

GIULIA PAPARELLA

Curriculum Vitae

ai fini della pubblicazione, conforme all'art. 4 del Codice in materia di protezione dei dati personali
e all'art. 26 del D. Lgs. 14 marzo 2013, n. 33

Rome, 30 03 2023

Education

| Type | Year | Institution | Notes (Degree, Experience,...) |
|-----------------------|------|---|---|
| University graduation | 2013 | Sapienza, University of Rome, Italy | Degree in Medicine and Surgery. Final mark: 110/110 cum laude. Thesis title: 'Depotential of early motor learning effects in healthy humans'. |
| PhD | 2021 | Department of Human Neurosciences, Sapienza, University of Rome, Italy, and Department of Clinical and Movement Neurosciences Queen Square Institute of Neurology, University College London London, United Kingdom | PhD degree in Clinical-experimental Neurosciences and Psychiatry. Curriculum: Sensorimotor Neurosciences. Final mark: 'ottimo' cum laude. Thesis title: 'Bradykinesia in non-parkinsonian conditions: the emerging concept of a network disorder' |
| Specialty | 2018 | Department of Human Neurosciences, Sapienza, University of Rome, Italy | Specialization in Neurology, Final mark: 70/70 cum laude. Thesis title: 'Neurophysiological correlates of bradykinesia' |

Spoken Languages: Italian, English, Spanish

Appointments

Academic Appointments

| Start | End | Institution | Position |
|-------|----------|--|---|
| 2023 | On going | Department of Human Neurosciences, Sapienza, University of Rome, Italy | Post-hoc research fellow. Principal investigator of the project 'Neurophysiological investigation of bradykinesia and apraxia in Parkinson's disease', granted by the European Research Council (Fellowship 'BE-FOR-ERC 2022'). |
| 2021 | 2022 | Department of Human Neurosciences, Sapienza, University of Rome, Italy | Post-hoc research fellow |
| 2020 | 2021 | Department of Human Neurosciences, | Post-hoc research fellow |

Sapienza, University of Rome, Italy

Other Appointments

| Start | End | Institution | Position |
|-------|----------|---|--|
| 2017 | On going | IRCSS Neuromed, Pozzilli (IS), Italy | Research collaborator and Neurologist with expertise in Clinical Neurophysiology |
| 2019 | 2020 | Department of Clinical and Movement Neurosciences Queen Square Institute of Neurology, University College London London, United Kingdom | Honorary researcher |

Society memberships, Awards and Honors

| Year | Title |
|------|---|
| 2022 | Winner of the travel grant for young researcher to the 52 nd Congress of the Italian Neurology Society (SIN), Milan, Italy |
| 2022 | Winner of the travel grant for young researcher to the 8 th Congress of the Italian Society for Parkinson's disease and movement disorders (LIMPE DISMOV), Naples, Italy |
| 2022 | Winner of a travel funding to the 32 nd International Congress of Clinical Neurophysiology (ICCN) 2022, Geneva, Switzerland |
| 2022 | Winner of a bursary for the Movement Disorder Society (MDS) International congress, Madrid, Spain |
| 2022 | Winner of a bursary for the 8 th congress of the European Neurology Academy (EAN), Vienna, Austria |
| 2021 | Honourable mention for the PhD thesis entitled 'Bradykinesia in non-parkinsonian conditions: the emerging concept of a network disorder'. Fondazione Sapienza, Sapienza, University of Rome. |
| 2018 | Winner of the award for the Best Contribution for the poster "Effects of transcranial alternating current stimulation on repetitive finger movements in healthy humans", 63 rd Congress of the Italian Society of Clinical Neurophysiology (SINC), Bari, Italy |
| 2017 | Winner of the travel grant for young researcher to the 48 th Congress of the Italian Neurology Society (SIN), Naples, Italy |
| 2017 | Winner of the travel grant for young researcher to the 3 rd Congress of the Italian Society for Parkinson's disease and movement disorders (LIMPE DISMOV), Verona, Italy |
| 2016 | Winner of the travel grant for young researcher to the 2 nd Congress of the Italian Society for Parkinson's disease and movement disorders (LIMPE DISMOV), Bari, Italy |
| 2015 | Winner of the award from the Italian Association for Dystonia (ARD) for the best contribution on dystonia presented at the 46 th Congress of the Italian Neurology Society (SIN), Genova, Italy |
| 2015 | Winner of the travel grant for young researcher to the 46 th Congress of the Italian Neurology Society (SIN), Genova, Italy |

