Overview

- The Client
- Purpose
- Requirements
- Previous Products
- Budget
- Task Distribution
- Conclusion
The Client

• Joshua Bouchard
  (Parents Sue and Ron)
• 9 year old boy with Cerebral Palsy
• 32-34 lbs
• 48 inches tall
Abilities

- Josh can move his legs to stand and jump
- Does not have upper body control
- Can support his own head/neck
- Unknown whether he has comprehension
- Does not speak
Purpose of Project

- Josh loves to be held/supported in order to jump and stand
- These actions provide a strain on the bodies of his parents
- This device will give Josh more freedom to move about how he pleases
- Will also be his first self-powered device, warming him to the idea of a motorized wheelchair
Requirements

- Fit Josh’s long, yet lean, build
- Adjustable to accommodate for growth
- Stable to prevent tipping and collapse
- Controls for Josh to practice and learn
  - Prepare him for a motorized wheelchair
- Allow for extensive use throughout the day
  - Comfort
  - Battery life
Proposed Design

- Motorized platform
  - Remotely Controlled
  - Controls for Josh
- Adjustable, Stable Frame
  - Detachable for easier portability
- Suspended Harness
  - Full Torso and Pelvic Support
  - Adjustable, elastic straps
Previous Products

- Currently, nothing can be found that matches this design project
- Products for infants and young children
- Nothing motorized in addition to free-standing
Previous Products

- Walkers, such as the Rifton Large Dynamic Stander pictured here, have too much structure
  - Josh requires less leg support and more upper body reinforcement
- NSF Jumping Apparatus
  - Portable frame unit, but missing the platform and motorized components
This budget is preliminary and simply an estimate because the exact parts to be use have not been chosen.
## Budget Overview

<table>
<thead>
<tr>
<th>Parts</th>
<th>Price (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor and Electrical Parts (DC Motor, Controller, Joystick, Remote, Batteries)</td>
<td>1285</td>
</tr>
<tr>
<td>Frame and Supporting Components (Frame metal, Covering/Padding, Wheels, Springs, Platform)</td>
<td>1000</td>
</tr>
<tr>
<td>Inner Device (Harness, Rope, Padding)</td>
<td>105</td>
</tr>
<tr>
<td>Extras (Wire, Unexpected Parts)</td>
<td>300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2690</strong></td>
</tr>
<tr>
<td><strong>35% of Total</strong></td>
<td><strong>941.5</strong></td>
</tr>
</tbody>
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- Extra money was set aside for unexpected purchases and extras that may come up in production.
- 35% of the product is estimated to be under $1000, which could be considered a good price since this exact product does not appear to exist.
Task Division

- Elyssa
  - Purchasing
  - Fabrication
  - Material Research
  - SolidWorks CAD Drawings

- Mike
  - Fabrication
  - Electrical Components
    - Motor, Remote Controls

- Nathan
  - Fabrication
  - Material Research
  - Mechanical Design
    - Frame Structure/Stability)
Conclusion: Our Progress

- Have good knowledge of Joshua’s abilities and limitations
- We have kept in contact with the family to update them on our project progression
- Currently brainstorming alternative designs—will be working on CAD drawings
- We will revisit our client in the next few weeks to discuss our designs and get feedback on the visuals we have created
Questions?