

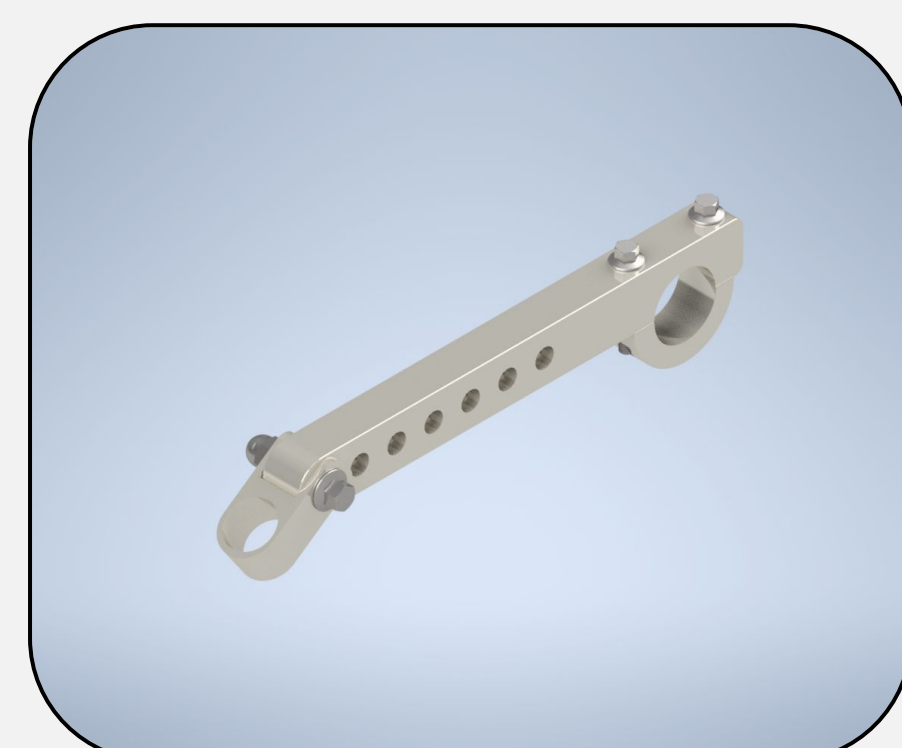
Background

Baja SAE® is a series of international collegiate design competitions. Teams gain real-world engineering experience in automotive processes by designing and building a single seat off-road competition vehicle. Due to covid the in person competition has been canceled and the online events are scheduled tentatively for late June early July of 2020.

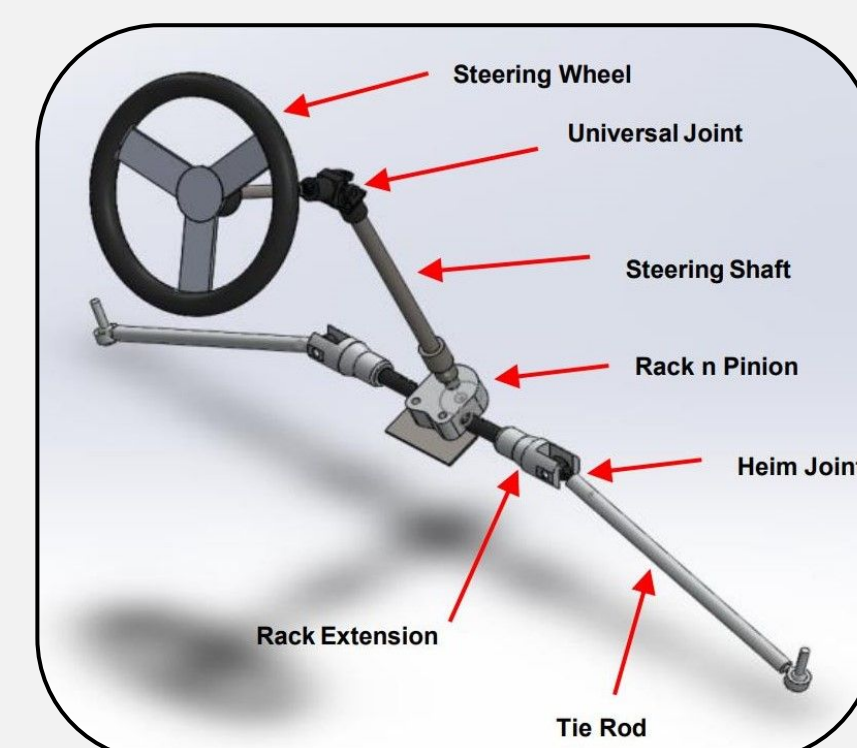
Competition Breakdown

Dynamic Events	Points	Static Events	Points
Acceleration	75	Design Evaluation	150
Traction	75	Cost Report	15
Maneuverability	75	Sales Presentation	50
Suspension	75	Prototype Cost	85
Endurance	400	Total Possible	1000

