



Mattia Delgrosso, PhD

Department of Medicine and Surgery
University of Parma
Parma, Italy
(rev. February 2026)

PERSONAL

Family name, First name:
Date of birth:
Nationality:

Delgrosso, Mattia
April 20th, 1997
Italian

CONTACT INFORMATION

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EDUCATION

Doctorate in Neuroscience 2021-2025

Department of Medicine and Surgery, University of Parma, Italy

Thesis: "Functional properties and firing features of monkey premotor neurons during sleep"

Supervisor: Bonini, L., PhD

Master's Degree 2019-2021

Biology and Biological Applications – curriculum Neurobiology (LM-6), Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italy

Thesis: "Neural signals for stimuli moved near the hand in macaque ventral premotor cortex"

Final grade: 110 cum Laude and honorable mention

Supervisor: Bonini, L., PhD

Bachelor's Degree 2016-2019

Biology (L-13), Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italy

Thesis: "Role of miRNA 34 in the development of cardiac alterations induced by repeated social defeat in the rat"

Final grade: 110 cum Laude

Supervisor: Sgoifo, A., PhD

Scientific High School Graduation 2011-2016

Liceo Scientifico Zappa-Fermi, Borgo Val di Taro (PR), Italy

CERTIFICATES

- Non-human primates course, *University of Parma, Italy* 2025
- EARA Media Training, *European Animal Research Association* 2023
- Laboratory animal science course on Primates according to FELASA guidelines–
Functions A and B-organized by EUPRIM-Net, *Gottingen, Germany* 2022
- Non-human primates course, *University of Parma, Italy* 2022
- Biology professional qualification, *University of Parma, Italy* 2021
- In2PrimateBrains' Skill Training course, *Aix-Marseille Université, France* 2021
- Cambridge English Level 1 Certificate in ESOL international (FCE), B2 First, *Cambridge University Press & Assessment* 2019
- Training course, prevention and safety at work, *University of Parma, Italy* 2016

POSITIONS

Postdoctoral researcher 2025-current
Department of Medicine and Surgery, University of Parma, Italy

Supervisor: Bonini, L., PhD

PhD student

2021-2025

Department of Medicine and Surgery, University of Parma, Italy

Supervisor: Bonini, L., PhD

Undergraduate Internship

2021

Department of Medicine and Surgery, University of Parma, Italy

Supervisor: Bonini, L., PhD

Undergraduate Internship

2019

Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italy

Supervisor: Sgoifo, A., PhD

SEMINAR ACTIVITIES

Exploring macaques' natural sleep: firing dynamics of premotor area neurons (1h)

2025

Invited seminar speaker, Netherlands Institute for Neuroscience (NIN) - Amsterdam, Netherlands

Animal and Comparative Psychobiology (guest lecturer, 3h)

2025

Department of Medicine and Surgery, Faculty of Psychobiology and Cognitive Neuroscience, University of Parma, Italy

Animal and Comparative Psychobiology (guest lecturer, 3h)

2024

Department of Medicine and Surgery, Faculty of Psychobiology and Cognitive Neuroscience, University of Parma, Italy

PhD students' seminar (1h)

