



Post-doctoral position in Aquatic and Terrestrial Ecotoxicology

Context: The Laboratory of Ecotoxicology and Applied Ecology, within the Department of Hydraulics and Sanitation (SHS), at the School of Engineering of São Carlos (EESC), University of São Paulo (USP), through the Thematic Project entitled "Fate and impacts of microplastics and pesticides in aquatic and terrestrial matrices in agricultural contexts," funded by FAPESP (Process No. 2022/1204-4), is opening a selection process for hiring a postdoctoral researcher, on a full-time basis. The Thematic Project is under the responsibility of Professor Cassiana Montagner, from the Institute of Chemistry at UNICAMP (Campinas), but the candidate will carry out their research activities under the supervision of Professor Evaldo Espindola, from EESC/USP, in São Carlos, São Paulo, interacting with researchers from USP, Unicamp, Unesp, and UFSCar. You will be working in a multicultural and multi-disciplinary group, where chemists, biologists, engineers and other scientists collaborate, each with their expertise, to carry out a scientific activity with a shared research goal.

Project Title: Fate and impacts of microplastics and pesticides in aquatic and terrestrial matrices in agricultural contexts

Project: Contamination of the environment by plastic particles [e.g., particles < 5 mm in size known as microplastics (MPs)] has emerged as among the most prominent issues currently confronted by government environmental agencies globally. Although these particles generally have low toxicity, they are highly persistent and their ability to sorb toxicants and leach their additives has the potential to alter the environmental fate and ecotoxicity of these substances. Plastic materials used within the agriculture sector are one major source of MPs into freshwaters, and substances such as pesticides can be associated with these particles generating unknown consequences in the environment. Pesticides are among the greatest challenges to sustainability in the agribusiness model and the environmental implications of pesticides are likely affected by the presence of MPs. An ongoing challenge to understanding the environmental fate of pesticides is processes that influence their sorption to particles in the aqueous phase, and these particles now include the presence of MPs. In this project, we propose a multidisciplinary approach to investigate how pesticides and microplastics mutually and individually influence their fate, transport and toxicity in soil and freshwater ecosystems. Both pesticides and MPs are highly relevant environmental contaminants in freshwaters of countries such as Brazil, which combine large regions of intensive agricultural production that have strong impacts on the provision of ecological services in these environments. The innovative integrated experimental design will include (1) laboratory and mesocosms experiments to better understand the sorption/desorption of pesticides to MPs under different environmental conditions, presence of biofilms, plastic additive, etc. and, (2) key toxicological tests (acute and chronic) to assess bioavailability, behavioural and physiological effects and lethal concentration caused by association of those contaminants to organisms, in addition to the effects on ecosystem functions and services.

Responsibilities: The postdoctoral researcher will work in the area of Ecotoxicology, assessing the effects of microplastics and pesticides, both individually and in combination, on aquatic and terrestrial organisms, using laboratory experiments and ecosystem models (mesocosms), considering different endpoints (mortality, reproduction, behaviour, among other responses to stress factors).

Profile:

Essential requirements

- PhD in ecology, environmental engineering, biology, environmental sciences, or a related field.
- Experience and a strong background in Ecotoxicology (aquatic and terrestrial).
- Experience in science communication and proven experience in scientific writing (strong publication record).
- Ability to work independently as well as in our team.
- Ability to properly report, organise and publish research data.
- Documented experience in coaching junior scientists and students (masters and undergraduates).



Additional Skills

- Highly dedicated, motivated, and well-organised.
- Good communication skills.
- Strong problem-solving attitude.
- High motivation to learn.
- Good at time and priority management.
- Ability to work in a challenging and international environment.
- Experience in community-based activities (community engagement and volunteerism).

All employees are expected to:

- Promote a common purpose consistent with stated university and Institution goals and demonstrate a commitment to students and the learning environment.
- Possess the knowledge of general written standards and procedures utilised, and can read, interpret, and follow procedural and policy manuals related to the job tasks.
- Demonstrate the ability to respond to supervision, guidance, and direction in a positive, receptive manner and accordance with stated policies.
- Present a professional image in word, action, and attire.
- Apply effective techniques to create working relationships with others to achieve common goals; successfully communicate and collaborate with others to achieve goals.
- Demonstrate skills necessary to look at situations and processes critically to make recommendations for improvement.

Benefits:

- Contribute to impactful research that directly informs policy and benefits the community.
- An equal, inclusive and multicultural environment ready to welcome you with open arms.
- Contract period: 12 + 12 months (potentially renewable contingent on performance).
- Competitive postdoctoral salary: R\$ 9047.40 per month.

Details:

- Workplace: Laboratory of Ecotoxicology and Applied Ecology, São Carlos School of Engineering, University of São Paulo, São Carlos/São Paulo, Brazil.
- Funding: São Paulo Research Foundation (FAPESP).
- Starting date: expected in August 2024.
- Deadline for application: 31/05/2024.

How to apply (application instructions):

Application materials should clearly communicate how the applicant meets all required qualifications and additional requirements. Documents must be submitted in one PDF file to Prof. Evaldo Espindola at elgaeta@sc.usp.br.

Applicants must prepare and attach the following documents to the e-mail:

- Current CV: Send a comprehensive CV with details on your academic and research background (for Brazilians, the CV Lattes is acceptable).
- Research summary: Send a concise draft including a research summary highlighting your key research achievements (2-3 pages maximum).
- Cover letter: Send a compelling cover letter expressing your interest in the position and explaining how your qualifications align with the research focus.
- Send contact details of at least two referees with whom you have worked recently.



We inform you that the information you provide will be used solely for the purposes of evaluating and selecting professional profiles to meet the requirements. Please note that this position is not eligible for remote work assignments.

For further information, please contact Prof. Evaldo Espindola (elgaeta@sc.usp.br).