Driver Controls



Adjustable Steering Column Bracket

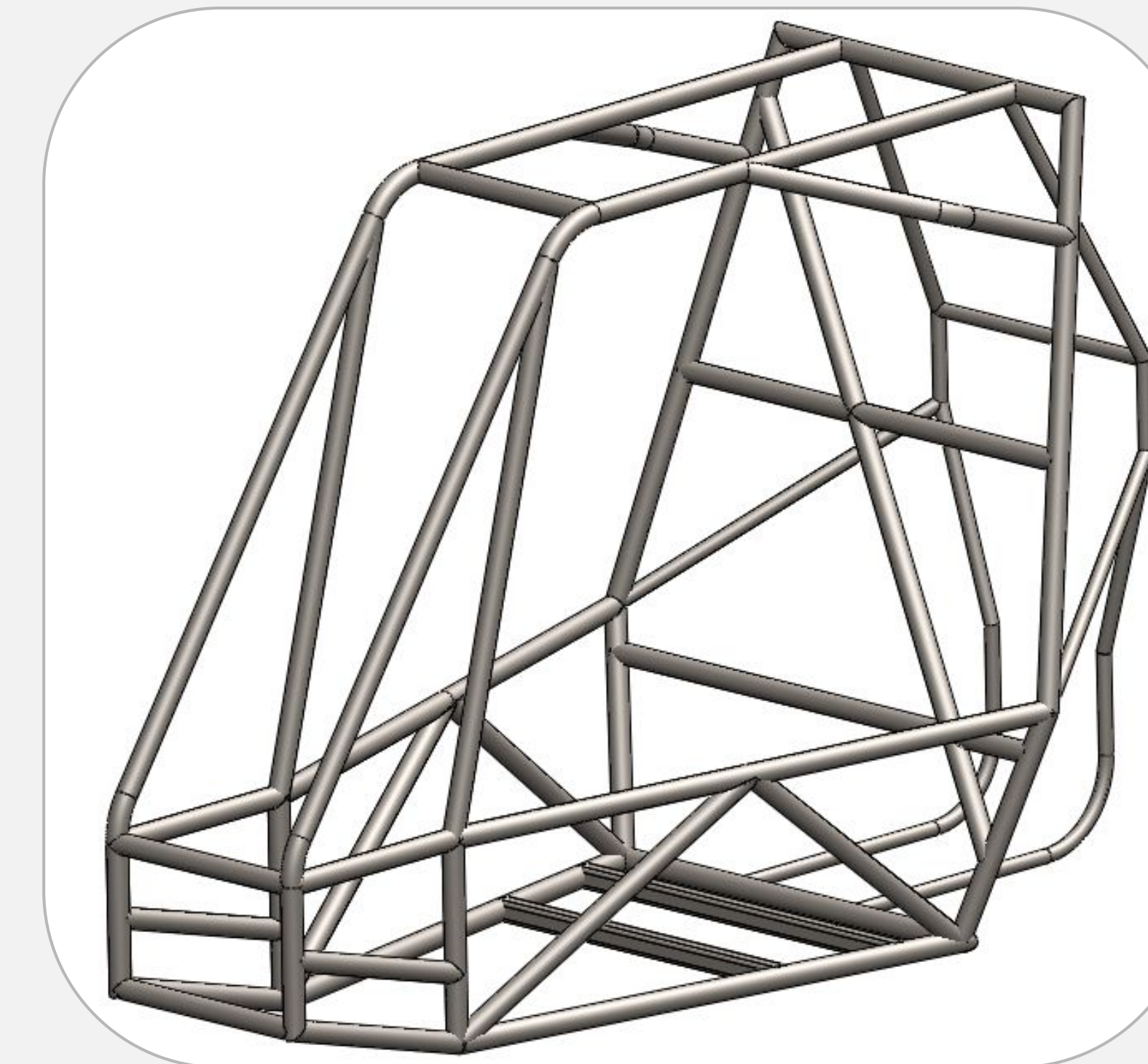


Steering Assembly

- Redesigned in order to ease the process of machining the bracket.
- Redesign incorporates less angles and use of common fasteners.
- New design does not sacrifice the features of the first design.
- Appropriate brakes selected for front and rear.
- Steering assembly finalized.
- Completed machining of the steering bracket.

