



## Clara FONTENEAU

26 rue Turbil, 69003 Lyon

6.10.1990 - ☎ +336.26.01.84.21

@ [fonteneau.clara@gmail.com](mailto:fonteneau.clara@gmail.com)

 [orcid.org/0000-0003-2808-3867](https://orcid.org/0000-0003-2808-3867)

 [clarafonteneau.github.io](https://github.com/clarafonteneau)



# Post-doctoral position

## EDUCATION

		Université Claude Bernard Lyon 1, France
2015-2018	<b>PhD, Neurosciences – Lyon Neuroscience Research Center</b>	
2012-2014	<b>MSc, Neurosciences</b>	
2010-2012	<b>Bachelor, Biology and Physiology</b>	

## ACADEMIC POSITIONS

2014-2018	PSYR2 Team, Centre de Recherche en Neurosciences de Lyon (CRNL) CRNL / INSERM / CNRS / UCBL1 / CH Le Vinatier <b>PhD in Neuroscience</b> <i>Impact of a single frontal transcranial direct current stimulation on the dopaminergic network in healthy subjects</i> <u>Supervisor:</u> Dr M.F. Suaud-Chagny <u>Grant:</u> Hospital/Research engineer – CH Le Vinatier (XXX euros) <u>Missions</u> <ul style="list-style-type: none"><li>• Transcranial stimulation in healthy humans (<b>tDCS, rTMS</b>)<ul style="list-style-type: none"><li>○ Impact of bifrontal tDCS on the <b>dopaminergic</b> transmission using <b>PET</b> imaging</li><li>○ Neurophysiological impact of fronto-temporal tDCS using a <b>multimodal PET-MRI</b> approach (PET dopamine, fMRI, ASL, DTI)</li></ul></li><li>• Pathophysiology and transcranial stimulation in patients with schizophrenia: <b>DTI, MRS</b> and <b>IRMf</b> data analysis (Impact of transcranial stimulation on structural (<b>DTI</b>) and functional connectivity (<b>MRS, rs-fMRI</b>) in patients with schizophrenia with and without hallucinations).</li></ul>	<b>Lyon, France</b>
2014 (5 months)	DYCOG Team, Centre de Recherche en Neurosciences de Lyon (CRNL) CRNL / INSERM / CNRS / UCBL1 <b>MSc Neurosciences</b> <i>Mechanisms of attentional preparation in the auditory cortex</i> <u>Supervisors:</u> Dr A. Bidet-Caulet & Dr O. Bertrand <u>Missions</u> : Electrophysiological recordings ( <b>intracranial EEG</b> , evoked potential and time-frequency)	<b>Lyon, France</b>
2013 (6 weeks)	Helen Wills Neurosciences Institute, UC Berkeley <b>Bachelor, Biology and Physiology, Neurosciences</b> <i>Neurophysiological mechanisms of auditory attention in humans</i> <u>Supervisors:</u> Pr R. Knight & Dr A. Bidet-Caulet <u>Missions:</u> Electrophysiological recordings ( <b>scalp EEG</b> ) in patients with frontal lesions and healthy controls	<b>Berkeley, USA</b>
2012 (5 weeks)	DYCOG Team, Centre de Recherche en Neurosciences de Lyon (CRNL) CRNL / INSERM / CNRS / UCBL1 <b>Research Assistant</b> <i>Attentional preparation and distractibility : a scalp EEG study</i> <u>Supervisors:</u> Dr A. Bidet-Caulet & Dr O. Bertrand	<b>Lyon, France</b>
2011 (2 months)	Institut des sciences cognitives (ISC), UMR 5229 <b>Research Assistant</b> <i>Decision making and Reward – An fMRI study</i> <u>Supervisors:</u> Dr J.C. Dreher	<b>Lyon, France</b>
(1 month)	IMPACT Team, Centre de Recherche en Neurosciences de Lyon (CRNL) CRNL / INSERM / CNRS / UCBL1 <b>Research Assistant</b> <i>Visuo-spatial representation – Visual attention and Heminegligence</i> <u>Supervisors:</u> Dr L. Pisella	<b>Lyon, France</b>

## HONORS AND AWARDS

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- 2017 **Poster presentation 1<sup>st</sup> place** – Non Invasive Brain stimulation techniques (NIBS) for psychiatric disorders, Germany  
**Young Investigator Travel Award**, 2<sup>nd</sup> International Brain Stimulation conference, Barcelona, Spain
- 2015 **Poster presentation 2<sup>nd</sup> place**, Non-Invasive brain stimulation techniques (NIBS) for psychiatric disorders, Belgium

