

**TENURE-TRACK GROUP LEADER RECRUITMENT - FLUID BASED  
BIOMARKERS OF AGING AND NEURODEGENERATIVE PATHWAYS**  
**Recruitment for the  
Barcelona $\beta$  Brain Research Center**

At the **Barcelona $\beta$  Brain Research Center (BBRC)**, Group leaders benefit from:

- A nurturing, international and collaborative environment
- An attractive starting package to set-up the lab, an initial team and lab expenses
- Access to cutting edge core facilities
- A broad network of international and interdisciplinary collaborations
- Leadership training and mentorship
- Tailored support in raising competitive funds

**About the employer**

The Barcelona $\beta$  Brain Research Center (BBRC) is a research center, constituted by the Pasqual Maragall Foundation and the Pompeu Fabra University. The goal of BBRC is to become an **internationally recognized centre of excellence in our understanding of age-related cognitive disability** in order to provide practical solutions to the global challenges posed by the **world's aging population**. Our goal will be achieved by **championing primary and secondary prevention programs for Alzheimer's disease and other related neurodegenerative disorders**, the study and promotion of healthy aging, and the research of the basic physiological mechanisms of cognitive functions affected by healthy or pathological aging. The vision of BBRC is to provide society with distinct and innovative solutions for age-related cognitive disability by leveraging complementary research programs to attain a multidisciplinary comprehension of the aging process and the pathophysiology of neurodegeneration.

Pasqual Maragall Foundation, Pompeu Fabra University and "La Caixa" Foundation are permanent members of the BBRC Board. International competitive recruitment, state-of-the-art scientific facilities, effective management and continuous high-standard peer-review evaluation are the BBRC core proceedings to ensure achieving world-class research results. BBRC is affiliated and located in the Campus Ciutadella of the Barcelona Pompeu Fabra University, the building contains excellent technical facilities, **including a research-dedicated 3T MR scanner, Clinical Trials facilities, EEG and Eye Tracker labs**.

**BBRC is also part of the Barcelona Biomedical Research Park (PRBB), a large research facility that hosts other seven different research institutions related to biomedical research**, including the Center for Genomic Regulation (CRG), the Hospital del Mar Medical Research Institute (IMIM), the Department of Experimental and Health Sciences of the Pompeu Fabra University (CEXS-UPF), the Institute of Evolutionary Biology (IBE CSIC-UPF), the Barcelona Institute of Global Health (ISGlobal) and the Barcelona site of the European Molecular Biology Laboratory (EMBL), among others, in a multidisciplinary, collaborative and stimulating international environment in close contact with a clinical setting, thus conducive to translational research.

BBRC endorses the Requirements and Principles of the **European Charter for Researchers**, the **Code of Conduct for the Recruitment of Researchers**, and Open, Transparent, Merit-based

recruitment promoted by the European Commission and follows Equal Opportunities policies. On October 2020, BBRC Barcelona was awarded the 'HR Excellence in Research' logo. This recognition reflects the commitment of the Institute to the continuous improvement of its human resources policies.

For more information see: [www.fpmaragall.org](http://www.fpmaragall.org) and [www.barcelonabeta.org](http://www.barcelonabeta.org)

### **The ALFA parent cohort**

The setup of preventive studies requires the **understanding, from a molecular perspective, of how risk factors generate the risk and the identification of individuals with an increased risk of developing AD** in the near future that are suitable to be recruited as asymptomatic subjects in prevention studies and clinical trials. With this in mind, and aiming at increasing our knowledge of the pathophysiology and pathogenic factors emerging at early preclinical AD stages, the BarcelonaBeta Brain Research Centre (BBRC) started the **ALFA (for ALzheimer and FAmilies)** programme for the prospective follow-up of a cohort of cognitively normal subjects, most of which are the offspring of AD patients. Our programme currently consists of the ALFA registry, the ALFA parent cohort, the ALFA+ study and associated ones. The ALFA registry contains basic demographic data of people willing to participate in current and/or future BBRC projects. The **ALFA parent cohort is composed of 2,743 cognitively normal participants, most of them first-degree descendants of AD patients**, aged between 45 and 74 years, who have been thoroughly characterised from a sociodemographic, clinical, lifestyle and cognitive point of view. Blood samples of these participants have also been acquired and stored.

### **The ALFA + cohort**

A subset of the ALFA parent cohort participants is invited to take part in a **nested longitudinal long-term study**, named the **ALFA+ study**, in which a more detailed phenotyping is performed. On top of a similar characterization as in the ALFA parent cohort (neuropsychological, clinical, etc.), it entails the acquisition of both **wet (CSF and blood sample collection) and imaging (MRI and PET) biomarkers**. In brief, the ALFA+ study will serve to untangle the natural history of the disease and to model the preclinical stages in order to develop successful trials. The ALFA+ longitudinal cohort includes **400 individuals, which are selected to participate based on their specific AD risk profile**. The ALFA+ study started in October 2016 and complete follow up visits every three years, the second visit being currently active.

### **Prioritized Research Line: Fluid Based Biomarkers of aging and neurodegenerative pathways**

**Fluid biomarkers, including cerebrospinal fluid and blood biomarkers, are currently essential for AD clinical research**, and they are also now being increasingly incorporated in the clinical routine of AD clinics. A state-of-the-art AD centre must nowadays include fluid biomarkers measurements, together with skilled neurologists and neuroimaging, neuropsychology and genetics experts to fully interpret data.

