

MSCA-PF: Expression of Interest

1. European Postdoctoral Fellowships

Purpose

- Support excellent researchers of **any nationality** who want to conduct research in Europe or move within Europe.
- Enhance scientific excellence, mobility, and acquisition of new skills through advanced training.
- Improve talent and facilitate knowledge transfer across Europe.

Mobility & Eligibility

- Supported fellows must be **postdoctoral researchers** at the date of the call deadline.
- At the call deadline, researchers must have a **maximum of 8 years** full-time equivalent experience in research, measured from the date of award of the doctoral degree.
- Researchers must comply with the **mobility rule**: they must not have lived or worked in the host country for more than 12 months in the last 36 months before the call deadline.
- Researchers can be of **any nationality**.

Duration

- 12 to 24 months hosted in an EU Member State or Horizon Europe Associated Country.
- An **additional period of up to six months at the end of the project** can be awarded to researchers who will spend that period in a non-academic organisation established in an EU Member State or Horizon Europe Associated Country.

Impact for Fellows

- Improved research and transferable skills.
- International, inter-sectorial and interdisciplinary experience
- Stronger employability inside and outside academia.
- Broader networks and enhanced communication skills.

Allowance

There are two types of contributions:

- a) Contributions for the recruited researcher (per person-month)
- **Living allowance: 6350€** (minus all compulsory deductions under national legislation).
 - **Mobility allowance: 710€**. This allowance covers their additional, private mobility-related costs (e.g. travel and accommodation costs).
 - **Family allowance: 660€**. If the postdoctoral researcher has or acquires family obligations during the action duration
 - **Long-term leave allowance: 7060€ * % covered by the beneficiary**. This allowance contributes to the personnel costs incurred by the beneficiary in case of the researcher's leave, including maternity, paternity, parental, sick or special leave, longer than 30 consecutive days.
 - **Special needs allowance: Requested unit * (1/number of months)**. This allowance contributes to the additional costs for the acquisition of special needs items and services for researchers with disabilities
- b) Institutional unit contribution (per person-month)
- **Research, training and networking contribution: 1000€**. This should cover, for example, costs for training and networking activities that contribute directly to the researchers' career development.

A country correction coefficient (CCC) applies to the living allowance to ensure equal treatment and purchasing power parity for all researchers. For Spain, the CCC is **94.2%**.

For more information, you can access the full work programme [here](#).

2. Brief description of IRB CatSud

The Institut de Recerca Biomèdica Catalunya sud (IRB CatSud) is an institution that integrates research in the field of biomedicine in the Camp de Tarragona and the Terres de l'Ebre. IRB CatSud is the instrument that the university hospitals of both health regions have been endowed with (Joan XXIII University Hospital of Tarragona, Verge de la Cinta Hospital of Tortosa, Sant Joan de Reus University Hospital, Institut Pere Mata University Hospital of Reus) and Rovira and Virgili University, in order to bring together and manage biomedical research and innovation in the territory.

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Seu Tarragona:

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The research we lead aims to answer relevant questions related to the health of the population through the scientific method, the most advanced technology and the talent of the people who work in our teams. We listen to patients, we look for strategies to develop our projects, we seek financing to carry them out and, finally, we transfer the results achieved to society by promoting spin-offs or medical devices that we patent.

IRB CatSud and the research groups that belong to it have enormous international prestige. We are part of the CERCA institution (Institution of Research Centers of Catalonia Foundation (I-CERCA) of Catalonia).

For more information about our Institute, visit the following website:
<https://www.iispv.cat/en/>

3. Short presentation about the group and research lines

Precision Environmental Health Lab (PrEHeaL)

Precision Environmental Health Lab (PrEHeaL) is an emerging multidisciplinary research group affiliated with the Paediatrics Research Unit (PEDINUR) at IRBCatSud and the Universitat Rovira i Virgili. Led by Dr Noelia Ramírez, the team brings together ten researchers with complementary expertise in Chemistry, Biochemistry, Biotechnology, Nutrition, Telecommunications, Biomedical Engineering, and Paediatrics.

PrEHeaL aims to advance precision environmental health by improving the characterisation of the chemical exposome and elucidating the molecular mechanisms linking environmental exposures to health outcomes. The group develops and applies comprehensive, data-driven analytical strategies to better understand real-world exposures, with a particular focus on indoor and outdoor air pollutants and their impacts during early life stages. This approach integrates advanced analytical chemistry, exposomics, wearable sensing technologies, and multi-omics to support risk assessment, prevention strategies, and clinical translation.

