Laura Avanzino, PhD

CURRICULUM VITAE

PERSONAL INFORMATION

Name and Surname: Laura Avanzino
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EDUCATION

2007-2009: PhD in Experimental Neuroscience, University of Genoa.
2001-2006 Residence in Neurology (50/50 cum laude), University of Genoa
2001 M.D. (110/110 cum laude), University of Genoa

CURRENT EMPLOYMENT

2019 – to date: Associate Professor of Human Physiology at Department of Experimental Medicine, University of Genova, Italy.

OTHER RESEARCH POSITIONS

2011 – 2019: Assistant Professor of Human Physiology at Department of Experimental Medicine, University of Genova, Italy.
2010-2011: Research Assistant at Department of Experimental Medicine, University of Genova, Italy.
2007-2009: Ph. D Student in Experimental Neuroscience, University of Genova, Italy.
2005-2006: Research Assistant at Sobell Department of Motor Neuroscience and Movement Disorders" (UCL, University College of London).

PERSONAL STATEMENT

Laura Avanzino is graduated in Medicine at the University of Genova. She accomplished her clinical specialization in Neurology in 2006. Between 2005 and 2006, she worked as research assistant at Sobell Department of Motor Neuroscience, London, UK under the supervision of Professor John Rothwell. She accomplished her PhD studies in Experimental Neuroscience, in 2009, at the University of Genova. From 2010 to 2011 she worked as research assistant at the Department of Experimental medicine, Section of Human Physiology, University of Genova. From 2011 to 2012 she worked as Assistant professor at the Department of Experimental medicine, Section of Human Physiology, University of Genova. She is Associate Professor of Human Physiology at the Dept. of Experimental Medicine, University of Genova where she teaches courses on Human Physiology and Neurophysiology.

The main subjects of investigation of Laura Avanzino are brain plasticity mechanisms and motor learning in healthy controls and in patients with Movement Disorders by means of non-invasive neurophysiological techniques (transcranial magnetic stimulation and transcranial direct and alternating current stimulation) and instrumented behavioural assessment. Major interests of her research have been the following: i) influence of transcallosal communication on motor control; ii) neurophysiological basis of action observation and motor imagery; iii) the study of the role of cerebellum in timing performance and the role of cerebellum in the pathophysiology of dystonia; iv) the influence of cognition and emotion on motor control in healthy and in patients affected by Parkinson's disease.

NATIONAL AND INTERNATIONAL SCIENTIFIC COLLABORATIONS

Prof. Mirta Fiorio, Department of Neurosciences, Biomedicine and Movement Sciences, Università di Verona, Verona, Italy; Dott. Michela Chiappalone, Rehab Facility, Italian Institute of Technology (IIT), Genova; Prof. Davide Martino, Director of the Movement Disorders Program, Department of Clinical Neurosciences, University of Calgary, Canada; Prof. Jurgen Konczak, Professor of Biomechanics and Neuromotor Control, University of Minnesota, USA; Prof. Alice Nieuweboer and Prof. Moran Gilat, Department of Rehabilitation Sciences, Catholic University of Leuven, Belgium; Prof. Charalambos Papaxanthis, Université de Bourgogne Franche-Comté, Cognition Action et Plasticité Sensorimotrice, Dijon, France; Prof. Jeffrey Hausdorff and Prof. Anat Mirelman, Center for the Study of Movement, Cognition and Mobility, Department of Neurology, Tel Aviv Sourasky Medical Center, Tel Aviv, Isreael; Prof. Dante Mantini, Associate Professor at the Research Center for Motor Control and Neuroplasticity of Catholic University of Leuven, Belgium, Dr. Jorik Nonnakes, Radboud University Medical Centre, Nijmegen, the Netherlands..

SCIENTIFIC PUBLICATIONS

Author of 178 scientific publications (in international peer-reviewed journals). Concerning publication indexed on international databases (source: Scopus): H-index: 40; Total citations: 4996 by 3973 documents.

