



# Working with Capstone Students to Augment AgrAbility Services

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Texas AgrAbility Project



# Outline

- Team Overview
- Relationship with Universities
- Meeting Grant Deliverables
- Coordination & Assessment
- Expansion of Reach
- Impact to the Industry
- Things we have Learned

# Project Partners





# Texas AgrAbility Team



**Cheryl Grenwelge**  
Project Director  
& Disability Specialist



**Makenzie Thomas**  
Program Coordinator, Co-PI



**Faye McGuire, OTD**  
Occupational Therapist &  
Program Manager



**Erin Kimbrough**  
Veteran Programs Manager



**Ellie Gandara Castillo**  
Migrant & Hispanic Farmworkers



# Collaborative Team



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**PhD, OTR/L, RYT**

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Capstone Student  
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Augustine for Health Sciences  
Austin, Texas



**Faye McGuire**

Occupational Therapy Doctoral  
Capstone Student  
MGH Institute of Health  
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Boston, Massachusetts





# **Relationships with Universities**





# Ways to Build Relationships

- Presenting to classes
- Land-Grant University partners/stakeholders
- Re-establishing past partnerships
- Ideas?

# Aligning your goals

- Grant deliverables
- Project goals & outcomes
- Needed expertise
- Marketability







# How we connected our goals

- Engineer needed for assessment in West Texas
- Vocational Rehab not an option for client
- Land-Grant University Partner
- Occupational Therapy expertise
- Capstone experience/internship hours for OTD students

# TRAUMATIC BRAIN INJURY IN AGRICULTURE

Makenzie K. Thomas<sup>1</sup>, Faye McGuire<sup>2</sup>, Meghan Skidmore<sup>3</sup>

## TRAUMATIC BRAIN INJURY (TBI)

Traumatic brain injury occurs when an external mechanical force causes brain dysfunction (Mayo Foundation for Medical Education and Research, 2021).

TBI most often occurs from a violent blow or jolt to the head or body, such as from a motor vehicle accident or fall—but, it can also occur from an object penetrating the skull (e.g., bullet, nail, and many other objects). TBI is more likely to occur in men than in women, with the highest age risk occurring between 15 and 29 years old.