Frame

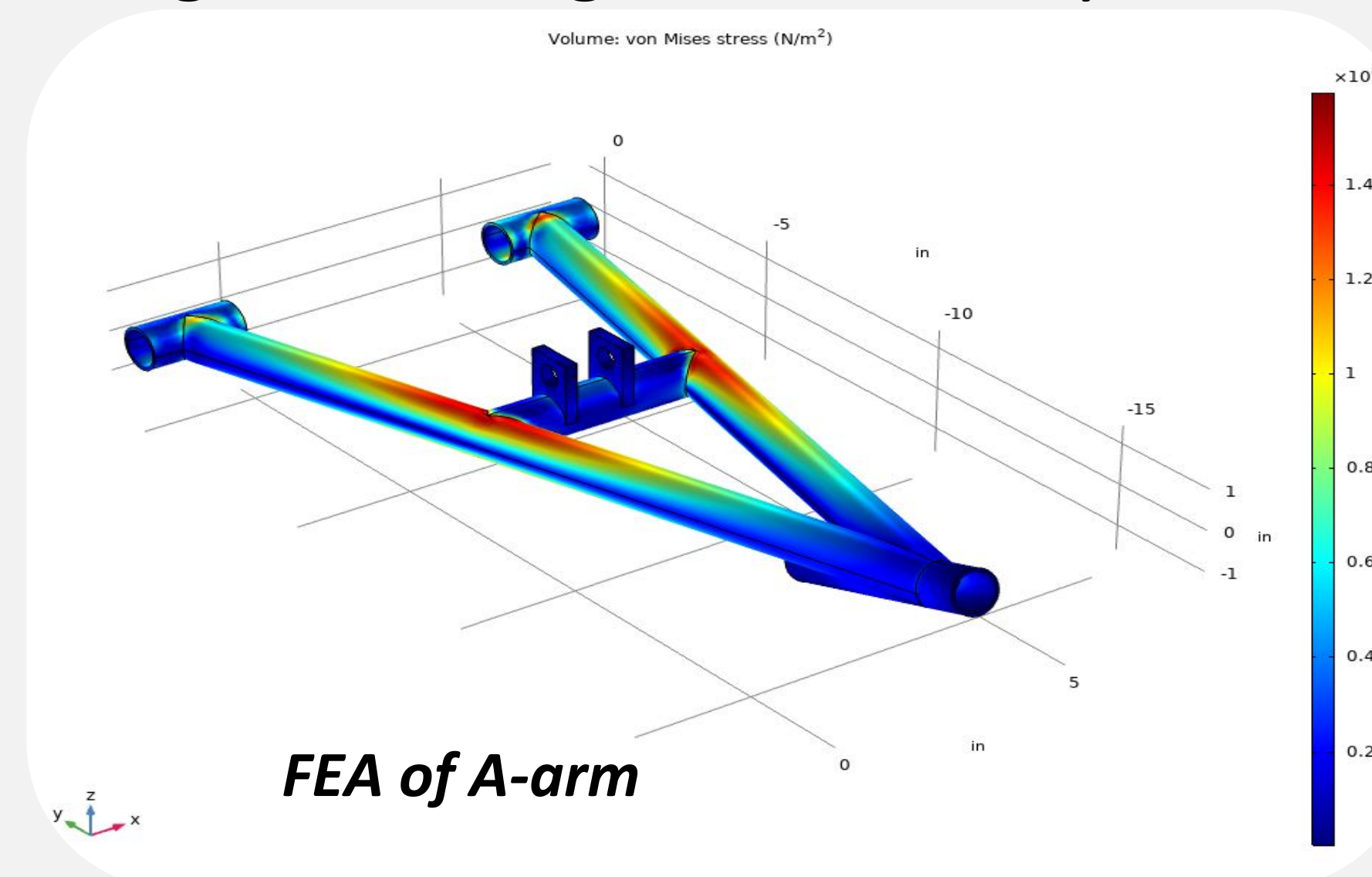
- Redesigned the rear end of the frame to save weight
- Removed erroneous members and cleaned up surface
- Redesigned engine envelope to accommodate other subgroups



