimulation (TMS) current direction and pulse waveform on cortico-cortical connectivity: A registered report TMS-EEG study. European Journal of Neuroscience. In press. DOI: 10.1111/ejn.16127

40. Tarasi L, Martelli ME, **Bortoletto** M, di Pellegrino G, Romei V. (2023). Neural Signatures of Predictive Strategies Track Individuals Along the Autism-Schizophrenia Continuum. Schizophrenia Bulletin, sbad105, https://doi.org/10.1093/schbul/sbad105

39. Bertaccini R, Ippolito G, Tarasi L, Zazio A, Stango A, **Bortoletto** M, Romei V. (2023) Rhythmic TMS as a Feasible Tool to Uncover the Oscillatory Signatures of Audiovisual Integration. Biomedicines. 11(6):1746. https://doi.org/10.3390/biomedicines11061746

38. Hernandez-Pavon JC, Veniero D, Bergmann TO, Belardinelli P, **Bortoletto** M, Casarotto S, Casula EP, Farzan F, Fecchio M, Julkunen P, Kallioniemi E, Lioumis P, Metsomaa J, Miniussi C, Mutanen TP, Rocchi L, Rogasch NC, Shafi MM, Siebner HR, Thut G, Zrenner C, Ziemann U, Ilmoniemi RJ. (2023) TMS combined with EEG: Recommendations and open issues for data collection and analysis. Brain Stimul. 16(2):567-593. doi: 10.1016/j.brs.2023.02.009

37. Bagattini C., Cid-Fernández S., Bulgari M., Miniussi C., **Bortoletto** M. (2023) Opposite pattern of transcranial direct current stimulation effects in middle-aged and older adults: Behavioral and neurophysiological evidence. Frontiers in Aging Neuroscience 15:1087749. doi: 10.3389/fnagi.2023.1087749

36. **Bortoletto** M., Veniero D., Julkunen P., Hernandez-Pavon J.C., Mutanen T.P., Zazio A., Bagattini C. (2022). T4TE: Team for TMS−EEG to improve reproducibility through an open collaborative initiative. Brain Stimulation 16, 20e22. doi: 10.1016/j.brs.2022.12.004

35. Zazio A, Barchiesi G, Ferrari C, Marcantoni E, **Bortoletto** M. (2022). M1-P15 as a cortical marker for transcallosal inhibition: a preregistered TMS-EEG study. Frontiers in Human Neuroscience 16:937515. doi: 10.3389/fnhum.2022.937515