| | |
|--------------------|---|
| 2015 | Winner of the travel grant for young researcher to the 1 st Congress of the Italian Society for Parkinson's disease and movement disorders (LIMPE DISMOV), Torino, Italy |
| 2014 | Award assigned by Sapienza, University of Rome, entitled "Donne, Genere e Sapienza" |
| 2010 | Erasmus Programme study (duration: 12 months), to the Hospital Clinical, Barcelona, Spain |
| From 2015-on going | Member of the Movement Disorder Society (MDS) |
| From 2015-on going | Member of the European Association of neurology (EAN) |
| From 2015-on going | Member of the International Federation of Clinical Neurophysiology (IFCN) |
| From 2015-on going | Member of the Italian Society of Neurology (SIN), |
| From 2015-on going | Member of the Academy for the Study of Parkinson's Disease and Movement Disorders (LIMPE/DISMOV) |
| From 2015-on going | Member of the Italian Clinical Neurophysiology Society (SINC) |

Funding Information [grants as PI-principal investigator or I-investigator]

| Year | Title | Program | Grant value |
|------|--|--|-------------|
| 2023 | Neurophysiological investigation of bradykinesia and apraxia in Parkinson's disease (PI) | Fellowship 'BE-FOR-ERC 2022' | 50.000€ |
| 2022 | Targeting the motor cortex in Parkinson's disease by gamma-transcranial alternating stimulation: pathophysiological and therapeutical implications (I) | Bando Ricerca Finalizzata 2021, Young Researcher | 370.000€ |
| 2019 | Research training at the Department of Clinical and Movement Neurosciences Queen Square Institute of Neurology, University College London London, UK, with the project entitled 'Neurophysiological investigation of motor learning variability in healthy subjects and in patients with | MDS-ES Visiting Trainee Grant Program | 6000€ |

| | | | |
|------|--|---|----------|
| | Parkinson's disease' (PI) | | |
| 2019 | Research scholarship at the Department of Clinical and Movement Neurosciences Queen Square Institute of Neurology, University College London London, UK. Project title: 'Neurophysiological investigation of motor learning variability in healthy subjects and in patients with Parkinson's disease' (PI) | IFCN Scholarship | 25.000\$ |
| 2019 | Neurophysiological investigation of motor learning variability in healthy subjects and in patients with Parkinson's disease (PI) | "Bando per progetti di mobilità di studenti di dottorato di ricerca", | 6000€ |
| 2018 | Neurophysiological correlates of bradykinesia in Parkinson's disease (PI) | Grant "Giulio e Giovanna Sacchetti" for PhD students in Neurosciences, Fondazione Sapienza, Sapienza, University of Rome to support to neurosciences PhD students | 4750€ |

Research Activities

Keywords

Brief Description

| | |
|--------------------------|---|
| Clinical neurophysiology | Neurophysiological investigations of the nervous system activity by using non-invasive brain stimulation techniques (NIBS), including transcranial magnetic stimulation (TMS) and transcranial alternating current stimulation (tACS) |
| Kinematic analysis | Use of a kinematic system for movement analysis (SMART motion system, BTS Engineering, Italy) in healthy subjects and in patients with neurological disorders |
| Motor control | Neurophysiological investigation of motor learning processes, with a specific focus on the primary motor cortex and the cerebellum |
| Movement disorders | Investigation of clinical and neurophysiological features in patients affected by movement disorders, including Parkinson's disease, Essential tremor and dystonia |
| Aging | Investigation of the effect of age on motor and cognitive neural processes in healthy individuals |

Publications

- 1) Bologna M, Espay AJ, Fasano A, Paparella G, Hallett M, Berardelli A. Redefining Bradykinesia. *Mov Disord.* 2023 Feb 27. doi: 10.1002/mds.29362. Epub ahead of print. PMID: 36847357.

