Dr. Denise Bloch - Curriculum Vitae

14th March 2025

Status:	Head of Junior Research Group
Institute:	German Federal Institute for Risk Assessment (BfR)
Fields:	Pesticides, Mixture Toxicity, New Approach Methodologies, Computational Toxicology
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Work experience

2022-present — **Head of Junior Research Group** — *Berlin, Germany*
German Federal Institute for Risk Assessment (BfR)
Department of Pesticides Safety, New Approach Methodology (NAM)-based Assessment of Mixture Toxicity

2016-2022 — **Regulatory Officer** — *Berlin, Germany*
German Federal Institute for Risk Assessment (BfR)
Department of Pesticides Safety, Unit Toxicology of Products and their Safe Use

2012-2016 — **PhD Student** — *Leipzig, Germany*
Helmholtz-Centre for Environmental Research (UFZ)
Department of Effect-directed Analysis

Education

2017 — **Dr. rer. nat. (PhD)** — *Aachen, Germany*
RWTH Aachen University, Faculty of Mathematics, Computer Science and Natural Sciences
Institute for Environmental Research
Dissertation: Chemosensitisation and its impact on bioaccumulation and toxicity under environmental conditions

2012 — **Master's Degree** — *Zurich, Switzerland*
ETH Zurich, Department of Environmental Systems Science
Environmental Sciences (major: Biogeochemistry and Pollutant Dynamics)
Master's Thesis: Bioaccumulation of environmental organic pollutants in the freshwater organism Gammarus pulex: Biotransformation and its significance

2010 — **Bachelor's Degree** — *Aachen, Germany*
RWTH Aachen University, Division of Earth Sciences and Geography
Georesources Management
Bachelor's Thesis: Distribution and origin of geogenic uranium in groundwater systems ofthe southern Lower Rhine Embayment and adjacent areas

Membership in scientific committees and panels

2024-present **EFSA PPR working group member** *Parma, Italy*
WG on Methodologies in assessing long-term toxicity and carcinogenicity of plant protection products
The WG conducts a systematic literature review to map all methods used to assess long-term toxicity and carcinogenicity with a focus on mixture toxicity.

2024-present **PARC project leader** *Berlin, Germany*
P5.2.1.b on endocrine metabolic disruptors
The project aims at developing novel *in vitro* methods for the detection of endocrine metabolic disruptors.

2024-present **ILMERAC Co-Chair** *Berlin, Germany*
International liaison group on methods for risk assessment of chemicals in food and feed
ILMERAC is a network of more than 25 governmental und intergovernmental organisations, which are active in the field of food and feed safety at the global level.

2023-present **Head of the Working Group on Mixture Toxicity** *Düsseldorf, Germany*
German Toxicology Society (GT)
The newly founded working group discusses the application of concepts of mixture toxicity on scientific and regulatory questions and contributes to the organisation of the annual GPTS Conference.

2023-present **CHANGE advisory board member** *Olso, Norway*
Collaboration to Harmonise the Assessment of Next Generation Evidence (CHANGE)
CHANGE seeks to design system-level interventions for bringing forward the date of effective use of NAMs.

2022-present **Nominated Expert** *Paris, France*
OECD Working Group on Biomarkers for Mixture Toxicity
The working group organises the conduction of case studies to demonstrate the applicability of biomarkers for mixture toxicity.

2019-2021 **Consulting Expert** *Parma, Italy*
EFSA Working Group on the Revision of the Non-Dietary Exposure Guidance Document
The working group revised the existing guidance and added refined models and a calculation tool for non-dietary plant protection product exposure assessment.

2019-2025 **Nominated Expert** *Geneva, Switzerland*
UN GHS Informal Working Group on the Implementation of Non-Animal Test Methods
The working group proposes alterations to individual chapters of the GHS and supporting guidance to improve the implementation of non-animal test methods for classification and labelling worldwide.

2019-2025 **Nominated Expert** *Geneva, Switzerland*
UN GHS Informal Working Group on Practical Classification Issues
In this expert panel, I currently organise and lead the discussion on the implementation of a weight-of-evidence approach for mixtures in the GHS classification principles.

Collaboration in international projects

2023-present **ADME4NGRA**
Implementing the EFSA NAMs Roadmap through Advancing Toxicokinetic Knowledge in Chemical Risk Assessment, funded by the European Food Safety Authority (EFSA)
Within this project, I co-supervise two PhD students.