34. Bonzano L, **Bortoletto** M, Zazio A, Iester C, Stango A, Gasparotti R, Miniussi C, Bove M. (2022). The hand motor hotspot for seed-based functional connectivity of hand motor networks at rest. Frontiers in Neuroscience, 16:896746. doi: 10.3389/fnins.2022.896746
33. Giustiniani A, Vallesi A, Oliveri M, Tarantino V, Ambrosini E, **Bortoletto** M, Masina F, Busan P, Siebner HR, Fadiga L, Koch G, Leocani L, Lefaucheur JP, Rotenberg A, Zangen A, Violante IR, Moliadze V, Gamboa OL, Ugawa Y, Pascual-Leone A, Ziemann U, Miniussi C, Burgio F. (2022). A questionnaire to collect unintended effects of transcranial magnetic stimulation: A consensus-based approach. Clinical Neurophysiology, 141:101-108. doi: 10.1016/j.clinph.2022.06.008
32. Farzan F, **Bortoletto** M. (2022). Identification and verification of a 'true' TMS evoked potential in TMS-EEG. Journal of Neuroscience Methods, 378:109651. doi: 10.1016/j.jneumeth.2022.109651
31. Barchiesi G, Zazio A, Marcantoni E, Bulgari M, Barattieri di San Pietro C, Sinigaglia C, **Bortoletto** M. (2022). Sharing motor plans while acting jointly: A TMS study. Cortex, 151:224-239. doi: 10.1016/j.cortex.2022.03.007
30. Esposito R, **Bortoletto** M, Zacà D, Avesani P, Miniussi C. (2022). An integrated TMS-EEG and MRI approach to explore the interregional connectivity of the default mode network. Brain Structure and Function, 227(3):1133-1144. doi: 10.1007/s00429-022-02453-6
29. Pievani M, Mega A, Quattrini G, Guidali G, Ferrari C, Cattaneo A, D'Aprile I, Mascaro L, Gasparotti R, Corbo D, Brignani D, **Bortoletto** M. (2021). Targeting Default Mode Network dysfunction in persons at risk of Alzheimer's Disease with Transcranial Magnetic Stimulation (NEST4AD): Rationale and Study Design. Journal of Alzheimer's Disease, 83(4):1877-1889. doi: 10.3233/JAD-210659
28. Zazio A, Miniussi C, **Bortoletto** M (2021). Alpha-band cortico-cortical phase synchronization is associated with effective connectivity in the motor network. Clinical Neurophysiology, 132(10):2473-2480. 10.1016/j.clinph.2021.06.025
27. Bertazzoli G, Esposito R, Mutanen TP, Ferrari C, Ilmoniemi RJ, Miniussi C, **Bortoletto** M. (2021). The impact of artifact removal approaches on TMS-EEG signal. NeuroImage, 239:118272. doi: 10.1016/j.neuroimage.2021.118272
26. **Bortoletto** M, Bonzano L, Zazio A, Ferrari C, Pedullà L, Gasparotti R, Miniussi C, Bove M (2021). Asymmetric transcallosal conduction delay leads to finer bimanual coordination. Brain Stimulation, 14(2): 379-388. doi: 10.1016/j.brs.2021.02.002
25. Grasso PA, Tonolli E, **Bortoletto** M, Miniussi C (2021). tDCS over posterior parietal cortex increases cortical excitability but decreases learning: an ERP and TMS-EEG study. Brain Research, 1753:147227. doi: 10.1016/j.brainres.2020.147227
24. Esposito R, **Bortoletto** M, Miniussi C (2020). Integrating TMS, EEG and MRI as an approach for studying brain connectivity. The Neuroscientist, 26(5-6):471-486. doi: 10.1177/1073858420916452
23. Zazio A, Schreiber M, Miniussi C, **Bortoletto** M (2020). Modelling the effects of ongoing alpha activity on visual perception: The oscillation-based probability of response. Neuroscience and Biobehavioral Reviews, 112:242-253. doi: 10.1016/j.neubiorev.2020.01.037
22. Fertonani A, Pirulli C, Bollini A, Miniussi C, **Bortoletto** M (2019). Age-related changes in cortical connectivity influence the neuromodulatory effects of transcranial electrical stimulation. Neurobiology of Aging, 82:77-87. doi: 10.1016/j.neurobiolaging.2019.07.009
21. Zazio A, **Bortoletto** M, Ruzzoli M, Miniussi C, Veniero D (2019). Perceptual and Physiological Consequences of Dark Adaptation: A TMS-EEG Study. Brain Topography, 32(5):773-782. doi: 10.1007/s10548-019-00715-x.