OTHER SCIENTIFIC ACTIVITIES

Invited reviewer for Cerebral Cortex, Movement Disorders, Journal of Neurophysiology, Frontiers in Human Neuroscience, Parkinsonism and Related Disorders, Journal of Neurology, Cerebral cortex.
Review Editor, Movement Disorders section of Frontiers in Neurology.
Reviewer for research projects of the Italian Ministry of University and Research (MIUR, MUR), the Italian Foundation for Multiple Sclerosis (FISM), the Jacques and Gloria Gossweiler foundation (Switzerland), the Marsden Fund (New Zeland), The Michael J Fox Foundation, The Binational Israel-USA Foundation.
2016-2018 member of the Board of the "Accademia LIMPE-DISMOV" (Italian academy for Parkinson's disease and Movement Disorders).
2020-2024 member of the Board of the "Società italiana Parkinson LIMPE-DISMOV" (Italian academy for Parkinson's disease and Movement Disorders).
Since 2009, invited speakers in several National and International conferences.

CONFERENCE ORGANIZATION

Since 2015 Dr. Avanzino has been involved in the scientific committees responsible for the organization of the following events:

- 66° National Congress of Italian Physiological Society (SIF), 16-18 September 2015, Genoa.
- II National Congress of the Academy for the Study of Parkinson's Disease and Movement Disorders (LIMPE-DISMOV Academy) , 4-6 May 2016, Bari.
- III National Congress of the Academy for the Study of Parkinson's Disease and Movement Disorders (LIMPE-DISMOV Academy), 17-19 May 2017, Verona.
- New advances in neuromodulation, 8 Ottobre 2018, Verona.
- V National Congress of the Academy for the Study of Parkinson's Disease and Movement Disorders (LIMPE-DISMOV Academy), 22-24 May 2019, Catania.
- Convegno di aggiornamento annuale sulla malattia di Parkinson, Liguria Parkinson 2022, 6-9 Aprile 2022 Genova
- 8 Congresso Nazionale dell''Accademia per lo Studio della Malattia di Parkinson e i Disordini del Movimento (Accademia LIMPE / DISMOV), 16-18 Novembre 2022, Napoli
- 9 Congresso Nazionale dell''Accademia per lo Studio della Malattia di Parkinson e i Disordini del Movimento (Accademia LIMPE / DISMOV), 4-6 Maggio 2023, Padova
- 10 Congresso Nazionale dell''Accademia per lo Studio della Malattia di Parkinson e i Disordini del Movimento (Accademia LIMPE / DISMOV), 10-12 Aprile 2024, Milano

- 11 Congresso Nazionale dell''Accademia per lo Studio della Malattia di Parkinson e i Disordini del Movimento (Accademia LIMPE / DISMOV), 14-16 Maggio 2025, Roma
- Convegno di aggiornamento annuale sulla malattia di Parkinson, Liguria Parkinson 2023, 12-13 Maggio 2023 Arenzano.
- Convegno di aggiornamento annuale sulla malattia di Parkinson, Liguria Parkinson 2024, Genova.
- Convegno di aggiornamento annuale sulla malattia di Parkinson, Liguria Parkinson 2025, Genova.

RESEARCH SUPPORTS

Ongoing

- The Michael J. Fox Foundation. Fall 2022 RFA: Biomarkers to Support Therapeutic Trials Program
  01/02/2023-01/02/2025

  Avanzino (coPI), Inbal Maidan (PI). "Using neurophysiology as a stratification tool for synucleinopathy". Grant ID: MJFF-022410.
  Total Grant: $299,756.27.
- JNPD research EU (2023-2026).
  01/04/2023-01/04/2026

  Avanzino (Italian PI), Project Coordinator: Jorik Nonnekes (The Netherlands). "Unraveling the Neural mechanisms underlying compensation strategies for gait impairmEnts in Parkinson's Disease: a transnational, multimodal approach (UNITE-PD)".

  Total Grant: €1.020.364,00.
- Italian Ministry of Health
  01/07/2022-01/12/2025

  Avanzino (PI). "The role of AgRP neurons in Parkinson's disease"

  Total Grant: € 52.183,71
- Fresco Foundation grant

  01/07/2023-31/12/2025

  Avanzino (PI). "Fresco Institute Network Research Project (FI-NRP) including the Parkinson outcome project (POP) carried on by the Parkinson's Foundation (USA)".

