

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
On Track - Undergraduate Space Education (3)

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CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT IN LATIN AMERICA: REFLECTIONS
FROM AN UNDERGRADUATE RESEARCH ABROAD PROGRAM IN PANAMA

Abstract

This paper is a follow-up to one presented at the 61st International Astronautical Congress (IAC) in 2010, describing a research abroad program in the Republic of Panama offered by the University of Alabama in Huntsville (UAH). Conducted in collaboration with the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), a regional NGO, the initiative is designed to afford undergraduate students the opportunity to participate in research and study complex contemporary issues surrounding climate change science and its impacts on communities in Latin America and the Caribbean. The joint NASA-USAID Regional Visualization and Monitoring System (SERVIR) has its Mesoamerican hub at CATHALAC, and serves as a technological hub and incubator providing real-time and near real-time data and information related to disasters, human health, energy, climate, weather, ecosystems, agriculture, and biodiversity. For many of the students, this represents their first international travel experience; thus, cultural immersion activities and community living arrangements serve to provide an enhanced experience, resulting in greater global awareness. Central to this program is the notion of sustainable development for Latin America, a region experiencing a population boom, rising living standards, and increasing resource consumption. Utilizing satellite imagery, Geographic Information System (GIS) and Remote Sensing, student groups address diverse topical areas such as sugarcane agriculture and biofuels in Latin America, tropical deforestation and its regional climate impacts, population effects from sea level rise, models of sustainable ecotourism, and the impact of climate change on indigenous communities, to name a few examples. Four years of successful programs have yielded valuable insights on how to manage a dynamic program like this while engaging students in interdisciplinary research. Our participants, 37 students in all, have represented four of our five Colleges and many of the Departments at the University. They have gone on to utilize this program as a springboard to become increasingly

involved in research on campus. In fact, many of our students have leveraged their experiences to win prestigious NASA student internships, present at international conferences, obtain jobs in STEM fields, win graduate research fellowships at UAH and elsewhere, and become actively involved in sustainable initiatives on campus and in the region. This article will address the lessons learned from the past four years, and present how this experience, a “research abroad program”, can be a profitable model for utilizing the concept of sustainability as a medium for international, interdisciplinary education.