



# EINLADUNG

Kolloquium  
Sommersemester 2023

**Dr. Stefan Scholz**

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hält am **Montag**, den **03.07.2023**, um **13:00 Uhr**, im Biologicum, Max-von-Laue-Str. 13, Campus Riedberg, Hörsaal 1 einen Vortrag über,  
**„A mechanistic approach to identify and predict the adverse effects of chemicals in the zebrafish embryo model“**

Chemicals play an important role in the modern civilisation and human well-being. However, they can also impact on the environment and human health. The Department of Bioanalytical Ecotoxicology at the UFZ aims at providing a mechanistic foundation to infer potential adverse effects of chemical and mixtures. Therefore we develop novel, complex approaches and tools mainly using organismal test systems such as zebrafish embryos, daphnids, algae or biofilms. The main areas of research are the development of alternatives to animal testing, data driven risk assessment and the combined assessment of chemical and non-chemical stressors. In my presentation I will focus on the development of assay systems. Typically, toxicological information is obtained to a large extent from vertebrate animal tests, which is expensive, laborious and ethically questionable. Furthermore, toxicity information is only available for a fraction of the 350 000 chemical estimated on the global market. Therefore, initiatives such as the US TOX21 had been aiming at changing the testing paradigm towards alternative test system and higher throughput testing. The zebrafish embryo represents such an alternative model, small scale and principally high(er) throughput compatible enabling screening of a large number of chemicals with a wide range of different endpoints. The latter can be mechanistically linked to so-called adverse outcome pathways (AOPs) to infer adverse effects. Examples will be presented with reporter genes linked to endocrine disruption, behaviour (embryonic movement) assessment as an indicator of neurotoxicity, transcriptome and metabolome analysis and quantitative image-based assessment of morphology for effect pattern analysis and grouping of chemicals. Many of these assessments produce large data sets and automated workflows and databases are key for an efficient assessment. It will also be demonstrated how the specificity of the observed effects can be estimated by comparison to the intrinsic, predicted unspecific baseline toxicity of chemicals. Finally, a brief outlook for a retrospective assessment using an advanced fish embryo assessment for environmental monitoring will be described.



Einladender: Prof. Dr. Dr. h.c. Henner Hollert

**Dieser Vortrag wird zusätzlich via Zoom übertragen. Eine Anerkennung für die Studierenden (freies Modul) ist nur bei einer Teilnahme in Präsenz möglich.**

Über diesen Link kommen Sie zu der entsprechenden Veranstaltung:

<https://uni-frankfurt.zoom.us/j/61258282868?pwd=NWhGb2d3R1B6NzgzTXN0M1RDUU1Edz09>