POSTDOCTORAL RESEARCH ASSISTANT

Within the framework of an international research program in Cambodia, Guinee, Ivory Coast and Guadeloupe, we are looking for a dynamic, inquisitive PDRA with a proven track record to study the role of aquatic food webs structure on the risks of infectious disease emergence in humans and animals. The PDRA will focus specifically on trematode diversity, spatial distribution and integration into different components of local aquatic host communities. The candidate should have a good level of food web modelling, Stable Isotopes analysis (SIA), an interest in aquatic ecology and a curiosity for travel in tropical areas. The postdoctoral fellow will be accompanied by a research assistant for species identification.

Background

Although a high percentage of the approximately 250 known emerging infectious diseases (EIDs) in humans have been attributed to tropical forests, the precise mechanistic details of this association often remain elusive. The rapid increase in human populations, settlements and encroachments worldwide is resulting in a rapid and concomitant decline in biological diversity, with significant changes in species community composition and severe disruptions to established food webs, which are directly addressable by land-use change and deforestation.

Results include advanced effects on ecosystem functioning and the potential for marked changes in associated microbial dynamics, including impacts on resident human populations. To potentially understand more generalist EIDs, which often do not depend on a single specific host or vector species, an in-depth analysis of changes in host/non-host communities caused by natural habitat modifications and/or land-use change is needed. For example, hosts of different fitness will be adapted differently to altered environments, so it is essential to quantify their relationship to a food web. In addition, changes in land use or habitat often lead to a change in trophic interactions, which may be a direct (e.g. predation) or indirect (e.g. extinction cascade) change in food web structure. A severe change in a food web can have a significant impact on a food web, with the promotion or decline of certain host species in the community web.

Here, the post-doctoral project will characterize for the first time the links between the structure of food web communities in tropical freshwater ecosystems across three continents and 4 countries, and the emergence of trematodes in local human and animal populations. A detailed structural presentation of host and non-host interaction under different levels of anthropogenic stress related to trematodes will be expected. The empirical relationship of structural changes in host and non-host community networks with trematodes biomass will also be characterized.

Duration : 11 months (5 month extension possible)
Location : I-SEM Laboratory, Montpellier, France
Gross salary : 2 793 € ppm
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