

Objective

Design and apply a novel movement mechanism that can successfully traverse the lunar surface

Regolith Background

- Extremely adhesive to any type of material
- Will clog mechanisms and prevent functional movement
- Irregular in shape and size of particles

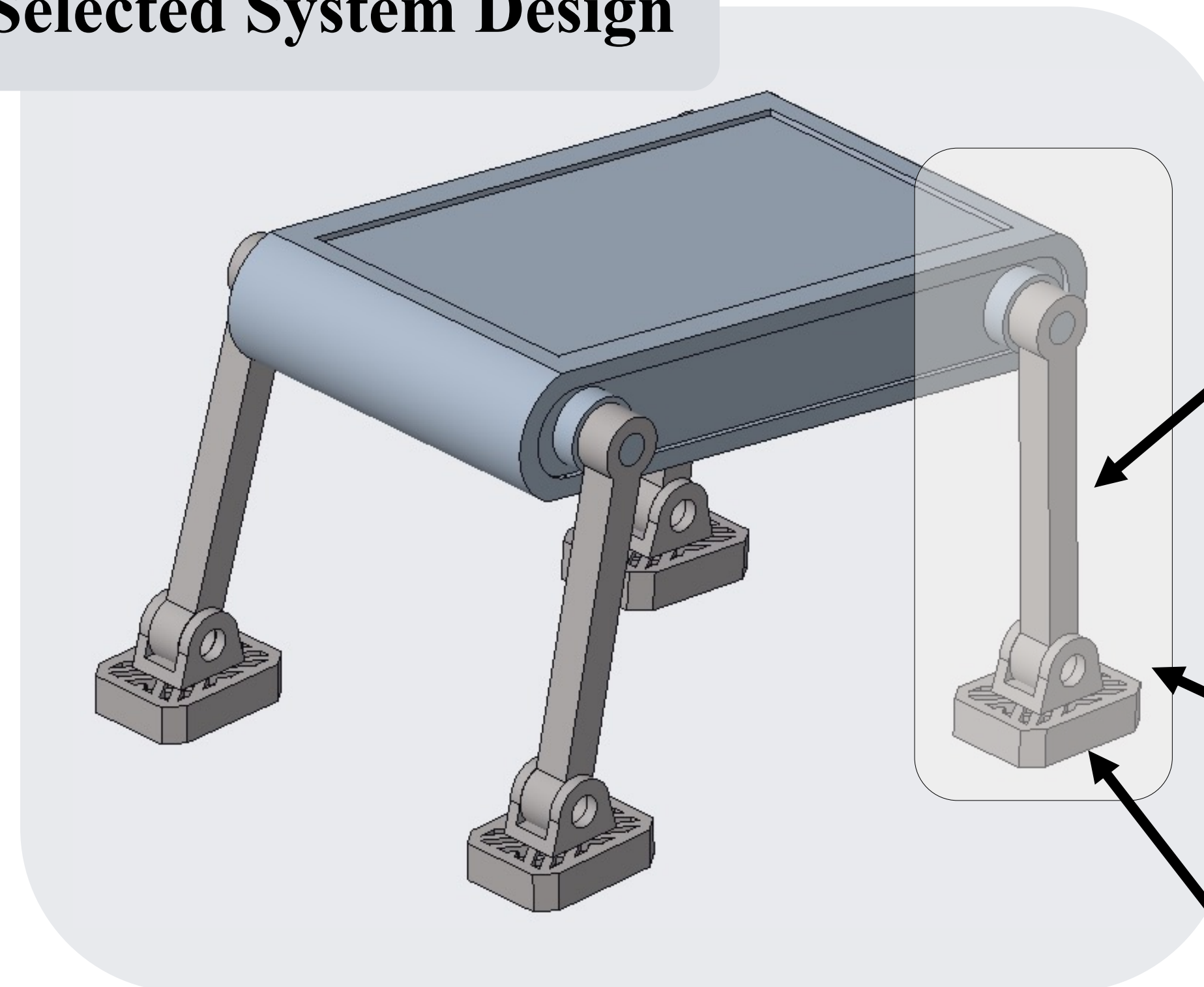
Key Goals

- Integrate novel mobility mechanism
- Prevent regolith from damaging hardware
- Maintain stability in uneven terrains