- 2) Paparella G, De Riggi M, Cannavacciuolo A, Colella D, Costa D, Birreci D, Passaretti M, Angelini L, Guerra A, Berardelli A, Bologna M. Relationship between the interlimb transfer of a visuomotor learning task and interhemispheric inhibition in healthy humans. *Cereb Cortex*. 2023 Mar 7:bhad042. doi: 10.1093/cercor/bhad042. Epub ahead of print. PMID: 36882526.
- 3) Angelini L, Paparella G, De Biase A, Maraone A, Panfili M, Berardelli I, Cannavacciuolo A, Di Vita A, Margiotta R, Fabbrini G, Berardelli A, Bologna M. Longitudinal study of clinical and neurophysiological features in essential tremor. *Eur J Neurol*. 2022 Nov 27. doi: 10.1111/ene.15650. Epub ahead of print. PMID: 36437695.
- 4) De Biase A, Paparella G, Angelini L, Cannavacciuolo A, Colella D, Cerulli Irelli E, Giallonardo AT, Di Bonaventura C, Berardelli A, Bologna M. Tremor and Movement Slowness Are Two Unrelated Adverse Effects Induced by Valproate Intake. *Mov Disord Clin Pract*. 2022 Sep 25;9(8):1062-1073. doi: 10.1002/mdc3.13560. PMID: 36339307; PMCID: PMC9631858.
- 5) Cannavacciuolo A, Paparella G, Guerra A, Colella D, Angelini L, De Biase A, Passaretti M, Berardelli A, Bologna M. Kinematic assessment of bradykinesia due to focal basal ganglia lesions: a series of two ischemic stroke cases. *Parkinsonism Relat Disord*. 2022 Nov;104:35-37. doi: 10.1016/j.parkreldis.2022.09.017. Epub 2022 Sep 30. PMID: 36209725.
- 6) Paparella G, De Biase A, Cannavacciuolo A, Colella D, Passaretti M, Angelini L, Guerra A, Berardelli A, Bologna M. Validating a Portable Device for Blinking Analyses through Laboratory Neurophysiological Techniques. *Brain Sci*. 2022 Sep 10;12(9):1228. doi: 10.3390/brainsci12091228. PMID: 36138962; PMCID: PMC9496691.
- 7) Chen R, Berardelli A, Bhattacharya A, Bologna M, Chen KS, Fasano A, Helmich RC, Hutchison WD, Kamble N, Kühn AA, Macerollo A, Neumann WJ, Pal PK, Paparella G, Suppa A, Udupa K. Clinical neurophysiology of Parkinson's disease and parkinsonism. *Clin Neurophysiol Pract*. 2022 Jun 30;7:201-227.
- 8) Passaretti M, Pollini L, Paparella G, De Biase A, Colella D, Angelini L, Galosi S, Manti F, Guerra A, Leuzzi V, Berardelli A, Bologna M. Neurophysiological assessment of juvenile parkinsonism due to primary monoamine neurotransmitter disorders. *J Neural Transm (Vienna)*. 2022 Aug;129(8):1011-1021.
- 9) Erro R, Pilotto A, Esposito M, Olivola E, Nicoletti A, Lazzeri G, Magistrelli L, Dallochio C, Marchese R, Bologna M, Tessitore A, Misceo S, Gigante AF, Terranova C, Moschella V,