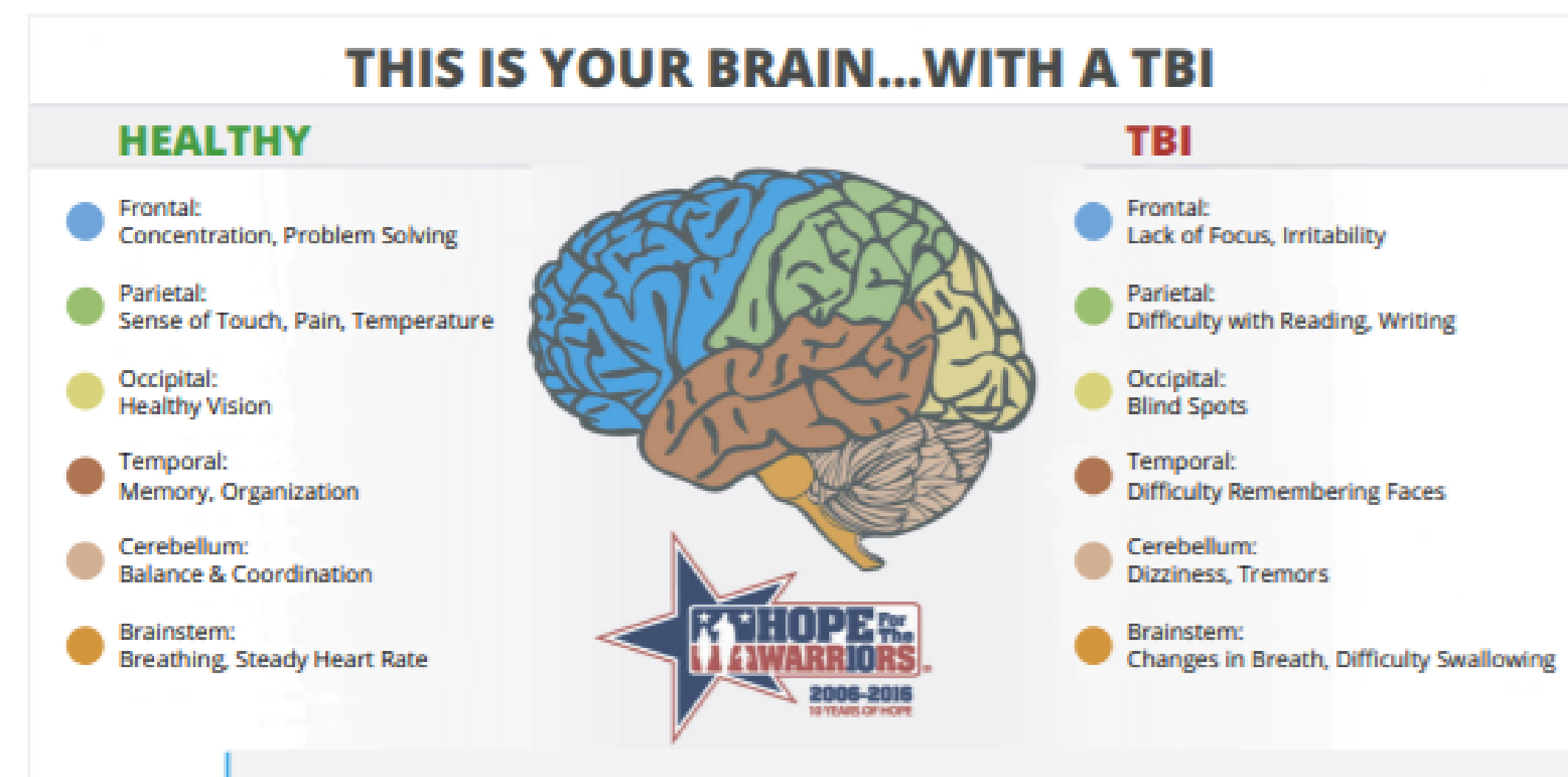


Figure 1. An example of how Traumatic Brain Injury (TBI) affects daily life. (Graphic courtesy of Hope for the Warriors. For more information: [www.hopeforthewarriors.org](http://www.hopeforthewarriors.org).)

Effects of TBI (Johns Hopkins Medicine, n.d.)

# Educational Fact Sheets





# Battleground to Breaking Ground’s Impact on Veterans’ Employment in Agriculture

Faye McGuire OT/s, Mary Hildebrand OTD, OTR/L

## Introduction

There are currently 18 million veterans living in the United States, 3.2% of whom are unemployed<sup>4,7</sup>. Of those 18 million, roughly 5 million of those veterans live in rural areas with higher rates of unemployment<sup>2,8</sup>. This coincides with the average age of agricultural producers being 57.5 years old and a 3% decrease in the number of farms between 2012 and 2017<sup>5</sup>. In an effort to keep agriculture sustainable and aid veterans with employment, the USDA has funded many programs to help veterans enter into an agricultural enterprise<sup>6</sup>. While many programs now exist to bridge this gap, there is little data on the effectiveness of these programs.

**Research Objective:** To evaluate the effectiveness of Texas A&M AgriLife Extension’s program, Battleground to Breaking Ground, at aiding veterans in obtaining agricultural employment.

## Definitions

**Agricultural employment:** Any work on a farm or ranch (excludes garden work)<sup>3</sup>

**Veteran:** Anyone honorably discharged from the United States Armed Forces<sup>9</sup>

## Methods

As part of a program evaluation, a mixed methods design was used. Battleground to Breaking Ground (BGBG) is in College Station, Texas. The program is primarily geared towards veterans and their families and has three phases: a one-day workshop, a 16-week online business program, and 100 hands-on learning hours.

**Quantitative:** Responses to the FEAT Satisfaction Survey were collected for participants in Cohorts 6 and 7. Results were analyzed by Colorado State University Extension.

**Qualitative:** Program manager selected previous participants for in-person and Zoom interviews. Ten participants were asked 19 semi-structured interview questions and responses were compared for themes.

## References

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## Results

Participants were mostly white, middle-aged men who were honorably discharged after serving anywhere from 4-24 years in the military. Most of those interviewed were in the cattle industry, however small ruminant producers, row crop producers, and other agriculture producers were also included.

