

## **ANNOUNCEMENT REF.: Candidate for PFIS grant to do the PhD under the project: “Ultra-processed diets and prefrontal development in adolescence (UP-PREdev)”**

### **EXPRESSIONS OF INTEREST**

IDIBGI is looking for highly-motivated and ambitious PhD student of any nationality interested in applying for a PFIS grant to join the Research line "Exposure to Ultra-processed foods and drinks and Mental Health" lead by Dr. Oren Contreras-Rodriguez at the Institut d'Investigació en Biomedicina de Girona (IDIBGI) under the awarded project “Ultra-processed diets and prefrontal cortex development in adolescence (UP-PREdev)” that will start by January 2023.

The Research line "Exposure to Ultra-processed foods and drinks and Mental Health" advances the scientific knowledge about the harmful effect of consuming ultra-processed foods and drinks (UPF) on cognition, mental health (e.g., depression, anxiety, emotional regulation strategies), and the underlying brain networks in adolescence. With this aim, the group is made up of clinical and basic researchers, as well as technic staff who integrate a great diversity of techniques and models.

**Project description:** UPF result from heavy food modifications, and have an enhanced number of artificial sweeteners, specific fats, as well as additives. UPF consumption has been associated with psychological problems (e.g., depression, anxiety) and dysfunctional eating styles humans, and brain alterations in animals. However, the effects pre- and post-natal UPF consumption on the developing human brain remains unknown. Adolescents lead the consumption of UPF products and are particularly vulnerable to the rewarding nature of UPF, and to affective disorders, because of ongoing non-uniform maturation brain patterns. UPF-PREdev aims to investigate the association between pre- and post-natal consumption of UPF and the development of mesocorticolimbic brain networks, emotion dysregulation and associated variables (e.g., eating behaviours) in two large Spanish and Dutch birth cohorts of adolescents (N= 1500), as well as determining the metabolic signatures (i.e., tryptophan and kynurenine metabolic pathways) mediating the effects of UPF intake on those associations.

#### **Brief description of the Host Institution**

The [Girona Biomedical Research Institute Dr Josep Trueta](#) (IDIBGI) is a CERCA research center of the Generalitat de Catalunya whose purpose is to promote, develop, transfer, manage and disseminate biomedical research, scientific and technological knowledge, teaching and training in the areas of life and health sciences, mainly in the Girona area.

The IDIBGI facilities at the Parc Hospitalari Martí i Julià in Salt host part of the research laboratories and personnel who, along with the rest of the researchers from the associated institutions, form multidisciplinary teams with different expertise, focused on finding synergies and solutions to the societal health challenges through translational research.

The IDIBGI gathers 400 researchers, support staff and associate medical doctors from two hospitals (Doctor Josep Trueta University Hospital and Institute for Health Care), the University of Girona, the Institute for Diagnostic Imaging, the Catalan Institute of Oncology and the Primary Care Institute. The research staff are divided into 23 groups framed into 7 different research areas.

On 2015 IDIBGI received the "HR Excellence in Research" award and is continuously improving their HR policies according to the principles of the European Charter & Code for Researchers.

**Tasks to develop:**

- New acquisition of magnetic resonance imaging data.
- Creation of study database with the integration of the study variables.
- Post-processing of the newly acquired brain imaging data.
- Statistical analysis to test the research hypotheses.
- Bibliographic revisions and information synthesis.
- Writing and submission of scientific papers.
- Attendance to scientific meetings.

**Requirements of the candidates:**

- We expect candidates with a Bachelor in the fields of Psychology, Biomedicine, Biomedical Engineering, Medicine or related.
- Candidates should meet the academic criteria to join a PhD programme.
- No reservations no travel to Sabadell some days a week.
- Experience in the use of statistical packages (SPSS, R).
- Motivation to perform research linked to the topic of the project (e.g., Mental Health, Nutrition) and to learn statistical approaches to analyse structural and functional brain imaging data with the use of specialized packages (e.g., MATLAB, SPM).
- The applicant should be able to perform team oriented as well as independent work.

**Desired skills of the candidates:**

- The candidate will interact with researchers from the Netherlands as well as with local participants, and therefore good language skills in English will be considered.
- Ability to analyse, interpret and organize large amount of data sets.
- Working with a focus on objectives and results.
- Careful in their tasks.
- Motivation to assume new intellectual challenges.

**Applications: documents to be submitted and deadlines**

- CV of the applicant (including the publications -if any- and academic grades)
- Motivation letter
- Deadline: 1st February 2023

- Interested candidates are invited to contact the Scientist in charge: Oren Contreras-Rodríguez (ocontreras@idibgi.org).

Note: Call is subject to the award and conditions of the grant