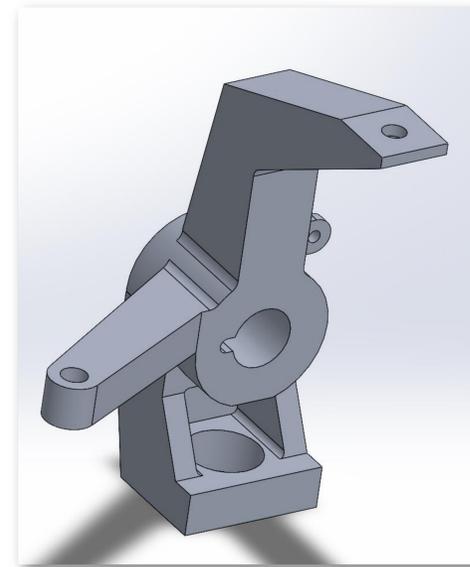


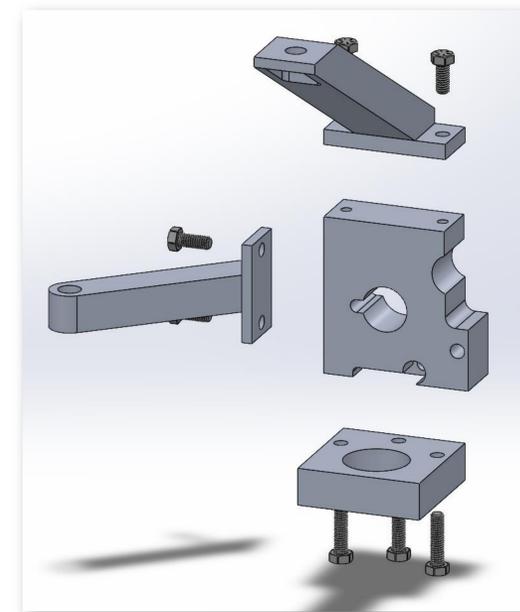
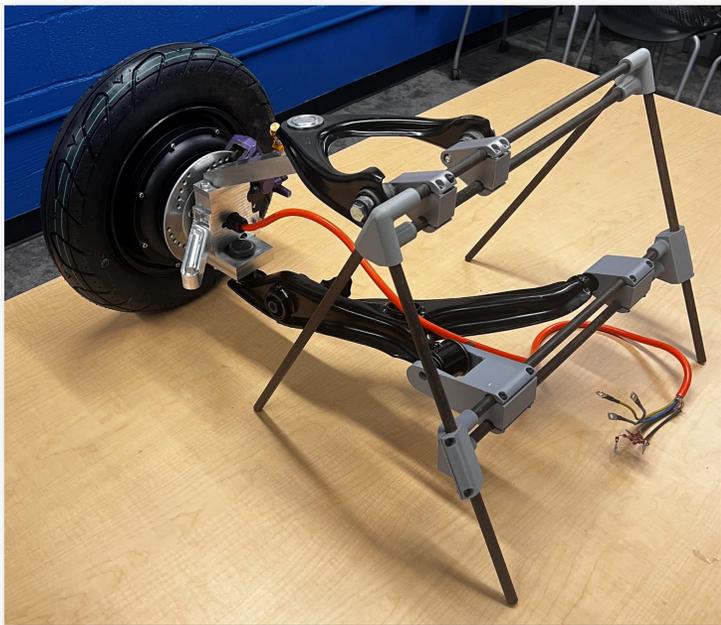
Project Description

- The Sunzeecar (see center logo) is a three wheeled vehicle that is transitioning to two solar powered front wheels
- The new configuration needs a suspension system
 - Supports a 900 lb load
 - Has 3" threshold ground clearance
 - Has less than 3" of kingpin offset
 - Low cost



Original Design

- Difficult to manufacture
- Caliper fasteners needed adjusting
- Lessons learned
 - The importance of making a prototype
 - Having a clear vision of the end-product is vital
 - Use shareable CAD software



Final Design

- Bolts make for easy manufacturing and provide more compact shipping
- Caliper fasteners needed adjusting
- Lessons learned
 - The importance of making a prototype
 - Having a clear vision of the end-product is vital
 - Use shareable CAD software

Conclusion

- Wheel knuckle meets all design requirements
 - Holds load with a Safety Factor of 8
 - Ground clearance is 3.68"
 - Has 2.28" kingpin offset
 - Produced finished product even with budget cuts
- Going forward:
 - Client can make minor adjustments to the knuckle design, allowing it to be integrated into the reverse trike community to allow for a solar powered E-trike



Tensile Test

- Held up to 7500 lb
- The internal threading of the lower control arm was the first to go