Màj 01/06/2020

UE 2.1. Current concepts in Precision Health — 15 ECTS

Parcours « *Precision Health* »

ST7: Medical devices and precision health

Team: Nicolas Blanchemain, Julien Dejonckheere

Contact: nicolas.blanchemain@univ-lille.fr

As part of this seminar, students will have knowledge in the field of medical device (regulation, class, etc..) and precision medicine. The field of oncology, inflammation, infection and neuroscience, the latest therapeutic innovations for precision medicine will be presented through concrete examples by researchers, clinicians and industry.

Duration: 1 day

Program

Provisional schedule

Introduction: Medical devices, definition and regulation (**N. Blanchemain / J. Dejonckeere**)

Oncology

- Oncologic Photodynamic Therapy performed at the Lille University Hospita (**Serge Mordon, DR INSERM**)
- Innovation in Mass Spectrometry for Guided Surgery and in vivo diagnostic (**Pr. Isabelle Fournier, ULille**) ISITE
- Instrumented biomimetic 3D Microfluidic devices for cancer studies: tumor vascularization, sensors and actuators. (**Dr Antony Treizebre, IEMN; Vincent Senez, DR CNRS ; Fabrice Soncin, DR CNRS**)

Neurosciences

- Heart Rate Variability analysis for autonomic nervous system monitoring: physiological principle, signal processing algorithms, clinical application in anesthesiology and demonstration (Class IIa) (**Julien Dejonckheere)**
- Connected devices for motor assessment at home for people with gait disorders (soles, actimetry…) » (**Caroline Moreau ULille, INSERM, CHU**)

Inflammation

- Conception of a antalgic meshes for the prevention of pain after hernia repair **(Pr. B. Martel, ULILLe)** → LABCOM (Region)
- Evaluation of a classe II medical device (preclinical and clinical evaluation) (**Dr Nicolas Blanchemain, ULille**)
- Technology transfer – from Laboratory to company. **(F. Aubert, Cousin Biotech)**

Revascularization / Tissue engineering

- Maxillo-facial surgery, problematic and therapeutic (**Pr Gwenael Raoul, PU/PH**)
- 3D Printing of scaffold for bone reconstruction (**Dr JC Hornez, UPVH, V. Hornez (cryberyl)**)
- 3D printing of endoprothèse for the treatment of complex aneurism (**Thomas Mesnard, PH**) → FEDERATE (projet SUSTAINED)
- 3D printing of bio-prostheses for breast reconstruction (**J. Payen (Lattice Medical)**) → INTERREG