<i>FEAT Satisfaction Survey Results</i>	Cohort 6	Cohort 7
As a direct result of participating in FEAT...		
Strongly agree overall knowledge increased...		
1a. Ag business development, business planning, ag funding	6/6	4/4
1c. Ag production practices, operation, marketing, funding, and management	6/6	4/4
Strongly agree gained skills...		
2a. Ag production practices, soil and fertility management, food safety, adv. ag marketing, farm safety, infrastructure design/management, etc.	6/6	4/4
2b. Through face-to-face, hands-on trainings in ag production practices and management	6/6	4/4
2c. Hands-on skills and knowledge in successful ag production techniques, ag operations, ag business management, etc.	6/6	3/4
Strongly agree I am satisfied with...		
3a. Hands-on learning opportunities	6/6	3/4
3b. Battle Ground to Breaking Ground workshops	6/6	3/4
3c. 100 hours of hands-on immersive training	6/6	3/4
3e. Through VetAdvisor, I increased my workforce readiness by accessing one-on-one coaching services in ag business, farming/ranching with a disability, career (resume writing & skills translation), behavioral health, VA benefits connection & navigation, and personal finance	4/6	2/4
3f. The 16-week business planning course	5/6	4/4
4a. I am employed in agriculture	2/6	3/4
4h. I applied for and/or used a USDA program	4/6	1/4
10. What did you <u>like best</u> ?	-Hands-on -Networking -Mentorship -Business planning	-Hands-on -Mentorship
11. What did you <u>like least</u> ?	-Old video content -Distance from training/mentor farm -Online group project -COVID interferences	-Distance to training farm -Limited number of mentors in specific field -COVID interferences
12. What do you <u>think needs to be added</u> ?	-Better/more recent videos -Workshops on participant’s farms -Training farms in different locations -Less online classes and more face-to-face/hands-on	-More regional access -Better online system -Specific field approved mentors
13. What do you <u>think needs to be removed</u> ?	-Cost of mentor farm class -ICEV classes are redundant -Group Project	-No suggestions

## Pros:

-Hands-on hours

“You’ve got to have the hands on”

-Business Planning

“...the main thing I went for”

-Networking

“...one of the big things was the network”

-Comradery



## Needs Improvement:

-Access to mentor: location and production type

“It would be great to get to work with people closer in my area so that I’m not driving you know, three hours to go to these hands-on learning...”

-Grant writing assistance

“It’s competitive, very competitive ...really kind of the hardest thing.”

## Discussion

In both the satisfaction surveys and interviews, participants saw a benefit from the business planning component, the hands-on experiences, and the mentorship program. Forming a network, especially with other veterans was also a valuable outcome of the program. Despite finding value in the mentorship and hands-on components, there was a strong desire for these aspects to be more easily accessible. Participants would like the program to expand the locations of the mentor farms and the type of specific production opportunities available through the approved mentor farms. The Battleground to Breaking Ground program includes many key features that other research studies have found important when working with individuals who are veterans, in agriculture, or entrepreneurs.

**Limitations:** The response rate to the satisfaction survey was low, out of 27 participants only 10 responded. Due to being a convenience sample with participants being selected by the program manager, the validity of the interview responses may be affected.

**Further Research:** It would be beneficial for further research and program evaluation to focus on individuals who may not have completed the program, to get a broader view of the effectiveness of the program overall. While both the responses to the satisfaction survey and interviews express an overall positive view of the program, further research needs to be done to determine how many participants successfully enter into an agricultural field following the program by following up with participants 1-5 years post graduation.

## Conclusion

Battleground to Breaking Ground’s program helps to fill the gap between unemployed veterans and the rising age of agricultural producers. By completing this program evaluation, Battleground to Breaking Ground can continue with the aspects that were identified as useful and begin to take steps to address the areas in which improvement is needed to help these veterans become successfully employed in agriculture.

## Implications for OT

According to the OTPF, work is an essential occupation<sup>1</sup>. This project helps generate foundational knowledge about the specific needs of veterans entering into agricultural employment. OTs can use this knowledge to better understand clients’ needs and how to best support them with their agricultural pursuit. OTs can work with individuals and with programs as a whole to address issues such as grant writing, secondary injury prevention, access to course material, and modifications for daily agricultural tasks.

## Acknowledgements

Erin Kimbrough: BGBG Program Manager  
Dr. Cheryl Grenwelge: Texas AgrAbility Program Director  
Dr. Bob Fetsch: FEAT Evaluation Team Leader with Colorado State University Extension  
Dr. Diane Smith: Research Professor

# Research Conducted



# Working with Farmers & Ranchers with Disabilities: An AgrAbility Resource for Occupational Therapy Practitioners

## Course Overview ▼

### Welcome to Working with Farmers & Ranchers with Disabilities: An AgrAbility Resource for Occupational Therapy Practitioners!

