

# Miina Yanagihara

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📍 **Home:** Utrecht (Netherlands)

## PROFILE / SUMMARY OF EXPERTISE

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Environmental scientist with expertise in probabilistic risk assessment, uncertainty quantification, and data-driven modelling. Experienced in Bayesian analysis (R, Stan) and the development of predictive models for complex environmental systems. Eager to apply these skills to structural and system-level risk analysis challenges.

**Risk Assessment & Uncertainty Analysis** – Conducting probabilistic risk assessments, species sensitivity distribution (SSD) analysis, and modelling under uncertainty for complex systems.

**Data Science & Predictive Modelling** – Proficient in R, Python, and Stan for statistical modelling, Bayesian inference, environmental data analysis, and interactive visualization

**Computational Environmental Science** – Developing and applying predictive models (e.g., QSAR tools) to evaluate risks of emerging contaminants and untested scenarios.

**Research Collaboration & Communication** – Leading interdisciplinary and international research collaborations, publishing peer-reviewed articles, and presenting findings at global conferences.

## WORK EXPERIENCE

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### Postdoctoral Researcher

**Ehime University (Japan) | KWR Water Research Institute (the Netherlands)** [01/04/2021 – Current]

- Conducted probabilistic ecological risk assessments using Species Sensitivity Distributions (SSD), focusing on system-level impacts of chemical contaminants.
- Developed and validated predictive models for emerging contaminants by integrating large-scale environmental datasets (chemical concentrations and bioassay outcomes).
- Conducted QSAR modelling for toxicity prediction and Bayesian analysis for uncertainty assessment.
- Collaborated with international research teams to enhance frameworks for uncertainty quantification and environmental risk assessment.
- Postdoctoral Fellow funded by the Japan Society for the Promotion of Science (JSPS CPD Fellowship).

### Project Assistant Professor

**The University of Tokyo, Department of Urban Engineering (Japan)** [01/04/2019 – 31/03/2020]

- Supervised undergraduate and master's students on chemical analysis for water and sediment quality, focusing on environmental risk indicators.
- Applied multivariate data analysis and system-level statistical modelling to urban sediment toxicity datasets, identifying key environmental factors contributing to urban ecosystem risks.
- Contributed to an international education program in collaboration with Vietnamese Japan University, supporting academic partnerships and student training.

## EDUCATION

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### Ph.D. in Engineering (Urban Engineering)

*The University of Tokyo (Japan)* [01/04/2016 – 31/03/2019]

Dissertation: “Development of a method to discriminate effects of heavy metals by analysing metabolomes of *Grandidierella japonica*”

### M.S. in Engineering (Urban Engineering)

*The University of Tokyo (Japan)* [01/04/2014 – 31/03/2016]

## PUBLICATIONS

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### Selected publications (peer-reviewed):

M Yanagihara, P Smeets, F Miura, S Torii. (accepted). *A statistical framework for assessing heterogeneous sensitivity of viruses to ultraviolet, ozone, and free chlorine*, Environmental Science & Technology Letters

M Yanagihara, K Hiki, Y Iwasaki: Which Distribution to Choose for Deriving a Species Sensitivity Distribution? Implications from Analysis of Acute and Chronic Ecotoxicity Data, Ecotoxicology and Environmental Safety, 278, 116379, 2024. DOI: 10.1016/j.ecoenv.2024.116379

M Yanagihara, K Hiki, Y Iwasaki (2022). *Can chemical toxicity in saltwater be predicted from toxicity in freshwater? A comprehensive evaluation using species sensitivity distributions*, Environmental Toxicology and Chemistry, 41: 2021-2027. DOI: 10.1002/etc.5354 **[Ranked in the top 10% downloaded articles of the journal]**.

Full publication list available on Google Scholar:

<https://scholar.google.com/citations?user=IbhxR40AAAAJ&hl=en>

## GRANTS AND AWARDS

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### Grant Acquisition

#### Japan Society for the Promotion of Science (JSPS):

- JSPS Grant-in-Aid Fund for the Promotion of Joint International Research, Fostering Joint International Research (B), Grant Number: 22KK0060 [co-PI, October 2022 – March 2025]
- Grant-in-Aid for JSPS Research Fellow (CPD), Grant Number: 21J00885 [PI, April 2021 – March 2026] (*Highly competitive national research fellowship*)
- Grant-in-Aid for Young Scientists [PI, April 2020 - March 2022] \*Declined due to change of employment conditions

#### Kurita Water and Environment Foundation:

- Research Grant [PI, October 2019 - September 2020]

### Awards

#### Top Downloaded Article

Our paper (Yanagihara et al., 2022) has received enough downloads to rank within the top 10% of papers published in Environmental Toxicology and Chemistry.

## LANGUAGE SKILLS

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- English: Professional proficiency (C1)
- Dutch: Basic proficiency (A2)
- Japanese: Native