Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB Berlin) & Swiss Federal Institute of Aquatic Science and Technology (EAWAG Dübendorf, Switzerland)**PostDoc in Genomics - host x parasite interactions**
#1
2 PhD students in Evolutionary Ecology - host x parasite interactions #2 (see below)

Application deadline: 20.07.2016

Eawag, the Swiss Federal Institute of Aquatic Science and Technology (Dübendorf, Switzerland), and IGB, the Leibniz-Institute of Freshwater Ecology and Inland Fisheries (Berlin, Germany), are internationally recognized institutes that are committed to the ecological, economical and social management of water. They offer excellent laboratory and field facilities for interdisciplinary research, large-scale experimental facilities, and long-term research programs and data sets. These institutions share common goals towards education, research, and technology transfer at the highest international level.The Department of Aquatic Ecology (Eawag) and the Department of Ecosystem Research (IGB) seek#1 **Postdoctoral Researcher in Genomics (2-year position)**

Project title: Hostâ parasite interactions in hybridizing Daphnia, from correlations to experiments
#1 [printable version
http://www.dzg-ev.de/de/stellenboerse/ausschreibungen/2016/postdoc_eawag_igb2017.pdf
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The postdoctoral researcher will participate in a collaborative research project with PD Dr. Piet Spaak (Eawag) and Prof. Justyna Wolinska (IGB), financed by the Swiss and German Science Foundations (SNF & DFG).Eutrophication is a worldwide environmental problem accelerated by global warming, affecting the stability of aquatic ecosystems and having long-lasting consequences. We will investigate if and how eutrophication affects two interacting evolutionary processes: disease spread and interspecific hybridization. We will use water fleas (Daphnia), a well-established model in both host-parasite and hybridization research. This project is a combination of field surveys of two eutrophic lakes, a large scale mesocosm experiment (where trophic conditions will be manipulated), the transcriptional profiling of Daphnia exposed to stressful eutrophic conditions, and the development and application of molecular markers to study parasite evolution in eutrophic environments. Overall, through the unique combination of expertise and methods, this project will improve our understanding of disease spread and biodiversity loss under different trophic conditions and, consequently, might provide tools for management of aquatic ecosystems.This is a collaborative project involving a team of five researchers: both PIâ s, a PhD student in Germany, a PhD student in Switzerland as well as this postdoctoral researcher (one year in Germany and one year in Switzerland). The PhD students will be primarily responsible for processing samples in a molecular lab (as well as for experimental- and field-work), whereas the postdoctoral researcher will work on the bioinformatics of the project. The first task will be the sequencing of the genome of our model parasite species, and the use of this information to develop molecular markers to study parasite

evolution in the hybridizing host (Daphnia). Second, Daphnia will be transcriptionally profiled (RNA-seq) under various stressful conditions (including parasitism), in order to explore the mechanisms underlying immunity and synergistic interactions between the stressors. Third, depending on skills and interests, the postdoctoral researcher might also get involved in a large genomic project, which involves an annotation of several Daphnia lineages, belonging to either parental species or interspecific hybrids.The position will be for a period of two years and should start in January 2017 or soon thereafter (negotiable). Generous funds are available to cover attendance at national and international conferences and for stays in collaborating institutions. The postdoctoral researcher will have an opportunity to participate in several research training exercises and workshops to facilitate career building: http://www.igb-berlin.de/postdocs-at-igb-kopie.html

In Berlin, the postdoctoral researcher will additionally be affiliated with the Berlin Center for Genomics in Biodiversity Research (BeGenDiv): http://begendiv.de/
The ideal candidate should have a strong background in bioinformatics and genomics, and interest in applying these tools to evolutionary questions. In particular, experience with genome annotation, development of SNP markers, and/or analyses of RNA-seq data would be advantageous. In addition, some lab experience would be beneficial (but this is not a must).We are seeking a highly motivated person who has an ambition to stay in academia. A record of successful publication is anticipated. We expect strong analytical and data handling skills, and the ability to communicate within a cross-disciplinary research environment. Excellent writing skills in English, good work ethic, and creative thinking are desired. The working language of the group is English. In keeping with the IGB's policy regarding gender equality, female applicants are particularly encouraged. Severely disabled applicants with equal qualification and aptitude are given preferential consideration.For further information please consult Dr Justyna Wolinska (wolinska@igb-berlin.de) or Dr Piet Spaak (spaak@eawag.ch).
The application should be submitted by 20 July 2016.
We look forward to receiving your application. Please submit your application including a motivation letter with a description of pertinent experience, a complete CV (incl. publication list), the names (with e-mail addresses) of three potential referees, and copies of certificates of academic qualifications via the Eawag Jobs & Career webpage, any other way of applying will not be considered. The link below will take you directly to the application form. https://apply.refline.ch/673277/0447/pub/1/index.html

