Microbial ecotoxicology – bacterial interactions to emerging pollutants in the environment

Lecturer: Dr Charles W Knapp, PhD (University of Strathclyde, UK)

Course description:

Microbial communities mirror the environmental conditions. Individual populations reflect specific substrates, nutrients, and physico-chemical conditions (e.g., pH, redox, salinity) and resulting interactions. Due to their functional versatility and ubiquitous presence, they act as relevant indicators of environmental change. For the same reasons, microorganisms can be used in a wide range of toxicity tests. Their relatively quick growth rates and close interactions help sensitively assess acute responses, and their functional diversity can facilitate long-term recovery.

Unfortunately, many people often overlook the ecological interactions within the microbial communities that support the processes. Understanding these interactions require knowledge of the distribution and abundance of organisms and their interactions in an environmental setting. Further, it requires analytical tools to examine microbial organisms in an effective and timely fashion. The lectures will integrate state-of the- art microbiological measurement technologies and ecological principles into the realm of environmental protection and sustainability.

Syllabus of the lecture

1. Principles of eco-toxicology
2. Principles of microbial ecology
3. Special topic: Antimicrobial resistance in the environment
4. Special topic: Community stability & nutrient cycling
5. Special topic: Microbial concerns in hydraulic fracturing (fracking)

TERMINY WYKLADÓW			
Data	**Dzień tygodnia**	**Godzina**	**Sala**
2014-12-16	Wt	16.15-21.00	Hydro 310
2014-12-17	Śr	16.15-21.00	Hydro 401
2014-12-18	Cz	16.15-21.00	Hydro 310

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