

Skipper's Chair

Engineers

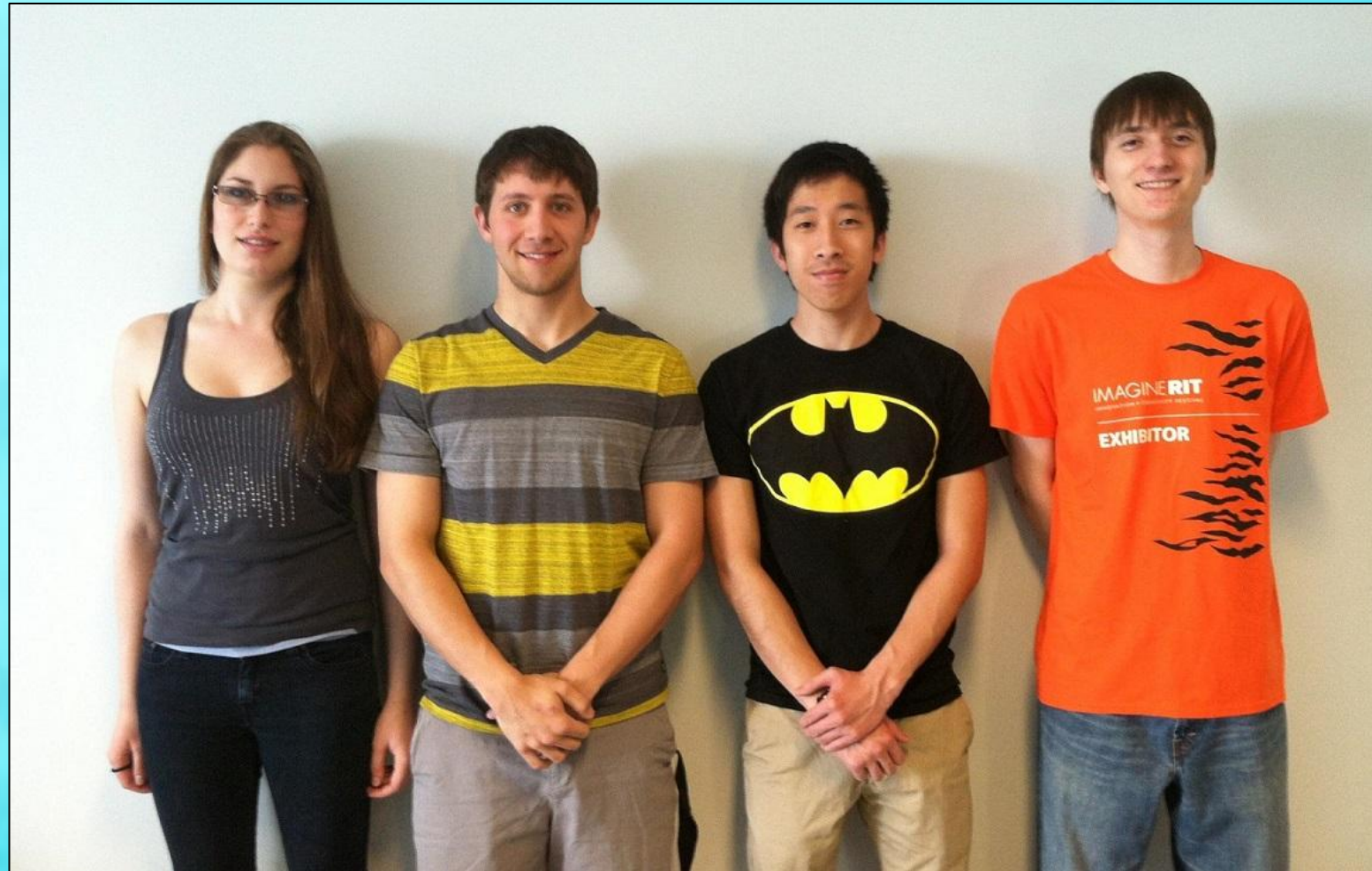
Jeffery Flowerday (ME)
Jonathan Nguyen (ME)
Richard Dzionara-Norsen (ME)
Kassandra Schlott (IE)

Customer

Caitlyn Ridgely

Faculty Guides

Kate Leipold
Elizabeth Debartolo



Mission Statement

The primary purpose of the Skipper's Chair is to allow disabled individuals with a severe spinal cord injury, to steer a Sonar class sailboat. The goal of the project is to reduce the amount of custom parts, device weight, machine hours, and assembly time thereby reducing the cost and making the device easier to use for both the sailor and anyone helping in the installation. Ultimately, the chair must be usable in training, recreational, and competitive activities.