Critical Targets

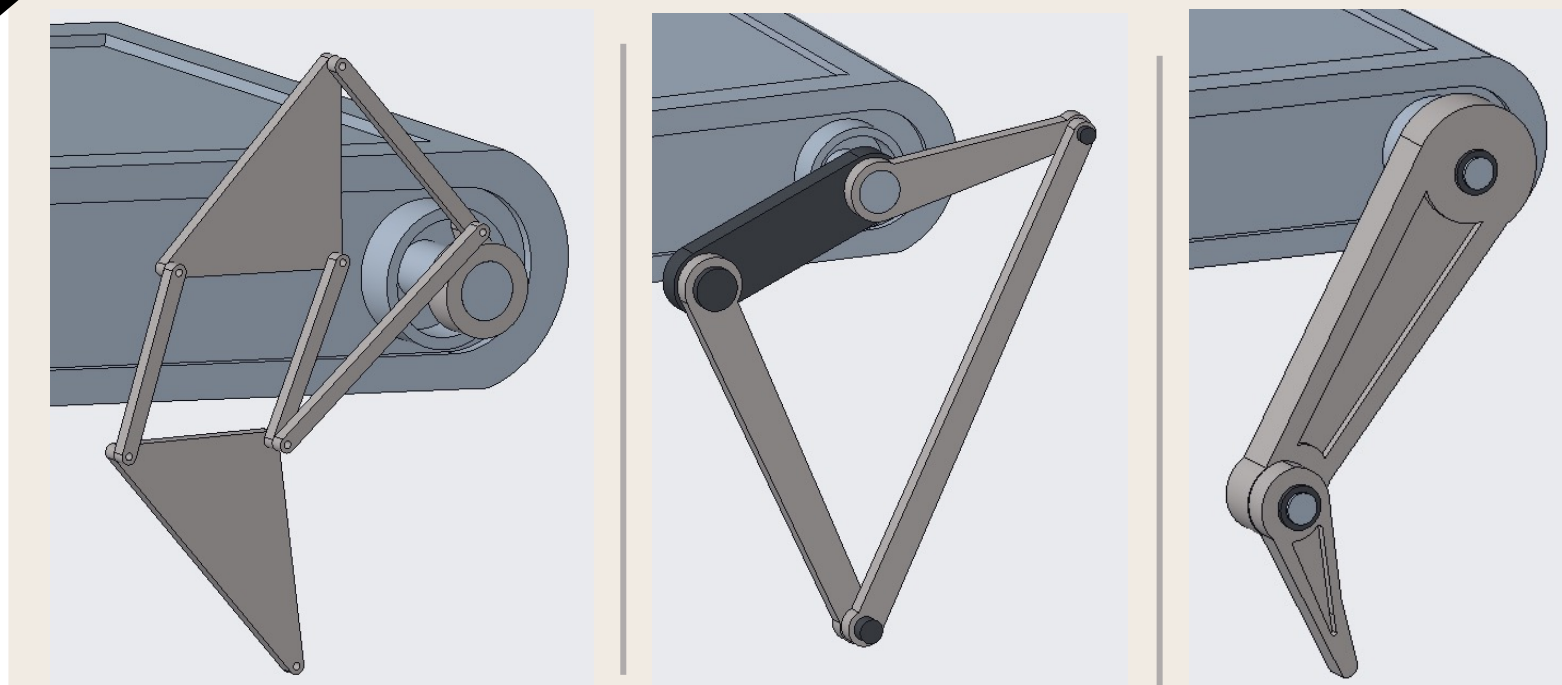
- Maximum roll angle of 30°
- Prevents immobilization in regolith by validating if actual speed is <10% of nominal velocity
- Maximum allowable grain size of 10 μm

Selected System Design



Design Components

Legs

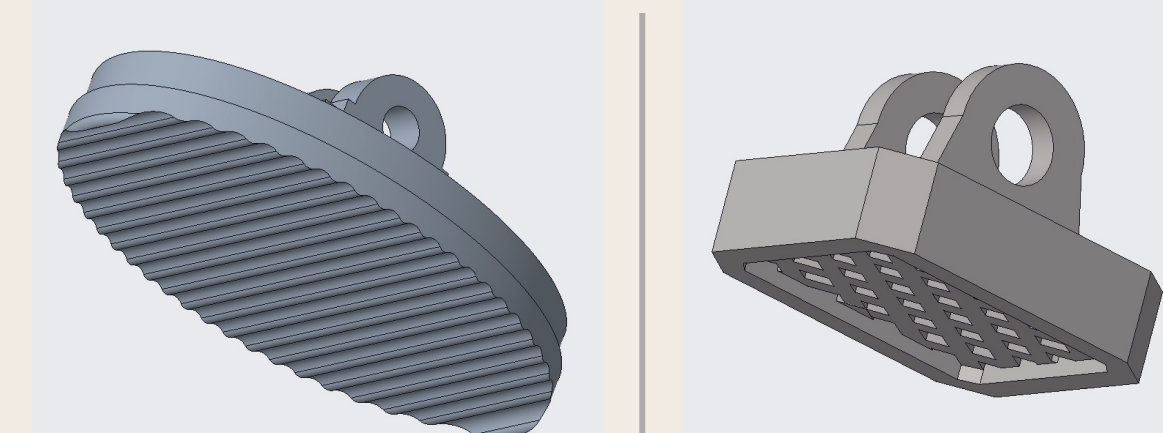


Type of legs

Regolith Shielding

- Material selection
- Minimum moving parts
- Joint protection

Foot



Type of feet

Future Work

- Select final design components
- Optimize design and FEA
- Order materials
- Assemble system
- Test and validate system