

## Objective

There exists a strong demand for orthotics and prosthetics (O & P) in Latin America, with approximately 2.5 million people in need of this type of care. IPRO 309 was started in the spring of 2006 with the goal of helping to make this type of care more readily available.

## Goal

To promote orthotic and prosthetic education in Colombia with a central fabrication unit that makes custom made to measure orthotics. This unit would first create a work study program at Centro Don Bosco, then move on to the rest of Bogotá, Colombia.

## define O & P

**Orthotic:** Devices that support or correct musculoskeletal deformities / abnormalities of the human body.

**Prosthetic:** Artificial extension that replaces a missing body part.

**Central Fabrication:** The process of "outsourcing" the fabrication of custom orthotics and prosthetics.

## Contact info

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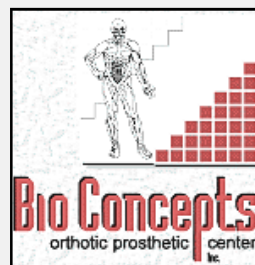
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## Special thanks to...



Instituto Técnico Industrial  
**Centro Don Bosco**



**H.O.P.E.**  
Human Orthotic and Prosthetic Education

## technical

**Goal:** To develop feasible method for creation of temporary orthoses. The group will also develop product line for business plan and understand all other technical aspects of Central Fabrication.

### Temporary Orthosis:

The production of a temporary orthotic onsite could allow the patient to receive immediate orthotic care. This would also allow the patient to have an orthosis while they wait for the production of the permanent orthosis.



The first prototype the group thought up was one inspired by soccer shin guards. Some shin guards can be heated and molded to fit. The second prototype that was thought up was one created by Friendly Plastic.

Friendly Plastic consists of small plastic beads which are heated in water and create a moldable plastic. This would allow for a more freeform method of orthotic fabrication.

### Central Fabrication:

Central Fabrication can be implemented to handle the heavy workload of production for orthotics that small clinics cannot. The program will be the **first** of its kind in Latin America.

1) A patient meets with a clinician and a service sheet is filled out listing the complete measurements of the part of the body needing the orthotic.

2) The measurements can be called, faxed, or emailed over to the Central Fabrication lab.

3) The orthotic is delivered to the patient in a few days. Generally, for a typical Knee Ankle Foot Orthotic the turnover time can be as low as 2-3 days.



## business

**Goal:** To develop a plan for implementation of Central Fabrication program at Centro Don Bosco. This program will cover organization, management, work study program, marketing, etc.

On the job training, known as an internship or CO-OP in the U.S. has the potential to provide the required hands-on involvement for ISPO Category III Orthotics & Prosthetics (O&P) students. With the creation of a work-study program for the students of Centro Don Bosco in Bogotá, Colombia; students will have the opportunity to improve their workshop skills crafting the O&P devices. Working with a local charitable clinic, centrally fabricated O&P devices to measure will be provided for those most in need.

The Central Fabrication method using off the shelf parts has a lower cost associated with the manufacturing of O&P devices to measure. In addition, Category III students could use additional financial aid for their vocational training. By giving charitable clinics the opportunity to purchase lower-cost O&P devices while ensuring quality, a work-study program for the student's training may be sustained.

Students will be eligible to receive minimum wage for their work; in addition funds will cover insurance, materials, and workshop operational expenses. Capital upgrades to the existing workshop will likely be provided in partnership between local donors and a NGO. The school management will ensure the educational focus of the program. Excess funds generated will be further invested back into the program, including the O&P students' scholarship program.

## impact

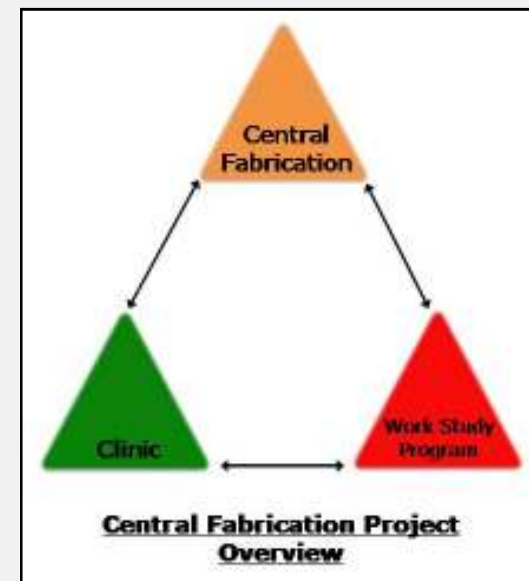
**Goal:** To focus on promoting Telemedicine in Colombia with local clinics. The group will also research methods of promoting O&P care and careers in Latin America.

### Telemedicine:

The use of communication and information technologies to deliver medical care to individuals in remote locations. X-rays, patient histories, and even video conferences will allow patients to communicate with facilities without having to travel great distances.

### O&P as a career:

Promoting O&P as a career path so that students have the ability to provide and teach within their communities as O&P professionals. This is key to creating a sustainable program.



The flow chart shows how the clinic, work study program, and central fabrication would interact with and depend on each other.