



งานบริหารและส่งเสริมการวิจัย  
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เรื่อง ประชาสัมพันธ์ทุนจากแหล่งทุน ISGlobal

เรียน คณบดี / ผู้อำนวยการ

ตามที่ แหล่งทุน The Barcelona Institute for Global Health (ISGlobal) เปิดรับสมัครผู้สนใจเข้าศึกษาต่อในระดับปริญญาเอกในด้านสุขภาพโลก (Global Health) ในโปรแกรม International PhD Fellowships in Global Health เพื่อพัฒนาการวิจัยแบบสหวิทยาการ โดยเปิดรับสมัครถึงวันที่ 1 มีนาคม 2568 ผู้สนใจสมัครขอรับทุนขอให้จัดทำเอกสารการสมัครโดยส่งเอกสารผ่านทางเว็บไซต์ของแหล่งทุนและสามารถศึกษารายละเอียดของทุนดังกล่าวเพิ่มเติมได้ที่เว็บไซต์ของแหล่งทุน <https://www.isglobal.org/en/-/phd-fellowships-global-health-2025>

ในการนี้ กองบริหารงานวิจัย มหาวิทยาลัยมหิดล จึงขอแจ้งข่าวประกาศทุนมายังท่าน เพื่อโปรดประชาสัมพันธ์ทุนดังกล่าวให้บุคลากรในหน่วยงานของท่านทราบโดยทั่วกัน และขอให้ส่วนงานโปรดส่งสำเนาเอกสารการสมัครมายังมหาวิทยาลัยเพื่อเป็นข้อมูลต่อไป

จึงเรียนมาเพื่อโปรดทราบและโปรดประชาสัมพันธ์ข่าวต่อไป จักเป็นพระคุณยิ่ง

(รองศาสตราจารย์ ดร.ยศชนัน วงศ์สวัสดิ์)

รองอธิการบดีฝ่ายวิจัย

ผู้ประสานงาน: นายวรินทร์พิภพ ชยทัตภูมิรัตน์

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# **ISGlobal** International PhD Fellowships Programme in Global Health 2025

**10 PhD scholarships available**



The Barcelona Institute for Global Health (ISGlobal) is a cutting-edge institute addressing global public health challenges through research, translation into policy and education. ISGlobal has a broad portfolio in communicable and non-communicable diseases including environmental and climate determinants, and applies a multidisciplinary scientific approach ranging from the molecular to the population level. Research is organized in five programs: Climate, Air Pollution, Nature and Urban Health; Environment and Health over the Lifecourse; Global Viral and Bacterial Infections; Malaria and Neglected Parasitic Diseases; and Maternal Child and Reproductive Health. ISGlobal is accredited with the Severo Ochoa distinction (first accreditation in 2019 and renewed in 2024), a seal of excellence of the Spanish Science Ministry.

The ISGlobal PhD Programme brings together doctoral candidates from different health fields, and universities, to enjoy the added benefits of developing transdisciplinary research at our Institute.

Thanks to the Severo Ochoa Centre of Excellence Accreditation, **in this call we offer up to 10 fellowships for national and international PhD students**, who wish to undertake rigorous research training and complete a research project in the field of global health and population studies to make new contributions to the existing knowledge base.

**Apply now to kick-start your scientific career at ISGlobal!**

**Select the research proposal you are interested in** from the list of research proposals provided at the end of this call, section “PhD research proposals (10 PhD proposals)”.

### Eligibility Criteria

ISGlobal will recruit prospective doctoral candidates of any nationality, gender, culture, religion, sexual orientation or age to undertake a PhD in Global Health.

- Candidates can be of **any nationality**.
- Candidates must have obtained a University Degree and a Master’s **Degree in biomedicine, epidemiology, computer sciences, environmental sciences, biostatistics, or a related discipline** within the European Higher Education Area (**minimum 300 ECTS - European Credit Transfer System, of which at least 60 are at master’s level**), or an **equivalent** University Degree that allows to start a PhD thesis in Spain **by the fellowship starting date**.

