



## Engineers Without Borders at USF *Water for Miches*



There are a few necessities which, when met, provide the basics of an acceptable standard of living for any man, woman, or child. These necessities have changed little over the course of time; however, the world in which we live has changed drastically over the course of the past century. Globalization is one inevitable outgrowth of a century characterized by trans-oceanic flight, the development of world wide communication systems, and the establishment of strong international political bodies. In the dawn of the 21<sup>st</sup> century there is an opportunity for individuals to reach across the political and social boundaries of nations and arrange for the provisioning of the basic necessities of life.

**Engineers Without Borders – USA** was established in the year 2000 to meet these needs and to promote sustainable development in communities around the world. The students, faculty and professional engineers of EWB-USA dedicate themselves to sharing their talents and experience with communities around the world suffering from a lack of funding, capability, or opportunity to provide for their citizens to live lives of security, health, and dignity. EWB also partners with professional societies such as civil engineering (ASCE) and mechanical engineering (ASME) to broaden its impact.

“We shall not finally defeat AIDS, tuberculosis, malaria, or any of the other infectious diseases that plague the developing world until we have also won the battle for safe drinking-water, sanitation and basic health care.” - *Kofi A. Annan, former United Nations Secretary-General*

The above statement from Mr. Annan succinctly lays out the urgent need for clean water in the developing world. Clean water is something we take for granted here in the United States. Yet, **over one billion** people worldwide do not have ready access to safe drinking water, while **about three billion** do not have adequate sanitation provisions. It is estimated that **three to four million** people, mainly low-income children in developing nations, still die each year from water-borne diseases such as diarrhea, cholera and typhoid. The United Nations has recognized this drastic gap in quality of life with the declaration of **World Water Day**, first observed on March 22, 2005 as the beginning of the **Water for Life Decade**. Goal 7 Target 10 of the UN’s **Millennium Development Goals** aims to, by 2015, reduce by half the number of people world wide who do not have clean water and adequate sanitation. This need is recognized by Engineers Without Borders as a cornerstone of their global mission.

Engineers Without Borders at the University of South Florida (EWB-USF) is currently engaging in an effort to develop a clean water supply for an underdeveloped community in the **Dominican Republic**. The goal of this project, titled “**Water for Miches**”, is to bring clean water to the 500 residents of Miramar in the Dominican Republic, which is pictured below. Miramar is a community within Miches, in the province of El Seibo, one of the poorest provinces in the



Dominican Republic. Currently, the residents of Miramar have no established water source. Many gather water flowing from fractures in a distant water tower, despite this untreated water being a source of disease and unsuitable to meet the needs of these families. The purpose of our project is to design and install a potable water source in Miramar capable of meeting World Health Organization (WHO) standards by providing 20 liters of clean water per day to each of these 500 people.



Success with this project will mean the beginning of a relationship between EWB at USF and the town of Miches as well as the opportunity to return later and address other health issues in the community such as sanitation. This relationship is providing the students of our chapter of Engineers Without Borders with valuable real world experience in the development and implementation of an engineering project. The cultural and technical challenges intrinsic in such a project provide a rare opportunity for engineers in training to utilize their academic training in a practical effort and to develop skills which are otherwise developed only after entering industry following graduation.

In pursuing this effort our organization has laid the groundwork for long lasting relationships with organizations within USF as well as others outside of it. **The Dr. Kiran C. Patel Center for Global Solutions** has provided a great deal of support and advice on the development of our system. We have partnered with USF faculty, professional engineers from **Malcolm-Pirnie** and **PBS&J**, as well as **Columbia University's center for Environmentally Sustainable Economic Growth** who are currently in Miches coordinating data gathering and logistics to make this project a success.



The project implementation is planned for **August of 2008**. We have carried out a broad based assessment of the technical options available to meet the design goals of the project. The price for any suitable system is near \$50,000, and with the aid of corporate sponsorships and private donations we intend to raise this money by the end of June. In mid April 2008, we plan to carry out a site visit. During that visit we will complete our assessment of the physical characteristics of the location as well as develop our relationships with the local community leaders and community members who will ultimately accept this project as a part of their lives.

**We welcome your support to help bring safe drinking water to the people of Miches. Join us!**

