

POSTDOCTORAL POSITION
MICROBIOLOGY – MICROBIOME STUDIES
FULL TIME CONTRACT (18 MONTHS)

Project

The applicant will take part in the project “Enteroprobe”, which is funded by the Région Rhone Alpes Auvergne-funded and granted to Pr. Donald Martin in partnership with the company Pelican Health SAS, and hosted in the TIMC laboratory of the University Grenoble Alpes.

Human-associated gastrointestinal microbial communities provide multiple beneficial services for the host. Disruption of any of these symbiotic relationships through shifts in microbial community composition (i.e. dysbiosis) could compromise human health and contribute to disease onset, progression or duration. Dysbiosis is associated with a growing number of chronic diseases (e.g. IBD, IBS, type-2 diabetes, obesity, neurological disorders, cancer). Up to now most studies have assessed gut microbiota alteration in patients through fecal analysis, primarily because of easy access and non-invasiveness. The studies are limited to correlations between the composition of fecal material (e.g. 16S, metagenome, metabolites), biological and clinical markers of pathologies, which limits causality interpretations in the etiology or treatment of the disease. It is noteworthy that feces-derived microbiota mostly reflect colonic species, thus neglecting the potential involvement of small intestinal-associated microbiota. Enteroprobe is a project supporting the development of a novel in-situ microbiome sampling medical device by Pelican Health SAS. The novel approach will give access to the small intestine, open a better understanding of the intestinal microbiome and its relationship with the host, and allow the development of new nutritional, therapeutic and diagnostic solutions. In this context, the postdoctoral applicant will setup an in-vitro platform for the development of the medical device and the study of the small intestinal microbiome and its evolution. He/she will select and develop culture media and conditions for mock microbiome communities and retrieved samples. The applicant will also perform metagenomics analysis to characterize the system.

Candidate

The applicant should have a recent PhD in microbiology with a strong knowledge in gut derived microorganism culture. He/she will have to master bench skills in molecular biology such as DNA/RNA extraction, PCR/qPC. Skills in bioinformatics and biostatistics (R programming and statistical programming language) dedicated to handle 16S sequencing data and meta-Omics data are mandatory.

Environment

Located in the Grenoble area, the TIMC laboratory "Translational Innovation in Medicine and Complexity" (UMR 5525) brings together scientists and clinicians around the use of bioengineering, computer science and applied mathematics for the understanding and control of normal and pathological processes in biology and health.

Its interdisciplinary activity contributes both to the basic knowledge in these fields and to the development of systems for diagnostic and therapeutic solutions.

TIMC has about 300 members spread over 12 research teams, including about 160 permanent staff: researchers, teacher-researchers, engineers, technicians and administrative personnel.

Pelican Health SAS is a spin off company from the TIMC lab. It has the ambition to “empower the microbiome health movement” with the release of a non-invasive multisampling medical device to

collect small intestinal samples. The company has the ambition to commercialize the first generation of the device at the end of 2022 and to bring new diagnostic solutions to patients.

Application

The position starts as soon as possible on a full-time basis for 18 months. Application process will be closed by April 2021. Application and informal queries about the project and the lab should be addressed to Pr. Donald Martin (don.martin@univ-grenoble-alpes.fr). Candidates should send a brief statement of their research interests, their CV and at least two recommendation contacts.