20. Bagattini C, Mutanen T, Fracassi C, Manenti R, Cotelli M, Ilmoniemi R, Miniussi C, **Bortoletto** M (2019). Predicting Alzheimer's disease severity by means of TMS-EEG coregistration. Neurobiology of Aging, 80: 38-45. doi: 10.1016/j.neurobiolaging.2019.04.008
19. Belardinelli P, Biabani M, Blumberger DM, **Bortoletto** M, Casarotto S, David O, Desideri D, Etkin A, Ferrarelli F, Fitzgerald PB, Fornito A, Gordon PC, Gosseries O, Harquel S, Julkunen P, Keller CJ, Kimiskidis VK, Lioumis P, Miniussi C, Rosanova M, Rossi S, Sarasso S, Wu W, Zrenner C, Daskalakis ZJ, Rogasch NC, Massimini M, Ziemann U, Ilmoniemi RJ. (2019). Reproducibility in TMS-EEG studies: A call for data sharing, standard procedures and effective experimental control. Brain stimulation, 12(3): 787-790. doi: 10.1016/j.brs.2019.01.010
18. Perini R, **Bortoletto** M, Capogrosso M, Fertonani A, Miniussi C (2016). Acute effects of aerobic exercise promote learning. Scientific Reports, 5(6):25440. doi: 10.1038/srep25440.
17. **Bortoletto** M, Rodella C, Salvador R, Miranda PC, Miniussi C (2016). Reduced Current Spread by Concentric Electrodes in Transcranial Electrical Stimulation (tES). Brain Stimulation 9(4):525-8. doi: 10.1016/j.brs.2016.03.001
16. Pellicciari MC, Miniussi C, Ferrari C, Koch G, **Bortoletto** M (2016). Ongoing cumulative effects of single TMS pulses on corticospinal excitability: an intra- and inter-block investigation Clinical Neurophysiology, 127(1):621-8. doi: 10.1016/j.clinph.2015.03.002
15. **Bortoletto** M, Veniero D, Thut G, Miniussi C (2015). The contribution of TMS–EEG coregistration in the exploration of the human cortical connectome. Neuroscience and Biobehavioral Reviews, 49: 114–124. doi: 10.1016/j.neubiorev.2014.12.014
14. **Bortoletto** M, Pellicciari MC, Rodella C, Miniussi C (2014). The Interaction With Task-induced Activity is More Important Than Polarization: A tDCS Study. Brain Stimulation, 8 (2): 269-276. doi: 10.1016/j.brs.2014.11.006
13. Veniero D, **Bortoletto** M, Miniussi C (2014). On the challenge of measuring direct cortical reactivity by TMS-EEG. Brain Stimulation, 7(5): 759-760. doi: 10.1016/j.brs.2014.05.009
12. **Bortoletto** M, Baker SK, Mattingley JB, Cunnington R (2013). Visual–Motor Interactions during Action Observation Are Shaped by Cognitive Context. Journal of Cognitive Neuroscience, 25(11): 1794-806. doi: 10.1162/jocn_a_00431
11. **Bortoletto** M, Mattingley JB, Cunnington R (2013). Effects of context on visuomotor interference depends on the perspective of observed actions. PlosOne, 8(1): e53248. doi: 10.1371/journal.pone.0053248.
10. Veniero D, **Bortoletto** M, Miniussi C (2013). Cortical modulation of short-latency TMS-evoked potentials: evidence for cortical origin. Frontiers in Human Neuroscience, 6: 352. doi: 10.3389/fnhum.2012.00352
9. **Bortoletto** M, Mattingley JB, Cunnington R (2011). Action intentions modulate visual processing during action perception. Neuropsychologia, 49: 2097-2104. doi: 10.1016/j.neuropsychologia.2011.04.004
8. **Bortoletto** M, Lemonis, M, Cunnington R (2011). The role of arousal in the preparation for voluntary movement. Biological Psychology, 87: 372-378. doi: 10.1016/j.biopsycho.2011.04.008.
7. **Bortoletto** M, De Min Tona G, Scozzari S, Sarasso S, Stegagno L (2011). Effects of sleep deprivation on auditory change detection: a N1-Mismatch Negativity study. International Journal of Psychophysiology 81: 312-316.
6. **Bortoletto** M, Cook, A, Cunnington R (2011). Motor timing and the preparation for sequential actions. Brain and Cognition, 75(2): 196-204. doi: 10.1016/j.bandc.2010.11.016

5. Brignani D, **Bortoletto** M, Miniussi C and Maioli C (2010). The when and where of spatial storage in memory-guided saccades. Neuroimage, 52(4): 1611-20. doi: 10.1016/j.neuroimage.2010.05.039

4. **Bortoletto** M, Cunnington R (2010). Motor timing and motor sequencing contribute differently to the preparation for voluntary movement. Neuroimage, 49(4): 3338-48. doi: 10.1016/j.neuroimage.2009.11.048

3. Veniero D, **Bortoletto** M, Miniussi C (2009). TMS-EEG co-registration: on TMS-induced artifact. Clinical Neurophysiology 120: 1392-1399. doi: 10.1016/j.clinph.2009.04.023

2. Poli S, Sarlo M, **Bortoletto** M, Buodo G, Palomba D (2007). Stimulus-Preceding Negativity and Heart Rate Changes in Anticipation of Affective Pictures. International Journal of Psychophysiolgy 65(1): 32-9. doi: 10.1016/j.ijpsycho.2007.02.008

1. **Bortoletto** M, Sarlo M, Poli S, Stegagno L (2006). Pre-Motion Positivity during self-paced movements of finger and mouth. Neuroreport 17(9): 883-6. doi: 10.1097/01.wnr.0000221830.95598.ea.