Background

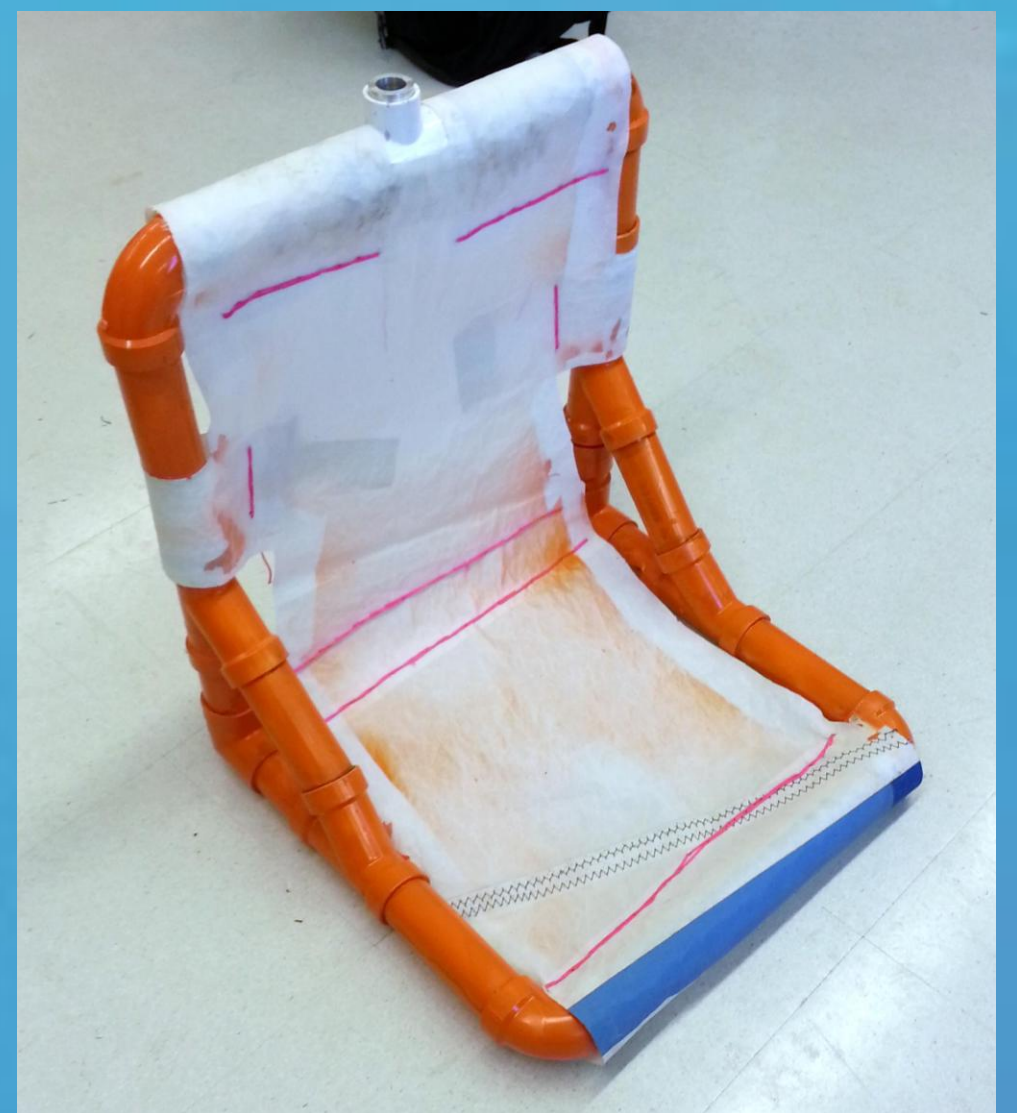
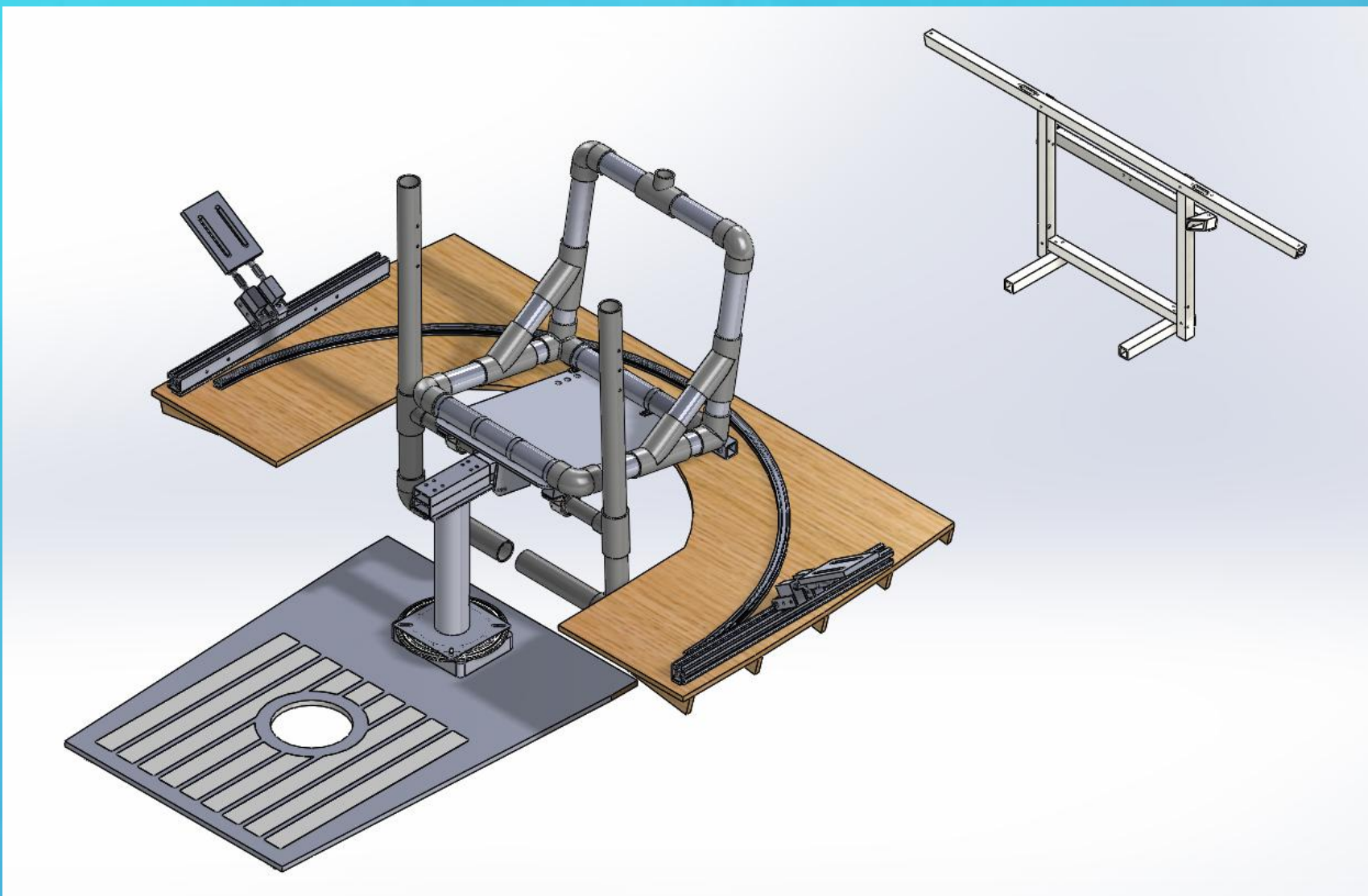
This is the third iteration of the Skipper's Chair project. The previous iterations, P12031 & P13032 focused on:

- P12031: Creating a steering system designed specifically for Richard Ramos (P12031's customer)
- P13032: Redesign P12031 to encompass 90% of the population body size

Objectives

- Steer the Sonar Sailboat
- Reduce system weight
- Decrease installation time
- Reduce number of custom parts

Overall Concept



Improvements

- PVC Chair designed to accommodate majority of the population and lighten overall weight
- PVC Steering Arms, utilizing pulley configuration, allow steering of the Sonar Sailboat
- Cheap for part replacement and system reproduction

Results/Conclusion

- System weight, installation time, user adjustment time, and custom made parts were reduced
- Overall safety of the system was improved (less pinch points, sharp edges)

Acknowledgements

Special Thanks to:

- Dr. Kate Leipold
- Dr. Elizabeth DeBartolo
- Dr. Tim Landschoot
- Keith Burhans
- Richard Ramos
- Piers Park Sailing Staff
- Mechanical Engineering
- Machine Shop Personnel