2021-present **PARC**
Partnership for the Assessment of Risks from Chemicals, funded by the European Union
This EU flagship project funds 400 million euros worth of research in toxicology. My principle role in this project is the advice of the management board regarding the regulatory relevance of projects planned in individual workpackages (WP2.1). I also contribute to research conducted in the work packages Hazard Assessment (WP5) and Innovation in Regulatory Risk Assessment (WP6), by collaboration with BfR colleagues and the Helmholtz-Centre for Environmental Research (UFZ) in Leipzig, Germany.

2020-2021 **RACEMiC**
Roadmap for action on Risk Assessment of Combined Exposure to Multiple Chemicals, funded by the European Food Safety Authority (EFSA)
As a member of the BfR team, I collaborated with colleagues from Wageningen University (Wageningen, The Netherlands), the Dutch National Institute for Public Health and the Environment (Bilthoven, the Netherlands), and the Technical University of Denmark (Copenhagen, Denmark).

Further academic activities (recent highlights)

2025 **Participant** — *Ventura, USA*
Gordon research conference on metabolomics and human health

2024 **Symposium chair** — *Munich, Germany*
GPTS mixture toxicity symposium

2024 **Invited Stakeholder Expert** — *Copenhagen, Denmark*
ONTOX Project Stakeholder Meeting

2023 **Invited Expert** — *Brussels, Belgium*
2nd Workshop of EFSA and the European Commission for the evaluation of plant protection products and their co-formulants

2021-present **Lecturer** — *TU Berlin, Germany*
Toxicology for chemists

2021-present **Lecturer** — *Potsdam University, Germany*
Toxicology

Scientific presentations (recent highlights)

2024 **Invited Speaker** — *Berlin, Germany*
PARC Stakeholder dialogue
Title: Basic concepts of mixture toxicity

2024 **Invited Speaker** — *Oslo, Norway*
CHANGE workshop
Title: The use of NAMs across regulatory silos

2023 **Invited Speaker** *Online*
4th International Akademie Fresenius MIXTOX Conference
Title: Data-driven alternatives to the mixture allocation factor (MAF) - A case study of plant protection products

2022 **Invited Speaker** *Online*
Franco-German NAM symposium, GPTS Conference
Title: Prioritising plant protection products for risk assessment with non-animal testing

2022 **Invited Speaker** *Online*
37th Korean Society of Food Hygiene and Safety Conference
Title: Use of NAMs in mixture risk assessment

Publications

Peer reviewed articles

Seifert, S., Siewert, K., Curato, C., Sonnenburg, A., Fritsch, N., Peiser, M., Willenbockel, C.T., Marting, S. & Bloch, D. (2025), Using new approach methodologies for the identification of a sensizising co-formulant in a plant protection product, *Toxicology*, , 514:154100, https://doi.org/10.1016/j.tox.2025.154100

Maertens, A., Antignac, E., Benfenati, E., Bloch, D., Bokkers, B., Fritsche, E., Hoffman, S., Jaworska, J., Loizou, G., McNally, K., Piechota, P., Roggen, E.L., Teunis, M., & Hartung, T. (2024), The probable future of toxicology - probabilistic risk assessment, *Alternatives to animal experimentation (ALTEX)*, 41(2):273—281, https://doi.org/10.14573/altex.2310301

Bloch, D., Marx-Stoelting, P., & Tralau, T. (2024), NAMs: Beta testing needed, *Current opinion in toxicology*, 39:100490, https://doi.org/10.1016/j.cotox.2024.100490

Diemar, M.G. et al. (2024), Report of the first ONTOX Stakeholder Network meeting: digging under the surface of ONTOX together with the stakeholders, *Alternatives to laboratory animals*, 52(2):117–131, https://doi.org/10.1016/j.cotox.2024.100490

Bloch, D., Diel, P., Epe, B., Hellwig, M., Lampen, A., Mally, A., … & Hengstler, J.G. (2023), Basic concepts of mixture toxicity and relevance for risk evaluation and regulation, *Archives of Toxicology*, 97(11):3005-3017, https://doi.org/10.1007/s00204-023-03565-6

Sanvido, O., Basketter, D.A., Berthet, A., Bloch, D., Ezendam, J., Hopf, N.B., Kleinstreuer, N., Merolla, L.L., Uter, W., Wiemann, C. & Wilks, M.F. (2023), Quantitative risk assessment of skin sensitising pesticides: clinical and toxicological considerations, *Regulatory Toxicology and Pharmacology*, 144:105493, https://doi.org/10.1016/j.yrtph.2023.105493