Incorporating fluid biomarkers in BBRC is especially relevant since the major strength of our centre is the multimodal approach of our studies. There are many advanced centres in the world leading in each of the above-mentioned areas, namely fluid biomarkers, clinical neurology, neuroimaging, neuropsychology or genetics, but there are very few that provide expertise in all of them. BBRC must belong to those centres and, therefore, biomarkers research needs to be incorporated.

## **The Fluid Based Biomarkers of aging and neurodegenerative pathways Group**

The main goal of the Fluid Based Biomarkers group is the development, validation and implementation of novel fluid biomarkers that will improve the diagnosis of AD and other age-related neurodegenerative diseases in their earliest stages, detecting susceptible subjects, determining their prognosis, monitoring disease progression and treatment effectiveness, or using them as surrogate markers in clinical trials.

It will address the whole biomarker development workflow, from identification of candidate biomarkers to assay development, and, finally, clinical implementation. We envision producing a better understanding of neurodegenerative disease but also providing biomarkers that are relevant for clinical purposes. A distinct feature of this group is that, unlike other nearby biomarkers labs, we will be able not only to incorporate already established biomarkers, but also to discover new biomarkers and therefore be at the forefront of AD research. We further envision intense collaboration with all relevant stakeholders, both international and local; particularly in the context of a collaboration with The Barcelona Institute for Global Health (ISGlobal, <https://www.isglobal.org/ca/>), to advance epidemiological research on the ALFA parent cohort.

Besides the focus on fluid biomarkers, the group will also incorporate to BBRC new basic research methodologies that have the potential to be applied to the study of the Alfa cohort and/or may help to understand the findings of the on-going projects in the BBRC. Some of the methodologies that may be included are: collection and differentiation of skin fibroblasts, monocytic cells, and other human cell lines; and other biological samples; neuropathological techniques to validate the biomarkers finding in brain samples; cell culture experiments and functional assays; and Stable Isotope Labelled Kinetics (SILK). It is important to note that all these methodologies will only be developed if they clearly complement the clinical research at BBRC and hence are truly translational.

### Our vision

The Fluid Based Biomarkers research group is committed to conduct high-quality and cutting-edge research through direct interaction with the rest of the BBRC groups and researchers, in order to maximise the quality of the BBRC research output. The group will also provide excellent teaching and training to PhD and MSc Students, Postdocs, clinical fellows and all other researchers that share our passion for this field.

### **About the position**

The Barcelonaβeta Brain Research Center (BBRC) invites applications from outstanding investigators for a **tenure track Group Leader** position. This is a full-time position and the selected candidate selected will join the Alzheimer's Disease Prevention Program.

The successful candidate is expected to conduct an **independent research project and would conduct research on identifying circulating fluid factors that have an impact on aging** (either deleterious or positive, leading to healthy ageing) **or are part of neurodegenerative pathways.**

The researcher would benefit from **established lines of research and technical capacities and her/his training in molecular biology would allow us to further exploit the biosamples in our biobanks.**

### **Selection process**

Candidates pre-selected by an internal scientific committee will be invited for an interview at the BBRC.

The interview will include the following:

- Open seminar about their past work and future research plan.
- Chalk Talk including an in depth interview with the different members of the panel.
- Opportunity to visit the institute and meet with different BBRC group leaders.

The panel will consist of the internal selection committee, members of the scientific advisory board and ad-hoc external experts. According to our Recruitment Policy, and our Declaration of Commitment to the Code of Conduct for the Recruitment of Researchers, the selection committees should bring together diverse expertise and competences and should have an adequate gender balance, aiming for at least one third of the panel members per gender.

An official offer letter will be issued in writing to the selected candidates.

### **Submission of letters of recommendation**

The pre-selected candidate will be informed in writing, and letters of recommendations will be requested.

The referees will receive an e-mail with the request to submit their letter of recommendation to the candidate's application.

**Please be advised that it is the responsibility of the candidate to make sure that the referees will submit the reference letters before the agreed deadline.**

### **Internal resources**

BBRC group leaders benefit from a highly collaborative, collegial, and international English-speaking environment.

We provide **fully equipped laboratory space for up to 7-9 people for our group leaders including lab expenses.**

### **Competitive funding**

Group leaders receive tailored support in grant scouting and comprehensive support in proposal preparation. The BBRC has an outstanding track record in obtaining funds from National, European and international public and private funding agencies.

## **Benefits**

We offer a competitive salary with a 5-year contract that will become tenured depending on peer-review. We provide fully equipped laboratory space for up to 7-9 people, and a flexible financial package to start a team and lab expenses.

We strongly encourage women scientists to apply.

## **Application process**

To apply, please submit a single PDF file containing the following:

- 1) Cover letter describing research interests and relevant background;
- 2) CV
- 3) The names of up to three individuals who could provide reference letters. All files or inquiries should be submitted electronically to: [rh@barcelonabeta.org](mailto:rh@barcelonabeta.org)

**Subject: FLUID BASED BIOMARKERS OF AGING AND NEURODEGENERATIVE PATHWAYS  
GROUP LEADER**

**Deadline: 15th of February 2021**

We inform you that your personal data will be part of a file which Pasqual Maragall Foundation and Barcelonaβeta Brain Research Center is responsible for in order to manage the job offer you have requested. Once the process is complete, the data processed will be erased.

You have the right to exercise the rights of access, rectification, cancellation and opposition recognized in Regulation (EU) 2016/679 (General Data Protection Regulation), to be addressed to the Pasqual Maragall Foundation and Barcelonaβeta Brain Research Center: c/ Wellington 30, 08005 Barcelona.