BOOK CHAPTER: Miniussi C, Bortoletto M, Thut G, Veniero D (2012). Assessing cortical connectivity using TMS – EEG. In: Cortical Connectivity: Brain Stimulation for Assessing and Modulating Cortical Connectivity and Function. Section I: Methods to assess and modulate cortical connectivity and functions. Robert Chen and John Rothwell (eds.). Springer-Verlag, Berlin Heidelberg chapter 5.

Funding

Past:

- **Co-PI** - "Targeting default mode network dysfunction in persons at risk of Alzheimer's disease with non-invasive techniques" (Italian Ministry of Health GR-2018-12368250)
- **PI** of spoke IIb - "Ecosistema innovativo della Salute" nell'ambito del Piano complementare al Piano Nazionale di Ripresa e Resilienza (PNC-TT-178)
- **Collaborator**: "EARLY-COGN^3 - Smart digital solutions for EARLY treatment of COGnitive disability: a Neuropsychological, Neurophysiological and Neurobiological perspective in chronic neurological diseases" (PNRR-MCNT2-2023-12377069).
- **PI** - "Cortico-cortical signal transmission and brain connectivity alterations at prodromal stage and during the progression of Alzheimer's disease: a multimodal approach of TMS-EEG and advanced MRI". (Italian Ministry of Health GR-2016-02364132). Preliminary results have been presented at international and national conferences (International Brain Stimulation 2023, TBS-CNW 2022, SIPF 2022).
- **PI** - "The motor roots of acting together: A psychophysiological investigation" (Bial Foundation 144/2018) has resulted in the Registered Report by Barchiesi G, et al. (2022) and in talks at the BrainBox 2021 and at SIPF 2021.
- **Co-PI** - "Temporal and spatial features of interhemispheric information transfer in multiple sclerosis: a multimodal approach of TMS-EEG coregistration, MRI and motor learning" (Italian Multiple Sclerosis Foundation 2018) generated the publication of one published paper, Bortoletto M, et al (2021), and several talks, 1 at a national conference (SIPF 2020) and 3 at international conferences (International Brain Stimulation 2021, TBS-CNW 2020 and BrainStim 2020).
- **Co-PI** - "Temporal and spatial features of interhemispheric information transfer in multiple sclerosis: a multimodal approach of TMS-EEG coregistration, MRI and motor coordination" (Italian Multiple

Sclerosis Foundation 2019/R-Multi/009) resulted in one published paper, Bonzano L, et al (2022), and a paper in preparation.
- **PI** - "New interventions aiming at the promotion of healthy aging" (ASM Foundation 2012) led to the publication of Perini R, Bortoletto M, et al (2016).

National and international groups, editorial positions, scientific societies
Scientific organization of the following national and international symposia/workshops:
- Snacks SIPF: Online monthly seminars organized by the Italian Psychophysiology and Cognitive Neuroscience Society– 2024 Edition
- Snacks SIPF: Online monthly seminars organized by the Italian Psychophysiology and Cognitive Neuroscience Society– 2023 Edition
- Workshop (2022): Transcranial Brain Stimulation in Cognitive Neuroscience Workshop (3 edition). Center for Mind and Brain Sciences, Rovereto, 2-3 December.
- Snacks SIPF: Online monthly seminars organized by the Italina Psychophysiology and Cognitive Neuroscience Society – 2022 Edition
- Workshop (2020): Transcranial Brain Stimulation in Cognitive Neuroscience Workshop (2 edition). Center for Mind and Brain Sciences, Rovereto, 3-4 December.
- Symposia (2016): TMS-EEG and connectivity. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, 05 February.
- Symposia (2013): Multimodal approach in the study of cortical connectivity. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, 1 July.
- Workshop (2013): Non-invasive Electrical Brain Stimulation (tDCS, tACS, tRNS): Basic and Applied research. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, 30 September.
- Young investigators symposia (2012): The interface between executive control and automatic behavior. XX *Congress of the Italian Society of Psychophysiology,* Venice, 22-24 November.
Editorial board member of:
- Peer Community In Registered Reports since 2025
- Frontiers in Integrative Neuroscience since 2016
- Scientific Reports 2015 -2022

