

Preventing Weightlifting Injuries by Barbell Modifications

December 8th - December 13th, 2024

Client: Mr. Robert Gold
Advisor: Prof. William Murphy

Team Members:

Jackson Jarrett jjarrett2@wisc.edu (Leader and BWIG)

Kai McClellan kamcclellan@wisc.edu (Communicator)

Gavin Gruber gtgruber@wisc.edu (BPAG)

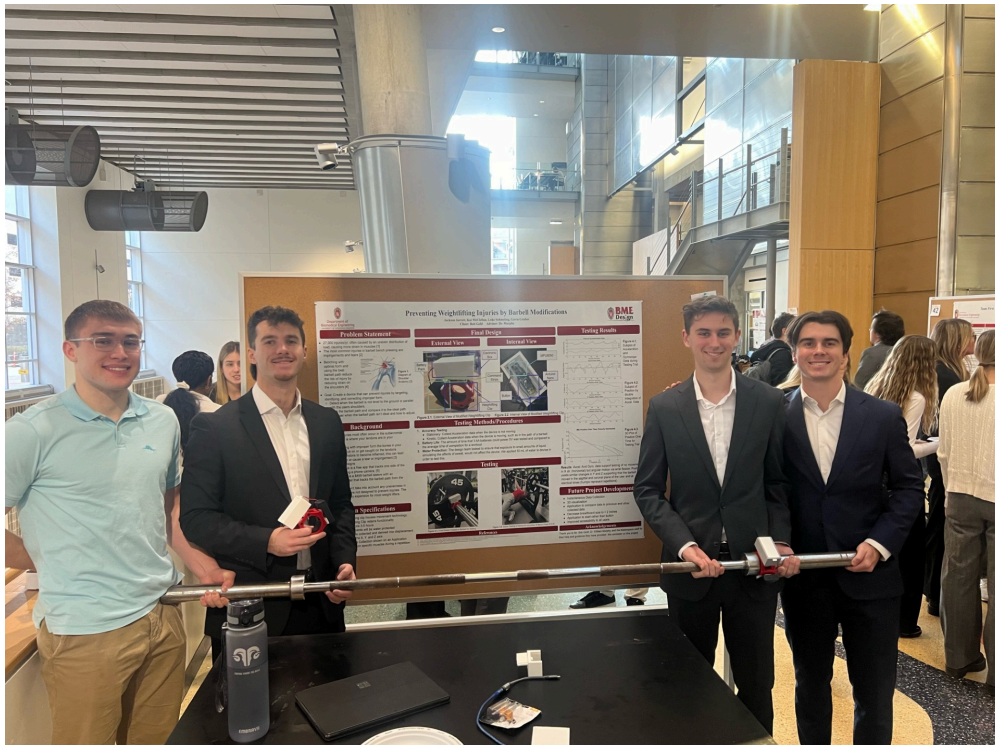
Luke Schmeling lascmeling@wisc.edu (BSAC)

Problem Statement

Up to 27,000 injuries occur while weightlifting every year. Injuries are often caused by an uneven distribution of load on the barbell, leading to the weight lifter favoring one arm over the other. The team has been tasked with designing a biomedical device that can prevent weight lifting injuries by targeting, identifying, and correcting improper form.

Brief Status Update

The design team has completed the poster presentation, which went very well. We were grateful for the experience of being able to present our ideas, findings, and areas of growth to our advisors and peers. This week, we look forward to wrapping up the semester with the Final Report.



Team Goals

This week we will finish the Final Report, submit our Final Design Notebook, and complete our peer and team evaluations.

Individual Accomplishments and Goals

Jackson: This week I created the skeleton of the progress report as well as the final report, and attached our preliminary report work with the comments left by Dr. Murphy into the Final Report for further adjustments. I updated the PDS document, and put that into the Final Report. I worked primarily on the Testing section, the Appendices, and the Final Design section. Finally, I completed the peer feedback evaluation, and look forward to seeing the group poster feedback as well as my own personal feedback to wrap up another great semester of BME Design.

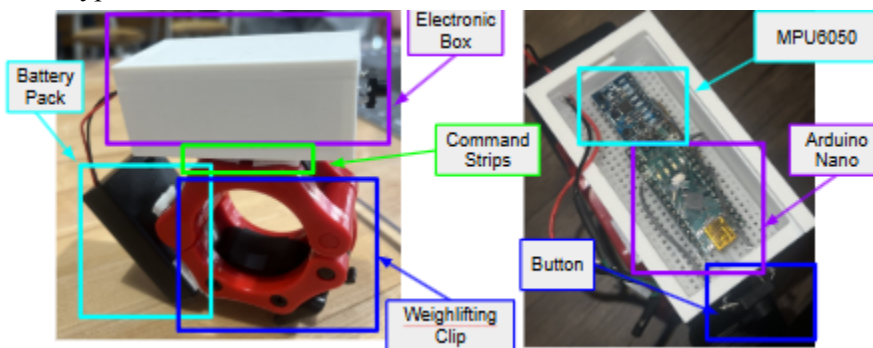
Kai: In the final week of BME design the team collaborated and completed the final deliverables for the project. I helped out with updating the PDS document, completing the testing results and future work section of the Final Report, and the code Appendices. I have been actively working on adding notebook entries and also completed the poster and peer review feedback fruits.

Luke: This week I did my part to contribute to the final report and ensure everything was completed to a high degree of satisfaction for the team. I also gave feedback on the team in feedback fruits and will be seeing if there is anything else I need to add to the team lab archives before we submit everything for evaluation.

Gavin: This week I worked on completing our final report along with the rest of our team. I worked primarily on the fabrication sections and the appendix about 3D printing, as well as completing the materials. I also have given feedback for the team feedback fruit and the posters I saw during the poster presentation.

Design Accomplishments

Final Prototype:





Weekly/Ongoing Difficulties:

N/A

Project Timeline:

Week #	Task
1	Choose project Assign roles
2	Finish first progress report BSAC meeting First client meeting
3	PDS, Brainstorm, Research
4	Brainstorm, Literature Search, Design matrix criteria and design ideas (at least three) due
5	Preliminary Oral Presentation
6	Preliminary Report, Electronic Notebook, Peer/Self Evaluation, Decide on final design
7	Final Design
8	Order materials, consider submitting invention disclosure
9	Fabrication, show and tell
10	Fabrication
11	Fabrication

12	Design Testing and Modification, Poster Draft Review
13	Design Testing and Modification, Final Report
14	Poster Presentation, Final Report, Final Electronic Notebook, Team Evaluation, Peer/Self Evaluation

Expenses [+](#) BPAG Expense Spreadsheet