## RESEARCH FUNDING

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- 2015 Fondation Neurodis, Dr Suaud-Chagny (PI), 30/06/2015 – XX/XX/2018: €48,000 *COMBISTIM*. Role: Co-I
- 2014 CSR, Dr Brunelin (PI), 18/02/2015 – 11/07/2016: €38,505 *DOPASTIM*. Role: Co-I

## PUBLICATIONS

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### Peer-Reviewed Research Articles

1. **Fonteneau Clara**, Redouté Jérôme, Haesebaert Frédéric, Le Bars Didier, Costes Nicolas, Suaud-Chagny Marie-Françoise, Brunelin Jérôme (2018) Frontal transcranial direct current stimulation induces dopamine release in the ventral striatum in human, *Cerebral Cortex*, Volume 28, Issue 7, 1 July 2018, Pages 2636–2646, <https://doi.org/10.1093/cercor/bhy093>
2. Psomiades Marion, Mondino Marine, **Fonteneau Clara**, Bation Rémy, Haesebaert Frédéric, Suaud-Chagny Marie-Françoise, Brunelin Jérôme (2018) N-Acetyl-Aspartate in the dorsolateral prefrontal cortex in men with schizophrenia and auditory verbal hallucinations: A 1.5T Magnetic Resonance Spectroscopy Study; *Scientific Report* (2018) [accepted; SREP-17- 27645B]
3. Psomiades Marion, **Fonteneau Clara**, Mondino Marine, Luck David, Haesebaert Frederic, Suaud-Chagny Marie-Françoise, Brunelin Jérôme (2016) Integrity of the arcuate fasciculus in patients with schizophrenia with and without auditory verbal hallucinations: A DTI-tractography study; *NeuroImage: Clinical* 12 (2016) 970–975 <http://dx.doi.org/10.1016/j.nicl.2016.04.013>
4. Bidet-Caulet A, Bottemanne L, **Fonteneau C**, Giard M-H, Bertrand O (2014) Brain Dynamics of Distractibility: Interaction Between Top-Down and Bottom-Up Mechanisms of Auditory Attention. *Brain Topography*

### Reviews, Chapters & Commentaries

1. Psomiades Marion\*, **Fonteneau Clara\***, Suaud-Chagny Marie-Françoise, Haesebaert Frédéric, Brunelin Jérôme (2015) Neurostimulation du cortex préfrontal dorsolatéral : quels effets sur la symptomatologie et les émotions dans la dépression et la schizophrénie ? ; *Santé mentale au Québec*; \*co-author
2. Mondino Marine, **Fonteneau Clara**, Brunelin Jérôme (2015) Schizophrenia. Book Chapter in *Transcranial Direct Current Stimulation in Neuropsychiatric Disorders: Clinical Principles and Management* by Brunoni AR, Nitsche MA, Loo CK. Springer NY, USA

### Manuscripts under review or in preparation

1. **Fonteneau Clara**, Mondino Marine; Arns Martijn; Baeken Chris; Bikson Marom; Brunoni Andre R; Burke Matthew J; Neuvonen Tuomas; Padberg Frank; Pascual-Leone Alvaro; Poulet Emmanuel; Ruffini Giulio; Santarnecchi Emiliano; Sauvaget Anne; Schellhorn Klaus; Suaud-Chagny Marie-Françoise; Palm Ulrich; Brunelin Jérôme; Sham tDCS: a hidden source of variability? Reflections for further blinded, controlled trials; *Brain Stimulation*; under review
2. **Fonteneau Clara**, Merida Ines, Redouté Jérôme, Haesebaert Frédéric, Le Bars Didier, Costes Nicolas, Brunelin Jérôme, Suaud-Chagny Marie-Françoise; Neurophysiological impact of a fronto-temporal transcranial direct current stimulation (tDCS) in healthy humans: a simultaneous PET-MR approach (*in preparation*)

