Orthotics and Prosthetics Education in Latin America and the United States
IPRO 309
Definitions and Terminology
Orthotics & Prosthetics (O&P)

• What is an Orthosis?
  o External device applied to control or enhance movement or to prevent movement or reduce deformity
  o Example: ankle foot orthosis (AFO)

• What is a Prosthesis?
  o Artificial replacement of a body part
  o May be internal or external
  o Example: above the knee (AK) prosthesis

Retrieved from: http://www.oandpcare.org
International Society for Prosthetics and Orthotics (ISPO) Categories

• Category I: Orthotist/Prosthetist, Orthopaedic Engineer
• Category II: Orthopaedic Technologist
• Category III: Orthopaedic Technician

Retrieved from: http://www.ispoint.org
# ISPO Categories

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<tr>
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<th>Fabrication</th>
<th>Direct Patient Care</th>
<th>Research and Development</th>
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<tr>
<td><strong>Category I</strong></td>
<td>III</td>
<td>II</td>
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<td><strong>Category III</strong></td>
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- **4-5 year university degree**
- **3-year college level - nondegree program**
- **High School or Junior College**

*Retrieved from:* http://www.ispoint.org
The Problem
Latin America – Relevant Facts

- Latin America has over 500 million people
- Estimated 2.5 million people need O&P treatment
- Approx. 50 ISPO certified & 1500 uncertified practitioners
- Limited educational opportunities in O&P

Retrieved from:
- Public Reference Bureau www.prb.org
- ISPO O&P statistics survey in Colombia
The Need in Colombia
Colombia

- Population of 40+ million
- Land mines still being planted
- Affects soldiers and civilians alike
- Bogotá is one of few cities where programs for all 3 categories reside

<table>
<thead>
<tr>
<th>Category I</th>
<th>Category II</th>
<th>Category III</th>
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[www.cia.gov](http://www.cia.gov)
The Solution
Project History

- Spring 2010
  - Student-Centered Learning

- 2009
  - Interdisciplinary Patient Care
  - Business Model

- 2008
  - Age Relations
  - Pathologies and Orthotics Fabrication

- 2007
  - Pathologies

- 2006
  - Biomechanics
  - Anatomy Measurements

Fall 2010: Interdisciplinary Capstone Course
Problem Definition

- Current lack of integration of different members of patient care team during their education
- Patients often not considered part of the care team, and thus not well-informed during treatment
Objective

• Design an interdisciplinary **team-based capstone course** that can be integrated within an existing O&P program

• Improve patient care by instructing the O&P students in new methods of **patient education**.
Team Organization

CATEGORY I
Prosthetist/Orthotist

Olivia Rovegno
Soha Zahir
*Matthew Song
Michael Muller

CATEGORY II
Orthopaedic Technologist

*Wen Chan
Sydney Williams
Rafael Sosa
Katherine Garczek

CATEGORY III
Prosthetic/Orthotic Technician

Alex Luttinen
*Jessica Shaw
Krystian Link
Christopher Fistek

*Previous IPRO 309 students
## 16 Week Capstone Course

<table>
<thead>
<tr>
<th>Milestone</th>
<th>GOALS</th>
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| 1         | • **Team building** exercises  
            • Understand individual professional roles  
            • Introduce **Patient Education** |
| 2         | • **Patient-Practitioner Interaction Videos**  
            • Practice developing treatment plans |
| 3         | • **Simulated Patient** treatment  
            • Practice interviewing patient, documentation, patient education, and follow-up treatments. |
Milestone 1 (2 Weeks)

- Form teams
  - Through *Team Building Exercises*
- Jump start the course
  - Through *Journal Paper* discussions
  - *Scope of Practice* essay
- Introduce *Patient Education*
  - Through existing techniques
  - Encourage new ideas
  - Quick Response, *QR Code*
Milestone 2 (4 Weeks)

- **Patient-Interaction Videos**
  - Watch how practitioner communicates with patient
  - Determine & implement treatment

- **Group Analysis**
  - O&P teams form *their own* treatment plans

- **Individual Report, Summary, and Reflection**
Milestone 3 (10 Weeks)

- Practice treatment of 12 Simulated Patients

- Subjective Objective Assessment Plan
  - **Subjective:** What is the medical history? What are the symptoms?
  - **Objective:** Age? Height? Abnormalities in posture?

- Final Presentation
  - How was patient education carried out?
Benefits of Interdisciplinary Course

- Wide range of experiences
- Diversified impact
- Solving real-world problems, not theoretical issues
- Experiential learning
- Enriches the academic experience
Impact

• Enhances treatment through practical experience
• Eases transition from classroom to work environment
• Increases effectiveness of learning
Obstacles Encountered

• Choosing a focus, i.e., designing a new interdisciplinary team capstone course
• Incorporating each team member's ideas and professional interest
Ethical Obstacles

• Patient Rights & Privacy
• Proper Patient Evaluation
  o Students monitored by a professional
• Informed Consent
• Institutional Review Board
Monitoring Team Progress

- Accountability
- Weekly updates in class
- Tasks broken down
Major Accomplishments

• Trip to BioConcepts
• Binder of materials for teaching the capstone course
• Designed exercises
Conclusions

• Patient is a vital part of the treatment team
• Hands-on experience is vital
• Effective communication optimizes treatment
Next Steps

• Test exercises
• Explore QR codes
• Examine incorporation of networking technologies
Questions?

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

Bio Concepts
Orthotic Prosthetic Center

LABORATORIO GILETE
Centro de Rehabilitación en Ortesis y Prótesis

Centro DON BOSCO