



# 6-month internship for MSc student

Multimodal assessment of diaphragm contractility

UMR-S 1158, Paris

**Locations:** UMR-S 1158 Hôpital Universitaire La Pitié-Salpêtrière, 47-83 boulevard de l'Hôpital, 75013, Paris, France with collaborators at BioMaps (Orsay) and the Institute of Myology (Paris)

**Starting date:** January 2023.

**Project summary:** We are aiming to combine non-volitional assessment of diaphragm contractility relying on phrenic magnetic stimulation with ultrafast ultrasound imaging (1, 2) in patients with diaphragm dysfunction.

**Profile:** The candidate must be an MSc student in a relevant discipline(s) (e.g. biomechanics, respiratory physiology, human movement sciences, and rehabilitation sciences). Experience with relevant laboratory techniques is desirable but a strong willingness to learn and an inquisitive attitude is essential. Experience with image analysis/signal processing and computer-programing skills (Matlab, R) are also desirable. Although not mandatory, French speaking is desirable, as the candidate will work with healthy volunteers and patients.

**Keywords:** Ultrasound imaging, skeletal muscle physiology, respiratory physiology, biomarkers, diaphragm

**Contact:** Interested applicants should email directly Damien Bachasson ([d.bachasson@institut-myologie.org](mailto:d.bachasson@institut-myologie.org)) with a cover letter and a detailed CV. Applications in French and English will be reviewed.

## **References:**

1. D. Bachasson, M. Dres, M. Nierat, J. Doorduyn, J. Gennisson, J. Hogrel, T. Similowski, in *2018 IEEE International Ultrasonics Symposium (IUS)*. (2018), pp. 1-4.
2. T. Poulard, M. Dres, M. C. Nierat, I. Rivals, J. Y. Hogrel, T. Similowski, J. L. Gennisson, D. Bachasson, Ultrafast ultrasound coupled with cervical magnetic stimulation for non-invasive and non-volitional assessment of diaphragm contractility. *J. Physiol.* **n/a**, (2020); published online EpubSep 30 (10.1113/JP280457).