*NOTE: Each candidate will be assessed for eligibility on individual basis by the corresponding PhD programme following University admission criteria; each candidate will need to be admitted to a University PhD Programme by the fellowship starting date – University PhD programme admission will be managed **after completion of the selection process**.*

- Candidates must demonstrate **academic excellence** and a commitment to pursuing a scientific research career with an interest in global health and population studies.
- Candidates must have **good command of English**.
- Candidates already holding a PhD are not eligible.
- Candidates beneficiary of a PhD Fellowship by the Spanish Government are not eligible.
- Candidates must not have held a PhD contract exceeding twelve months by the fellowship starting date. **The months in which the candidate has enjoyed a predoctoral contract will be discounted.**



## How to Apply

Applicants must fill in the [request form](#) and attach the following documents:

- **Curriculum vitae in English** including the name of two reference contacts that could be contacted by ISGlobal during the selection process.
- **Motivation letter in English** (1-page MAX, A4, Arial, size 11, single space), justifying the interest and suitability for the **selected research proposal** (see section “PhD Research Proposals (10 PhD proposals)” below).
- A scan of the **student’s academic transcripts (degree and masters)**, showing grades obtained. If the academic transcripts are not in Catalan, Spanish or English, applicants should also attach a translation in one of the above-mentioned languages, and the grading system should be explained.

Please note that all documents must be in **pdf format** and each submitted document must be named as: CandidateSurname\_CandidateName\_filetype (e.g. Smith\_John\_cv, Smith\_John\_letter). Candidates must ensure that all required information is submitted before the **application deadline of 01 March 2025**. Incomplete proposals will not be considered.

## Conditions

- Number of offered PhD fellowships: 10.

*These fellowships are funded through the ISGlobal Centre of Excellence Severo Ochoa grant (CEX2023-0001290-S) from the Spanish Ministry of Science and Innovation, and the Spanish Research State Agency (MCIN/AEI/10.13039/501100011033).*

- PhD fellowships conditions.

<b>Duration (years)</b>	4 years max <sup>1</sup>
<b>Expected remuneration<sup>2</sup> (annual gross salary)</b>	Y1-Y2 = 20.400€ Y3-Y4 = 24.350€
<b>Expected starting date</b>	Sept-Dec 2025 <sup>3</sup>
<b>Dedication</b>	Full time
<b>Additional contribution</b>	6.860€ <sup>4</sup>

- (1) If the doctoral degree is obtained before the predoctoral fellowship ends, a Postdoctoral Orientation Period (POP) can be funded from the time the doctoral degree is obtained until the end of the predoctoral fellowship, with a maximum duration of 12 months (i.e. predoc contract + POP = max. 4 years in total).
- (2) as per ISGlobal’s salary scale and according to the grant CEX2023-0001290-S by MCIN/AEI/10.13039/501100011033. Please note that the final salary will be agreed upon candidate’s selection. The contract is linked to the registration to Social Security, a public system of protection against situations of illness, disability, unemployment, old age, accidents at work, maternity. This also gives access to a public health-care system that offers universal assistance to city residents. All these costs are covered by the employer institution so the candidates do not need to pay for them.
- (3) The predoctoral fellowship necessarily starts on the 1st of the month. The exact date will be defined once the candidate has been selected.



