William Jordan and Brian Thomas

Designing a Micro-Hydroelectric System for use in Rural Honduras

(Mechanical Engineering/ Engineering and Computer Science)

Students will research different methods of creating village-level electricity systems using small hydroelectric generators in rural villages not connected to their national electrical grids. Students will then model, design, analyze, and deploy such a system. Implementation of the system will be in rural mountainous areas of Honduras.

An URSA grant is sought to support a larger sponsored project that Dr. Jordan and Professor Thomas received from the National Collegiate Inventors and Innovators Alliance (NCIIA) to create such a system and then expand it to other villages through micro-franchising. This $50,000 grant will support the involvement of four faculty members (Jordan, Thomas, and Lee from Engineering and Computer Science and Leman from the Hankamer School of Business) and one to three graduate students. It will also pay for the equipment and travel by the supported faculty members and graduate students.

Several undergraduate students have expressed a willingness to be involved with the project, but the financial burden of airfare and the lost wages of summer employment are cumbersome if not prohibitive. The URSA grant would be used to pay their travel costs to Honduras, and to pay them a modest stipend for additional research assistance done before and after the trip. This assistance will significantly increase the pace of the planned summer work.

This project will also provide a culturally rich international experience for our students which will help them in their future careers, as engineering is increasingly being done in a global environment. It is also likely to pique student interest in renewable energy and related research areas at Baylor, increasing the liklihood of retaining knowledgable students into the Masters level.