2023

Department of Medicine and Surgery, University of Parma, Italy

RESEARCH ACTIVITIES

Fields of research

- 1. Role of miRNA in the development of cardiac alterations induced by repeated social defeat in rats.** As an undergraduate student under the mentorship of Andrea Sgoifo and Luca Carnevali in the Stress Physiology Lab, I investigated the effect of stress exposure on miRNA-34 levels in the heart of rats subjected to repeated social defeat stress. During my internship, I learned basic techniques for working with rats, including protocols for social defeat, organ dissection (e.g., adrenal glands), abdominal suturing of experimental subjects, and analysis of telemetry data such as locomotion, heart rate, and heart rate variability.
- 2. Neural signals for stimuli moved in the peripersonal space of the hand.** As an undergraduate student, under the mentorship of Luca Bonini and Monica Maranesi in the Bonini Lab, I investigated the neural basis of peripersonal space during the movement of stimuli near the hand in the premotor cortex of rhesus macaques. During my internship, I acquired fundamental skills in working with macaques, as well as the use of innovative and advanced wireless technologies for acquiring intracortical neural data. Additionally, I contributed to the behavioral analysis of experimental subjects using video scoring software and analyzed results through MATLAB and Python code development. I also assisted in surgical operations and craniotomies for the implantation of intracortical electrodes.
- 3. Firing features of premotor cortex neurons during sleep.** As a PhD student under the mentorship of Luca Bonini and Marco Lanzilotto in the Bonini Lab, I developed both theoretical and practical expertise in neuroscience. I contributed to data acquisition from motor and premotor cortices of non-human primates, either restrained in a primate chair or freely moving during reach-and-grasp tasks and spontaneous behaviors. This involved collecting large datasets of video, neural, and audio recordings. I refined skills in experimental setup, data acquisition software, and analysis, writing numerous MATLAB and Python scripts. Additionally, I participated in surgeries for the implantation of intracranial electrodes and telemetry devices, including EEG, EOG, EMG, and ECG, as well as the subsequent signal analysis. My PhD project focused on acquiring and analyzing neural signals from motor, premotor, and subcortical regions (colliculus and pulvinar) to assess neuronal firing properties during natural sleep. Using an innovative approach, I successfully identified sleep stages solely from intracortical signals, eliminating the need for traditional EEG, EOG, and EMG gold standards in sleep staging. My research also suggested the presence of dynamic neural networks in the premotor cortex, with neurons cyclically alternating their activities between sleep stages and wakefulness.

Key words: neuroscience, neurophysiology, rodents, non-human primates, stress, sleep-wake cycle, cerebral cortex, telemetry data, neural data, behavioral data

RESEARCH SUPPORTScientific participation in funded projects as a team member

<i>BIAL Foundation Grant</i> (Grant ID: 403/24)	2025-2028
Title: “The inner working of primate brain during natural sleep”	
PI: Marco Lanzilotto, PhD	
<i>ERC Consolidator Grant “EMACTIVE”</i> (Grant Agreement: 101002704)	2022-2027
Title: “The mechanisms of emotions in monkeys”	
PI: Luca Bonini, PhD	
<i>Bando di Ateneo UNIPR Linea B</i> (Grant ID: FIL_2024_B)	2024-2026
Title: “The Inner Working of Premotor Cortex during Sleep of Freely Behaving Macaques”	
PI: Marco Lanzilotto, PhD	
<i>2021 Young Investigator Grant, BBRF</i> (Grant ID: 30604)	2023-2025
Title: “The neural basis of facial mimicry in Macaque brain”	
PI: Marco Lanzilotto, PhD	
<i>Project PRIN 2022</i>	2023-2025
Titolo: “The social brain: the neural mechanisms underlying Social Fear Learning”	
PI: Marco Lanzilotto, PhD	
<i>Project MNESYS - A Multiscale integrated approach to the study of the nervous system in health and disease</i> (Project code: PE0000006)	2022-2025
Project funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.3 - Call for tender No. 341 of 15/03/2022 of Italian Ministry of University and Research funded by the European Union – NextGenerationEU	
Spoke: “Neurosviluppo, cognizione sociale e interazione”	
PI: Luca Bonini, PhD	
<i>ERC Starting Grant 2015</i> (Grant Agreement: 678307)	2016-2022
Title: “Motor and cognitive functions of the monkey premotor cortex during free social interactions”	
PI: Luca Bonini, PhD	

FELLOWSHIP, AWARDS AND HONORS

<i>Best Poster Award</i> , 21 st SINS National Congress, Pisa, Italy	2025
Title: “Primate frontal neuron awakening in natural NREM sleep”	
<i>Research fellowship</i> , University of Parma, Italy (public competition)	2024-2025
<i>Best oral presentation Award</i> , UNIPR Research Day, University of Parma, Italy	2023
Title: “Intracortical recordings in freely behaving macaques during sleep and wakefulness”	
<i>PhD fellowship</i> , University of Parma, Italy (public competition)	2021-2024