- (4) The predoctoral fellowship provides an amount of 6.860€ in total to support covering expenses derived from carrying out stays in other R&D centers and enrollment in a university PhD programme, according to what established in the grant CEX2023-0001290-S by MCIN/AEI/10.13039/501100011033. The approximate distribution is:
- support to enrollment fee in doctoral studies: 1.600€ approx. in total (400€ approx. per year).
  - support for a research stay: 5.260€ approx. The research stay needs to be agreed with the doctoral supervisor/s, and needs to take place throughout the duration of the predoctoral fellowship, with a minimum duration of 1 month. The research is aimed at completing and consolidating the research training and promoting the development of the doctoral thesis. The research stay needs to be carried out in a R&D center located in a different place from the centre where the PhD is carried out and different from the beneficiary's place of origin. Provided support: support to expenses derived from lodging and meals, travel expenses, and medical and accident insurance abroad during the stay. Please note that **expenses are limited by the Ministry (Decree 462 of the BOE) and vary according to the country of the stay.**

### Selection Process and Selection Criteria

All applications are reviewed by an ad hoc Internal Committee, with representative of Principal Investigators at ISGlobal with no conflict of interest.

Candidates are selected on the basis of academic excellence, performance in research, adequacy of candidate's experience to the selected research proposal, and a commitment to pursuing a scientific research career with an interest in global health and population studies (see detailed selection criteria and subcriteria below). **A good command of English** is requested.

Selection criteria and subcriteria: 100 points in total

#### Criterion 1. Candidate's academic and/or scientific-technical background (up to 50 points)

- **Subcriterion 1.a): Scientific and technical contributions** (up to 45 points). The academic and other curricular merits of the candidate will be assessed, as well their suitability for the duties to be performed in the doctoral study.
- **Subcriterion 1.b): Mobility and internationalization** (up to 5 points). The relevance and impact of the candidate's stays in national and international centres and/or in the industrial sector on his/her research career will be assessed, taking into account the prestige of the institution hosting the stay and the activity carried out there.

#### Criterion 2. Adequacy of candidate's experience to the research activities to be conducted in the doctoral study (up to 50 points)

The suitability of the candidate for the research activities to be carried out in the framework of the selected PhD research proposal will be assessed, on the basis of the candidate's previous training and experience. For this, it will be taken into account the added value that carrying out the research activities will bring to the candidate's career, as well as the added value the candidate will bring to the Centre and to the host research team.

Short-listed candidates will be invited for an online interview.

Selected candidates will be notified shortly after the interview period.

Applicants who have not been successful but have received a positive evaluation will be put on a waiting list to cover possible renunciations and for future positions.

### Key Dates

- Call opening: **30 January 2025**
- Call deadline: **1 March 2025, 17.00 CET**
- Notification to candidates: **30 April - 15 May 2025 approx.**

### Contact

For any additional information, please contact [research.management@isglobal.org](mailto:research.management@isglobal.org).

### PhD Research Proposals (10 PhD proposals)

Please find the list of PhD research proposals below.

**Select the research proposal you are interested in.**

Should you wish to know more about a research proposal, you can contact the corresponding Supervisor/Co-Supervisor.



## Research Proposal 1

# Globally Applicable and Highly Efficient Algorithms for Triage and Risk Stratification of Sick Patients Based on Prognostic Biomarkers Tested Across Different Populations, Age Groups and Geographies

Supervisor:

**Bàrbara Baro**[barbara.baro@isglobal.org](mailto:barbara.baro@isglobal.org)

Co-Supervisor:

**Quique Bassat**[quique.bassat@isglobal.org](mailto:quique.bassat@isglobal.org)

## Proposal Description

Our group is implementing three different ambitious projects (Horizon-EU EChiLiBRiST; EDCTP3-ACROBAT-Newborns and FIS-ACROBAT) which will recruit sick newborns and children (in- and outpatients) in 4 African countries (Mozambique, Ethiopia, Gabon and Uganda) and in Spain. In all cases (estimated sample size:  $7,000+4,400+300=11,700$  participants), we will screen patients at first encounter with a recently developed rapid prognostic device (Point of Care (PoC) test) that assesses sTREM-1 levels, as excellent predictor of adverse outcomes and mortality. We will collect clinical and outcome data, and measure a panel of ~30 prognostic markers by Luminex. In this project, we aim to harmonize and meta-analyze data from different population groups, geographies and background endemicities to design the best predictive and globally applicable triage algorithms (including the PoC measurement of biomarkers) for sick patients. Such approach could improve severity stratification to enhance patient survival, as well as decompress high-burden emergency departments and save healthcare costs.

