

## **The fate and role of terrestrial organic matter in inland waters, from molecular to global scale**

Lars J. Tranvik, Uppsala University, Sweden

Dissolved organic matter (DOM) in inland waters plays a substantial role in the global carbon cycle, and thus potentially affect climate as well. This presentation is an overview of the dynamics and fluxes of carbon involving DOM, from micro-scale to global scale. DOM is a heterogeneous mixture of decomposition products, and the reactivity and controls of the molecular composition are a central topic in aquatic biogeochemistry. Furthermore, DOM contributes substantially to evasion of carbon dioxide and methane to the atmosphere but is also an important precursor of carbon that is buried in sediments. The loss of DOM from the water column is mediated via microbial and photochemical mineralization, as well as sedimentation upon formation of particles by flocculation or by sorption to minerals. The factors that constrain and promote loss of DOM from the water column will be discussed, and compared across different habitats, from soil to sea.