- di Biase L, Di Giacomo R, Morgante F, Valentino F, De Rosa A, Trinchillo A, Malaguti MC, Brusa L, Marinella A, Di Biasio F, Paparella G, De Micco R, Contaldi E, Modugno N, Di Fonzo A, Padovani A, Barone P; TITAN Study Group. The Italian tremor Network (TITAN): rationale, design and preliminary findings. *Neurol Sci.* 2022 May 24. doi: 10.1007/s10072-022-06104-w. Epub ahead of print. PMID: 35608737.
- 10) Passaretti M, Paparella G, De Biase A, Angelini L, Cannavacciuolo A, Colella D, Berardelli A, Bologna M. Reply to "Intensification of an Essential Tremor by SARS-CoV-2". *Cerebellum.* 2022 May 2:1–2. doi: 10.1007/s12311-022-01410-7. Epub ahead of print. PMID: 35499811; PMCID: PMC9059107.
- 11) Passaretti M, De Biase A, Paparella G, Angelini L, Cannavacciuolo A, Colella D, Berardelli A, Bologna M. Worsening of Essential Tremor After SARS-CoV-2 Infection. *Cerebellum.* 2022 Jan 6. doi: 10.1007/s12311-022-01366-8. Epub ahead of print. PMID: 34989982.
- 12) Leodori G, De Bartolo MI, Guerra A, Fabbrini A, Rocchi L, Latorre A, Paparella G, Belvisi D, Conte A, Bhatia KP, Rothwell JC, Berardelli A. Motor Cortical Network Excitability in Parkinson's Disease. *Mov Disord.* 2022 Jan 9. doi: 10.1002/mds.28914. Epub ahead of print. PMID: 35001420.
- 13) Paparella G, Ceccanti M, Colella D, Cannavacciuolo A, Guerra A, Inghilleri M, Berardelli A, Bologna M. Bradykinesia in motoneuron diseases. *Clin Neurophysiol.* 2021 Oct;132(10):2558-2566. doi: 10.1016/j.clinph.2021.08.006. Epub 2021 Aug 19. PMID: 34479133.
- 14) Guerra A, Colella D, Giangrosso M, Cannavacciuolo A, Paparella G, Fabbrini G, Suppa A, Berardelli A, Bologna M. Driving motor cortex oscillations modulates bradykinesia in Parkinson's disease. *Brain.* 2021 Jul 10:awab257. doi: 10.1093/brain/awab257. Epub ahead of print. PMID: 34245244.
- 15) Guerra A, Vicenzini E, Cioffi E, Colella D, Cannavacciuolo A, Pozzi S, Caccia B, Paparella G, Di Stefano G, Berardelli A, Bologna M. Effects of transcranial ultrasound stimulation on Trigeminal Blink Reflex excitability. *Brain Sci.* 2021 May 15;11(5)645. doi: 10.3390/brainsci11050645. PMID: 34063492; PMCID: PMC8156436.
- 16) Paparella G, Fasano A, Hallett M, Berardelli A, Bologna M. Emerging concepts on bradykinesia in non-parkinsonian conditions. *Eur J Neurol.* 2021 Apr 1. doi: 10.1111/ene.14851. Epub ahead of print. PMID: 33793037.
- 17) Pietracupa S, Bologna M, Tommasin S, Elifani F, Vasselli F, Paparella G, Petsas N, Berardelli A, Pantano P. No evidence of iron deposition in essential tremor: a

- susceptibility-weighted imaging study. *Neurol Sci.* 2021 Mar 15. doi: 10.1007/s10072-021-05173-7. Epub ahead of print. PMID: 33721138.
- 18) Colella D, Guerra A, Paparella G, Cioffi E, Di Vita A, Trebbastoni A, Berardelli A, Bologna M. Motor dysfunction in mild cognitive impairment as tested by kinematic analysis and transcranial magnetic stimulation. *Clin Neurophysiol.* 2021 Feb;132(2):315-322. doi: 10.1016/j.clinph.2020.10.028. Epub 2020 Dec 2. PMID: 33450553.
- 19) Bologna M, Paparella G. Neurodegeneration and Sensorimotor Function. *Brain Sci.* 2020 Nov 1;10(11):808.
- 20) Paparella G, Di Stefano G, Fasolino A, Di Pietro G, Colella D, Truini A, Cruccu G, Berardelli A, Bologna M. Painful stimulation increases spontaneous blink rate in healthy subjects. *Sci Rep.* 2020 Nov 17;10(1):20014.
- 21) Paparella G, Rocchi L, Bologna M, Berardelli A, Rothwell J. Differential effects of motor skill acquisition on the primary motor and sensory cortices in healthy humans. *J Physiol.* 2020 Sep;598(18):4031-4045.
- 22) Paparella G, Angelini L, De Biase A, Cannavacciuolo A, Colella D, Di Bonaventura C, Giallonardo AT, Berardelli A, Bologna M. Clinical and Kinematic Features of Valproate-Induced Tremor and Differences with Essential Tremor. *Cerebellum.* 2020 Nov 16.
- 23) Bologna M, Paparella G, Fasano A, Hallett M, Berardelli A. Evolving concepts on bradykinesia. *Brain.* 2020 Mar 1;143(3):727-750.
- 24) Bologna M, Paparella G. Pathophysiology of rigidity in Parkinson's disease: Another step forward. *Clin Neurophysiol.* 2020 Aug;131(8):1971-1972. doi: 10.1016/j.clinph.2020.05.013. Epub 2020 May 29. PMID: 32507558.
- 25) Bologna M, Guerra A, Colella D, Cioffi E, Paparella G, Di Vita A, D'Antonio F, Trebbastoni A, Berardelli A. Bradykinesia in Alzheimer's disease and its neurophysiological substrates. *Clin Neurophysiol.* 2020 Apr;131(4):850-858. doi: 10.1016/j.clinph.2019.12.413. Epub 2020 Jan 27. PMID: 32066104.
- 26) Bologna M, Paparella G, Colella D, Cannavacciuolo A, Angelini L, Alunni-Fegatelli D, Guerra A, Berardelli A. Is there evidence of bradykinesia in essential tremor? *Eur J Neurol.* 2020 Aug;27(8):1501-1509. doi: 10.1111/ene.14312. Epub 2020 May 31. PMID: 32396976.
- 27) Bologna M, Berardelli I, Paparella G, Ferrazzano G, Angelini L, Giustini P, Alunni-Fegatelli D, Berardelli A. Tremor Distribution and the Variable Clinical Presentation of Essential Tremor. *Cerebellum.* 2019 Aug 17.