## What We Are Looking for (Candidate Requirements)

We are looking for a PhD candidate, ideally from the field of Epidemiology, Medicine, Biomedicine or Computational Science, with interest in severe disease and its pathophysiology, and strong analytical skills (including machine learning approaches). The main goal of the project will be to exploit the results of the different trials, harmonize them, and produce clinical and laboratorial triaging algorithms that can outperform currently existing ones, and be used globally across geographies, diseases and age groups. The candidate should be willing to get heavily involved in the implementation, data cleaning and analysis of these trials, so as to have a transversal understanding of the different results generated. By pooling together all the results being generated, this project should allow the design of highly efficient, globally applicable (including across age groups) prognostic algorithms to be used universally for the risk stratification, triage and management of sick patients.

## Related Links

[ECHILIBRIST Project](#)



# 2

## Research Proposal 2

# In Utero Chemical Exposome, Placental Molecular Profiles, and Their Link with Health Outcomes

Supervisor:

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Co-Supervisor:

**Mariona Bustamante**

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### Proposal Description

Humans are exposed daily to toxic chemicals, with effects on the immune, endocrine and reproductive systems. The DOHaD hypothesis suggests that insults during fetal development can lead to lasting adverse health effects throughout life. The placenta plays a vital role in pregnancy and fetal development, facilitating nutrient transport while also serving essential immune and endocrine functions.

**Hypothesis:** The in utero chemical exposome disrupts the molecular profiles of the placenta leading to life-long adverse health outcomes.

**Objectives:**

1. To examine the relationship between the in utero chemical exposome and the placental epigenome (n>2000) through EWAS.
2. To identify epigenetic regulators of the placental transcriptome (eQTM) (n>500), and utilize these findings to interpret the results of the EWAS.
3. To identify genetic variants associated with the placental epigenome (mQTLs) and transcriptome (eQTLs) (n>500), and leverage mQTLs and eQTLs for causal inference of placental molecular alterations on later health outcomes using Mendelian randomization.

### What we are looking for (candidate requirements)

We are looking for a PhD candidate with knowledge on:

- Molecular biology (genetics, epigenetics, and transcriptomics)
- Exposome (chemical exposome and metabolomics)
- Bioinformatics (R environment, python, etc.)

Additional skills are:

- Being able to work and communicate in English.
- Strong organization skills and being methodological.
- Learning attitude, flexibility and interest in applying new methods.
- Team player, yet capable of working autonomously, rational and critical thinker.

### Related Links

[BiSC Cohort](#), [INMA Cohort](#), [PACE Consortium](#), [ATHLETE Project](#)

### Keywords

DOHaD (developmental origins of health and disease), chemical exposome, in utero, placenta, multi-omics, epigenetics, transcriptomics, metabolomics, genetics, epigenome-wide association study (EWAS), expression quantitative trait methylation (eQTM), expression quantitative trait locus (eQTL), methylation quantitative trait locus (mQTL)



# 3

## Research Proposal 3

# Risk of Re-introduction of Dengue in the Mediterranean (REDEM)

Supervisor:

**Daniel Camprubí Ferrer**

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Co-Supervisor:

**Claudio Parolo**

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### Proposal Description

The PhD project will combine three innovative studies to develop Early warning systems (EWS) for mitigating the risk of dengue expansion to non-endemic areas, such as the Mediterranean region.

1. The **Dengue\_Travel\_Risk** Study will determine the real incidence of asymptomatic dengue in travelers, and use Machine Learning to predict asymptomatic infections (which account for 80% of dengue infections).
2. The **DENMAL** Project will serve to develop a groundbreaking dual lateral flow assay to simultaneously detect dengue and malaria (the two leading causes of fever in travelers) with great accuracy and cost-effectiveness.
3. The **PASSENGER** Project will integrate a software to interpret DENMAL results and a risk score to assess the transmission risk for viremic travelers, to trigger timely and efficient vector control strategies, which allow minimizing the risk of dengue expansion to non-endemic areas.

