Become a research detective in the field of microplastics research!

Background

Research into the harmful effects of microplastics is crucial to protect both the environment and human health. Larval and adult zebrafish (*Danio rerio*) are commonly used in these toxicity studies. However, this field of research is threatened by the mass production of fraudulent research publications by so-called "paper mills". Paper mills are for profit companies selling authorships on fake publications, which are subsequently published and pollute the scientific evidence base. One method to identify such fabricated publications is by detecting image duplication: the inappropriate (partial) reuse of images.

In this internship, you will use systematic review methodology and AI software to assess how fraudulent papers affect the published literature on the toxicity of microplastics in zebrafish. You'll have the opportunity to learn about evidence synthesis and become an expert in detecting potential scientific misconduct!

Department

You will primarily work under supervision of Dr. Kim Wever at the Radboudumc's dept. of Anaesthesiology, in close collaboration Dr. René Aquarius from the dept. of Neurosurgery. The review team also includes team members in Amsterdam and Virginia, USA. It is possible to partially work from home, but we welcome you to (also) work at the department.

Duration: flexible, we can accommodate both BSc and MSc internships.

Research question: How do publications with image duplications affect the integrity of publications on microplastics in zebrafish?

Research objectives ("*what will I be doing?*")

Depending on the duration and start date of your internship, you will:

1. Screen the result of a comprehensive search for articles on microplastics in zebrafish
2. Use visual inspection and AI software to detect image duplication, within and across publications
3. Record study characteristics such as country and journal to assess their effect on research integrity
4. Interpret the results and formulate directions for future research based on your findings
5. Write your report in publication format, prepare and give an oral presentation

Learning objectives ("*what will I learn from this?*")

You'll join a specialist group of worldwide experts on evidence synthesis of animal studies, and will acquire unique knowledge about how to spot questionable research practices!

In more detail, you'll learn e.g.:

1. To use systematic review techniques to assess the effects of potential research misconduct on evidence syntheses
2. To critically reflect on incentives in research culture that may lead to scientific misconduct or questionable research practices
3. To organise your tasks and manage a collaborative research project
4. To interpret the results and present these, in English, in a draft manuscript and presentation

If you are interested, please contact kim.wever@radboudumc.nl