

# Joint EEMGS meeting & International Comet Assay Workshop



**May 23<sup>rd</sup> – 26<sup>th</sup> 2022**  
***Maastricht, The Netherlands***

*Including discussion forums, young scientist sessions,  
allocated poster sessions and informal gatherings  
on the riverbanks of the Maas.*

*Hosted by Maastricht University's  
departments of Pharmacology & Toxicology and Toxicogenomics,  
and financially supported by the Limburg University Fund/SWOL*



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# The Team

## Co-Chairs of ICAW/EEMGS 2022



**Sabine Langie**



**Roger Godschalk**



**Simone van Breda**

## Scientific committee

Amaya Azqueta (*Spain*)  
Elisa Boutet-Robinet (*France*)  
Paul Fowler (*UK*)  
Roland Frötschl (*Germany*)  
Goran Gajski (*Croatia*)  
Marko Gerić (*Croatia*)  
Roger Godschalk (*The Netherlands*)  
George Johnson (*UK*)  
Marcin Kruszewski (*Poland*)  
Sabine Langie (*Belgium*)  
Matjaz Novak (*Slovenia*)  
Bertrand Pourrut (*France*)  
Marie Vasquez (*USA*)  
Sona Vodenkova (*Czech Republic*)

## Instructors of the hands-on training session

Amaya Azqueta and Miguel Collía Martín  
*University of Navarra, Spain*

Martina Stampar and Matjaž Novak  
*National Institute of Biology, Slovenia*

Sabine Langie, Roger Godschalk and Shan Wang  
*Maastricht University, The Netherlands*

## **P21 Bioactivity of the Joint Danube Survey 4 surface water samples collected by horizon large volume solid-phase extraction technique**

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Within the Joint Danube Survey 4 (JDS4) (2019) surface water samples were collected at 24 localities along the Danube River and were extracted by horizon large volume solid-phase extraction (LVSPE) technique. LVSPE technique provided 25,000x relative enrichment factor (REF) of the river samples. The bioactivity of the LVSPE samples was investigated employing prokaryotic *SOS/umuC* assay (S9+ and S9-) and battery of bioassays analyzing different endpoints – cytotoxicity (MTS assay), genotoxicity (comet assay), cell cycle analyses of ZFL cells and embryo toxicity (zFET) in eukaryotic models (zebrafish liver cell line – ZFL and *Danio rerio* embryos – zebrafish). In the case of the *SOS/umuC* assay none of the tested samples (REF100) has induced genotoxic effect. The cytotoxic effect was detected for 11 samples at REF100 (MTS assay). The comet assay results indicated genotoxic potential for nine samples – one in the Upper Danube, six in the Middle Danube and two in the Lower Danube. The most potent were JDS4-37 and JDS4-41 samples collected at two sites in the Serbian part of the Danube River. These samples were analyzed at REF13. The analysis of the cell cycle was performed in the case of eight samples for which were previously recorded genotoxic effect. For one sample (JDS4-41) was found the G1 phase cell cycle arrest. The zFET assay was performed for all the samples at REF100 and there was no embryo toxicity or teratogenicity recorded. The results obtained within this study indicate a higher sensitivity of eukaryotic models compared to prokaryotic *SOS/umuC* assay. Likewise, it was found that most of the genotoxic samples originate from the middle part of the Danube.