Ad-hoc reviewer for international scientific journals:
Biological Psychology, Brain Communications, Brain & Cognition, Brain Stimulation, Brain Structure and Function, Brain Topography, Cerebellum, Cerebral Cortex, Clinical Neurology and Neurosurgery, Clinical Neurophysiology, Cortex, Eneuro, Experimental Brain Research, European Journal of Neuroscience, Frontiers in Aging Neuroscience, Frontiers in Human Neuroscience, Human Brain Mapping, J. Alzheimer's Disease, J. Biomechanics, J. Clinical Neurophysiology, J. Integrative Neuroscience, J. Motor Behavior, J. Neurophysiology, J, Neuroscience, J, Neuroscience Methods, Network Neuroscience, Neurobiology of Aging, Neuroimage, Neuroimage Clinical, Neuropsychologia, Neuropsychological Rehabilitation, Neuroscience Letters, Perceptual & Motor Skills, Plos One, Psychophysiology, Social Cognitive and Affective Neuroscience

Ad-hoc grant reviewer:
European Research Council Executive Agency (ERCEA), Angence Nationale de la recherche (ANR), Research Executive Agency (REA), Scientific research quality for the Italian Minister of University

and Research, Alzheimer's Association, Italian Association of Research in Alzheimer's disease (AirAlzh), The W. Garfield Weston Foundation (WBI), La Caixa Foundation

Member of scientific societes

- Italian Society of Psychophysiology (SIPF) since 2012
- Italian Reproducibility Network (ITRN) since 2023
- Organization for Human Brain Mapping (OHBM)
- Past member: Italian Association of Experimental Psychology (AIP)
- Past member: Cognitive Neuroscience Society (CNS)
- Past member: Society for Psychophysiological Research (SPR)

Honors and Awards

- Italian Reproducibility Network – Reproducibility Award 2023
- Italian Society of Experimental Psychology - Young researcher Award (September 2007).
- Centenario Rotary Club Brescia Nord - Excellence Award for PhD projects (March 2005).
- Erasmus travel grant from the University of Padova

Speaker at national and international conferences

Invited talks at congresses and seminars:

- Keynote speaker: T4TE: A collaborative effort for understanding Validity and Robustness of TMS-EEG measures. **TMS@40 workshop**. 23-25 April 2025, UK
- Seminar: Emerging trends in the application of TMS-EEG coregistration in psychiatry. **Institut de Psychiatrie et Neurosciences Paris** 4 October 2024, France.
- Keynote speaker: Challenges and opportunities in studying effective connectivity through TMS-EEG coregistration. **BCI & Neurotechnology Spring School**. 22 April – 1 May 2024, Online.
- Invited speaker: Validation of TMS-evoked potentials to study effective connectivity in pre-registered studies and registered reports. **53rd Neural Dynamics and Information Processing in the Brain and Body International Symposium,** 8-10 February 2024, Japan.
- Invited speaker in the Panel discussion: Reliability of TMS-EEG. **7th Annual Brain Stimulation and Imaging Meeting**, Helsinki 2-3 June 2023.
- Invited teacher at the **9th TMS-EEG Science Factory** 28 May – 2 June 2023, Finland.
- Invited speaker at the **TWINNIBS** Symposia, 26 May 2023, Italy.
- Keynote speaker: Challenges and opportunities in studying effective connectivity through TMS-EEG coregistration. **BCI & Neurotechnology Spring School**. 17-26 April 2023, Online.
- Invited speaker at seminar "Introductory Training On Open Science", 1 February 2023, Italy.
- Invited speaker: TMS-evoked potentials as a measure of inter-hemispheric effective connectivity. **Copenhagen Brain Stimulation**, 9 December 2022, Denmark.
- Invited speaker: T4TE Team for TMS-EEG. **Copenhagen Brain Stimulation**, 9 December 2022.
- Seminar: Inter-hemispheric effective connectivity in the motor system studied through TMS evoked potentials. Multi-lab meeting – **IRCCS San Camillo**, 10 November 2022, Italy.
- Seminar: Transcranial magnetic stimulation (TMS) and advanced neurostimulation techniques. Turin, 26-27 May 2022, Italy.

