

## People, pollution and pathogens – mountain ecosystems in a human-altered world (P<sup>3</sup>)



Mountain ecosystems are seen as particularly sensitive to climate change because they are influenced not only by altered average environmental conditions but also by climate extremes. Globally, the negative impacts of climate change on mountain ecosystems are expected to greatly outweigh the potential benefits. Future change is expected to especially affect mountain freshwater habitats, their biota and the surrounding terrestrial environment. The principal aim of P<sup>3</sup> is to understand the impact of global change on microbes, plankton, amphibians, and on pathogen emergence in aquatic and terrestrial mountain habitats.

Beyond adding to the growing body of knowledge, a core element of the P<sup>3</sup> philosophy is to synthesize existing knowledge, produce generalized insights and supplement these with new data collected at altitudinal gradients in four mountain ranges, the Pyrenees (France), Dhofar Mountains (Oman), Sierra Nevada (USA) and the Great Hinggan Mountain (China).

Within the P<sup>3</sup> several early career and postdoc positions are available in China, France, Germany, and California (USA). The consortium combines the expertise of outstanding research institutes in each of those four countries. Please, direct questions concerning P<sup>3</sup>. to Dirk S. Schmeller ([Dirk.Schmeller@ufz.de](mailto:Dirk.Schmeller@ufz.de)), the coordinator of P<sup>3</sup>, and questions concerning the advertised positions to the responsible PIs. If you want to apply for these positions, please send a letter of interest, CV and publication list, and preferably a letter of support (in English) to Dirk S. Schmeller ([Dirk.Schmeller@ufz.de](mailto:Dirk.Schmeller@ufz.de)) and to the respective PIs responsible for each position before the specified start of application review. Applications received via email or regular mail will be considered.

The P<sup>3</sup> project and the Belmont Forum supporting agencies especially encourage female candidates to apply (including international applications). In case of equal personal aptitudes and qualification, priority will be given to disabled persons.

## Postdoc#1 (Nanjing, China): Changes in mountain ecosystems

In mountainous regions, large differences in landcover may occur over short distances and during short time periods. Pollen data from montane watersheds can record extreme changes in landcover and climate in a relatively small spatial area. We seek a postdoctoral researcher who will participate in and manage field trip logistics as well as conduct fieldwork in close collaboration with other consortium members. The researcher will investigate elevational and latitudinal gradients in pollen records from lake sediments through sampling, analyzing and interpreting data, and will use these data to reconstruct the historical variation of landcover over the last several centuries. The paleolimnological approach will thus help explain changes in the montane aquatic ecosystems of the four mountain systems being studied in this project.



We are looking for a highly motivated and qualified candidate with expertise in paleoenvironmental sciences, holding a strong PhD degree in paleobotany and/or paleolimnology. Additional qualifications we seek are experience in aquatic ecology and in international research projects. Proficient written and spoken English language skills are required.

The Postdoctoral researcher will be hosted in China on a fixed term of 2 years.. Salary corresponds to 100000 – 125000 CNY/yr depending on experience.

The call is open until the position is filled.

Requirements: Chinese and English are required.

Location: Nanjing Institute of Geography & Limnology, Nanjing

PI: Dr. Kunshan Bao (kunshan.bao@hotmail.com)

Additional training: Laboratoire écologie fonctionnelle et environnement, ECOLAB, Toulouse (France)

Start of application review: 01.02.2017

Earliest starting date: 01.07.2017

Duration: 24 months

## Postdoc#2 (Nanjing, China): Aquatic foodwebs in changing mountain ecosystems

The candidate will work with the P<sup>3</sup> team to reconstruct aquatic food webs in freshwater systems and link structure to historical human influences on mountain ecosystems. We are looking for a highly motivated candidate holding a PhD-degree in Aquatic Ecology or Ecology. Skills needed to conduct the work include paleolimnological methods and an understanding of aquatic food webs and ecosystem functioning. The successful candidate will be based in Nanjing but will be supervised and trained within the international research context including extensive training sessions in European research laboratories and at several of the international field sites. The candidate will directly participate in fieldwork at sites in the Great Hinggan Mountains to contribute to the overall sampling scheme of the P<sup>3</sup> project. Very good spoken and written English skills are necessary. Moreover, the ability to work, communicate and interact in an international collaborative consortium is essential. Finally, the ideal candidate must possess the physical abilities to take part on sampling campaigns (fieldwork) in the mountains.



The Postdoctoral researcher will be hosted in China on a fixed term of 2 years. Salary corresponds to 100000 – 125000 CNY/yr depending on experience.

Requirements: Chinese and English are required.

Location: Nanjing Institute of Geography & Limnology, Nanjing

PI: Dr. Kunshan Bao (kunshan.bao@hotmail.com)

Additional training: Helmholtz-Centre for Environmental Research - UFZ, Leipzig (Germany)

Start of application review: 01.07.2016

Starting date: 01.09.2016

Duration: 24 months

## **PhD student (Leipzig, Germany): The microbiome in aquatic mountain ecosystems**



We seek a PhD candidate interested in microbial (bacteria, micro-eukaryotes) communities and their interaction networks. We are particularly interested in candidates that are motivated to study these networks in aquatic food-webs in mountain lake systems that may vary along altitudinal and pollution gradients. To research will include next generation sequencing methods, network science approaches and bioinformatics tools for big data analyses.

