We are looking for a candidate to apply for Predoctoral Grants in the "Cognition and Behavior Study Group" at IRB-Lleida to study molecular alterations within the Mild Cognitive Impairment (MCI) and dementia pathological spectrum

1. Our research group:

The "**Cognition and Behavior Study Group**" is located within the IRBLleida, a research center that integrates biomedical research from the faculties of Medicine and Nursing and Physiotherapy of the Lleida's University (UdL); and also incorporates research groups from the Arnau de Vilanova University Hospital (HUAV), the primary healthcare of Lleida and the Alt Pirineu-Aran Health Region, and the healthcare provider Gestió de Serveis Sanitaris (GSS) such as Santa María University Hospital (HUSM), Pallars Regional Hospital and Mental Health, among others.

The Cognition and Behavior Study Group is a consolidated research group recognized by the Generalitat de Catalunya (SGR). It is made up of clinical and basic translational research staff from different specialties (neurology, neuropsychology, biomedical sciences, etc.) led and coordinated by Dr. Gerard Piñol-Ripoll. The group comprises the clinical and translational researchers of the "Cognitive Disorders Unit" of the Santa María University Hospital; and they have national and international competitive funding and currently is participating in several clinical trials of anti-Alzheimer's drugs. It is part of several national and international consortia on neurodegenerative diseases (https://www.irblleida.org/en/research/49/cognition-and-behavior-study-group).

2. The proposal:

We are seeking a highly motivated and talented doctoral candidate to develop a thesis project in the fields of molecular biology and neurodegenerative diseases, with a primary focus on the Mild Cognitive Impairment (MCI) and dementia pathological spectrum. The project aims to <u>investigate the underlying molecular alterations in the MCI-dementia spectrum focusing on a translational approach</u>, using a range of molecular biology techniques and approaches, including cell cultures and cell lines, animal models, and post-mortem tissue and biofluid samples from MCI-dementia patients. The main research objectives are: **(i)** to study putative biomarkers related to omics profiles for neurodegenerative disorders within the context of the heterogeneity of the MCI-dementia spectrum; **(ii)** to study the underlying altered molecular mechanisms of MCI-dementia spectrum disorders; in addition to **(iii)** modulate the reported pathways and test novel drugs in *in vitro* and *in vivo* models will be contemplated.

The thesis will be supervised by Dr. Gerard Piñol Ripoll and Dr. Pol Andrés Benito. Dr. Piñol is a reputed clinician in dementias and serves as head of the "Cognitive Disorders Unit" within the neurology service at Lleida's Santa María University Hospital; while Dr. Andrés Benito is a translational researcher, a Sara Borrell Researcher at the IRB-Lleida, and is an expert in neurodegenerative disorders.

Labor conditions:

Contract: Predoctoral grant application (FI, i-PFIS, FPU, etc.) (4 years). Full-time position (37.5h/week).
Workplace: Cognition and Behavior Study Group Lab. 3rd Floor. Ed. Biomedicina II. Institut de Recerca Biomèdica de Lleida (IRBLleida). Avinguda Alcalde Rovira Roure, 80, 25198, Lleida (Spain)
Gross annual salary: According to Grant call
Approximate starting date: According to Grant call

3. Functions and tasks:

The successful candidate will be responsible for tasks intrinsic to a Ph.D. thesis, including literature review and critical analysis, hypothesis formulation, experimental design and implementation, data analysis, interpretation, and manuscript preparation for publication in peer-reviewed journals. The experiments to be conducted will involve in vitro studies in cultured cells and tissues, in vivo studies using rodent models to characterize and define the mechanisms of the disease and treatments, and the use of post-mortem tissue and biofluid samples from MCI-dementia patients to deeply characterize underlying molecular alterations. The development of the thesis will also include the use of various -omic approaches. Additionally, the study of other neurological disorders, primarily neurodegenerative disorders, may also be considered during the thesis period.

4. Requirements:

- A degree in biochemistry, biotechnology, or biomedicine, with a grade point average of 8.5/10 or higher.
- An official master's degree is mandatory for enrollment in the PhD program. A master's degree in neuroscience will be valued.
- Language proficiency: Candidates must demonstrate proficiency in English (B2 or higher) and/or Spanish (B2 or higher).
- Experience: Prior experience in laboratory techniques for molecular biology and/or working with animal models is highly valued.
- Other desirable qualities:
  · Strong teamwork (with lab and clinical colleagues) and interpersonal skills, high motivation, and commitment.
  · Familiarity with lab software such as GraphPad, Microsoft Office, R, and Fiji.
  · Programming skills are a plus.
  · Publications and/or congress attendance will be valued.

5. Submission:

Please submit your application (including your CV, degree and master records, and letter of interest/cover letter) to Dr. Gerard Piñol Ripoll (gerard.437302@gmail.com) and Dr. Pol Andrés Benito

(pol.andres.benito@gmail.com). The deadline for receiving CVs and cover letters is **November 30st, 2024**.

6. **Selection procedure:**

1. Selection of CVs: Suitable and unsuitable CVs will be identified based on the requirements. Applicants who do not meet the requirements indicated in the candidate profile will not proceed to the next phase.
2. Evaluation of the CV: To advance to the interview phase, a minimum score of 60/100 points is required in the sum of the scores of the evaluation of the curriculum (80 points - evaluated on fit in the workplace, experience, developed functions/skills, publications, congress, etc.) and the cover letter (20 points - evaluated on motivation, attitude, extracurricular skills related to research, etc.).
3. Personal interviews will be conducted during the process.
4. After all candidates have been interviewed, the final candidate will be selected.