Farmers and ranchers are at risk of acquiring a disability. Occupational therapy (OT) practitioners require knowledge of agricultural occupations to address farmers' and ranchers' rehabilitation needs. However, there are a few educational resources available to practitioners. These modules are designed to inform occupational therapy practitioners, in all settings, on how to improve OT services provided to farmers and ranchers with a disability.

THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY THE UNIVERSITY OF ST. AUGUSTINE FOR HEALTH SCIENCES INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS. IF YOU HAVE QUESTIONS OR CONCERNS, THOSE QUESTIONS OR CONCERNS SHOULD BE DIRECTED TO THE INSTITUTIONAL IRB CHAIR, DR. ELIZABETH ARDOLINO, EMAIL: [EARDOLINO@USA.EDU](mailto:EARDOLINO@USA.EDU), PHONE: 737-202-3343.

## Program Information ▼

The Texas AgrAbility project was started in 2009 and is funded through the USDA National Institute of Food and Agriculture. The project provides assistance to farmers, ranchers, and those interested in agriculture with disabilities, health conditions, and functional limitations.

Services include farm & ranch assessments, recommendations for assistive equipment and task modification, and connections to resources. Services provided by Texas AgrAbility are at no cost to the customer. Visit the [Texas AgrAbility website](#) for more information!

# Course Developed





# Coordination & Assessment





### Prototype Project Agreement

This Agreement is between West Texas A&M University (“WTAMU”), a member of The Texas A&M University System (the “A&M System”) and an agency of the State of Texas, and Texas AgrAbility (“Organization”). The parties agree as follows:

**1. The Project**

- 1.1 WTAMU shall supervise students undertaking the project described in Exhibit A (the “Project”).
- 1.2 Organization acknowledges that:
  - (a) The Project is educational in nature and intended to facilitate student learning;
  - (b) The Project is performed by students and is not subject to peer review or independent verification of results;
  - (c) Students may make mistakes as a natural, expected, and appropriate aspect of the educational process; and
  - (d) WTAMU makes no representation, guarantee, or warranty, express or implied, about the outcome of the Project.

# Coordination

- Client confidentiality/release of information
- Memorandum of Understanding
- Liability release
- Coordination & timelines established with partners

