

中英文资助领域描述

“变化地球的生物多样性”项目建立在“生物多样性多维度”和“生态与进化交叉”等项目的基础上，但主要聚焦于变化地球背景下生物多样性的功能和动态变化维度。生物多样性动态变化是指生物多样性的范围、结构和相互作用的变化。生物多样性是地球上最复杂的特征之一，对人类的生存非常重要。当前快速且持久的物种丧失速率需要科学界提出新知识，阐明有机体的功能多样性与环境变化互作的机制。本项目将在气候条件变化及其他环境变化背景下，推动建立对物种本身以及物种丧失、获得、维护和重组的认识，提升模拟和预测生物多样性在功能变化方面产生的影响，并从整合生态、进化、地质和古生物学的角度，加深对功能多样性及其在环境变化下与生物多样性动态变化关系的理解。

“变化地球的生物多样性”研究领域包括，但不限于以下内容：

- (1) 变化地球上与生物多样性动态变化相关的基本原则。
- (2) 生物多样性动态变化和功能多样性之间的相互作用和反馈范围。
- (3) 在不断变化的环境下，生物多样性功能方面的变化如何触发种群、物种、系统发育、群落和生态系统层面的响应。

(4) 生态系统层面事件与气候和地质过程之间的相互联系，以及它们与变化环境中生物多样性功能方面变化的关系。

(5) 与变化地球上生物多样性动态变化和功能性多样性有关的概念和理论发展。

The Biodiversity on a Changing Planet (BoCP) program is based on Dimensions of Biodiversity program and The Intersection of Ecology and Evolution program. It supports projects using an integrative approach to understand biodiversity dynamics and functional biodiversity under changing environmental conditions, including climate conditions. Biodiversity dynamics refer to shifts in scope, structure, and interactions of biodiversity. Biodiversity is one of the most complex features on the earth and is very important for human survival. The current rapid and lasting rate of species loss requires the scientific community to propose new knowledge about how the functional biodiversity interacts with environmental change. Granted projects could pursue development of a synthetic understanding of the constant loss, gain, maintenance, and reorganization of biodiversity on a changing planet. They could also consider the full context of past and current ecological and evolutionary processes and biodiversity dynamics to enhance understanding of biodiversity function under various types of global environmental change.

Examples of research areas include, but are not limited, to:

- Understanding fundamental principles related to shifting biodiversity dynamics on a changing planet.
- Understanding the range of interactions and feedbacks between biodiversity dynamics and functional biodiversity.
- Understanding how functional biodiversity change may trigger population-, species- phylogenetic- community-, and ecosystem-level responses, under changing environments.
- Understanding the interconnection between ecosystem-level events and climatic and geological processes, and their relationship to functional changes in biodiversity in a changing environment.
- Conceptual and theory development pertaining to shifting biodiversity dynamics and functional biodiversity on a changing planet.

These examples are illustrative only. Proposals may focus on any of these areas, a combination of these areas, or topics outside of these areas.