



## Junior Post-Doctoral Position



### Profile

#### Research Project / Missions / Scientific context

A postdoctoral research fellow position is available for 3-years at CRCT (Toulouse Cancer Research Center) in Corinne Bousquet's Research group « Microenvironment & Therapeutic Resistance in Pancreatic Neoplasms. »

The project aims at understanding pancreatic cancer heterogeneity in spatial cell positioning, focusing on the interplay between cancer cells, cancer-associated fibroblasts and immune cells, to understand immune cell exclusion within sub-tumor microenvironment areas. Within an European Consortium (Belgium, Spain, Italy & France), the role of specific guidance cues that may organize cell attraction or repulsion will be explored. To do so, multiplex RNA and protein immunohistofluorescence on pancreatic cancer tissue shall be developed, as well as functional assays using 3D cell co-cultures.

Toulouse is a dynamic research area located in south of France that comprises many internationally recognized laboratories (fundamental cell biology, pharmacology, cancerology, immunology, metabolism, agronomy...) and gives access to a network of high-level skills research platforms in life sciences ([GENOTOUL – Un ensemble de ressources au service de la R&D](#), e.g. imaging, cytometry, bioinformatics, genomics & transcriptomics, biostatistics; [Metatoul - Home \(inrae.fr\)](#), e.g. metabolomics & fluxomics; [Toulouse Proteomics Infrastructure | IPBS](#), e.g. proteomics) making possible almost all research projects.

The Toulouse Cancer Research Center, accredited by INSERM, CNRS and Toulouse University, is internationally recognized and offers a productive scientific environment centered on basic, transdisciplinary (bioinformatics, mathematics & physics in close link with the Toulouse [Laboratoire d'analyse et d'architecture des systèmes | LAAS-CNRS](#) and [Laboratoire de Physique et Chimie des Nano-objets \(insa-toulouse.fr\)](#)), and clinical research (in close link with the [IUCT Oncopole - Institut Universitaire du Cancer de Toulouse - Accueil \(iuct-oncopole.fr\)](#)), to understand and treat cancers. CRCT brings together a total of >250 Researchers, MDs, University Professors, Technicians, Students and Post-docs of many nationalities. CRCT offers on-site state-of-the-art technological platforms with personalized project support, including single cell RNAseq ([Le pôle technologique DU CRCT - Centre de Recherches en Cancérologie de Toulouse \(crct-inserm.fr\)](#)).

#### Main missions

- Multiplex imaging (RNAs & Proteins) and image analyses on pancreatic cancer tissues
- Set up of 3D co-cultures of patient-derived cancer-associated fibroblasts with cancer cells and immune cells
- Functional characterization of selected guidance cues using molecularly engineered 2D and 3D patient-derived cell models, and in vivo murine models of pancreatic cancer (orthotopically grafted with cancer cells).
- Experimental design & organization, Statistical analysis, Result interpretation & reporting (oral in english during Labmeetings; written for grant reporting & application, and manuscript preparation)
- Involvement in the tutoring of 1 to 2 Master/ PhD Students
- Strong interaction with other Lab members (help with experiment design, interpretation,...)

- Associated activities**
- Participation in the lab organization (orders, storage organization, cleaning,...) & Social events (Teambuilding, Poster presentation during our yearly Lab retreat)
  - Presentation (yearly) and participation (weekly) at the CRCT Department meetings & at the CRCT Journal Club
  - Presentation at National and International Conferences

- Knowledge**
- Histopathology
  - Confocal fluorescence imaging
  - Image analysis
  - 3D cell biology & matrix
  - Tumor biology (tumor cell plasticity, cell heterogeneity, tumor microenvironment including immune & non-immune cells)
  - Good Lab practices (including health & safety)
  - Ethical practices in murine model

- Know-how / Methodology aptitude**
- Multiplex immunohistofluorescence & in situ Hybridization (nanosttring, FISH, Codex) (knowledge & experience recommended)
  - Imaging (confocal analysis) (knowledge & experience recommended)
  - Image analysis (Image J, HALO, Imaris, QuPath) (knowledge & experience recommended)
  - 3D cell (co)cultures & transfection (knowledge & experience recommended)
  - Protein biochemistry (Western-blot, immunoprecipitation) (practice recommended)
  - Molecular biology (lentiviral design/ construction; CRISPR/ CAS9; primer design & RTqPCR) (minimal practice recommended)
  - Mice handling & ip injection (minimal practice recommended; can learn surgery & imaging/ ultrasound)

- Skills**
- Autonomy
  - Original & critical thinking
  - Highly motivated
  - High spirit of initiative
  - Rigorous
  - Work in team

**Requirements** Seeking a passionate Post-Doc who ambitions an (international) academic research career His/her skills should be demonstrated by proven track record of research accomplishments including first author publication(s) in international peer-reviewed respected journal(s) in the field

- Experience**
- 3 years post-PhD maximum

- Diploma(s)**
- PhD
  - Certification in Animal Experimentation (Conceptor level) (desirable but not essential)

## Host Research Center

**Institution** INSERM U1037

**Name** Toulouse Cancer Research Center

**Director** Pr. Gilles FAVRE

**Adress** 2 avenue Hubert Curien - CS53717 – 31037 Toulouse

**Tél.** +33(0)5 82 74 15 75

**Regional Department** Délégation régionale Inserm Occitanie Pyrénées

**INSERM CSS** INSERM CSS3

**ITMO** ITMO Cancer

<b>Website</b>	<a href="http://crct-inserm.fr">Centre de Recherches en Cancérologie de Toulouse (crct-inserm.fr)</a>
<b>Center organization</b>	<a href="http://crct-inserm.fr">ÉQUIPES - Centre de Recherches en Cancérologie de Toulouse (crct-inserm.fr)</a>
<b>Team</b>	<a href="http://crct-inserm.fr">MICROPANC - Centre de Recherches en Cancérologie de Toulouse (crct-inserm.fr)</a>
<b>Team PI</b>	Dr. Corinne BOUSQUET, DVM, PhD
<b>Contract</b>	
<b>Type</b>	CDD
<b>Length</b>	36 months
<b>Salary</b>	2.856,02€ gross monthly depending on experience post-PhD Salary will follow INSERM guidelines commensurate with training and experience
<b>Starting date</b>	Position starting in April 1 <sup>st</sup> , 2023, the latest

## To apply:

Please send a motivation letter explaining your interest in this job advertisement, CV and the names of three references to: [corinne.bousquet@inserm.fr](mailto:corinne.bousquet@inserm.fr)