- Keynote speaker at the **BCI & Neurotechnology Spring School**. 25 April – 4 May 2022, Online.
- Seminar: New perspectives on stimulation of brain circuits in neuro-cognitive disorders. IRCCS Fatebenefratelli 4 March 2022, Italy.
- Seminar: TMS-evoked potentials as a measure of connectivity: data and opinions. **Snack seminars 2021 – Italian Society for Psychophysiology**. Online, 28 May 2021, online.
- Seminar: Temporal aspects of interhemispheric interactions and their behavioural consequences. General Psychology Department, **University of Padova**, 21 December 2020.
- Teacher at 8th Science Factory: **TMS–EEG Summer School and Workshop**, Aalto, 15-20 May 2020 (postponed at 2023).
- Invited speaker: TMS-evoked potentials as a measure of interhemispheric effective connectivity, **Pre-OHBM Workshop** on Multi-Modal Connectivity Imaging of the Central Nervous System. Montreal, 25 June 2020 (postponed).
- Seminar: TMS-evoked potentials to measure effective connectivity of long-range connections. **IMT School for advanced studies Lucca,** 12 February 2020, Italy.
- Invited speaker: Theorical and technical aspects to consider when using transcranial direct current stimulation. **Workshop on: Transcranial electrical stimulation in individual rehabilitation after ictus.** Monza, 01 October 2016.
- Seminar: TMS-EEG: A novel technique to study cortico-cortical connectivity. **University of Milan**, 25 Jannuary 2016.
- Invited speaker: Tracking cortico-cortical connectivity with TMS and EEG. **Pre-conference Workshop of the Italian Society of Psychophysiology**, Lucca, 18 November 2015.
- Seminar: Brain processes underlying sensory-motor interference during action observation. **University of Padova**, 27 January 2014.
- Seminar: Role of the supplementary motor area in self-initiated movement preparation. Neuroimaging and Neuroinformatics group meeting, **Howard Florey Institute**, Melbourne, 11 August 2006.
- Seminar: The Mismatch Negativity. Seminar within the series of "Early components of Event-related Potentials". **University of Padova**, 12 Luglio 2005.
- Seminar: Vision modulates somatosensory cortical processing. PhD seminars, **University of Padova**, 02 February 2004.

Other talks at congresses:

- Cortical excitability: insights from immediate TMS-EEG responses. 6th International Brain Stimulation Conference – **BRST**, Kobe 23-26 February 2025.
- Cortico-cortical connectivity revealed by early and mid-latency TMS-evoked potentials. 6th International Brain Stimulation Conference – **BRST**, Kobe 23-26 February 2025.
- Advancements in TMS-EEG for studying cortico-cortical connectivity alterations in Alzheimer's Disease. 6th International Brain Stimulation Conference – **BRST**, Kobe 23-26 February 2025.
- Early TMS-evoked potentials to track cortico-cortical connectivity changes. Organization for Human Brain Mapping - **OHBM**, Seul 23-27 June 2024.
- Team 4 TMS-EEG: A large-scale collaborative initiative to improve reproducibility of TMS-EEG studies. **Big Team Science Conference**, online 23-25 October 2023.
- Integration of neuromodulation, neuroimaging, and behavioral approaches for shedding new light on sensorimotor cortical networks. **Progress in Motor Control**, Rome 28-30 September 2023.