- 28) Bologna M, Guerra A, Paparella G, Colella D, Borrelli A, Suppa A, Di Lazzaro V, Brown P, Berardelli A. Transcranial Alternating Current Stimulation Has Frequency-Dependent Effects on Motor Learning in Healthy Humans. *Neuroscience*. 2019 Jul 15;411:130-139.
- 29) Pietracupa S, Bologna M, Bharti K, Pasqua G, Tommasin S, Elifani F, Paparella G, Petsas N, Grillea G, Berardelli A, Pantano P. White matter rather than gray matter damage characterizes essential tremor. *Eur Radiol*. 2019 May 28.
- 30) Paparella G, Ferrazzano G, Cannavacciuolo A, Cogliati Dezza F, Fabbrini G, Bologna M, Berardelli A. Differential effects of propranolol on head and upper limb tremor in patients with essential tremor and dystonia. *J Neurol*. 2018 Sep 12.
- 31) Bologna M, Guerra A, Paparella G, Giordo L, Alunni Fegatelli D, Vestri AR, Rothwell JC, Berardelli A. Neurophysiological correlates of bradykinesia in Parkinson's disease. *Brain*. 2018 Jun 12.
- 32) Guerra A, Bologna M, Paparella G, Suppa A, Colella D, Di Lazzaro V, Brown P, Berardelli A. Effects of Transcranial Alternating Current Stimulation on Repetitive Finger Movements in Healthy Humans. *Neural Plast*. 2018 Jul 8;2018:4593095. doi: 10.1155/2018/4593095. PMID: 30123248; PMCID: PMC6079362.
- 33) Bologna M, Bertram K, Paparella G, Papi C, Belvisi D, Conte A, Suppa A, Williams DR, Berardelli A. Reversal of long term potentiation like plasticity in primary motor cortex in patients with progressive supranuclear palsy. *Clinical Neurophysiology*. 2017 Sep;128(9):1547-1552.
- 34) Bologna M, Berardelli I, Paparella G, Marsili L, Ricciardi L, Fabbrini G, Berardelli A. Altered kinematics of facial emotion expression and emotion recognition deficits are unrelated in Parkinson's disease. *Frontiers in Neurology*, 2016 Dec 14;7:230.
- 35) Bologna M, Paparella G, Fabbrini A, Leodori G, Rocchi L, Hallett M, Berardelli A. Effects of cerebellar theta-burst stimulation on arm and neck movement kinematics in patients with focal dystonia. *Clinical Neurophysiology*. 2016 Nov;127(11):3472-3479.
- 36) Bologna M, Leodori G, Stirpe P, Paparella G, Colella D, Belvisi D, Fasano A, Fabbrini G, Berardelli A. Bradykinesia in early and advanced Parkinson's disease. *Journal of Neurological Science*. 2016 Oct 15;369:286-91.
- 37) Bologna M, Rocchi L, Paparella G, Nardella A, Li Voti P, Conte A, Kojovic M, Rothwell JC, Berardelli A. Reversal of practice-related effects on corticospinal excitability has no immediate effects on behavioral outcome. *Brain Stimulation*. 2015 May-Jun;8(3):603-12.

- 38) Bologna M, Rocchi L, Leodori G, Paparella G, Conte A, Kahn N, Fabbrini G, Berardelli A. Cerebellar continuous theta burst stimulation in essential tremor. *Cerebellum*. 2015 Apr;14(2):133-41.
- 39) Bologna M, Marsili L, Khan N, Parvez AK, Paparella G, Modugno N, Colosimo C, Fabbrini G, Berardelli A. Blinking in patients with clinically probable multiple system atrophy. *Movement Disorders*. 2014 Mar;29(3):41520.