

DEPARTMENT OF BIOLOGY  
ARTS & SCIENCES

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

APPLICATION DEADLINE: 02/25/2022

PROJECT TITLE: Environmental Resilience and Sustainability of the Ancient Maya

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**Project Description**

The purpose of this study is to establish a greater understanding of how the ancient occupants of the Maya Lowlands managed their forests, soil and water resources. A primary theoretical question to be addressed in this study focuses on the lingering concern of how the ancient inhabitants in the elevated interior areas of the Maya Lowlands were able to support substantial urban populations for over a millennium. A corollary to this question asks how agricultural intensification was achieved and how other essential resources, such as water and forest products, were managed. We believe that all of these activities were essential components of an initially sustainable land use strategy that eventually had trouble meeting the demands of an escalating population. This project will utilize an array of paleoecological techniques including, the analysis of pollen, macrobotanical remains, phytoliths, starch grains and, a new but powerful data source, environmental DNA (eDNA) coupled with freshly acquired lidar data to answer these and other questions about the ancient inhabitants of the Maya cities of Copan, Aventura and Calakmul.