Feiertag, K., Karaca, M., Fischer, B., Heise, T., Bloch, D., Opialla, T., … & Marx-Stoelting, P. (2023), Mixture effects of co-formulants and two plant protection products in a liver cell line, *EXCLI Journal*, 22, 221, https://doi.org/10.17179/excli2022-5648

Karaca, M., Willenbockel, C. T., Tralau, T., Bloch, D. & Marx-Stoelting, P. (2023), Toxicokinetic and toxicodynamic mixture effects of plant protection products: A case study, *Regulatory Toxicology and Pharmacology*, 141, 105400, https://doi.org/10.1016/j.yrtph.2023.105400

Braeuning, A., Bloch, D., Karaca, M., Kneuer, C., Rotter, S., Tralau, T. & Marx-Stoelting, P. (2022), An approach for mixture testing and prioritization based on common kinetic groups, *Archives of Toxicology*, 96(6), 1661–1671, https://doi.org/10.1007/s00204-022-03264-8

Karaca, M., Fischer, B. C., Willenbockel, C. T., Tralau, T., Marx-Stoelting, P. & Bloch, D. (2021), Effects of co-formulants on the absorption and secretion of active substances in plant protection products *in vitro*, *Archives of Toxicology*, 95(10), 3205–3221, https://doi.org/10.1007/s00204-021-03140-x

Tralau, T., Oelgeschläger, M., Kugler, J., Bloch, D., Braeuning, A., Burgdorf, T., ... & Hensel, A. (2021), A prospective whole-mixture approach to assess risk of the food and chemical exposome, *Nature Food*, 2(7), 463–468, https://doi.org/10.1038/s43016-021-00316-7

Bloch, D., Marx-Stoelting, P. & Martin, S. (2020), Towards a tiered test strategy for plant protection products to address mixture toxicity by alternative approaches in human health assessment, *Pest Management Science*, 76(10), 3326–3332, https://doi.org/10.1002/ps.6034

Kurth, D., Wend, K., Adler-Flindt, S. & Martin, S. (2019), A comparative assessment of the CLP calculation method and in vivo testing for the classification of plant protection products, *Regulatory Toxicology and Pharmacology*, 101, 79–90, https://doi.org/10.1016/j.yrtph.2018.11.012

Kurth, D., Krauss, M., Schulze, T. & Brack, W. (2017), Measuring the internal concentration of volatile organic compounds in small organisms using micro-QuEChERS coupled to LVI–GC–MS/MS, *Analytical and Bioanalytical Chemistry*, 409, 6041–6052, https://doi.org/10.1007/s00216-017-0532-2

Kurth, D., Lips, S., Massei, R., Krauss, M., Luckenbach, T., Schulze, T. & Brack, W. (2017), The impact of chemosensitisation on bioaccumulation and sediment toxicity, *Chemosphere*, 186, 652–659, https://doi.org/10.1016/j.chemosphere.2017.08.019

Kurth, D., Brack, W. & Luckenbach, T. (2015), Is chemosensitisation by environmental pollutants ecotoxicologically relevant?, *Aquatic Toxicology*, 167, 134–142, https://doi.org/10.1016/j.aquatox.2015.07.017

Jeon, J., Kurth, D. & Hollender, J. (2013), Biotransformation pathways of biocides and pharmaceuticals in freshwater crustaceans based on structure elucidation of metabolites using high resolution mass spectrometry, *Chemical Research in Toxicology*, 26(3), 313–324, https://doi.org/10.1021/tx300457f

Jeon, J., Kurth, D., Ashauer, R. & Hollender, J. (2013), Comparative toxicokinetics of organic micropollutants in freshwater crustaceans, *Environmental Science & Technology*, 47(15), 8809–8817, https://doi.org/10.1021/es400833g

Project reports

de Jong, E., van der Voet, H., Marx-Stoelting, P., Bennekou, S. H., Sprong, C., Bloch, D., ... & van Klaveren, J. (2022), Roadmap for action on Risk Assessment of Combined Exposure to Multiple Chemicals (RACEMiC), *EFSA Supporting Publications*, 19(10), 7555E, https://doi.org/10.2903/sp.efsa.2022.en-7555

Großkopf, C., Mielke, H., Bloch, D., Martin, S. (2020), Update of the Greenhouse Agricultural Operator Exposure Model, *BfR Wissenschaft*, Berlin, Germany, 133 pp., ISSN 1614-3841 (online)