Main Research lines:

1. Advanced analytical strategies for exposome characterisation.
2. Innovative technologies for personalised environmental monitoring.
3. Multi-omics integration and mechanistic precision environmental health.
4. Environmental drivers of paediatric respiratory disease.

Candidate profile

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We are seeking a highly motivated postdoctoral researcher to contribute to research lines (1) Advanced analytical strategies for exposome characterisation and (3) Multi-omics integration and mechanistic precision environmental health. The ideal candidate will have strong expertise in analytical chemistry, with a particular focus on high-resolution mass spectrometry applied to complex environmental and biological matrices. The successful applicant should hold a PhD in Analytical Chemistry, Environmental Chemistry, Metabolomics, Exposomics, or a closely related field. The candidate will have demonstrated experience in mass spectrometry-based analysis of small molecules, ideally using high-resolution platforms (Orbitrap, Q-TOF, or equivalent), and a strong interest in precision environmental health and early-life exposures.

Expected expertise

- Advanced LC-HRMS and/or GC-HRMS for small-molecule analysis
- Experience in suspect and untargeted metabolomics/exposomics workflows
- Sample preparation for biological matrices (plasma, urine, saliva, tissues) and/or environmental samples
- Data processing tools (e.g., XCMS, MZmine, Compound Discoverer, MS-DIAL, GNPS)
- Statistical and multivariate analysis (R, Python, MetaboAnalyst, SIMCA)

Additional desirable skills

- Integration of exposome and multiomics datasets
- Experience in cohort-based human studies
- Knowledge of environmental pollutants (VOCs, SVOCs, tobacco toxicants, air pollutants)

Research focus within PrEHeal

The fellow will:

- Develop high-resolution analytical workflows for early-life exposome characterisation
- Apply wide-scope suspect screening and non-target analysis approaches
- Identify biomarkers of exposure and early biological effects
- Integrate exposome and metabolomics data to uncover mechanistic pathways
- Contribute to studies on air pollution and paediatric respiratory health
- Support translation toward precision environmental health applications

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Ideal candidate characteristics

- Strong publication record in analytical chemistry / exposomics / metabolomics
- Demonstrated independence and innovation capacity
- Interest in interdisciplinary research bridging chemistry and health
- Experience working in international environments
- Strong writing skills for MSCA proposal preparation
- Motivation to develop an independent research line within precision environmental health

Possible candidate backgrounds

Suitable candidates may come from:

- Analytical chemistry applied to environmental exposomics
- Metabolomics with HRMS expertise
- Environmental mass spectrometry
- Human biomonitoring using LC-HRMS
- Air pollution chemical characterisation
- Toxicological metabolomics
- Non-target screening of emerging contaminants

Supervisor profile

Dr Noelia Ramírez is an established researcher at IRB CatSud and an associate researcher at the Universitat Rovira i Virgili (URV). Her career has been supported by highly competitive funding, including a Marie Skłodowska–Curie Individual Fellowship, a Juan de la Cierva Incorporación award, and a Miguel Servet contract. She has served as principal investigator of 18 competitive projects and contracts and has participated as collaborator in 17 national and international research projects, as well as seven innovation and knowledge transfer initiatives. She is also the lead author of the AIRE patent, which focuses on wearable technologies for personal exposure assessment.

Her scientific leadership is complemented by active engagement in international research networks. She is affiliated with the Thirdhand Smoke Consortium at the University of California and is a member of the International Human Exposome Network (IHEN), EnvHealthNet, the Metabolomics Society, SETAC, ISES, and the ELIXIR Toxicology Community.

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Dr Ramírez has established strong national and international collaborations in exposome research and has been invited to present her work at multiple international conferences and scientific workshops.

The background of Dr Ramírez provides an excellent supervisory environment for an MSCA Postdoctoral Fellow, combining strong expertise in analytical exposomics and mass spectrometry, leadership in precision environmental health, established international collaborations, experience in mentoring researchers, and a proven track record of successful project coordination and scientific impact.

If you are interested in this opportunity, send your expression of interest to upi@irbcatsud.cat, indicating the MSCA-PF + research group in the subject.