



Jessica Lucchesi

11.09.1995
Female
Italian

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Position Held

Dr. Jessica Lucchesi is a postdoctoral researcher at the European Laboratory for Non-Linear Spectroscopy (LENS) in the Neurophotonics group of Prof. Francesco Saverio Pavone. Her research activity “Brain Functional mapping in freely behaving mice” as part of the Human Brain Optical Mapping project, focuses on the development of a portable miniaturized optical system “Miniscope”, capable of monitoring the brain activity of both calcium and hemodynamic signals distributed over the entire cortex in freely moving mice. The innovative optical system for widefield imaging will be used to study the behavioral dynamics in freely moving rodents engaged in social interaction to investigate the neuronal mechanisms underlying the inter-brain synchrony between two or more interacting subjects.

Skills

- Handling and neurosurgery in mice
- Management and housing of laboratory animals (mice)
- Behavioral study of Social Interactions in mice
- Optical imaging techniques: Widefield and Miniaturized microscopy
- Animal behavior data analysis
- Calcium imaging data analysis

Professional Experience

2023-ongoing Post-doc in the Biophotonics Laboratory at LENS
Via Nello Carrara, 1, 50019, Sesto Fiorentino (FI), Italy

Education and Training

2019-2022 International Doctorate in Atomic and Molecular Photonics (XXXV cycle). LENS, University of Florence

- Thesis Title: “*In vivo* calcium imaging of mice engaged in social behavior reveals widespread inter-brain synchrony”
- Supervisor: Prof. Dr. Francesco Saverio Pavone
Co-supervisor: Dr. Anna Letizia Allegra Mascaro

09.2022-12.2022 Ph.D. Internship abroad at **Social Brain Laboratory**
Netherlands Institute for Neuroscience (part of KNAW)
Meibergdreef 47, 1105BA, Amsterdam

Study of neural basis using Functional Ultrasound Imaging (fUSI) during emotional contagion experiments.

- Supervisor: Prof. Dr. Valeria Gazzola

Computer Skills

- Windows, Linux
- Microsoft Word, Excel, Powerpoint
- Inkscape, Photoshop
- Autodesk Fusion 360
- Jupyter Notebook, Spyder

Languages

Mother Tongue:

Italian 

Further Languages:

English B2 

Licenses

- Driving license B
- Diving license NASE Open Water Diver (max 18m deep)
- Diving license NASE for Thermal caves
- HACCP certificate

2017-2019

Master's degree in Biomedical Biology
University of Florence

- Vote: 110/110 e Lode
- Thesis Title: *“Kinematics analysis and study of the distributed cortical activity during reaching and grasping task”*
- Supervisor: Dr. Anna Letizia Allegra Mascaro
Co-supervisor: Prof. Dr. Francesco Vanzi
Second Co-supervisor: Dr. Eros Quarta

2014 - 2017

Bachelor's degree in Biological Science
University of Florence

- Vote: 110/110 e Lode
- Thesis Title: *“Optical imaging of a cortical activity during learning of a motor task”*
- Supervisor: Dr. Anna Letizia Allegra Mascaro
Co-supervisor: Prof. Dr. Francesco Vanzi
Second Co-supervisor: Dr. Eros Quarta

Personal Skills

- Excellent communication skills, listening aptitude, quick learning, and grit accompanied by a natural inclination for team working and goal achievement.

Additional Information

Conferences:

- **2023**

SPIE Photonics West 2023 San Francisco (28th January – 2nd February 2023) attended with **Oral Talk**: *“In vivo calcium imaging of mice engaged in social behavior reveals widespread inter-brain synchrony”*

- **2022**

DCP22 – Dynamics and Complexity Pisa 2022 (26th – 28th May 2022)
Invited Speaker: *“In vivo calcium imaging of mice engaged in social behavior reveals widespread inter-brain synchrony”*

- **2021**

5th HBP Student Conference on Interdisciplinary Brain Research (1st – 4th February 2021) attended with **Oral Talk and Poster Presentation**: “*Head-mounted wide-field microscope to monitor bilateral cortical activity in freely moving mice during Social Interaction*”

- **2020**

BraYn 3rd Brainstorming Research Assembly for Young Neuroscientists (25th - 26th November 2020) attended with **Poster Presentation**: “*Kinematics analysis and study of the distributed cortical activity emerge in the mouse neocortex during Reach-to-Grasp*”

Additional Information

Publications:

- **Jessica Lucchesi**, Alessandro Scaglione, Anna Letizia Allegra Mascaro, and Francesco Saverio Pavone
“*Miniaturized head-mounted wide-field microscope to monitor bilateral cortical activity in mice engaged in social interaction*”
SPIE Conference Proceeding 2023
- Eros Quarta*, Alessandro Scaglione*, **Jessica Lucchesi**, Leonardo Sacconi, Anna Letizia Allegra Mascaro#, and Francesco Saverio Pavone#
“*Distributed and Localized Dynamics Emerge in the Mouse Neocortex during Reach-to-Grasp Behavior*”
Journal of Neuroscience 2022
- Eros Quarta, Anna Letizia Allegra Mascaro, **Jessica Lucchesi**, Costanza Campaioli, Leonardo Sacconi, and Francesco Saverio Pavone
“*Mesoscale Imaging of Cortical Dynamics during Motor Skill Learning*”
Biophotonics Congress: Biomedical Optics Congress 2018