- T4TE: Una collaborazione multilaboratoriale per la riproducibilità nella coregistrazione TMS-EEG. Italian Association for Psychology – experimental – **AIP**, Lucca 18-20 Spetember 2023.
- Team for TMS-EEG: A big team initiative to improve reproducibility in TMS-EEG**.** Italian Reproducibility Network - **ITRN** annual meeting, Rome 24 February 2023.
- Perspective of the study of brain connectivity through TMS-EEG in healthy and pathological conditions. 52th Congress of Italian Society of Neurology - **SIN**, Milan 3-6 December 2022.
- Looking into EEG to understand TMS effects. Congress of the Italian Society for Neuropsychology - **SINP**, Rovereto, 18-19 November 2022.
- **ITRN** meeting "Provando e Riprovando", Florence, 12 May 2022.
- Measuring the timing of functional connections through TMS-evoked potentials. 4th International Conference on Brain Stimulation - **IBS**, Charleston (USA), 6-10 December 2021.
- From Register Reports to word-wide collaborative projects. XXIX Congress of the Italian Society of Psychophysiology – **SIPF**, Palermo 30 September – 3 October.
- TMS-evoked potentials as a measure of transcallosal conduction delay in the motor system. 6th Annual Brain Stimulation and Imaging Meeting – **BrainStim**. Online, 19-20 May, 2020.
- TMS-EEG coregistration to track Alzheimer's disease progression. 8th Winter Seminar on Dementia and Neurodegenerative Disorders – **SINdem4Juniors**, 22-24 January, 2020.
- The speed race of transcallosal inhibition for bimanual coordination. XXVII Congress of the Italian Society of Psychophysiology – **SIPF**, Ferrara, 14-16 November, 2019.
- Neuromodulation of learning: The role of cortical activity and reactivity. XXV Congress of the Italian Society of Experimental Psychology – **AIP**, Milan, 18-20 September, 2019.
- TMS-EEG coregistration in the exploration of the human effective connectome. Congress of the Italian Society of Psychophysiology – **SIPF**, Lucca, 19-21 November 2015.
- State-dependency of tDCS effects on motor learning. Congress of the Italian Society of Experimental Psychology – **AIP**, Rome, 16-18 September, 2013.
- Plasticity and homeostatic regulation in the motor system: effects of transcranial electrical stimulation. Italian Society for Neurological Rehabilitation – **SIRN**, Bari, 18-20 April, 2013.
- The effects of cognitive context on visual-motor interactions. Australasian Cognitive Neuroscience Conference – **ACNS**, Brisbane, 29 November - 2 December 2012.
- Flexibility of mirror mechanisms: the effects of cognitive context. 19o Congress of the Italian Society of Psychophysiology – **SIPF**, Brescia, 14-16 Novembre 2011.
- Do Motor Plans Influence Visual Processing? 17th Congress of the Italian Society of Psychophysiology – **SIPF**, Siena, 28-31 October, 2009.
- Does action preparation modulate perception? **HCSNet** Perception and Action Workshop, Brisbane, 8-9 August, 2009.
- Effects of arousal state on readiness potential. 18th Australasian Psychophysiology Conference and general annual meeting of the society – **ASP**, Hobart, 27-29 November, 2008.
- Effects of attention to motor timing on movement-related brain activity. Congress of the Italian Society of Experimental Psychology – **AIP**, Como, 17-19 September, 2007.

Posters:

More than 30 first-author presentations of posters to national and international congresses. Here the list of the last 5 years:

- XXX Congress of the Italian Society for Psychophysiology and Cognitive Neuroscience (SIPF), Udine, 15-17 September 2023.

- III Annual meeting “Rete Italiana Neuroscienze e Neuroriabilitazione” RIN, Rome 30 November-1 December 2023.
- Italian Neurological Society– Dementia SINDEM Firenze 23-25 November 2023.
- 5th International Brain Stimulation Conference, Lisbon, 19-22 February 2023.
- XXX Congress of the Italian Society for Psychophysiology and Cognitive Neuroscience (SIPF), Udine, 15-17 September 2022.
- International Conference of Cognitive Neuroscience 2022. Espoo, Finland, 18-22 May 2022.
- CuttingEEG 2021. Aix-en-Provence, 4-7 October 2021.
- Brainbox Initiative conference 2021. Online, 21-24 September 2021.
- XXVIII Congress of the Italian Society of Psychophysiology, Online, 20-21-27-28 November, 2020
- 7th International Conference on Non-invasive Brain Stimulation, Online, 10-14 Novembre, 2020
- First VIRTUAL annual meeting della Rete IRCCS delle neuroscienze e della neuroriabilitazione, Online, 8-9 Luglio, 2020
- Live MEEG, Online, 5-9 October 2020
- 6th Annual Brain Stimulation and Imaging Meeting, Online, 19-20 May, 2020
- SINdem4Juniors, 8th Winter Seminar on Dementia and Neurodegenerative Disorders, 22-24 January 2020
- XXVII Congress of the Italian Society of Psychophysiology, Ferrara, 14-16 November, 2019
- The mystery of the Brain, Tubingen, 16-19 September 2019
- XXV Congress of the Italian Society of Experimental Psychology, Milano, 18-20 September 2019
- Transcranial Brain Stimulation in Cognitive Neuroscience Workshop, Rovereto, 6-7 December 2018
- XXVI Congress of the Italian Society of Psychophysiology, Torino, 15-17 November, 2018

TEACHING

Teaching

University courses

- Course at the PhD Program in Neuroscience at IMT School for Advanced Studies Lucca, “Introduction to Non-invasive Brain Stimulation” (16 h; PhD students). From a.y. 2024/25

- Course at University of Brescia. Responsible for module “Physiology and Neurophysiology” (36 hours) within the “Anatomy and Physiology” course, degree in Psychiatric Rehabilitation. From a.y. 2021/22 to 2024.

