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### Background



Sled Hockey is an adaptive sport. On the sled, the player is supported by two blades and a skag. Players lean with their body weight to turn.

## **Objective**

- Design and build a blade replacement for dry land practice
- In person testing for comparisons between normal and modified hockey sled
- Deliver working prototype to Challenger: Trevor Hunter

### **Design Requirements**

- Turning radius: High speed - 15 ft Low speed - 3 ft
- Similarities to on-ice (Qualitative ratings): Feel: >6/10 Ease of turn initiation: >6/10
- Able to withstand 300 lb. load
- Durability: 2 year lifespan
- Adjustability: Various adjustment times

# **Dryland Hockey Sled**

Salvador Vargas | Ryan Thompson | Ryan Wells | Alana Brummel | Abdulrhman Almutawtah | Andrew Beiter | Parker Saltiel



Requirement Minimal interference with motion

Solution 3" Diameter neoprene medical grade caster wheel (narrow profile)



Requirement Allows comparable level on-ice gameplay

Solution Longboard-inspired, small wheelbase turning apparatus that attaches directly to sled frame



FOS Requirement: 4 FOS after Analysis: 25

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### **Blade Replacement**

maneuverability to high



Requirement **Enables friction-based** propulsion with relative ease

Solution Fabricated interface between stick and longboard road paddle



FOS Requirement: 4 FOS after Analysis: 4



### Testing



 Multiple rounds of testing with professional Sled Hockey Athletes Ensuring all design requirements met Testing adjustments to optimize feel

### Conclusion

 Overwhelmingly positive feedback from professional testers "...twenty times better than anything else on the market." -John Reed "...this invention is going to change the adaptive sports community big time." - Trevor Hunter All design requirements met, typically exceeded

### **Moving Forward**

- Angled stick attachment to provide better push initiation
- Better clamps to hold the Blade
- Replacement