The PhD project aims at integrating groundbreaking technologies to develop **EWS** adaptable to other (re)emerging diseases.

### What we are looking for (candidate requirements)

We are looking for candidates with a Degree in Medicine, Biomedicine or Medical Sciences (or related field) with experience in Travel medicine, Infectious diseases, poverty-related diseases, Global Health and Epidemiology, and particularly in imported acute febrile illnesses and arboviruses. Postgraduate learning in Research methodology, Epidemiology, Tropical Medicine, Data Science, or a related field will be very much appreciated. Applicants should have demonstrated experience in clinical studies and a foundation in data analysis and interpretation. Additionally, excellent communication skills and interest in learning new skills are crucial, as the project will entail collaborations across multidisciplinary teams. Laboratory expertise in molecular biology techniques will be positively evaluated.

### Keywords

Early warning system, dengue, arboviruses, preparedness, biosensors, machine learning predictive algorithms, introduction in non-endemic areas



# 4

## Research Proposal 4

# Extracellular Vesicles as New Biomarkers in Parasitic and Bacterial Infections

Supervisor:

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Co-Supervisor:

**Sara Soto González**

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### Proposal Description

Recent advances in the study of extracellular vesicles (EVs), nano-vesicles derived from cells and present in biological fluids, have opened up new strategies for biomarker discovery in protozoan and bacterial infections. EVs carry selectively packaged molecular signatures from their cells of origin, including proteins, nucleic acids, and lipids. This project proposes the molecular characterization of EVs in malaria and Chagas disease to identify novel biomarkers for asymptomatic infections and disease prognosis, respectively. Additionally, the protein content of urinary EVs will be investigated in patients with urinary tract infections (UTIs), comparing sporadic and recurrent cases, to identify bacterial traits contributing to relapses, such as biofilm formation, multiresistance or virulence. OMICs technologies will be employed to determine the molecular cargo of EVs, and in silico-predicted biomarkers will be validated through lateral flow assays, with the ultimate goal of improving diagnostic methods and patient management.

### What we are looking for (candidate requirements)

We are looking for a highly motivated, enthusiastic, and autonomous PhD candidate with a degree in Life/Health Sciences, such as Biological Sciences, Biomedicine, or Medicine, who is interested in developing her/his predoctoral research within the context of the challenging and ambitious project described above. Candidates with previous experience in laboratory research, and knowledge of infectious diseases, cell and molecular biology techniques, proteomics, and bioinformatics will have an advantage. Expertise in working with biological samples and extracellular vesicles will also be considered as a plus. The ideal candidate should be responsible, flexible, and possess excellent problem-solving skills. Strong organizational abilities, a proactive attitude, and a willingness to learn are essential. The candidate should be able to work autonomously but also be a strong team player with excellent written and verbal communication skills. A good level of English is required.

### Related Links

[VivaxEVTalk Project](#)

### Keywords

Extracellular vesicles, biomarkers, parasitic infections, malaria, chagas disease, urinary tract infections, bacterial resistance



# Climate Change and Seniors' Health

Supervisor:

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Co-Supervisors:

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**Margarita Triguero-Mas**

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## Proposal Description

The PhD will work on the HEAT-GRAVITAS-BCN project. The aim of this PhD will be to identify and propose solutions to the challenges caused by the interplay of climate change and the current housing crisis in cities on seniors' health, focusing on the needs, values and perceptions of senior populations themselves.

The PhD will work on:

1. Capacity building by recruiting seniors and community partners to identify research gaps in the fields of housing and health.
2. Explore the relationship between housing, health behaviours (i.e. physical activity, sleep), and heat relief behaviors (e.g. house ventilation practises, AC use) and health in seniors.
3. Review the existing literature that used participatory research to mitigate heat-related health issues.
4. Together with the community, implement and evaluate an intervention related to indoor environmental quality and heat relief strategies.
5. Data analysis and manuscript writing integrating participatory, quantitative and qualitative research methods.

