

Jean-Charles MARIANI  
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## Studies

▶ <b>Italiano Istituto di Tecnologia</b> Postdoc Computational Neuroscience	Paris, France 2022 – Now
▶ <b>Center for interdisciplinary research</b> PhD Neurophysiology (awarded in 2023)	Paris, France 2018 – 2022
▶ <b>Imperial College London</b> MRes Neurotechnology	London, UK 2017 – 2018
▶ <b>ESPCI Paris</b> MEng, Adv MSc, Physics (Biophysics option)	Paris, France 2014 – 2018

## Scientific Experiences

▶ <b>Postdoc project in Functional Neuroimaging lab – Gozzi lab IIT, CNCS</b> ■ Analysis of anaesthetized and awake mice functional connectivity with magnetic resonance imaging (fMRI) and ultrasounds (fUS) ■ Development of dynamic models of brain connectivity for the inference of neuronal perturbations ■ Development of computational models to predict the influence of neuronal population states on dynamic functional connectivity	Nov 2022 – Now
▶ <b>PhD project in Team Lenkei – IPNP, INSERM U1266</b> ■ Studying functional connectivity in awake mice brain using ultrasounds (fUS) ■ Developing an automated pipeline from acquisition to analysis for transcranial awake fUS imaging in mice ■ Studying the fingerprint of pharmacological treatments on behaving brain functional connectivity	Sept 2018 – Sept 2022
▶ <b>Research project at the Chadderton Lab and Breckley lab – Imperial College London</b> ■ Studying connectivity in prefrontal cortex during healthy aging ■ Electrophysiology (patch clamp) in mouse brain slices ■ Intracranial injection of viral vector (optogenetic)	Oct 2017 – Sept 2018
▶ <b>Research project at the Hansen Experimental Physics Laboratory - Stanford University</b> ■ Studying implanted rats behaviour for Daniel Palanker's team retinal prosthesis project ■ Building an experimental setup using Arduino and Python to automate freezing behaviour detection	Jun - Sep 2017

## Extracurricular activities

- **2018-2022:** Student representative at CRI and at IPNP – organising monthly seminar, semestrial conferences, yearly retreat
- **2017-2018:** Representing the Mres Neurotechnology for Imperial College fair – BCI project : the music of the brain
- **2015-2017:** Active member of ESPCI's Hacklab : organising Arduino and atex workshops, project leader for COP-21
- **2014-2017:** Member of ParisTech sailing team – French Student Championship, «Cruise Race EDHEC »

## Other Information

- Programing skills: languages CAML, Python, MAPLE, LaTeX, C, MATLAB
- Electronic skills: Arduino, RaspBerry Pi
- English: reading, writing and speaking / German, Italian: basic knowledge
- Hobbies: art: linocut, exhibitions in Portbail and Senlis, France; design: [mcjibulles.creator-spring.com](http://mcjibulles.creator-spring.com)

## Publications

- **Opioid-induced Inter-regional Dysconnectivity Correlates with Analgesia in Awake Mouse Brain**, J.C. Mariani, S. Diebolt, L. Beynac, R.Santos, S. Schulz, T. Deffieux, M. Tanter, Z. Lenkei, A. Kliewer, bioRxiv, 31/07/2024, DOI: [10.1101/2024.07.30.604249](https://doi.org/10.1101/2024.07.30.604249)
- **Connectomic and behavioral alterations in creatine transporter deficiency are partially normalized by gene therapy**, C. Montani, A. Galbusera, B.D'Epifanio, S. Cornutti, J.C. Mariani, E De Guzman, S. Mandrup Bertozzi, A. Amirotti, L. Baroncelli, A. Gozzi, bioRxiv, 12/01/2024, DOI: [10.1101/2024.01.12.575377](https://doi.org/10.1101/2024.01.12.575377)
- **Altered Cortical Trigeminal Fields Excitability by spreading Depolarization Revealed with in vivo functional ultrasound imaging combined with electrophysiology**, L. Bourgeois-Rambur, L. Beynac, J.C. Mariani, M. Tanter, T. Deffieux, Z. Lenkei, L. Villanueva, Journal of Neuroscience, Vol 42, Issue 32, DOI: [10.1523/JNEUROSCI.1825-21.2022](https://doi.org/10.1523/JNEUROSCI.1825-21.2022)
- **Microglia control cerebral blood flow and neurovascular coupling via P2Y12R-mediated actions**, E. Császár, N. Lénárt, C. Cserép, Z. Kornyei, R. Fekete, B. Pósfai, D. Balázsfi, B. Hangya, A. D Schwarcz, D. Szollosi, K. Szigeti, D. Máthé, BL. West, K. Sviatkó, AR. Brás, J.C. Mariani, A. Kliewer, Z. Lenkei, L. Hricisák, Z. Benyo, M. Baranyi, B. Sperlagh, A. Menyhart, E. Farkas, A. Denes, Journal of Experimental Medicine, Vol 219, n°3, DOI: [10.1084/jem.20211071](https://doi.org/10.1084/jem.20211071)
- **Whole-brain 3D activation and functional connectivity mapping in mice using transcranial functional ultrasound imaging**, A. Bertolo, M. Nouhoum, S. Cazzanelli, J. Ferrier, J.C. Mariani, A. Kliewer, B. Belliard, BF. Osmanski, T. Deffieux, S. Pezet, Z. Lenkei, M. Tanter, Journal of Visualized Experiments, Vol 24, 2021, p. 62267, DOI: [10.3791/62267](https://doi.org/10.3791/62267)
- **Temporal structure in spiking patterns of ganglion cells defines perceptual thresholds in rodents with subretinal prosthesis**, E.Ho, H. Lorach, G. Goetz, F. Laszlo, X. Lei, T. Kamins, J.C. Mariani, A. Sher & D. Palanker, Nature Scientific Reports, Vol 8, Feb 2018, p. 3145, DOI: [10.1038/s41598-018-21447-1](https://doi.org/10.1038/s41598-018-21447-1)