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economical and social management of water. They offer excellent laboratory and field facilities for interdisciplinary research, large-scale experimental facilities, and long-term research programs and data sets. These institutions share common goals towards education, research, and technology transfer at the highest international level.
The Department of Aquatic Ecology (Eawag) and the Department of Ecosystem Research (IGB) seek#2 **Two PhD students in Evolutionary Ecology**

Project title: Hostâ□□parasite interactions in hybridizing□*Daphnia*, from correlations to experiments
#2 [printable version
http://www.dzg-ev.de/de/stellenboerse/ausschreibungen/2016/phd_eawag_igb2017.pdf]

Both PhD students will participate in a collaborative research project with PD Dr Piet Spaak (Eawag) and Prof. Justyna Wolinska (IGB), financed by the Swiss and German Science Foundations (SNF & DFG).Eutrophication is a worldwide environmental problem accelerated by global warming, affecting the stability of aquatic ecosystems and having long-lasting consequences. We will investigate if and how eutrophication affects two interacting evolutionary processes: disease spread and interspecific hybridization. We will use water fleas (Daphnia), a well-established model in both host-parasite and hybridization research. This project is a combination of field surveys of two eutrophic lakes, a large scale mesocosm experiment (where trophic conditions will be manipulated), the transcriptional profiling of *Daphnia* exposed to stressful eutrophic conditions, and the development and application of molecular markers to study parasite evolution in eutrophic environments. Overall, through the unique combination of expertise and methods, this project will improve our understanding of disease spread and biodiversity loss under different trophic conditions and, consequently, might provide tools for management of aquatic ecosystems.The position at IGB focuses on host-parasite interactions. The main task will be development of molecular markers (SNPs) for a model parasite species and application of these markers to study parasite evolution. Thus, the student will participate in preparation of samples for de novo sequencing of the whole parasite genome. Developed markers will be applied on field-collected and experimental samples (i.e. amplicon sequencing on Illumina). The bioinformatics component will be performed in collaboration with a postdoctoral researcher, but the student is expected to learn and help with that part. In addition, some microscopy work, field work and/or experimental work might be accommodated, depending on skills and interests.The position at Eawag focuses on interspecific hybridization. Here, the main task will be participation in a large-scale field study and mesocosm experiment, data collection and processing. The student will screen the dynamics of hybridizing
Daphnia
communities, using already established microsatellite and SNP markers. Also, the student will conduct a large laboratory experiment to assess
Daphnia
stress responses; here, RNA-Seq methods will be applied. The PhD student will take advantage of the draft

D. galeata
genome. A postdoctoral researcher will help with analyses of RNA-Seq data.
Although the students will be hosted primarily at their given institution, exchange stays are planned at Eawag and IGB, respectively. Moreover, generous funds are available to cover attendance at national and international conferences. The students will take part in the organized PhD programs (including attending various skills courses) of their respective institution: http://www.eawag.ch/en/teaching/academic-education/ , http://www.igb-berlin.de/PhD_Training.html

The positions will be for a period of three years, and should start as soon as possible (January 2017 or even earlier). The Eawag PhD student will be enrolled at the Swiss Federal Institute of Technology (ETH) in Zürich, the German PhD student at Free University in Berlin.The ideal candidate should have good molecular skills and a strong background in evolutionary biology, ecology or related fields. In addition, knowledge of statistics, bioinformatics and/or population genetics will be highly advantageous. Excellent communication and writing skills in English, good work ethic, and creative thinking are desired. A Masters Degree (or equivalent) in biology or a related subject is necessary for admission. The working language in the groups is English. In keeping with the IGB's policy regarding gender equality, female applicants are particularly encouraged. Severely disabled applicants with equal qualification and aptitude are given preferential consideration.For further information please consult Dr Justyna Wolinska (wolinska@igb-berlin.de
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The application should be submitted by 20 July 2016.
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