## What we are looking for (candidate requirements)

- Interest in acquiring expertise on quantitative and qualitative research methods.
- Interest in implementing participatory research.
- Curiosity to better understand how climate change, in particular ambient heat, affect health of senior adults in indoor spaces in Barcelona.
- Joy and self-confidence to approach and initiate conversations with senior citizens and community partners to conduct interviews.
- Ability to work independently.
- Ability to communicate in English, Catalan, and Spanish (minimum B2 level in all 3 languages required).
- Strong motivation to play a key role in the Barcelona team for an international project.
- Degree in environmental sciences, political sciences, geography, medicine, biology, or similar scientific disciplines.
- Master in Public Health, Sustainability/Environmental Sciences or similar.
- Basic knowledge on quantitative and qualitative research methods and participatory research.
- We will highly value any relevant experience in participatory research, as well as experience with quantitative and qualitative data collection methods.

## Related Links

[Climate Change Adaptation and Mitigation](#) (filter items: Koch – or Triguero-Mas)

## Keywords

Citizen science, health, climate change, mobility and physical activity, ambient heat, climate justice, intervention evaluation, healthy and active aging



# 6

## Research Proposal 6

# Immunoglobulin G N-Glycan Profiling as New Biomarkers of Infection, Disease and Immunization

Supervisor:

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Co-Supervisor:

**Carlota Dobaño**

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### Proposal Description

Immunoglobulin G (IgG) antibodies are fundamental to immune defense, bridging antigen recognition with effector non-neutralizing functions, in cooperation with innate cells through their Fc region. These functions depend on N-linked glycosylation at asparagine 297, a critical modification that regulates IgG stability, secretion, and interaction with Fc receptors (FcRs) and complement proteins. Variations in glycan composition, including fucose, bisecting GlcNAc, galactose, and sialic acid, significantly impact antibody function and immune modulation. IgG Fc N-glycosylation is a key determinant of antibody activity and a promising biomarker for immune responses to infections, disease and vaccination. This PhD project aims to develop analytical approaches for IgG glycosylation profiling in longitudinal studies with different exposure to pathogens, diseases and vaccines, to understand determinants and outcomes of antibody glycosylation in health. Potential methodologies include lectin recognition assays, capillary electrophoresis profiling, and mass spectrometry. The project offers opportunities to contribute to biomarker discovery and cutting-edge immunological research.

### What we are looking for (candidate requirements)

We are seeking a motivated PhD candidate with a strong background in biochemistry, immunology, or a related field, and a keen interest in glycosylation and immune response research. The ideal candidate should demonstrate proficiency in laboratory techniques and data analysis, with experience or enthusiasm to learn approaches such as mass spectrometry, high-throughput glycan profiling, ELISAs, and bead-based multiplex assays. Familiarity with computational tools for analyzing complex datasets is highly desirable. Beyond technical expertise, we value critical thinking, problem-solving skills, and the ability to work autonomously and collaboratively in a multidisciplinary environment. Strong organizational and time management abilities are essential for balancing experimental work and project deadlines. Transversal skills such as effective communication, adaptability, and curiosity-driven inquiry are crucial, as the candidate will engage with diverse teams and contribute to advancing knowledge in immunological biomarkers.