ACADEMIC REVIEWINGCo-examiner for master's degree thesis

Sara Dragoni (University of Parma)

MENTORING ACTIVITIESMaster's degree students

Lucas Fernandes da Fonseca (University of Turin)
Sara Dragoni (University of Parma)

INTERNATIONAL AND NATIONAL CONGRESSES**Invited talks**International

Sleep and Circadian Biology DataBlitz (oral communication) Nov. 2023
 Title: “Intracortical Recordings in Freely Behaving Macaques during Sleep and Wakefulness”
 Society for Neuroscience, Washington D.C., USA

National

Big Data in Neuroscience: Large Scale Characterization of Brain Physiology (oral communication) Sept. 2023
 Title: “Encoding brain states from intracortical recordings in freely behaving macaques”
 20th SINS National Congress, Turin, Italy

First author/speaker in abstract/posters

International

Intracortical recordings in freely behaving macaques during sleep and wakefulness (poster) Nov. 2023
Delgrosso M., Campanello C., Bonini L., Lanzilotto M.,
 Society for Neuroscience, Washington D.C., USA

National

Primate frontal neuron awakening in natural NREM sleep (poster) Sept. 2025
Delgrosso M., Campanello C., Bonini L., Lanzilotto M.,
 21st SINS National Congress, Pisa, Italy

Intracortical recordings in freely behaving macaques during sleep and wakefulness (oral communication) Oct. 2023
Delgrosso M., Campanello C., Bonini L., Lanzilotto M.,
 UNIPR Research Day, Cremona, Italy

Encoding brain states from intracortical recordings in freely behaving macaques (poster) Sept. 2023
Delgrosso M., Campanello C., Bonini L., Lanzilotto M.,
 20th SINS National Congress, Turin, Italy

Encoding brain states from intracortical recordings in freely behaving macaques (poster) Sept. 2023
Delgrosso M., Campanello C., Bonini L., Lanzilotto M.,
 SINS National Meeting of PhD Students in Neuroscience, Turin, Italy

Wake and sleep features from intracortical recordings in freely behaving macaques (poster) Sept. 2022
Delgrosso M., Campanello C., Lanzilotto M., Bonini L.
 Comparative Neurobiology of Higher Cognitive Congress – Ettore Majorana Foundation and Center for Scientific Culture, Erice, Italy

Participation

International

In2PrimateBrains’ Skill Qualification Nov. 2021
 Aix-Marseille Université, Marseille, France

National

UNIPR Research Day Oct. 2022
 University of Parma, Parma, Italy

SOFTWARE KNOWLEDGE

Matlab Programming
 Python Programming
 Monkeylogic (experimental task development)
 Simi Reality Motion System GmbH (Markerless Motion Capture 3D for both Human and Monkey)
 BORIS (Behavioral Observation Research Interactive Software for behavioral analysis)
 Deuteron Technologies (multichannel neural activity wireless recording)
 NeuroScore, Data Science International (telemetric signal analysis)
 Neuroexplorer System (neural activity analysis)
 Offline Sorter Softwares (automatic and manual sorter of single neurons)
 Microsoft Office
 Windows

TECHNICAL SKILLS

Animal handling and welfare
Experimental setup design and assembly
Neural, telemetric and behavioral data acquisition
Sleep scoring and stage classification
Single unit, multiunit and LFP interpretation
Data analysis and management of large datasets
Project management and experimental workflow coordination
Communication of results

VOLUNTEERING AND EXTRACURRICULAR ACTIVITIES

<i>UEFA C Coaching License</i> , Florence, Italy	2026
<i>BLS-D provider certification</i> , DAN Europe	2025
<i>Course for defibrillator use</i> , Borgo Val di Taro (PR), Italy	2021
<i>Course for company first aid officer</i> , Borgo Val di Taro (PR), Italy	2021

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