

The Uganda Project: A Cross-Disciplinary Student-Faculty Research and Service Project to Develop a Sustainable Community- Development Program

The opening of the Holy Innocents Children's Hospital in Mbarara, Uganda, on July 4th, 2009 brought to fruition the opening chapter of what is envisioned as a continuing collaboration among the University of San Diego, the Roman Catholic Archdiocese of Mbarara, Uganda, and the Holy Innocents Foundation. The University of San Diego's role is to provide an interdisciplinary team of consultants—in nursing and health sciences, sustainable-business planning, and environmental impact and assessment—as well as offer research opportunities involving health issues, water quality and environmental assessment for selected graduate and undergraduate students. The challenges and issues we have faced in sustaining and expanding this project to include all relevant disciplines at the university may prove instructive for other institutions.

In September 2006, the Archdiocese of Mbarara, Uganda, (Figure 1) approached the Hahn School of Nursing at the University of San Diego (USD) asking for help in saving the lives of over 13,000 children who die annually of preventable diseases in the diocese. In April 2007, a team of nursing faculty members and graduate students at USD, with the support of the Mbarara community-advisory board and its sister organization in San Diego, visited Mbarara and conducted a total-community needs assessment to determine the feasibility of building a hospital and providing health outreach services for the children in Mbarara. Focus-group interviews with lay and professional people in that community, an epidemiological review, geographical assessment, and participant observations were completed, analyzed, and the information disseminated to the Mbarara and San Diego community-advisory boards. The research/needs assessment report concluded it was feasible to build the hospital. However, it also found that the fiscal and physical support needed to sustain the hospital's operations, as well as interventions to prevent environmental contamination by the hospital, required consideration. The long-term effects on the community also needed to be integrated into the action plan for building the hospital (for example, finding resources to educate, feed, and support the increased numbers of children surviving in the community).

The success of this project to date would not have been possible without the involvement of other stakeholders, both in the



January 2008 group in Mbarara – Nursing, business, science students and faculty with our local hosts.v

U.S. and Mbarara. The resources available from the university, in collaboration with a recently developed non-governmental organization (NGO) in the U.S., have provided a support system for the Mbarara Archdiocese and the children's hospital. The university involvement includes faculty members from nursing, business, and chemistry and biochemistry serving as consultants, along with graduate and undergraduate students and their faculty mentors.

Although the initiative originated as a health-development project, it has evolved into a sustainable community-development project requiring the ongoing involvement and expertise of several university departments: 1) nursing to promote public and individuals' health, prevent illnesses, and help sick children recover to their optimal potential; 2) chemistry and biochemistry to address the environmental issues; 3) business to promote Mbarara's fiscal viability; 4) peace studies and law to address conflict resolution, protection of women and children, and protection of the environment; and 5) education to help improve the educational preparation of teachers and children.

Three more trips to Mbarara were completed between January 2008 and January 2009. The trips helped integrate the interdisciplinary efforts of the faculty members involved and allowed the faculty to consult with the Uganda community-advisory



Figure 1: Map of Uganda. © 2009 Lonely Planet. Reproduced with permission of Lonely Planet



board and also to mentor the research activities of their graduate and undergraduate students. Table 1 sets out the particular goals of each discipline’s team for each visit. As a result of this two-year, cross-disciplinary collaboration among USD faculty and students and the involvement of other stakeholders in Uganda and the U.S., ground was broken for the Holy Innocents Children’s Hospital in April 2008. Phase I, a 60-bed general pediatric hospital, opened in July 2009.

USD’s graduate School of Nursing has served as the leader in this faculty-student research venture. One of the authors, Anita Hunter, had 15 years of experience working in international health and collaborating with developing communities and NGOs. Those initially involved in the project realized that a community cannot survive without health care regardless of its economic resources. Further, the nursing school has long emphasized research and service to those in desperate need. As the initiative developed, the nursing school identified the need for specialized assistance from faculty members in USD’s School of Business Administration (SBA) and faculty from chemistry/biochemistry with expertise in water quality work from the College of Arts and Sciences.

The SBA, for example, was asked to create a sustainable business plan to provide for the fiscal sustainability of the hospital. Graduate students in the international MBA program, in conjunction with a faculty advisor, formulated 12 viable options for enterprises capable of either fully or partially supporting the financial needs of the children’s hospital. In the future they

will travel to Mbarara to help the Archdiocese implement the plan chosen.

Undergraduates were included in the initiative through the College of Arts and Sciences. They worked on a water-quality assessment of the Rwizi River, which provides water for the hospital, aiming to provide a baseline set of environmental data to support long-term analysis of any impact of the hospital on the river’s watershed. During two expeditions in January 2008 and 2009, five undergraduates assisted in these studies. Three of these five students also assisted in a baseline water-quality study in the vicinity of Uganda’s Bwindi Impenetrable Forest Gorilla Park (near the Congo border) in January 2009 (done jointly with the group Conservation through Public Health).

Undergraduate students have played a major role in the environmental assessment of the Mbarara area and in the development of critical teaching interventions related to prevention of disease. Their research has solidified the importance of undergraduates to all future work related to this project. In particular, fecal coliform data obtained from the Rwizi River and local water-storage facilities provided additional evidence for the necessity of boiling water prior to drinking. Their results were presented jointly with the faculty and students from the nursing school to local lay health educators in Mbarara, and the immediate impact of these results changed these educators’ behavior regarding the consumption of unboiled water.

Additionally, following graduation from USD several other undergraduate students served as interns with the archdiocese and the hospital to assist in the construction, equipping, and



James Bolender and Ashley Parks analyzing water samples in a make-shift lab in Mbarara.