### Related Links

[Glycobiology and Malaria Parasite Biology Group](#), [Malaria Immunology Group](#)

### Keywords

Immune response, immunoglobulin, infections, diseases, n-glycosylation, biomarkers, vaccination



# 7

## Research Proposal 7

# Quantifying the Health Impacts of Climate Change Adaptation and Mitigation in Vector-Borne Disease Control

Supervisor:

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Co-Supervisor:

**Xavier Rodó**

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### Proposal Description

Climate change poses critical threats to global health, particularly through vector-borne diseases (VBDs) like malaria and dengue. This research aims to enhance understanding of climate change adaptation and mitigation strategies to optimize health outcomes. By integrating interdisciplinary methods, the project will:

1. Quantify health co-benefits of climate adaptation and mitigation policies, focusing on interventions such as urban cooling, water management, and green infrastructure to reduce VBD risks while achieving climate goals.
2. Assess impacts on vulnerable populations, including children, individuals with chronic diseases, socioeconomically disadvantaged groups, and migrants in low- and middle-income countries (LMICs).
3. Utilize digital tools and data science to analyze real-world data and simulate health outcomes under different climate scenarios, leveraging ISGlobal's global datasets.

This work will identify trade-offs and synergies between climate policies and public health, providing evidence-based strategies for policymakers to promote health equity, climate resilience, and sustainable development.

### What we are looking for (candidate requirements)

We seek a motivated and interdisciplinary-minded candidate with a strong background in public health, environmental science, epidemiology, or a related field. The ideal candidate will possess:

- A Master's degree in a relevant discipline and demonstrated knowledge of climate change impacts on health, particularly vector-borne diseases.
- Proficiency in quantitative analysis, health impact modeling, and data visualization tools (e.g., R, Python, GIS).
- Experience with digital tools and datasets, preferably in analyzing spatial or urban health data.
- Strong analytical and problem-solving skills, with the ability to integrate diverse methods and disciplines.
- A commitment to addressing health equity and climate resilience, especially in vulnerable populations such as those in low- and middle-income countries (LMICs).
- Excellent communication skills to translate findings into actionable insights for diverse stakeholders.

The candidate should thrive in a collaborative research environment and be passionate about advancing global health and sustainability goals.

### Keywords

Climate change, public health, vector-borne diseases (VBDs), malaria, dengue, climate adaptation, climate mitigation, health impact modeling, urban cooling strategies, green infrastructure, water management, vulnerable populations, low- and middle-income countries (LMICs), health equity, data science, spatial analysis, epidemiology, sustainable development goals, interdisciplinary research, environmental science, digital tools, health co-benefits, climate resilience



# 8

## Research Proposal 8

# Unraveling the Maternal-Fetal Exposome: Integrating Chemical and Metabolic Insights for Health Prediction

Supervisor:

**Léa Maitre**

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Co-Supervisor:

**Pablo Gago-Ferrero**

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### Proposal Description

Unseen chemical exposures during pregnancy are shaping health outcomes in ways we are only beginning to understand, with rising global pollution playing a critical role in disease development. This project aims to investigate how environmental exposures to contaminants during pregnancy influence maternal and child health by analyzing pre-collected plasma, cord blood, and placenta samples from the [BiSC Cohort](#), and from a cohort in low- and middle-income countries (LMICs). Leveraging high-resolution mass spectrometry (HRMS), we will shift from traditional targeted analyses to non-targeted discovery, unlocking novel insights into emerging environmental exposures.

### Specific Objectives:

1. To characterize longitudinally the metabolomic and exposome profiles during pregnancy.
2. To investigate the association between the exposome and maternal cardiometabolic and mental health, and fetal and child development.
3. To generate new HRMS pilot data in an established cohort in a LMIC setting.

This study will contribute to global exposome science using a strong longitudinal design and cutting-edge technologies.

### What we are looking for (candidate requirements)

We are seeking a highly motivated and detail-oriented PhD candidate with a background in analytical chemistry, epidemiology, biostatistics, or related fields. Experience in HRMS data analysis, metabolomics, and bioinformatics is highly recommended. Candidates should have experience with statistical software (e.g., R, Python) and possess strong analytical and problem-solving skills.

Familiarity with exposome research, environmental health, or maternal-child health studies is a plus. This PhD will be a co-supervision between ISGlobal, campus Mar in the [Environment and Health over the Lifecourse research programme](#) and at [CSIC - IDAEA](#). We are co-leader of the International Human Exposome Network ([IHEN](#)), which offers a unique opportunity to conduct groundbreaking research within an internationally collaborative environment.

