

Übersicht - Overview / Veranstaltung

Veranstaltung

Titel	Ecotoxicogenomics
Title	Ecotoxicogenomics
Schwerpunkt/Focus	
Sprache/Language	optional
VV-Nr./Course No.	136117
Modulverantwortlich/Responsible	Dr. Sebastian Eilebrecht
Vertreter/Co-responsible	Dr. Steve Ayobahan
Anbieter/Teachers	Dr. Sebastian Eilebrecht
Typ/Type	lecture, seminars, literature work, (practical course)
SWS/Semester periods per week	
Arbeitslast(h)/Work load	300
KP/Credit points	10 KP
Zuordnung/Classification	Vertiefungs-Modul
Semester/Semester	WiSe
Studierende/Students	BSc Biowissenschaften
Corona-Informationen/Corona-Information	
Zeit/Date	Block II: 04.01.2027 - 26.02.2027
Ort/Location	Fraunhofer Institut für Molekularbiologie und Angewandte Ökologie IME, Auf dem Aberg 1, 57392 Schmallenberg (4 weeks, practical part) a weeks, theoretical part)
Beginn/Start	04.01.2027
Vorbesprechung/Obligatory pre-meeting	n.V.
Voraussetzung/Prerequisite	
Anmeldung/Registration	Online-Anmeldung
Leistungskontrollen/Performance assessments	oral presentation
Termine f. Leistungskontrollen/Date for performance assessments	n.A.
max. NP/Max. grade points	200 NP
Ziele/Aims	Students will learn about approaches for ecotoxicological hazard and risk assessment at the genome scale.
Inhalte/Content	The module will introduce the field of ecotoxicogenomics for environmental hazard and risk assessment. Utilizing different aquatic model or focus will be put on transcriptomics and proteomics approaches for studying molecular effects induced by chemical stressors.

Methoden/Methods	While focusing on online lectures and seminars for introducing the topic, the course will include molecular biology methods of sample preparation, quality assessment as well as the work with data analysis pipelines.
Berufsrelevante und interdisziplinäre Komponenten/Occupational and interdisciplinary skills	
Voraussetzung für/Prerequisite for	
Präsenzpflicht/Compulsory presence	yes
Plätze/Number of participants	5
Gruppengröße/Group size	5
Materialien/Materials	Computer, ideally (but not compulsory) an R environment
Literatur/Literature	Reinwald, Hannes, et al. "Toxicogenomic fingerprints for thyroid disruption AOP refinement and biomarker identification in zebrafish embryos of The Total Environment 760 (2021): 143914. Reinwald, Hannes, et al. "Toxicogenomic profiling after sublethal exposure to nerve-and muscle-targeting insecticides reveals cardiac and neurodevelopmental effects in zebrafish embryos." Chemosphere 291 (2022): 132746. Loll, Alexandra, et al. "Short-Term Test for Toxicogenomic Analysis of Ecotoxic Modes of Action in Lemna minor." Environmental Science & Technology 56.16 (2022): 11504-11515. Essfeld, Fabian, et al. "Transcriptomic profiling of clobetasol propionate-induced immunosuppression in challenged zebrafish embryos." Ecotoxicology and Environmental Safety 233 (2022): 113346. Pfaff, Julia, et al. "Toxicogenomic differentiation of functional responses to fipronil and imidacloprid in Daphnia magna." Aquatic Toxicology 105927.
Links	https://www.ime.fraunhofer.de/de/Forschungsbereiche/Geschaeftsfelder_AE/Umweltrisikobewertung_von_Chemikalien/Ecotoxicogenomic
Sonstiges/Further information	The practical part of the course will take place at Fraunhofer IME in Schmallenberg (externally).

Modulelemente:

Elemente of the module:

	Titel/Title	Zeit (von...bis)/Time (from...to)	Ort(Raum)/Location
Übungen/Practical exercises			
Vorlesung/Lecture			
Seminare/Seminars			
Exkursionen/Excursions			

Legende: / Legend:

-  = Modul gehört zum SPP Imoplant / Module is part of the SSP Imoplant
-  = Modul gehört zum SPP Evolution /Module is part of the SSP Evolution
-  = Modul gehört zum SPP Bioanalytics and Biochemistry /Module is part of the SSP Bioanalytics and Biochemistry
-  = Modul gehört zum SPP Neuroscience and Behaviour /Module is part of the SSP Neuroscience and Behaviour
-  = Modul gehört zum SPP Quantitative Cell Biology /Module is part of the SSP Quantitative Cell Biology

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