**Post-doctoral position – 12 months**

**LAMIH UMR CNRS 8201 Valenciennes, France**

Context: The Laboratoire d’Automatique, de Mécanique et d’Informatique industrielles et Humaines (LAMIH), UMR CNRS 8201 (<http://www.uphf.fr/LAMIH/en/presentation>) of the Université Polytechnique Hauts-de-France (UPHF - [http://www.uphf.fr](http://www.uphf.fr/)), is recruiting a post-doctoral fellow for 12 months. The LAMIH is organized into 4 well-identified disciplinary departments: Automation, Mechanics, Computer Science and Human and Life Sciences (HLS). The recruited person will work within the HLS department, a multidisciplinary department which is essentially based on psycho-ergonomics, neurophysiology and biomechanics, which means that humans can be apprehended there via a systemic model. The HLS department has solid collaborations with clinical partners, and in particular with various functional rehabilitation centers. These links allow the HLS department to have access to specific populations, particularly those with locomotor disabilities. In addition, given the local, national and international contexts, the forces of this department have focused on human mobility, an essential factor of well-being and social inclusion. The HLS department thus has as main scientific challenge to promote the maintenance and improvement of mobility and is based in this context on 3 research axes:

1) TechInno axis: Design and validation of innovative biomechanical devices

2) Detectôt axis: Determination of markers of the early degradation of mobility and understanding of the underlying mechanisms

3) Lab2practice axis: Transfer of knowledge and skills from scientific approaches to clinical or field applications

Project title: **INTERREG project: NeurO-Musculo-skeletAl Disorders ecosystem (NOMADe)**: validation of new low-cost movements sensors for clinical practice.

Project: The prevention and the medical care for the Neuro-Musculo-Skeletal Disorders (NMSD) in Europe continue to be a major challenge because it is a real public health issue. The occurrence of NMSD keeps increasing creating therefore an important economic issue. The project NOMADe aims to develop low-cost measurement tools and an e-learning platform on the NMSD dedicated to the healthcare practitioners as well as the patients or the companies. The long-term objective is to facilitate the access to knowledge, learning, information and good clinical practices linked to the NMSD with the main goal of improving Health. The NOMADe project is funded by European INTERREG FWV funds (France-Wallonie-Vlaanderen) on which CERISIC (Research center of the Haute Ecole Louvain en Hainaut) is the leader. The department Human and Life Sciences (HLS) of the LAMIH UMR CNRS 8201 is one of the partners and is taking part in the project for its clinical expertise on the human movement analysis. The part of HLS in the NOMADe project is to help in developing and validating low-cost measurement devices adapted to the need of the healthcare practitioners.

Main activities:

* Littérature review and experimental protocols development
* Data collection on asymptomatic and/or pathological populations
* Data processing
* Statistical analysis
* Regular presentations and reports to the INTERREG consortium
* Scientific communication

Knowledge and skills expected:

* EMU sensors
* 3D capture and analysis of human movement
* Electromyographie (EMG)
* Programming (Matlab)
* Data analysis and statistics
* English, written and spoken
* French speaking would be appreciated
* Relational with patients, clinicians and researchers

Available scientific tools:

* Low-cost measurement tools from NOMADe
* 3D motion capture systems (Vicon, Qualisys)
* Force plates and force sensors
* EMG
* Ultrasound machine
* Ankle dynamometers
* Pressure insoles
* Access to the experimental laboratories of our clinical partners

Location: LAMIH, Campus du Mont Houy, 59 313 Valenciennes, France

Salary: 2 126 € net

Supervision: Dr Christophe GILLET, Dr Sébastien LETENEUR et Pr Émilie SIMONEAU

Deadline for submission of applications: April 12, 2021

Start of post-doctoral position : September 1st, 2021

For more information: [sebastien.leteneur@uphf.fr](mailto:sebastien.leteneur@uphf.fr)

To apply, please send to [sebastien.leteneur@uphf.fr](mailto:emilie.simoneau@uphf.fr):

* CV
* Cover letter
* PhD manuscript
* PhD reports
* PV de soutenance
* Copy of PhD diploma
* Copy of the 3 most significant scientific publications