



Leibniz-Institute of
Freshwater Ecology and Inland Fisheries

The Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB) (www.igb-berlin.de) is the largest freshwater research institute in Germany with a mission for the generation, dissemination and application of knowledge about freshwater ecosystems. The IGB program is unique in that it combines basic and applied research for the benefit of both. Cooperating intensively with the scientific community (universities, research institutes), government agencies, as well as the private sector, guarantees the development of innovative solutions to the most pressing challenges facing freshwater ecosystems and human societies. The IGB is part of the Forschungsverbund Berlin e.V. (FVB). Within the framework of a legal entity the FVB represents eight research institutes operating in the fields of natural, life, and environmental sciences which pursue common interests while maintaining scientific autonomy. IGB is linked through joint professorship to three universities in Berlin.

The Department of Ecohydrology at the IGB offers a:

PhD Thesis

“Effects of river network fragmentation on ecosystem functioning”

Fluvial ecosystems are an important element in the global carbon cycle metabolizing large amounts of terrigenous organic matter (tOM). This contributes to CO₂ evasion fluxes that are under continuous reevaluation at the global scale. In contrast, research on the underlying processes is concentrated at the local ecosystem scale. This scale-gap seriously hampers process understanding across scales, limits upscaling accuracy, and reduces our scope of reaction strategies. The **ERC Starting Grant Project FLUFLUX** (“Fluvial Meta-Ecosystem Functioning: Unravelling Regional Ecological Controls Behind Fluvial Carbon Fluxes”) aims to develop a deeper mechanistic understanding of fluvial carbon fluxes by investigating ecological processes at the intermediate ‘regional’ scale of the ‘fluvial network’. In particular, respiration of tOM is hypothesized to be an interactive product of organismic diversity and resource diversity, which both follow conspicuous patterns in river networks. From an ecological perspective, river networks may be aptly termed ‘fluvial meta-ecosystems’.

The aim of the open PhD position is to investigate effects of fragmenting a lab-based fluvial model meta-ecosystem on patterns of biodiversity, resource diversity and resource use (i.e. respiration). Research tasks include designing the laboratory system in close collaboration with another PhD, designing and carrying through fragmentation experiments, analysis of microbial biodiversity by molecular biological tools (16S-rDNA based metabarcoding), analysis of chemical diversity of dissolved organic matter by high-resolution mass spectrometry and measurements of respiration by a smart tracer approach (Resazurin). Ecosystem modeling work could complement the experimental work.

We search for a highly motivated PhD candidate holding a Masters degree in relevant disciplines (Ecology, Limnology, Environmental Sciences, Ecohydrology, Environmental Microbiology, Geochemistry) with experience/motivation in stream/river ecosystem ecology, biodiversity or biogeochemistry. Excellent English is mandatory. Experience in relevant disciplines/methods is highly advantageous. We offer a 3-year position in a small international team starting anytime October 2017 - February 2018. Salary will be according to TVöD (60 %). The position will be filled upon identification of a suitable candidate. Final application deadline is **December 31 2017**.

Enquiries or questions should be directed to **Dr. Gabriel Singer** at the IGB (gabriel.singer@igb-berlin.de).

Please upload your application (including a CV, a brief letter of motivation indicating experience and research interests/ideas, contact details of two referees and copies of pertinent degree certificates) via the IGB’s (<http://www.igb-berlin.de/en/jobs>) online job-application facility (button “Apply online”).