

BIOSTATISTICS INTERNSHIP

Subject: **STUDY OF NON-INVASIVE DIAGNOSTIC CRITERIA FOR HEPATOCELLULAR CARCINOMA**

Location: HIFIH Laboratory, Angers University.

Education level: Master 2 in applied mathematics or engineering school.

Start date: Between January and April 2020.

Duration: 6 months.

Internship bonus: a monthly stipend of around 550 euros.

Context. Patients with cirrhosis are at risk of developing hepatocellular carcinoma (HCC). The French cohort CirVir recently showed that strict biannual screening can significantly improve patients' overall survival. Reliable HCC diagnosis is therefore crucial. The discovery of a hepatic nodule can be done either by ultrasound, scanner or MRI. Once the nodule is discovered, its non-invasive characterization in imaging and the formal diagnosis of HCC is an important issue, thus avoiding a biopsy to the patient (invasive procedure with potential complications).

Internship objectives. Therefore, the evaluation of the performance of existing non-invasive diagnostic criteria according to the HCC discovery method is the first objective of the internship. The factors influencing these performances will also have to be identified. This will determine the optimal non-invasive diagnostic algorithm relative to the patient's profile. The student will rely on the CHIC and CHIC plus cohorts of 613 patients for whom 289 CHCs have been histologically proven. Furthermore, a new non-invasive diagnostic algorithm will be developed after an extensive exploratory data analysis.

Intern Requirements: The successful candidate must be interested in modelling and have a good proficiency in the R programming language.

Application: Send a CV and cover letter to Jérémie Riou: jeremie.riou@univ-angers.fr, and to Marine Roux: marine.roux@univ-angers.fr.