

## Position 2

### **3-yr Postdoc – Integrating Predictive Modeling of Ecosystems with Biogeography: DK-8000 Aarhus C, Denmark**

#### Research Area and Project Description:

This 3-yr postdoc project is part of a new ERC Starting Grant project [UTF-8?]â – Macroecological studies of long-term historical constraints on functional diversity and ecosystem functioning across [UTF-8?]continentsâ – (HISTFUNC).

The objective of HISTFUNC is to apply macroecological analyses to provide ground-breaking assessments of large-scale drivers of functional diversity and ecosystem functioning, including effects of diversity on functioning. In particular, it will assess the novel hypothesis that ecosystem functioning is subject to long-term ( $10^2$ - $10^7$  year) constraints mediated by biodiversity effects and driven by past climate change and other historical factors. The overall objective for this postdoc project is to develop and implement a novel framework for predicting spatiotemporal dynamics of vegetation-related ecosystem functioning that accounts for the constraints imposed by long-term biogeographic dynamics. The project will explore and develop a range of methodologies for predictive ecosystem modeling on a global scale, including hybrid statistical-mechanistic models that combine statistical modeling of ecosystem-environment links, biodiversity-ecosystem relations, and large-scale historical effects with dynamic simulations of future [UTF-8?]â – historicalâ – dispersal dynamics as well as certain physiological effects and trait-based dynamic vegetation models (DVGMs), modified to take biodiversity-ecosystem relations (notably functional diversity effects) and large-scale historical effects into account.

#### Qualifications and Specific Competences:

Applicants to the postdoc position must have PhD degree in ecology or evolutionary biology (or equivalent) or have submitted their PhD thesis for assessment before the application deadline. All postdoc candidates are expected to provide cutting-edge expertise in advanced statistical analyses of large data sets (including strong skills in R), mechanistic models such as DVGMs, and to have a solid ecological background and strong collaborative skills, and to have proven abilities to publish at a high international level. The successful candidate is expected to have strong skills in English and applicants must document this.

Supervisors and collaborators: The main supervisor is prof. Jens-Christian Svenning. The project also involves prof. Brian J. Enquist (University of Arizona) and prof. Robert E. Ricklefs (University of Missouri).

### Place of Employment and Place of Work:

The place of employment is Aarhus University, and the place of work is the Ecoinformatics & Biodiversity Group, Department of Bioscience, Aarhus University, Ny Munkegade 114, DK-8000 Aarhus C, Denmark.

The Ecoinformatics & Biodiversity Group is a diverse and vibrant research community with strong international ties. Postdocs and PhD students are encouraged to collaborate within the group, across departments and with other universities. More information about the people and research activities of the group can be found at <http://bios.au.dk/en/research/aarhus/ecoinformatics-and-biodiversity/>