# Case Study Tractor Lift





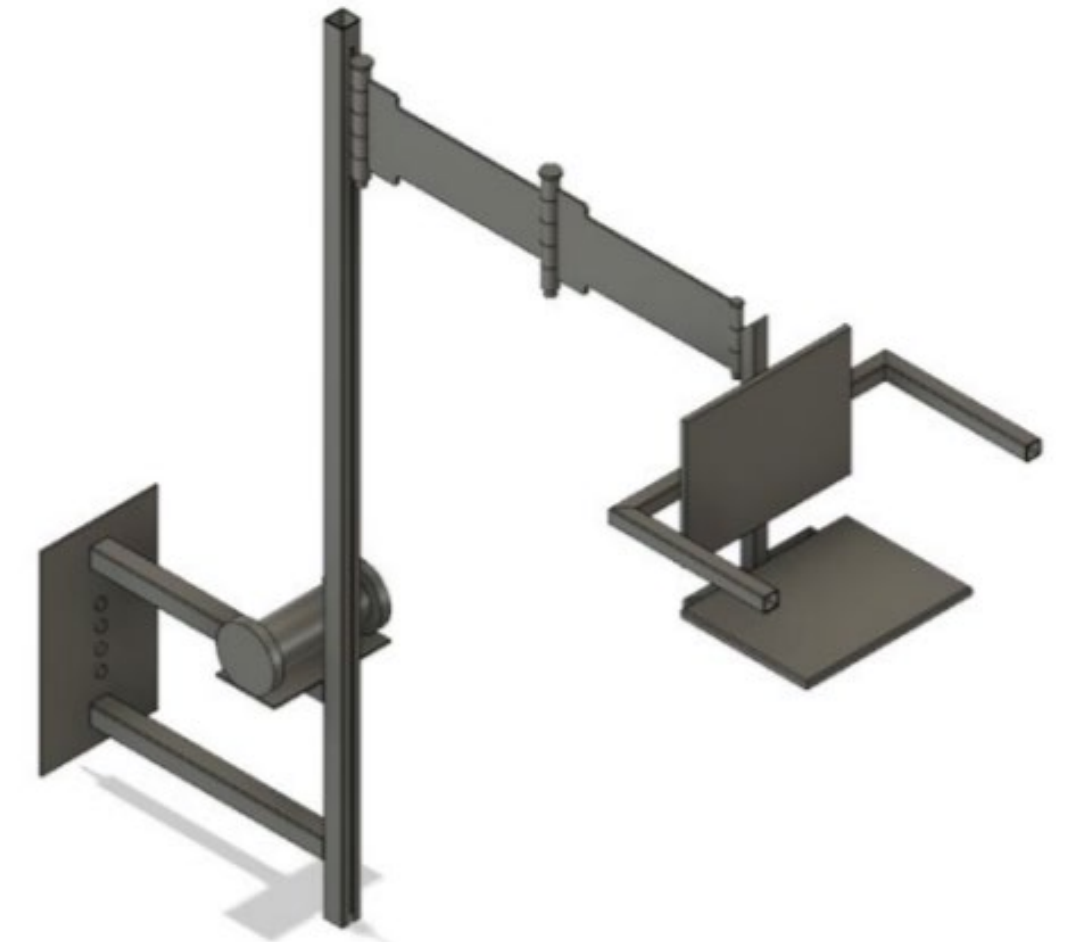
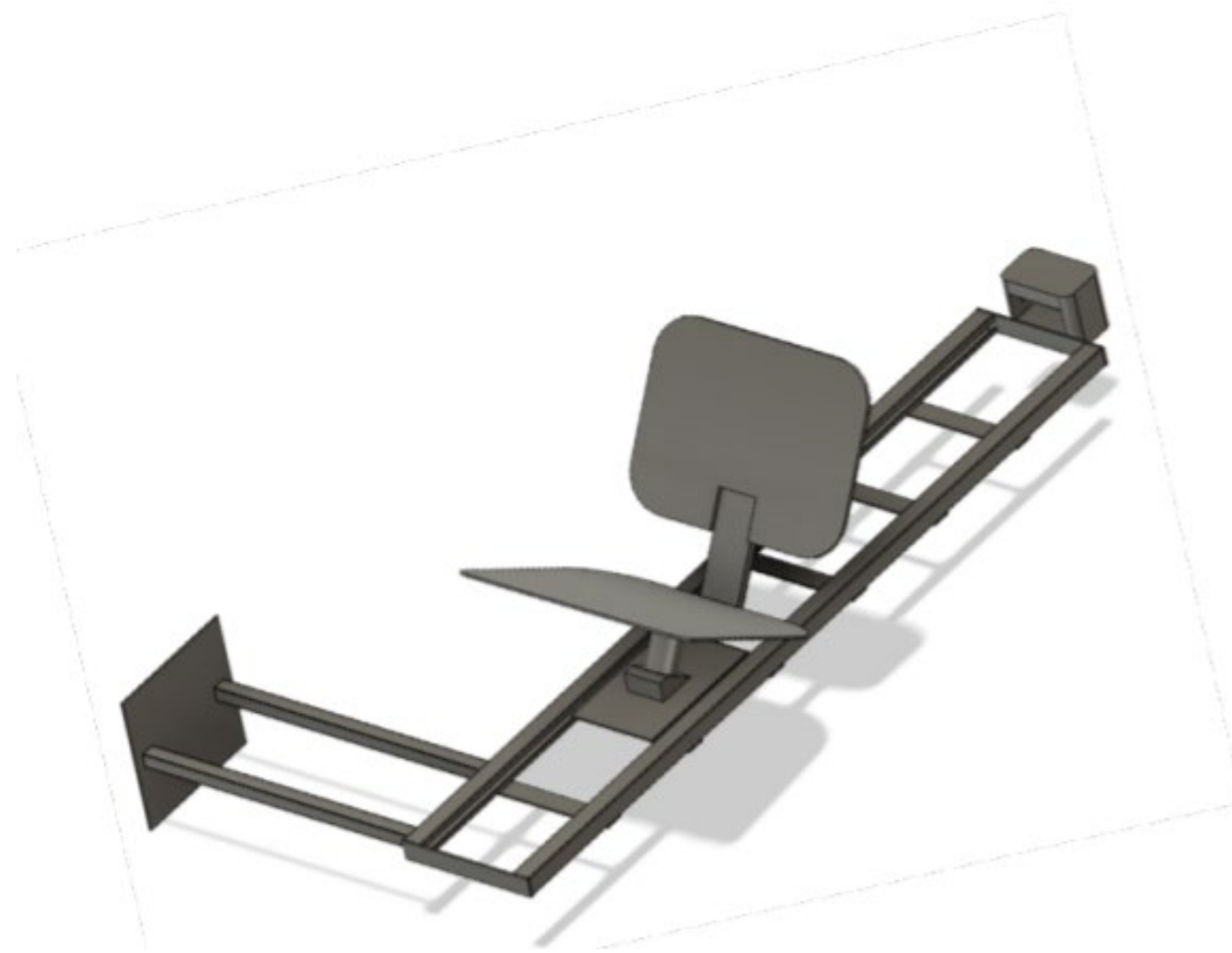