### Conference Presentations

1. **Fonteneau Clara**, Neurophysiological impact of a fronto-temporal transcranial direct current stimulation (tDCS) in healthy humans: a simultaneous PET-MR approach; Talk in the symposium: Transcranial direct current stimulation for auditory hallucinations: evidence from clinical and neurophysiological studies, given at 3rd European Conference on Brain Stimulation in Psychiatry; Lyon, France, October 2018
2. **Fonteneau Clara**, Mondino Marine; Arns Martijn; Baeken Chris; Bikson Marom; Brunoni Andre R; Burke Matthew J; Neuvonen Tuomas; Padberg Frank; Pascual-Leone Alvaro; Poulet Emmanuel; Ruffini Giulio; Santarnecchi Emiliano; Sauvaget Anne; Schellhorn Klaus; Suaud-Chagny Marie-Françoise; Palm Ulrich; Brunelin Jérôme; Sham tDCS: a hidden source of variability? Reflections for further blinded, controlled trials; Poster presented at 3rd European Conference on Brain Stimulation in Psychiatry; Lyon, France, October 2018
3. **Fonteneau Clara**, Merida Inès, Redouté Jérôme, Haesebaert Frédéric, Costes Nicolas, Brunelin Jérôme, Suaud-Chagny Marie-Françoise; Neurophysiological impact of a fronto-temporal transcranial direct current stimulation in healthy subjects: a multimodal PET-MR imaging approach; Poster presented at *Non Invasive Brain stimulation techniques (NIBS) for psychiatric disorders*; Munich, Germany; October 2017 \***1st poster prize**
4. Merida Inés, **Fonteneau Clara**, Reilhac Anthonin, Redouté Jérôme, Irace Zacharie, Suaud-Chagny Marie-Françoise, Hammers Alexander, Costes Nicolas; Motion correction and multi-atlas attenuation correction applied to a simultaneous bolus/infusion PET-MR brain study; Talk given (by I. Merida) at 6th PET-MRI and SPECT-MRI (PSMR) Conference; Lisbon, Portugal, May 2017
5. Merida Inés, Hammers Alexander, Redouté Jérôme, McGinnity Colm, **Fonteneau Clara**, Suaud-Chagny Marie-Françoise, Reilhac Anthonin, Costes Nicolas ; Attenuation correction with a multi-atlas method for brain PET-MR imaging: assessment

- with realistic simulated [11C]raclopride bolus-infusion PET data ; Poster presented at *28th International Symposium on Cerebral Blood Flow, Metabolism and Function & 13th International Conference on Quantification of Brain Function with PET*; Berlin, Germany, April 2017
6. **Fonteneau Clara**, Haesebaert Frédéric, Redouté Jérôme, Le Bars Didier, Costes Nicolas, Brunelin Jérôme, Suaud-Chagny Marie-Françoise ; Online transcranial direct current stimulation of the frontal cortex induces dopamine release in the striatum – a spatial and temporal analysis in healthy humans ; Poster presented at *2<sup>nd</sup> International Brain Stimulation conference*, Barcelona, Spain; March 2017
  7. Reilhac Anthonin, Berrada Rania, Irace Zacharie, Merida Inés, **Fonteneau Clara**, Suaud-Chagny Marie-Françoise, Costes Nicolas ; Développements d'une méthode de correction de mouvement en IRM-TEP cérébrale ; Poster presented at *Recherche en Imagerie et Technologie pour la santé (RITS)*, Lyon, France, Mars 2017
  8. **Fonteneau Clara**, Haesebaert Frédéric, Villien Marjorie, Redouté Jérôme, Le Bars Didier, Costes Nicolas, Brunelin Jérôme, Suaud-Chagny Marie-Françoise ; Neurophysiological impact of a fronto-temporal transcranial direct current stimulation in healthy subjects: a multimodal PET-MR imaging approach; Poster presented at *11th International Symposium on Functional NeuroReceptor Mapping of the Living Brain*, Boston, USA; July 2016
  9. **Fonteneau Clara**, Haesebaert Frédéric, Redouté Jérôme, Le Bars Didier, Costes Nicolas, Brunelin Jérôme, Suaud-Chagny Marie-Françoise ; Acute and subsequent effects of transcranial direct current stimulation on the dopaminergic transmission in healthy humans ; Poster presented at *11th International Symposium on Functional NeuroReceptor Mapping of the Living Brain*, Boston, USA; July 2016
  10. **Fonteneau Clara**, Redouté Jérôme, Le Bars Didier, Costes Nicolas, Brunelin Jérôme, Suaud-Chagny Marie-Françoise; Impact of transcranial direct current stimulation on the dopaminergic transmission in healthy humans; Poster presented at *Non Invasive Brain stimulation techniques (NIBS) for psychiatric disorders* Ghent, Belgium; December 2015 **\*2nd poster prize**
  11. Psomiades Marion\*, **Fonteneau Clara\***, Haesebaert Frédéric, Suaud-Chagny Marie-Françoise, Brunelin Jérôme. Does prefrontal non invasive brain stimulation alleviating symptoms in depression and schizophrenia impact emotion processing ?; Poster presented at *Non Invasive Brain stimulation techniques (NIBS) for psychiatric disorders* Ghent, Belgium; December 2015; \* co-author

