



## Post Fellowship Reporting - Project Summary

**Report Title:** Sustainability and Environmental Education in Costa Rica      **Name:** Kristen Cacciatore

**Other Team Members:** Jamaica O'Brien

**Program:** Boston Program

**Trip Dates:** 07/06/2011 - 07/22/2011      **Location Visited:** Costa Rica

**Post Fellowship Reporting Template:** PFR Template 02

**Project Summary:** The health of our planet rests in increased public understanding of science and greater capacity to design, develop, and apply creative solutions to current and future challenges. I know that urban, high-need students are primarily from demographic groups underrepresented in science careers, and that science careers present a golden opportunity for professional and economic success in today's world. My project focused on achieving three goals. First, to enhance my knowledge of environmental field research, to apply this new knowledge to improve my science fair research program, to initiate a cross-curricular sustainability initiative in my school, and create new laboratory activities for my classes. Second, to create a compelling record of my own authentic inquiry as I conduct scientific research on a topic that I care deeply about, and to share this experience with my students. Third, to learn about the culture, history, people, language, and environment of Costa Rica, in order to allow me to better connect with and understand my students, the majority of whom have roots in Latin America.

My project began with an eight-day Earthwatch expedition on a coffee growing cooperative in Terrazu, in central Costa Rica, where I, along with my colleague Jamaica O'Brien, worked with a team of scientists and other volunteer researchers to study the environmental impact of coffee farming on the local area. While on the expedition, I had the opportunity to visit and conduct research on many different coffee farms, interact extensively with local farmers, visit a local coffee processing plant owned by the cooperative, participate in an official coffee tasting, and learn about issues affecting fair trade and organic coffees.

Following the Earthwatch expedition the next stop was the Monteverde cloud forest, where I spent three days learning about the diverse ecology of the area and the current and potential future impact of global climate change on the forest. I discovered how integral sustainability is to the burgeoning tourism industry through the ethic of ecotourism.

The journey ended with three days at the nearby Arenal volcano. Arenal is one of the world's most active volcanoes. I learned about the geology of the volcano, the methods used to monitor its activity, and unique flora, fauna and landscape of the area and visited the Cano Negro Wildlife refuge where I saw fantastic creatures great and small in their natural habitat.

**Career Impact:** My Costa Rican journey led me to grow as a scientist, an educator, a citizen of the world, and a person. While working as a research volunteer on a study of sustainability in coffee farming, I learned many new skills as I collected data, operated GIS technology, and analyzed results with my team. I discovered many educational resources related to science and sustainability that I am using to enhance my students' learning and passion for science and environmental preservation. I was immersed in the fascinating Costa Rican culture and landscape and left with a deep admiration for and greater understanding of Costa Ricans and their world. I had amazing adventures -- horseback riding up to a volcano, seeing endangered monkeys in the wild, ziplining through the cloud forest -- which will be with me always. I created my first-ever blog as a daily chronicle of my journey and grew in technical know-how. Along the way I gained confidence in my ability to travel abroad and to communicate in a non-English culture, and to make friends wherever I go. I am inspired to engage in foreign travel and scientific research again in the future, and to learn to speak Spanish as I have long desired.

**Classroom/Community Impact:**\* new student led field-based research projects that address sustainability issues in our community

- \* enhanced cross-cultural understanding among staff and students
- \* greater collaboration between science teachers
- \* greater use of web-based technology and social media to engage and inform students and families
- \* incorporation of new science curricular materials focused on sustainability and environmental concerns
- \* partnership with a green chemistry research company to provide science mentors for student research teams

**Open Response:** I am currently gathering educational resources related to sustainability to share with my colleagues in different disciplines, planning a campaign to reduce waste and consumption in science labs, investigating ways to expand school-wide recycling capacity and awareness, and learning Spanish using Rosetta Stone software and self-study.

**Quote:** "My journey to Costa Rica empowered me as a science teacher to inspire my students to create a sustainable future for

themselves .”

Photos:



Triumph after ascending the Arenal volcano



Touring a carbon-neutral coffee processing plant



Thank you Fund for Teachers!



Coffee plants were the focus of our field research



Learning to make tortillas the traditional way



A close encounter with a rare and venomous jumping viper!



Ziplining in the cloud forest was unforgettable!



On a hanging bridge in Monteverde