



Prof. Ilana Camargo is seeking a talented and motivated individual for the position of
Postdoctoral Research Fellow 1 (PDRF1)
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 air purifying system could decrease dust-bound ARBs and ARGs and thus decrease this transmission route in household 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 antibiotic in dogs could select ARBs and contribute to disseminate 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:

Post-doctoral research fellow 1 – PhD with expertise in microbiology and NGS (Nanopore and Illumina) of bacterial pathogens of clinical importance (Wet-lab + Bioinformatic skills). Candidates must show established research in areas of NGS that focus on bacteria resistome, virulome, phylogeny, and metagenome analysis.

The fellowship will be provided by ICARS and is compatible with PDJ CNPq (~R\$ 4.100,00). 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
- Accurately document experiments and data
- Analyze and interpret data and draw relevant conclusions
- Present results at internal and external meetings/conferences
- Participate of the lab meetings every week;
- Assist in the preparation of scientific publications and reports in English;
- Contribute to 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)

Technical Skills

Primary Responsibilities (*, experience required)

- 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) and transport the air purification system to/from lab from/to houses for the project (field work);
- 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;
- Perform NGS library construction and sequencing (Nanopore method) *;
- Perform the NGS hybrid assemble, data analysis and bioinformatic analysis (including resistome, virulome, typing, plasmidome, plasmid assemble, phylogeny...)*;
- 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 PDFR1 as the subject

Deadline: January 31st, 2022.

Starting date: February/March