## NOTABLE INVITED TALKS

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| 2017 | <p><b>Neurophysiological impact of a fronto-temporal transcranial direct current stimulation (tDCS) in healthy subjects: a PET-MR multimodal imaging approach</b><br/>         NeuroImaging Journal Club, CRNL, Lyon<br/>         Journée Scientifique LILI – IRM-TEP, Lyon</p> <p><b>Online transcranial direct current stimulation of the prefrontal cortex induces dopamine release in the ventral striatum in humans</b><br/>         Annual Scientific Meeting, Doctoral School of Neuroscience and Cognition, Lyon</p> <p><b>L'exploration des méthodes de modélisation TEP dans le cas de déplacement par un neurotransmetteur endogène (approche lp-ntPET)</b><br/>         Journal Club CERMEP, Lyon</p> |
| 2016 | <p><b>Effets de la stimulation transcrânienne en courant continu sur la transmission dopaminergique chez le sujet sain</b><br/>         Partenariat Université Lyon 2 et Conseil scientifique de la recherche CH Le Vinatier, Lyon</p> <p><b>Neurophysiological impact of transcranial direct current stimulation (tDCS) in healthy subjects</b><br/>         Berenson-Allen Center for NonInvasive Brain Stimulation, Boston</p>   |
| 2015 | <p><b>Neurophysiological impact of a fronto-temporal transcranial direct current stimulation (tDCS) in healthy subjects: a multimodal imaging approach</b><br/>         Conseil scientifique de la fondation Neurodis, Lyon</p>   |

## TEACHING AND SUPERVISION

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| 2017-2018 | <b>Co-supervisor</b> of Charline Magnin, MSc Clinical Neuroscience   |
| 2017      | <b>Lecturer</b> – tDCS & Neuroimaging (STEP – Stimulation transcrânienne en Psychiatrie, de la théorie à la pratique, Module 4 – Technique de neuromodulation – Effets cognitifs, biologiques et comportementaux) – Centre Hospitalier Le Vinatier |
| 2016-2017 | <b>Teaching Assistant</b> – Neurophysiology (Developmental histology) – Université Lyon 1<br><b>Co-supervisor</b> of Julie Renaud, MSc   |
| 2015      | <b>Co-supervisor</b> of Jeanne Monnier, MSc  |
| 2010-2013 | <b>Tutor in English</b> at the Language center – Université Lyon 1   |

## PROFESSIONAL SERVICE

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Memberships	Society for Neuroscience, Stimulation transcrânienne en Psychiatrie (STEP)
Peer Review	Journal of Neurochemistry; Neuropsychopharmacology; Schizophrenia Bulletin
Lab services	Co-organizer, Big Data in Neuroscience Conference (2016) <i>Invited guest speakers: Dr G. Varoquaux, Dr P-A Gourraud, Dr N. Lechopier</i> Organizer, PsyR2 Team Journal Club (2015-2018) Grant and Funding watch for PsyR2 Team (2015-2018)
Lab skills	Research project design; Grant submission; Clinical trial management (ethics requirements (CPP, ANSM), subject recruitment); Computer science (Windows/Mac/Linux, Bash); Data analysis (Python, Matlab, SPM, CONN, FSL, Minc Tool Kit, Turku, Niftireg, Mango, MedINRIA); Statistical analysis (R, SPSS, JASP); scalp EEG and intracranial EEG acquisition and analysis; PET acquisition and analysis; MRI acquisition and analysis (ASL, DTI, resting-state fMRI); brain stimulation (tDCS, TMS)
Communication	English bilingual, German conversation, Spanish proficient

## INTEREST

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Sports	Rock climbing, Alpinism, Ski, Tennis
Hobbies	Photography, Cooking, Trekking, Cello

## REFERENCES

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Dr Marie-Françoise Suaud-Chagny  
Co-Director, PSYR2 Team, CRNL, Lyon  
Adress  
Email ; phone number

Dr Nicolas Costes  
CERMEP, Lyon  
Adress  
Email ; phone number

Dr Olivier Bertrand  
Director, CRNL, Lyon  
Adress  
Email ; phone number