- Course at University of Brescia. Teaching “Physiology” course (12 hours) within the Degree in Social Worker, University of Brescia. a.y. 2020/21.

Teaching assistant

- Teaching assistant of “Physiology and Neurophysiology” within the “Anatomy and Physiology” course, degree in Psychiatric Rehabilitation, University of Brescia. From a.y. 2012/13 to a.y. 2015/16, and for a.y. 2019/2020 and a.y. 2020/2021.

- Teaching assistant of “Physiology of the nervous system” within the Degree in Physiotherapy, University of Brescia. From a.y. 2012/13 to a.y. 2015/16.

Masters and other courses

- Teaching for 2nd Level Master Course in Psychophysiology and cognitive neuroscience, Università telematica San Raffaele Roma e Consorzio Universitario Humanitas (ay 2022/23). Teaching of "Cerebral plasticity" (4 hours).
- Teaching for 2nd Level Master Course in Neuropsychology: Assessment, Diagnosis and Rehabilitation, Catholic University of the Sacred Heart. Teaching of "State-dependency in neurorehabilitation" from ay 2012/2013 to ay 2014/2015 (12 hours). Teaching and practical training on non-invasive brain stimulation and electroencephalography in cognitive neuroscience from ay 2011/2012 to ay 2015/2016 (28 hours).
- Teaching for "Summer School: Integration of methods and techniques for research, clinic and rehabilitation in psychophysiology and neuroscience", organized by Catholic University of the Sacred Heart, Milan, 22-26 June 2015.
- Teaching for "Theoretic and practical workshop on transcranial electrical stimulation", Brescia, Italy, 26-27 June 2014.
- Teaching for "Theoretic and practical workshop on transcranial electrical stimulation", Brescia, Italy, 8 July 2013.

Other teaching roles

Invited lectures at undergraduate courses:

- Lecture 13/12/2019: "Mirror neurons and action understanding" within the "Anatomy and Physiology" course, degree in Psychiatric Rehabilitation, University of Brescia (2 hours).
- Lecture 16/11/2017: "The cortical control of movement" within the "Anatomy and Physiology" course, degree in Psychiatric Rehabilitation, University of Brescia (2 hours).
- Lecture 20/1/2016: "The cortical control of movement" within the Human physiology course, Medical degree, University of Brescia (2 hours).
- Lecture 21/5/2015: "Higher-order movement control systems: Intention to act and mirror neurons" within the Human physiology course, Medical degree, University of Brescia (2 hours).
- Lecture 5/6/2014: "Higher-order movement control systems: Intention to act and mirror neurons" within the Human Physiology course, Medical degree, University of Brescia (2 hours).
- Lecture 14/1/2014: "The cortical control of movement" for the course in "Physiology of the nervous system" within the Degree in Physiotherapy, University of Brescia (2 hours).
- Teaching and practical training for EEG users within the university course entitled "Psychophysiology: Methods and Applications" at the School of Psychology, University of Queensland (2008 and 2009).

Supervision:

- From 2016, co-supervision of four PhD students at the Neurophysiology Lab. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy
- From 2010, co-supervision of 8 honors student and 7 graduate trainees at the Neurophysiology Lab. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy
- From 2008 to 2010, Supervision and co-supervision of 2 honors students and 1 graduate student at the School of Psychology, University of Queensland
- From 2005 to 2006, Co-supervision of 2 honors and 1 graduate students at the Psychophysiology Laboratory at the Department of General Psychology, University of Padova

PhD board
- 2021, Member of the board of the PhD in Neuroscience – 34 cicle, University of Padova, Padova.
- 2019, Member of the board of the PhD in Neuroscience – 32 cicle, University of Milan Bicocca, Milan.

OTHER PERSONAL DETAILS

Researcher unique identifier(s): ORCID: 0000-0002-8489-8043;
ResearcherID: A-9403-2012

Parental leaves: 02/11/2014 – 03/05/2015
18/07/2016 – 20/03/2017

Languages: Italian (native)
English (fluent)

I declare that the above-listed information is true to the best of my knowledge and that I will be responsible for any deviation from the truth of these facts.

Marta Bortoletto

Brescia, 17/06/2025

17/06/2025