



Prof. Ilana Camargo is seeking a talented and motivated individual for the position of

Postdoctoral Research Fellow 2 (PDRF2)

to join her group at the

Laboratório de Epidemiologia e Microbiologia Moleculares – LEMiMO

São Carlos Institute of Physics - University of São Paulo

São Carlos city (SP)

-Brazil-

This postdoctoral position is open to candidates with strong track record of scientific publications.

The successful candidate will work in the “Microbiota Intervention Strategies Limiting Selection and Transmission of Antibiotic Resistance burden in the One Health domain (**MISTAR**)” project, approved by JPIAMR HARISSA Call, and supported by the “International Centre for Antimicrobial Resistance Solutions – ICARS”.

The purpose of **MISTAR** is to develop, evaluate, implement and monitor new intervention strategies to control the selection and spread of antimicrobial resistance genes (ARGs) and antimicrobial-resistant bacteria (ARBs) in ‘hothouses’ by modulating the intestinal microbiota of high-risk patients, “indoor microbial communities” of controlled environments and hospital sewage with impact on AMR using a One health perspective.

In Brazil, our main aim is to evaluate whether the air intervention using an air-purifying system could decrease dust-bound ARBs and ARGs and thus decrease this transmission route in households in the community. We also will access dogs and tutors’ microbiota to possibly track ARBs transmission among the residents. Another point is to verify whether the recent use of antibiotics in dogs could select ARBs and contribute to disseminating them to the house dust microbiota. We will analyze the dust microbiome by metagenome and quantify its total bacterial load by qPCR.

Similar analysis will be performed to the remaining samples (nasal swabs and feces). We will isolate and identify specific bacteria of clinical interest from nasal swabs, feces, and dust to a complete characterization and comparison. In addition, using the same samples collected in the trial described above, a secondary aim is to contribute with isolates to projects in Europe, in which new approaches of microbiome modulation will be tested by our collaborators in **MISTAR**.

Required experience:

Postdoctoral research fellow 2 - Ph.D. with expertise in clinical bacteriology (nasal swab collection, Bacteria isolation and identification, AST following EUCAST recommendations, MIC by broth microdilution method), DNA extraction and quantification, PCR and qPCR assays) and 2+ years of experience in bacteria molecular typing and/or mechanism of antibiotic resistance research.

The fellowship will be provided by ICARS and is compatible with FAPESP Post-doc fellowship (~R\$ 7.100,00). The successful candidate will work at the LEMiMo, in Brazil, but will keep close contact with international research groups in this collaborative project.



The successful candidate's basic activities include to:

- Independently design and perform experiments;
- Analyze and interpret data and draw relevant conclusions;
- Accurately document experiments and data;
- Present results at internal and external meetings/conferences;
- Participate in the lab meetings every week;
- Assist in the preparation of scientific publications and reports in English;
- Contribute to the writing of fellowships and grants;
- Write manuals and document standard operating procedures for LEMiMo;
- Together with the other team members, overview the operation of the laboratory, including the administrative and operational tasks, like equipment maintenance and purchases;
- Work collaboratively across lab functions (including cleaning and organizing) and train other junior lab staff as needed (in special for BL-2).

Primary Responsibilities (*, experience required)

- Receive Electrostatic Dust Collectors (EDCs) from MISTAR collaborator;
- Collect the samples of participants in their houses (Nasal swabs of dogs and tutors, houses dust, and take the flasks of collected feces from dogs and humans), inform about the dust and feces

collection, organize the consent forms, and transport the EDCs and air purification system to/from the lab from/to houses for the project (fieldwork);

- Cultivate bacteria for daily assays and prepare the -80 °C stock of isolates;
- Process different samples, extract and quantify DNA for NGS and metagenome*;
- Submit gDNA for sequencing facility for sequencing by Illumina method;
- Process the samples to isolate bacteria of clinical interest from nasal swabs, feces, and dust;
- Isolate and identify bacterial isolates*;
- Perform AST following EUCAST recommendations (Disk Diffusion, MDB, and Vitek)*;
- Extract and quantify DNA, and design primers for qPCR*;
- Perform qPCR assay and analysis*;
- Organize and submit the DNA and other samples to the MISTAR Consortium collaborators in accordance with national and international legislation;
- Compile data for presentations, reports, and manuscripts*.

Other Important Skills

- Experience in juggling multiple tasks in parallel.
- Strong interpersonal skills; excellent oral and written communication skills
- Ability to follow safety procedures and to maintain a safe work environment (BL-2)
- Strong attention to detail, time management, excellent recordkeeping, and organizational skills

Other Information

At LEMiMo, we value respect for diversity in all its forms and understand that people are a fundamental part of our success!

Prof. Camargo requires employees to be fully vaccinated -subject to approved exemptions- against vaccine-preventable diseases including, but not limited to, COVID-19 and influenza.

If interested, please send a cover letter describing your research interests, curriculum vitae, and the names of three references via email to

Prof. Dr. Ilana Camargo (ilanacamargo@ifsc.usp.br) with PDFR2 as the subject

Deadline: January 31st, 2022.

Starting date: February/March