Model of Current Frame

Suspension

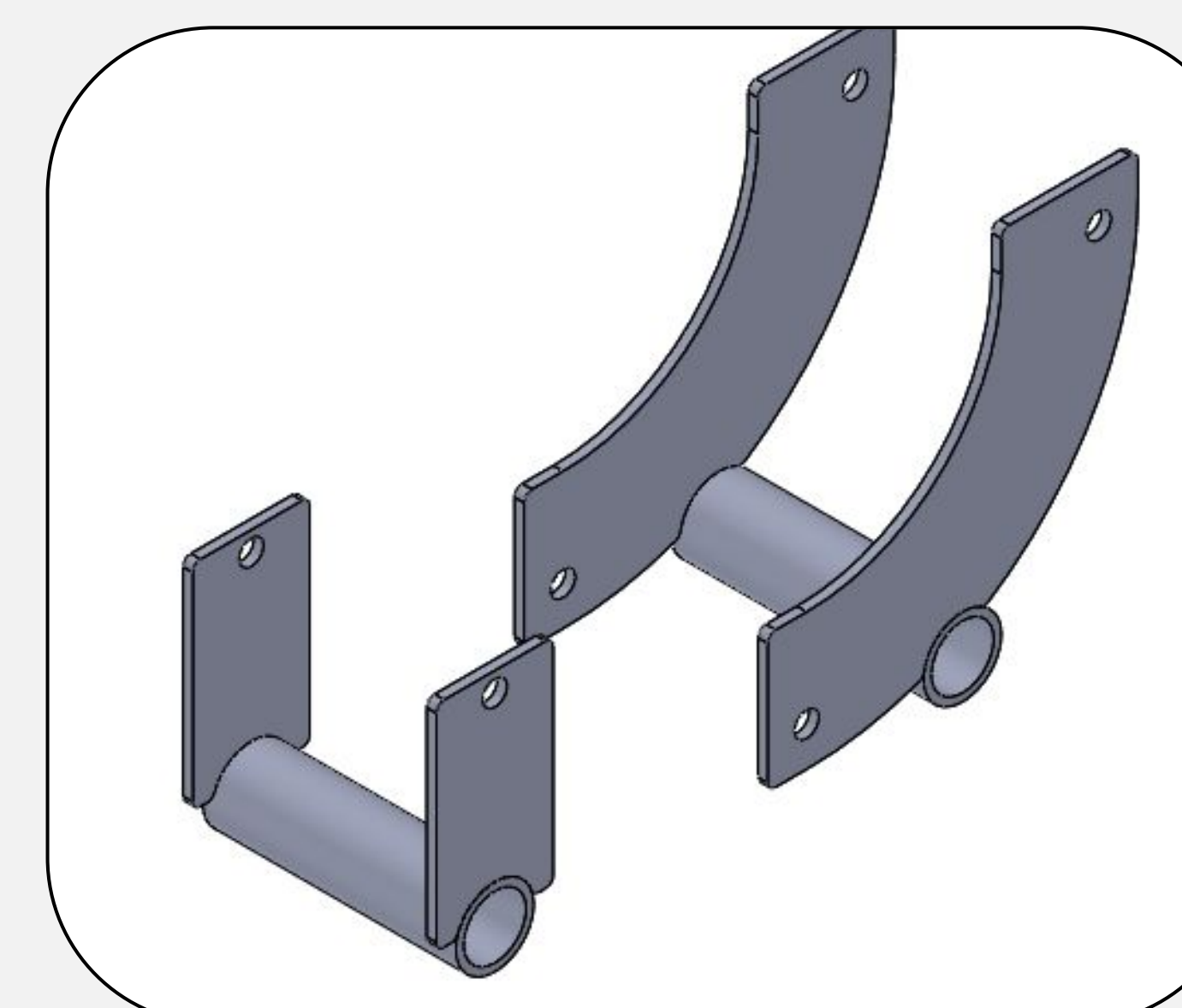
- A-Arms Fabrication nearly completed.
- Bushings and hardware on hand
- Ball joints on hand/ordered
- Swing arms designed and ready to start



A-arm

Drive train

- Sealed CVT and mounted half shaft to gearbox.
- Redesigned gearbox mounts.
- Redesign will allow for a lower mounted gearbox which will allow for more suspension travel without CV shaft binding a problem previous cars faced.



Gearbox Mount

Design Milestones

- A-Arm and Rear Swing arm design updated for available materials. (A-arms nearly completed, swing arms yet to be manufactured)
- Brake design finalized from available materials.
- Gearbox Mount design to lower Drivetrain components and increase performance.
- Update of body panel materials for increased rigidity.
- Update of Seat mount designs.



Frame

The 2019-2020 Team

Project Advisor: Dr. Curtis O'Malley

Sponsors: New Mexico Tech, Thermal Transfer Products, NMT Student Government, Solidworks, NMT SGA, AND NMT Mechanical Engineering Department.



2019-2020 NMT Baja SAE® Design Team