

Postdoctoral Researcher in Paleobotany, Paleoclimate, and Vegetation Modeling

Also seeking Visiting Scholars and Graduate Students (MS/PhD)

Location: Xishuangbanna Tropical Botanical Garden (XTBG), Chinese Academy of Sciences, Menglun Town, Xishuangbanna, Yunnan, China

Date: October 8, 2024

Research Theme

Paleobotany, Paleoclimate, and Vegetation Modeling

Position Overview

We invite applications for a postdoctoral position focused on exploring the complex interactions between biodiversity, vegetation patterns, and environmental changes. Current biodiversity and vegetation reflect the combined effects of topography, climate, and life processes, representing a moment in Earth's long geological and evolutionary history. Understanding these patterns requires retracing the evolutionary history of plant groups through geological time.

Southwest China and Southeast Asia are recognized as global biodiversity hotspots. The evolution of tropical and subtropical ecosystems during the Cenozoic era provides valuable insights into the link between climate changes and biological evolution. This project will combine climate and vegetation modeling with palynological and large plant fossil data to examine how the topographic evolution and climate changes in Southwest China and Southeast Asia have shaped biodiversity. This research will also help predict the effects of future climate change on vegetation and biodiversity and provide strategies to address these challenges.

The successful postdoctoral candidate will build on existing research to address the key scientific question: *"How do tropical and subtropical environmental changes drive the evolution of vegetation and plant diversity?"* The research will focus on Yunnan and Southeast Asia, with three main objectives:

- 1. Reconstructing the Evolution of Tropical and Subtropical Biodiversity and Vegetation**

This will involve studying key geological periods, using large plant fossils, palynological fossils, and geochemical analyses to reconstruct the biogeographical history of major plant groups. Quantitative analyses will trace the co-evolution of biodiversity and topography in Southwest China and Southeast Asia.

- 2. Establishing a Paleoclimate Simulation Platform for Vegetation and Plant Diversity Research**

In collaboration with the China Science and Technology Cloud's "Open Science Advancement Plan," this project will establish a platform for paleoclimate and biodiversity simulation. Numerical simulations, using high-resolution models such as HadCM3, will be applied to Yunnan, Southeast Asia, and surrounding regions to explore how topographic and climate changes have driven biodiversity evolution.

- 3. Developing a Cenozoic Palynology and Large Fossil Data Platform**

This aspect involves creating a fossil database and conducting big data analyses and numerical simulations to understand the evolution of the environment, ecosystems, and plant diversity in tropical and subtropical regions during the Cenozoic era.

The research will integrate large plant fossils, palynology, and numerical simulations to analyze the relationship between environmental changes and biodiversity formation. Ultimately, this project will contribute a model for understanding how tropical and subtropical environmental changes drive vegetation and plant diversity evolution.

Position Details

This is a two-year postdoctoral position based at the Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, under the supervision of Prof. Shufeng Li. XTBG offers a research start-up fund of RMB 200,000, and the annual salary for the postdoctoral fellow ranges from RMB 200,000 to RMB 300,000.

For more information about the project, visit:

https://xtbg.cas.cn/2022/rcdw/bshldz/bshzp/202312/t20231212_6942256.html

The position will remain open until filled.

Eligibility and Application Requirements

We encourage applications from individuals underrepresented in the fields of paleobotany (especially palynology), climate and vegetation modeling (including dynamic vegetation and niche modeling), and related areas. Applicants must hold a Ph.D. in ecology, botany, climate science, physics, or a related discipline, and have experience in numerical and vegetation modeling.

To apply, please submit a CV, cover letter, and contact information for three references to lisf@xtbg.org.cn.

Application Deadline

December 31, 2025

Visiting Scholars and Graduate Students (MS/PhD)

In addition to postdoctoral researchers, we are also welcoming **Visiting Scholars** (funded by the Chinese Academy of Sciences (CAS) President's International Fellowship Initiative (PIFI)) and **MS or Ph.D. students** (supported by the Chinese Government) related to this project. For more information, please contact Prof. Shufeng Li at lisf@xtbg.org.cn.

Further Information

- PIFI: <https://pifi.cas.cn/front/pc.html#/bicsite/home>
- XTBG: <https://en.xtbg.ac.cn/>
- Prof. Shufeng Li's Profile: <https://people.ucas.ac.cn/~lisf?language=en>

Contact

Email: lisf@xtbg.org.cn