



## **MASTER 2 Fundamental and Clinical Neurosciences**

### **Internship proposal 2023-2024**

*(internship from January to June 2024)*

**Host laboratory:** *University of Plymouth, UK*

**Host team :** *Elsa Fouragnan's lab*

<https://www.elsa-fouragnan.com/>

**Internship supervisors :** *Elsa Fouragnan, Associate Professor,  
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#### **Project title :**

*Working on Transcranial Ultrasound Stimulation in addiction*

#### **Project summary :**

*This work will include the first preclinical trial employing Transcranial Ultrasound Stimulation in addiction as well as additional work exploring the possibility of TUS crossover dissociation. Crossover dissociations disconnect two brain regions in opposite hemispheres such that these can no longer communicate in the same hemisphere, leaving unilaterally intact functioning homologues. Capitalizing on the high spatial resolution and specificity of TUS, the project will use this approach to inform clinical interventions.*

*This proposal has two central aims (A1 preclinical trials; A2 multisite TUS) which will be tackled in interlinked WPs all involving the same brain regions across different networks. We will target a subcortical and a deep cortical region (the striatum and the anterior cingulate cortex) regulating reward-based learning. (A1) will use TUS to modulate learning circuits in addiction using double dissociation. (A2) will establish a multisite human TUS approach with the equivalent of A1 using crossover dissociation. We will follow the Open Science Framework principles for both aims.*

#### **3-5 recent publications :**

Please send your proposal to [marion.richard@univ-lyon1.fr](mailto:marion.richard@univ-lyon1.fr) for publication on the Master of Neuroscience website.