Raffaella Abbriano (USD 2008) with one of our local guides collecting water from the Rwizi River in January 2008.

administration of the facility during its early stages. The results of this undergraduate work have not been published or presented at scientific meetings, but a likely venue would be a regional meeting of the Society for Environmental Toxicology and Chemistry (SETAC) that focuses on African issues.

Undergraduate involvement in this type of project goes well beyond the “typical” undergraduate research experience. Another ongoing project at USD is the long-term environmental monitoring of Magdalena Bay in Baja California Sur, Mexico, and students working in that and other environmental projects were selected to take part in our work in Mbarara. These students all had field sampling and analysis experience prior to their visits to Uganda. Particularly for the first expedition in January 2008, students were active participants in the pre-trip brainstorming sessions to determine what equipment to take and what tests to conduct in an unknown field environment, in order to make the trip successful. All five students participating in the trips in 2008 and 2009 have stated that the experience has “changed how they view the world.” These students truly experience the goals of a liberal-arts education because they must incorporate perspectives on social justice, cultural sensitivity, political challenges, ethical considerations, and human suffering with science and its effects on public health and sustainable development in a developing country.

Sustainable international community-development projects are fraught with challenges, and not all students and faculty members are adventurous enough to “step out of their box”

to pursue such international research. Faculty colleagues must be willing to offer their intellectual capital to projects that span the criteria of scholarship and service used in rank and tenure decisions. Students, while more willing to take this type of leap, must be independent and disciplined to conduct this work with maturity. They must also be passionate about their work and the impact it can have on a community. Prior to any expedition to Uganda, all students must have worked for at least one semester in a research laboratory and must have taken part in at least one environmental sampling trip to some other international location. Those experiences ensure the independence and maturity of the students prior to any trip to Uganda.

In terms of the faculty challenges, at USD we realized that the disciplines of nursing/science/business had some common interests—providing for the fiscal and physical well-being of people in desperate need. The evolution of the project from nursing to other university departments resulted from the support given the project at the highest administrative level, as well as the voices of the student and faculty participants who have promoted this joint successful venture through presentations in university committees, professional presentations, “brown bag” lunches with others interested in pushing the envelope—helping to validate bench science and service science in a developing country as legitimate research endeavors.

One goal of those types of presentations and meetings was to help university and departmental administrative units rec-

Table 1: Team goals for a given expedition to Mbarara

Team	Student Collaborators	Goals
Nursing	Graduate	<p>Evaluate the unique health problems, causes, and treatment given by Ugandan health professionals for sick children.</p> <p>Identify the essential supplies and clinical environment needed to support the health recovery of children.</p> <p>Initiate a community health educator training program.</p> <p>Implement a specialty pediatric training program for the nurses and doctors hired to work in the hospital.</p>
Business	Graduate	<p>Identify a strategic business plan to keep the hospital sustainable.</p> <p>Identify a business plan to cover most or all of the hospital costs for patients.</p>
Arts & Sciences (Chemistry and Biochemistry)	Undergraduate	<p>Assess water quality before and after hospital construction.</p> <p>Assess water quality in Bwindi, in collaboration with Conservation Through Public Health.</p> <p>Initiate an environmental study related to zoonotic transmission of diseases.</p> <p>Support the community health-educator program with data about water-quality issues.</p>
All	All	<p>Identify service-learning and research activities that could continue in Mbarara.</p> <p>Analyze ways to create and sustain a healthy environment.</p>



Science and nursing students, faculty, and guides in Bwindi Impenetrable Forest National Park, January 2009.

ognize how such projects bridge the criteria for promotion and tenure in teaching, scholarly work, and service—through work with the global community. Without administration support, many faculty members will not leave the tried and true modes of attaining promotion and tenure. At the University of San Diego, the Uganda Project has not only been recognized as fulfilling the criteria for promotion and tenure, but also as fulfilling a fourth criterion—support of the mission and goals of the university. These goals include international and interdisciplinary aspects of the three “standard” criteria.

University administrators can foster these sorts of projects with seed money and with release time for faculty members. At USD, recognition of faculty who are active in scholarship can consist of a reduction in teaching loads.

Of course, funding for endeavors like the Uganda Project is always a challenge. To date, the graduate nursing and business students have enrolled in “intersession classes” to gain credit toward their master’s degrees, or they have received funding from specific foundation grants or individual scholarships. Funding for the undergraduates has come from the dean of the College of Arts and Sciences, and a variety of scholarship or foundation funds at USD. . To expand the available resources, faculty members have been active in working with the USD development office to pursue funding from various foundations and NGOs that fund international work. They also have written proposals for internal grants to support faculty-student collaborative research and service. However, for long-term funding of such a project, a major donor or granting agency must be found.

The success of this project, as well as the successes achieved in other cross-disciplinary collaborations, depends on the support of all components in an institution whose mission

is graduating global citizens. Our uniqueness is based on the original mission and philosophy we developed: As a guest invited into this community, we would serve as consultants to help Mbarara help itself; we would collaborate with an established NGO that could help raise the capital necessary to get the identified components of the project off the ground; and we would help develop a replicable model for a sustainable community-development project that could draw widely on a university’s faculty and student expertise. We were committed to undertaking the project for a defined and agreed upon period of time so that the community does not become dependent on us, and we are determined to facilitate the training of local people who can continue the project.

This project will continue as a cross-disciplinary effort when a team of more than 20 nursing, science, and business faculty members and students return to Mbarara in January 2010 to sustain and expand our teaching, service, and research roles in the community.

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