

# Motor-Assisted Sled for Sled Hockey

Team 12: Ryan Kormos<sup>1</sup>, Nick Falkides<sup>2</sup>, Josh Sklar<sup>2</sup>, Zach Messerle<sup>3</sup> Advisor: Dr. Fred Allen, PhD<sup>1</sup>

<sup>1</sup>School of Biomedical Engineering, Science and Health Systems, <sup>2</sup>College of Engineering – Mechanical, <sup>3</sup>College of Engineering – Civil

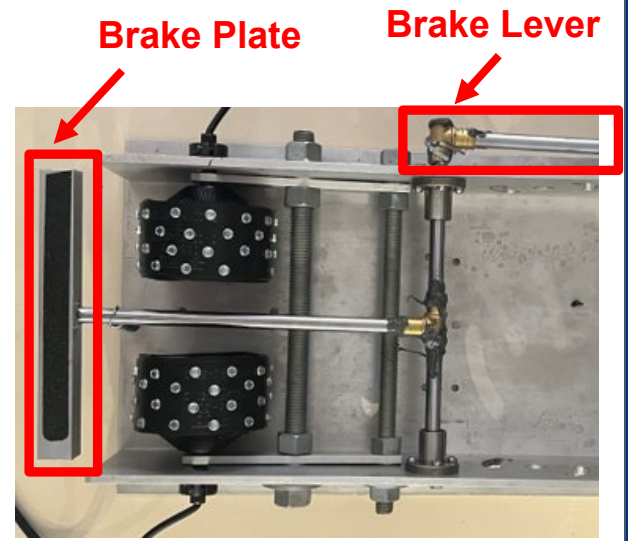
## Need

The existing solutions available to children with physical disabilities interested in playing youth sled hockey are not sufficient

**Objective:** Upgrade the existing prototype with 5 key components that allow it to be safe, functional and autonomous for children with physical disabilities to participate in youth sled hockey

Existing Solution	Autonomous	Strength Requirement	Functional for Gameplay
 Self-Propelled	✓	✗	✓
 Pusher	✗	✓	✓
 Previous SD Project	✓	✓	✗

## Solution



## Testing

**Kill Switch**  
5.a = success

Test #	Y/N
1	Y
2	Y
3	Y
4	Y
5	Y
6	Y
7	Y
8	Y
9	Y
10	Y
Success %	100

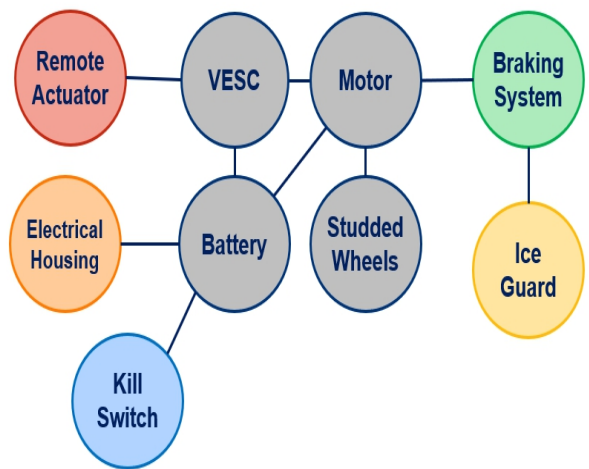
**Electrical Compartment**  
4.a = success 4.b = success  
4.c = pending 4.d = success

Electrical Compartment (Team Members)		Electrical Compartment (Outsiders)	
Test #	Δt (s)	Test #	Δt (s)
1	25	1	25
2	18	2	32
3	22	3	29
4	29	4	26
5	26	5	19
6	17	6	23
7	20	7	24
8	22	8	20
9	18	9	34
10	24	10	28
AVG:	22.1	AVG:	26

**Braking System**  
1.a = failed  
1.b = success

Test #	ΔX (m)
1	43
2	47
3	56
4	51
5	49
6	41
7	57
8	48
9	45
10	52
AVG:	48.9

## System Diagram



## Conclusion

Although our final sled design is not ready for gameplay, we believe that it has moved us one step closer to increasing the accessibility of youth sled hockey.

In order to accomplish this, the electrical system must be modified further.