### Related Links

[BiSC Cohort](#)

### Keywords

Exposome; metabolomics; high resolution mass spectrometry, multi-omics prediction; maternal health; child health



# 9

## Research Proposal 9

# Evaluating the Impact of Social Protection on Reducing Health Effects of Climate Change and Identifying the Most Effective Adaptation Strategies in LMICs

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### Proposal Description

The aim of the project is to evaluate the potential for Social Protection (SP) to reduce the impact of extreme weather events (EWE) – including extreme rainfall, floods, and tropical storms – on child and adult mortality over the last three decades in all LMICs, and to forecast which SP implementation scenarios will reduce EWE health effects up to 2050.

The candidate will develop retrospective impact evaluation models, using global datasets representing more than 100 countries with more than 50 million person-years, merged with national and subnational longitudinal data from multiple data sources. These models will be integrated with microsimulation forecasting models to evaluate the impact of EWE and SP mitigation interventions under alternative scenario at the global and local level.

### What we are looking for (candidate requirements)

ISGlobal is seeking a PhD candidate in epidemiological modelling to join the Health Impact Assessment and Evaluation (HIAE) research group. Candidates should hold a Bachelor or Master degree in a scientific field that includes coursework in statistics and mathematics.

Additional assets include:

- Expertise and prior experience in epidemiological, statistical, or mathematical modelling.
- Proficiency in programming, preferably in STATA or R.
- A demonstrated track record of achievements, including publications in peer-reviewed journals.

Specific responsibilities include:

- Designing and conducting epidemiological, statistical, and mathematical modelling studies.
- Performing microsimulation and individual-based model analyses.
- Preparing scientific manuscripts.
- Contributing to scientific discussions and participating in other HIAE group activities.

Desired skills: ability to work with people from diverse cultural backgrounds, strong teamwork capabilities, problem-solving skills, capacity to work independently, effective verbal and written communication skills, willingness and capacity to learn, a sense of responsibility, flexibility, excellent organizational and coordination skills.

### Related Links

[Health Impact Assessment and Evaluation Research Group](#)

### Keywords

Poverty, social protection, climate change, global health



# Participatory Research Focused on the Occupational Health Impacts of Climate Change and the Green Transition and Opportunities for Intervention

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## Proposal Description

Ongoing research as part of the European INTERCAMBIO project includes intervention and natural experimental studies on topics of climate change and the green transition on occupational health in five main sectors (construction, health care, public transit, renewable energy, and recycling). Methods include sensor-based technologies, external and internal exposome approaches, and co-creation and participatory research methods.

This PhD position seeks to contribute to and build upon work being conducted in INTERCAMBIO to develop new initiatives in occupational health research in climate change and the green transition among vulnerable workers in Spain, including among agricultural workers. The PhD project will:

1. Work with outdoor workers and workers in green industries in Spain, to understand current concerns regarding occupational hazards and to co-design priorities for multi-level intervention.
2. Collect and analyse personal occupational and environmental exposome and health outcome data, in interventional and observational studies.
3. Evaluate interventions in terms of exposure, health parameters, and compliance.

## What we are looking for (candidate requirements)

- **Research Development:** design and implement research projects that involve co-creation methodologies.
- **Data Management:** collect, analyze, and interpret data generated through co-creation initiatives.
- **Worker Engagement:** foster relationships with workers, companies and stakeholders to encourage participation in research activities.
- **Publication and Dissemination:** prepare research findings for publication in academic journals and present at conferences and public forums.
- **Collaboration:** work with interdisciplinary teams including scientists, educators, and community organizers. Be coordinated with the ISGlobal Science for Society Group.

## Related Links

[INTERCAMBIO Project](#)

## Keywords

Climate change, occupational health, co-creation, participatory research



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