The ideal candidate has a Master's Degree or equivalent university degree in microbiology or environmental sciences and should have proven knowledge on next generation sequencing applications. We also expect a strong knowledge in the application of statistical tools, a very strong interest in ecological theory, and a combination of organizational skills and strong personal responsibility. Additional qualification in bioinformatics is an advantage. Fluency in spoken and written English is required. Moreover, the ability to work, communicate and interact in an international collaborative consortium is essential. The ideal candidate must possess the physical abilities to take part in sampling campaigns (fieldwork) in the mountains.

Requirements: English required.

Location: Helmholtz-Centre for Environmental Research - UFZ, Leipzig (Germany)

PI: Dr. Antonis Chatzinotas (antonis.chatzinotas@ufz.de)

Additional training: San Francisco State University, San Francisco (USA)

Start of application review: 01.07.2016

Earliest starting date: 01.09.2016

Duration: 36 months

Salary: According to German TVöD 13 (65%). (minimum Euro 30,000 / yr)

## PhD student (Toulouse, France) : Hydrology in mountain ecosystems



We are looking for a motivated and qualified candidate with interest in earth and environmental sciences, holding a strong Master's degree in hydrological modelling. Additional qualification in ecology or biogeochemistry as well as in programming will be an advantage. The PhD student will investigate key parameters in large scale mountain hydrology related to the health of aquatic ecosystems across the four P<sup>3</sup> mountain ranges using a modelling approach based on the SWAT hydrological model.

The PhD candidate will be hosted in France with additional training and supervision in Germany. This PhD position is a fixed term position of 3 years. Salary corresponds to 1500 to 1700€/months. The call is open until the positions are filled.

Requirements: English required and if possible French and/or Chinese.

Location: Laboratoire écologie fonctionnelle et environnement, ECOLAB, Toulouse (France)

PI: Dr. Gael Le Roux (gael.leroux@ensat.fr)

Additional training: Helmholtz-Centre for Environmental Research - UFZ, Leipzig (Germany)

Start of application review: 01.07.2016

Starting date: 01.10.2016

Duration: 36 months

Salary: Euro 20,000-25,000 / yr depending on experience

## Graduate student (San Francisco, USA): Dynamics of pathogen host interactions in a human altered landscape.



Amphibians are threatened globally and species in mountain ecosystems are especially at risk from emerging fungal and viral pathogens. We are seeking a motivated master's student generally interested in studying host/pathogen dynamics. The graduate student will investigate the interactions between human caused pollution and invasion of the deadly fungal pathogens *Batrachochytrium dendrobatidis*, *Batrachochytrium salamandrivorans* and other pathogens including ranaviruses across the four P<sup>3</sup> mountain ranges. The student will be supported on a combination of research and teaching assistantships beginning in Fall 2017. Preference will be given to applicants with previous field experience (e.g. backpacking) in difficult terrain. Assistantship includes 12-month stipend and full tuition waiver.

Requirements: Lab and field experience

Location: San Francisco State University, San Francisco (USA), Dept of Biology

PI: Assoc. Prof. Vance Vredenburg (vancev@sfsu.edu)

Additional training: Helmholtz-Centre for Environmental Research - UFZ, Leipzig (Germany)

Start of application review: 01.02.2017

Start date: 01.05.2017

Duration: 36 months

Salary: \$USD 24,000 / yr plus tuition waiver

## P<sup>3</sup> offers

- Excellent technical facilities
- The opportunity to bridge the gap between basic research and applied research
- Work experience in interdisciplinary, multinational teams with excellent links to national and international research networks
- Interesting career opportunities and an extensive range of training and further education courses



## About the consortium

The P<sup>3</sup> consortium provides a framework that includes an international research team with diverse experience across many scientific fields in an innovative and exciting context that links human impacts in montane systems over centuries. The project supports supervision of young researchers, and expects publication of results in scientific as well as public outlets that have had significant impacts. The P<sup>3</sup> consortium combines expertise in a range of different natural science fields (e.g. Chemistry, Ecology, Microbiology, Hydrology, Epidemiology) from its member organizations. The Helmholtz Center for Environmental Research ([UFZ](#)) has a strong focus on interdisciplinary research involving ecologists, economists, social and legal scientists, which will all be integral to P<sup>3</sup>. The [ECOLAB](#) complements the consortium by integrating research on dynamic environments, the influence of disturbance regimes on biodiversity, dynamics and the effect of pollutants, and modeling of the structure and operation of mountain ecosystems. The analytical platforms of UFZ and ECOLAB will allow detailed data collection of a range of different biotic and abiotic parameters. San Francisco State University ([SFSU](#)) provides expertise in retrospective studies of emerging disease in montane ecosystems, climate change impacts on wetlands, aquatic food web interactions, and in delineating energy flow in montane systems across aquatic to terrestrial boundaries. The Nanjing Institute (NIGLAS) completes the consortium with their long-standing research on paleolimnology, and innovative paleoproxies for ecosystem studies.

