

Research proposal for internship at RIVM:

How do new developments in pharmaceutical R&D affect pharmaceutical emissions into water systems and their subsequent risks?

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Background:

Pharmaceuticals may enter the environment after their use and pose a risk to aquatic organisms. Within the EU-project PREMIER ([HOMEPAGE - imi-premier](#)) we have been working on criteria for greener pharmaceuticals (<https://pubs.acs.org/doi/pdf/10.1021/acs.estlett.2c00446>). Within the PREMIER project, we will start working on the topic of new developments in the discovery and development of pharmaceuticals, and what this means for environmental risks of these new pharmaceuticals or new delivery methods (e.g., using nanoparticles). For this internship, we are looking for someone who will perform fundamental research into this issue, using literature review and information from experts in the field.

Research aims would be:

- Perform a literature review on new developments in discovery and development of pharmaceuticals.
- Make an inventory of experts in the Netherlands and abroad who could be contacted for further information.
- Communication with experts about what this means regarding human excretion of residues of these pharmaceutical products into the environment.
- Using the GREENER criteria (from the paper in the link above) to obtain an indication of environmental risks.
- Obtain an indication of whether these treatment options are more environmentally friendly than current treatment options.

The project will be performed together with consortium members from industry. We expect the candidate to have a good view on how to deal with contrasting agenda's from industry and other stakeholders. A good written and oral proficiency in English is a must.

We are looking for a candidate with strong communication skills, who likes to combine literature research with reaching out to stakeholders and experts. The background of the candidate could be either (bio)pharmaceutical sciences or environmental sciences.

The research will be performed at the Dutch National Institute for Public Health and the Environment (RIVM) in Bilthoven, within the group MSP (Environmental risks of substances and products) which is part of VSP (Center for Safety of substances and products). The Center for Health Protection will also be involved.

The internship will be for 5-6 months, starting as soon as possible. It is possible to work in Bilthoven as well as hybrid (partly at home).