# Assessment

- Texas AgrAbility Team
- Capstone project oversight
- Capstone students



# Design Proposal



# Feedback & Construction



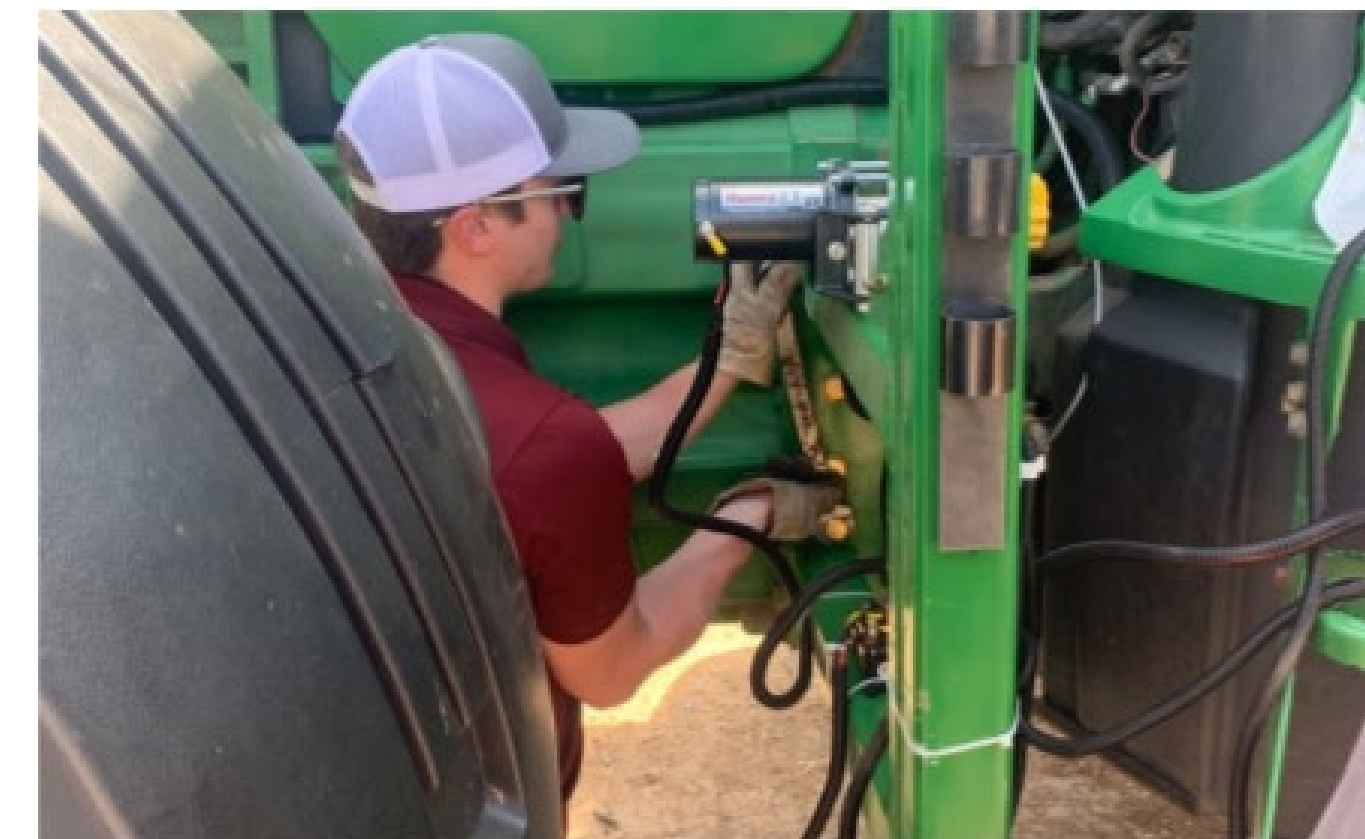
*Figure 29: Track Column*



*Figure 38: Tractor Chair*



*Figure 30: Pulley System on Track Column*



*Figure 54: Tightening of Tractor Plate Bolts during Installation*



# Installation





# Case Study Manlift & Saddle Lift





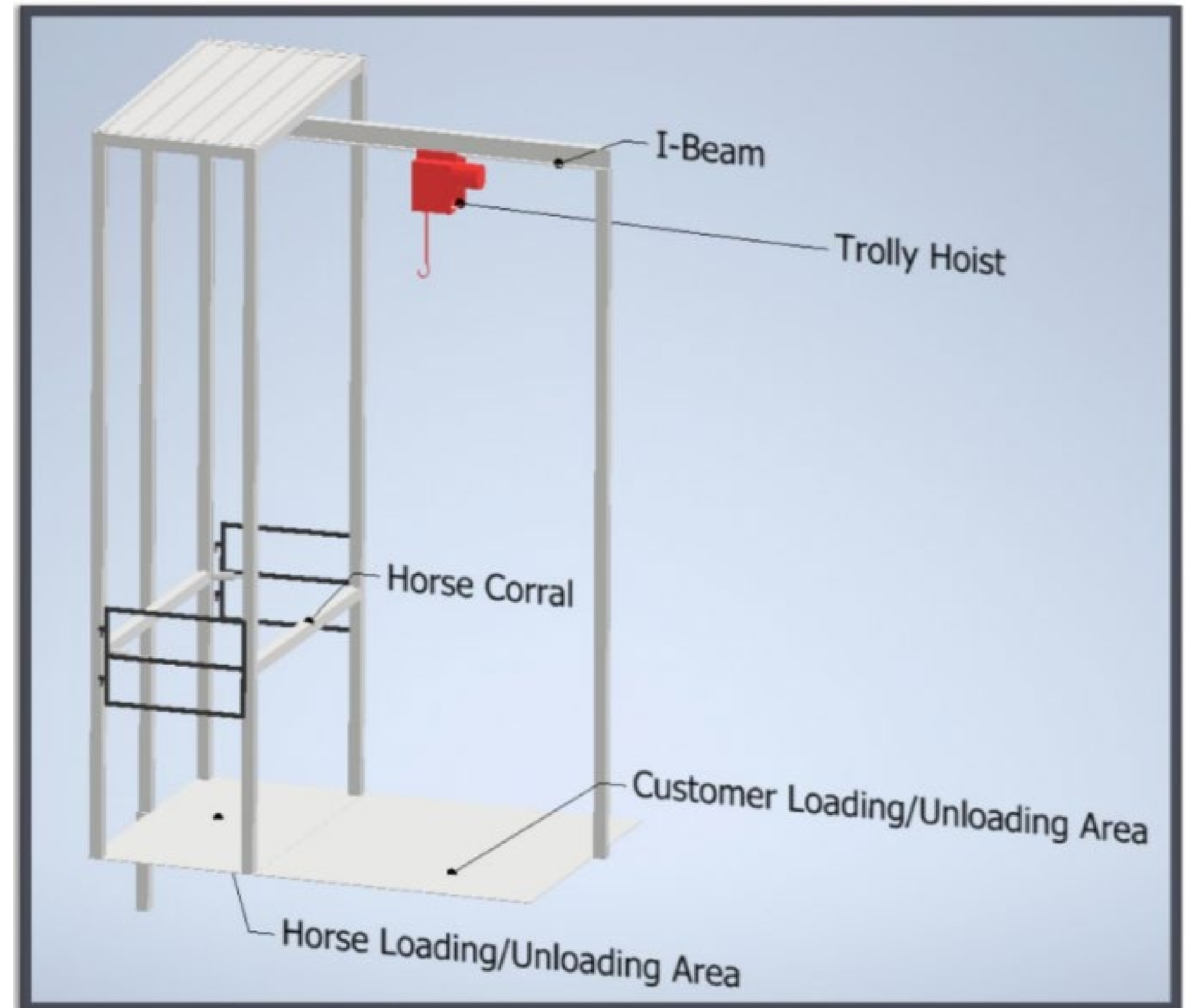


# Assessment

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# Design Proposal

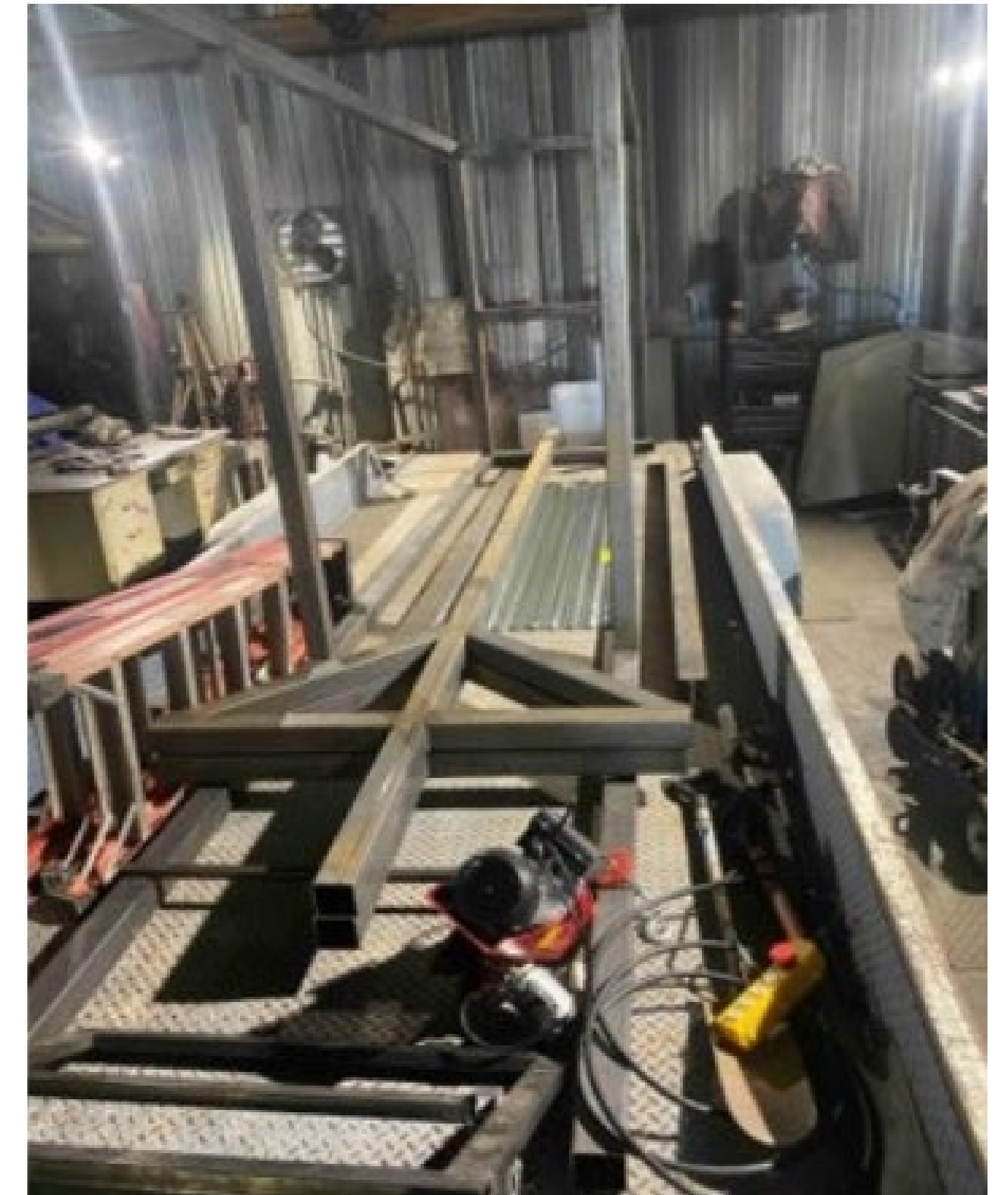




# Feedback & Construction



Figure 43: Petzl Volt harness keeping dummy in a seated position



# Installation





# Installation



# Installation





# Follow-up

- Make a follow-up plan in case of any issues
- Capstone students graduate
- Sharing contact information
- Establish follow-through with professor/oversight
- Photos & filming to use for story/marketing



# Benefits to AgrAbility

- Economic impact of leveraged services
- Timely delivery of services/products developed
- Increased reach to underserved areas
- Marketing programs to new audiences
- Multi-state reach
- Goals & deliverables met





# Impact to the Industry

- Gives students hands-on experience with farmers & ranchers with disabilities
- Increased awareness of AgrAbility programs and support
- Increased education and research for occupational therapists and rural health practitioners
  - Rural health disparities (access to healthcare, prevalent injuries)







# What We Learned



# Lessons Learned

- Set expectations & timelines
- Must have time to devote to mentoring/overseeing students
- Communication is key
- Quick turnaround
- Opportunity for ongoing relationships
- Not all relationships end in success
- It is worth it!





# Questions





**Funded by**



National Institute of Food and Agriculture  
U.S. DEPARTMENT OF AGRICULTURE





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