ACADEMIC POSITIONS

JOB DESCRIPTION

- **JOB TITLE/PROFILE**
  36 months PhD position

- **RESEARCH FIELD(S)**[1]
  Interdisciplinarity between Natural and Social Sciences.

- **JOB DESCRIPTION**
  The Ocean Sciences Institute with A*midex is funding or 3years PhD position to contribute to the project: MANGRIVE - The role of MANGroves in storm mitigation: a social-ecological case study from the Red RIver delta, Vietnam.

  Mangroves are unique ecosystems found in tropical intertidal zones. South-East Asia has the largest area of mangroves in the world, with 33.8% of global coverage. Mangroves contribute to the livelihoods of coastal communities by providing shelter for terrestrial and marine flora and fauna. At the same time, they protect coastlines from tides and waves and can store large amounts of carbon in trees and soils (Alongi 2014).
  Despite the wealth of ecosystem services they provide, mangroves have been affected by global change (Richards & Friess 2016). The Red River delta, located west of the Gulf of Tonkin, is the fourth largest delta in Southeast Asia (Fan et al., 2019). Climate change (sea level rise, saline intrusion), combined with high population density, is leading to strong pressure on natural resources, including mangrove ecosystems. In this context, the project aims to interview diverse stakeholders, including public and private actors, NGOs researchers, and members of local populations living in mangrove areas, using the Q-methodology. (Hugé et al., 2016). The results of these interviews will be used as a baseline study to propose measures and policies to the partner organizations in this project. In this context, the project aims to understand the impacts of increased storm frequency and intensity to the mangrove social-ecological system, both in terms of ecological functioning and associated livelihoods. We will focus on the morpho-physiological and metabolic responses of two mangrove species widely used in restoration operations, *Bruguiera gymnorhiza* and *Sonneratia caseolaris*, under different salinity and flooding conditions. Greenhouse and in situ experiments will be designed to measure the growth, survival rate and photosynthetic efficiency of the seedlings, as well as changes in their

[1] **Social Sciences** - Law, Education, Economics, Social Science, Psychology - **Political Science** - Political Science - **Computational Sciences** - Computer Science, Mathematics - **Engineering** - Architecture and Design, Engineering - **Natural Sciences** - Biology, Chemistry - **Physical Sciences** - Physics, Space Science - **Environmental Sciences** - Agricultural Science, Geosciences - **Humanities** - Theology, Philosophy, Literature, Linguistics, History, Anthropology, Arts and Culture - **Medical Sciences** - Medicine

metabolome as a function of the different saline gradient and flooding treatments, using a non-targeted metabolomics approach. These experiments will be carried out in two laboratories: Institut méditerranéen de biodiversité et d'écologie (IMBE - France) and Hanoi National University of Education (HNUE - Vietnam). The results will be applied as technical guidelines for the partners involved in this project, who oversee mangrove management in this region, and will have a strong impact on local communities, raising their awareness of mangrove protection.

Alongi D (2014) Carbon cycling and storage in mangrove forests. Annual Review of Marine Science 6:195–219.
Fan D, Nguyen DV, Su J, Van Bui V, Lan Tran D (2019) Coastal morphological changes in the Red River Delta under increasing natural and anthropic stresses. Anthropocene Coasts 2, 51–71
Hugé J, Vande Velde K, Benitez-Capistros F, Japay JH, Satyanarayana B, Nazrin Ishak M, et al. (2016) Mapping discourses using Q methodology in Matang Mangrove Forest, Malaysia. Journal of Environmental Management 183: 988–997.
Richards DR, Friess DA (2016) Rates and drivers of mangrove deforestation in Southeast Asia, 2000–2012. Proceedings of the National Academy of Sciences 113:344–349.

- **QUALIFICATIONS/SKILLS/EDUCATION & RESEARCH REQUIREMENTS**

The candidate must hold a master's degree in ecology, environmental sciences or equivalent.
Knowledge of chemical ecology would be appreciated.
Good relational capacities to work in a collaborative a multidisciplinary context
Good level in English (spoken, written)

- **APPLICATION DEADLINE**

1st of May 2024. International candidates are encouraged to apply

- **STARTING DATE**

The position is available for 36 months ideally starting in October 2024

- **JOB LOCATION**

This position is split into two parts of 18 months each: first in Vietnam at the Department of Genetics-Biochemistry of the Faculty of Biology (Hanoi National University of Education) and then at the University of Aix-Marseille at the Mediterranean Institute of Biodiversity and Ecology.

- **REQUESTED DOCUMENTS OF APPLICATION**

Letter of motivation, CV and 2 reference letters.

- **CONTACT TO APPLY**

yoan.furtado@osupytheas.fr
virgnie.sanial@univ-tln.fr

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