Abstract IPRO 309

Educational and Technical Support of Orthotics and Prosthetics Education in Latin America

Collaborating Organizations:

Centro Don Bosco, Bogotá, Colombia
Laboratorio Gilete, Bogotá, Colombia
Bioconcepts, Inc., Burr Ridge, IL
Gulbrandson Orthotics & Prosthetics, Cary, IL
Children's Memorial Hospital, Chicago, IL
Northwestern University Prosthetics and Orthotics Center, Chicago, IL

"**There are a number of people in Colombia who have congenital defects or abnormalities that need to be correct by orthotics or prosthetics**. Many people in Colombia are in poverty and cannot afford the proper medical assistance needed, or the devices necessary to do normal functions. In our IPRO we are helping to comprise part of a program that would train students to manufacture and create the orthotic devices needed. The program will give them a solid understanding of biomechanics of the body and how to make orthotics for specific to the patient."

–Sandra Ogbonnaya

"**Imagine you take 15 students from a broad spectrum of majors, ranging from Psychology to Aerospace Engineering, to BioMedical Engineering to Mechanical Engineering. Now you tell them all that they are to help implement an orthotic and prosthetic fabrication curriculum at a Columbian trade school to help alleviate the deficiency in device availability in Latin America... what do they do?** You have to start by teaching the basic biomechanic principals of the affected areas of the body. The students possess a high school level education and lack the advanced mathematic and engineering knowledge that we now possess. However, by using basic analogies and device demonstrations, you can get across the point of what is important and what to consider when fabricating a device for each individual case and patient."

–Matthew Hamblen

"We are doing a project on prosthetics and orthotics. **What we have done is focused on the biomechanics of prosthetics and orthotics to create a lesson plan to teach high school aged kids how to manufacture the different devices.** It is a part of a program that will get them certified as a manufacturer so they will have a career after they are finished. Also once they have enough experience they can take an exam to advance in there career. So it is really a great opportunity for the students because there are chances to advance in the field."

–Elise French

"We are creating an educational module for an Orthotics and Prosthetics education program in Colombia. In that region, there are countless numbers of people who require some sort of orthotic device or prosthetic. Unfortunately, there aren't any schools there which train technicians to make these devices. This program will be the first of its kind in that country. **Our work could potentially impact thousands of people.**"

– Piotr Maksimowicz

Category III O&P Technician * 250 patients/year * 20 years = 5000 patients/technician

1st Graduating Class: 5000 patients* 15 students = 75000 patients helped during their careers

Total cost per student to complete the program = $3000

Problem Description:

Objectives: There is an enormous need for creating and supporting education opportunities in orthotics and prosthetics in Latin America. The primary objective of this IPRO is to support the first orthotics and prosthetics educational program (established in February 2005) in Bogotá, Colombia.

Key Tasks: 1) To develop several educational modules for instruction in orthopedic biomechanics. 2) To deliver a 4-day presentation in Bogotá Colombia May 15-18. 3) To create a Spanish/English website to get the information out to the community. 4) To follow ABC, NCOPE and ISPO accreditation and to collaborate with clinical practitioners and other organizations with the content of the educational modules. 5) To develop several low-cost laboratory demonstrations for the presentations to be as visual and hands-on as possible. 6) To develop an ongoing project and establish relationships that with result in further service to Latin America beyond this semester.

Barriers and Obstacles: Some barriers faced throughout this IPRO were the typical problems of people being late to class and occasional problems with assignments not being on time but in the end the work all came together to create the final product. One other barrier faced during the semester was the school we were working with in Bogota almost canceled the program we were helping develop. Through discussions between one of our contacts Dr. Gomez and the school the program was reinstated.

Solution:

Key Findings: The key findings of this project were that people of any major can use their knowledge to create an educational module. It just takes dedication and hard work to learn the material and create a valid lesson plan.

Conclusions: The conclusion would be that through all the hard work of the semester a small group of students can have an effect on thousands of other people. Through the work we have done we may have indirectly helped thousands of people in need.

Recommendations: To keep people motivated and working well in a group deadlines must be implemented and a final goal must be kept in mind. Group bonding is also important to work well together and communication is key. Dealing with problems as soon as they arise is also another recommendation that is important for a group to be productive.

Results:

Accomplishments: The IPRO has completed 5 educational modules with deliverables including PowerPoint presentations, worksheets, informational brochures and demonstrations. This information will be presented by 5 students in the IPRO in Colombia the week following graduation.

Next Steps: The next steps of this IPRO is to continue improving the modules, finishing the translations from English to Spanish, creating new modules, creating a business plan for the program and helping out a similar program that is to be started in Joliet Illinois.

Participants:

Faculty Advisor: Dr. Kevin Meade

Students: Jahir Caro, Elise French, David Gracia, Michael Grilley, Matthew Hamblen, Kristen Kelley, Shea Lemley, Piotr Maksimowicz, Sandra Ogbonnaya, Sonali Patel, Christopher Pellico, Vinit Prabhu, Natalie Rezek, Prachi Singh.