  € 60.000

Completed

- Italian Ministry of Health

  01/07/2021-01/07/2024

  Avanzino (coPI). "Cognitive-emotional-sensorimotor integration in Parkinson's disease and major depression". Amore (PI), Pelosin (coPI)

  Total Grant: € 79.621,5
- Fresco Foundation grant

  01/07/2020-31/12/2022

Avanzino (PI). “Fresco Institute Network Research Project (FI-NRP) including the Parkinson outcome project (POP) carried on by the Parkinson’s Foundation (USA)”.
$ 70.000

- Gloria Gossweiler Foundation
  18/05/2017 -31/12/2019
  Avanzino (PI) “The effect of tACS at gamma frequency on working memory performance in patients affected by mild to moderate Huntington’s disease.” Role: PI
  Total Grant: Euro: € 138.467
- Fresco Foundation grant
  01/01/2017-31/12/2019
  Abbruzzese (PI). “Fresco Institute Network Research Project (FI-NRP) including the Parkinson outcome project (POP) carried on by the Parkinson’s Foundation (USA)”. Role: Study coordinator
  $ 210.000
- Italian Ministry of Health
  10/12/2014 a 10/12/2018
  Fiorio (PI) “How does the cerebellum contribute to the pathophysiology of dystonia? A multidisciplinary approach with ad-hoc behavioral tasks and cerebellar stimulation with transcranial Direct Current Stimulation (tDCS)”. Role: research Unit PI
  Total Grant: Euro: € 177.949,16
- Seven framework programme (Health-2011-to stage)
  01/01/2012-31/12/2015
  Hausdorff (PI); Abbruzzese (research Unit PI) “V-TIME: virtual reality treadmill combined intervention for enhancing mobility and reducing falls in the elderly” Role: Co-investigator
  Total grant € 7.499.223,20
- University of Genoa, Italy
  01/01/2014-31/12/2014
  Avanzino (PI) “Learning by observing: the effect of multiple sessions of action-observation training on the spontaneous movement tempo and motor resonance.” Role: PI
  € 20.106,69
- University of Genoa, Italy
  01/01/2013-31/12/2013
  Avanzino (PI) “The role of aging on motor adaptation.” Role: PI
  € 11.238
- University of Genoa, Italy
  01/01/2012-31/12/2012
  Avanzino (PI) “Boosting the proprioceptive-induced after effects by combining tendon vibration and repetitive TMS over M1.”Role: PI

€ 8.044

- University of Genoa, Italy
  01/01/2011-31/12/2011
  Avanzino (PI) "The role of proprioception in use-dependent hemispheric balance: a TMS study."
  Role: PI
  € 7.380,58
- Italian Foundation for Multiple Sclerosis
  2009-2010
  Quartarone (PI) " Central fatigue in multiple sclerosis: from motor preparation to motor execution."
  Role: Co-investigator
  Total grant € 50.000,00

TEACHING ACTIVITY

A) Undergraduate

- 2008/2009, 2009/2010 and 2010/2011: teaching activity as adjunct professor of Human Physiology in the following courses of the University of Genoa: Bioengineering, Physiotherapy and Nursing school.
- 2011/2012-2018/2019 – ongoing: teaching activity for more than 60 hours of class as professor of Human Physiology and Neurophysiology in the following courses of the University of Genoa: Medicine and Surgery, Bioengineering, Physiotherapy, Sport Science.
- 2019/2020 – ongoing: teaching activity for more than 120 hours of class as professor of Human Physiology and Neurophysiology in the following courses of the University of Genoa: Medicine and Surgery, Bioengineering, Physiotherapy, Sport Science.

B) I have been mentoring more than 30 thesis of undergraduate students of the courses of Biomedical Engineering, Physiotherapy and Medicine and Surgery.

C) Master

- 2015/2016; 2016/2017 and 2017/2018: Teaching activity in the II level Master in Neuropsychology: Assessment, Diagnosis and Rehabilitation, Cattolica University, Milan
- 2017/2018: Teaching activity in the II level Master in Neurorehabilitation, University of Pavia
- 2018/2019: Teaching activity in the I level Master in Telerehabilitation and novel technologies, University of Genoa
- 2020/2021-ongoing*:* Teaching activity in the I level Master in Neurorehabilitation, University of Genoa

D) PhD School

- 2011/2012: Ph.D. in Motor and Sport Science, University of Genoa
- 2013- ongoing*:* Ph.D. in Neuroscience, University of Genoa
- Mentor of 4 PhD thesis

INSTITUTIONAL ACTIVITIES

2017-2022 is responsible for Quality Assurance of the Department of Experimental Medicine, University of Genoa.

2022-ongoing Member of the Quality Assurance committee of the University of Genoa.

06 June 2025