**TH255 Toxicity of copper, cadmium and zinc towards common carp (Cyprinus carpio)** V. Delahaut, G. De Boeck, University of Antwerp / Biology SPHERE; R. Blust, University of Antwerp / Systemic Physiological and Ecotoxicological Research Department of Biology. Metals are one of the many groups of pollutants that have the potential to seriously harm aquatic organisms, depending on their concentrations. Common carp is a fresh water teleost thriving in most ponds and channels all over Belgium. Therefore, it is a good sentinel species to assess the impact of metal pollution. Previous studies already provided a good understanding of the uptake kinetics and physiological effects of copper, cadmium and zinc as single elements. However, biotoxicity of metals is mainly explored for individual compounds, while reports on environmentally relevant metal mixtures are rather scarce. Therefore, this research project will address this question by focussing on the mechanistic understanding of bioaccumulation and toxicity of copper, cadmium and zinc mixtures at multiple biological levels (molecular, organismal and population level). Scientific reports suggest a wide range of lethal concentrations for common carp, where variation in sensitivity is mainly due to the developmental stage and/or water hardness. Therefore a screening experiment was conducted with the 3 metals of interest (Cu, Cd and Zn) to obtain a better understanding of the individual toxicity of these pollutants under standard environmental conditions. Juvenile common carp (+ 2.69 g) were acclimatized to medium-hard water (EPA 60-100 mg $CaCO_3$/L) for 3 weeks. For 10 days the fish were exposed to a wide range of single-metal concentrations found in literature (Cu: 0.2-11 µM, Cd: 0.05-100 µM, Zn: 10-150 µM), and mortality was recorded. Dead and moribund fish were collected and stored for whole-body digestion, to acquire a kinetic understanding of the metal uptake and change in internal ion concentrations after exposure. Results indicate a high sensitivity of common carp towards cadmium, whereas copper and zinc seemed to be lethal only at concentrations far above ecologically relevant levels. Interestingly, the lethal concentrations calculated after this experiment were much lower than initially hypothesised based on the literature, especially for copper and cadmium. This emphasizes the role which water hardness and the developmental stage of the fish may have on sensitivity towards metals. Overall, these preliminary results provided a screening step for our future experiments on the uptake kinetics of these metals in single- and mixture metal exposures at sublethal and environmentally relevant concentrations in controlled laboratory and semi-natural mesocosm studies.