What's our Purpose?

• Give disabled operators access to their articulated tractors
• Currently no mounted lifts available for John Deere Tractors
• Tasked with creating a design that allows for these operators to use their tractors as they once were able to

Value Proposition

• The value of this product comes from the ability of disabled persons to use their tractors once again.

Quantatively

• Increase operation efficiency
• Reduce labor costs
• Diversified Tasks

Qualitatively

• Less limitations
• Operator independence
• Improved Quality of life

Final Design Rendering

John Deere 9RX

SS-1
AgrAbility
Articulated Tractor Lift Design

Seinor Capstone Design Experience

SS-1 Team
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Final Design Rendering

John Deere 9R

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The Life Essentials

LifeLifts®
by Life Essentials

AgrAbility
Cultivating Accessible Agriculture

Purdue University
**Problem Scope**
- In August of 2021, the team was presented with two clients who needed access to their John Deere 9R’s but conventional methods were not an option.
- Clients two tractors, John Deere 9620RX (Below) and 9410R.
- Task was to develop a tractor mounted design that followed certain constraints and criteria.

**Constraints**
- Lift must not exceed 14’ when mounted.
- Lift must not inhibit regular tractor operations.
- Lift capacity ≥ 500 lbs.
- Must be mounted.
- Must on the tractor.
- Must be a seated lift.

**Criteria**
- Easily usable by handicap persons.
- Design meets safety standards.
- Durable and able to handle the elements.
- Easy to service and maintain.
- Tractor resale value is not impacted.

**Solution Path**
- Looked into alternative mounted equipment for potential mounting points and decided on the best ones for each tractor.
- Worked with Life Essentials to ensure the lifts were safe and properly designed for manufacture.
- Due to the differences in the tractor models and configurations, two separate mounting techniques were created.
- Both mounting techniques use the SAME Life Essentials Truck Bed Lift.
- This way, as the tractors may change the lift itself can be utilized with different mounting.

**Our Final Designs**

**John Deere 9RX Design**
- Lift design mounts on the rear track assembly.
- Two metal sleeves extend away from the track creating the proper distance for mounting.
- The lift sits on a platform that slides onto the tractor mounting assembly.
- A simple pinning system is used to hold the lift on the mounting sleeve.

**John Deere 9R Design**
- Design places the lift between the rear fenders.
- All mounting brackets will be bolted to the frame for easy removal.
- Brackets create a simple platform for the lift to sit on.
- Lift is secured to the platform using bolts.