Renewable Vehicular Robot
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### Introduction
One way to increase renewable energy production is by developing devices that can charge directly from the sun and the wind without drawing power from the grid. If enough devices are developed with this capability, it will reduce the strain on the power grid and alleviate reliance on non-renewable resources.

### Mission Statement
To develop technology for renewable energy devices by designing a Renewable Vehicular Robot (RVR) for use in the ASME Student Design Competition.

### Design
- **Full assembly**
- **Main body assembly**

### Manufacturing
Most of the parts were manufactured by 3D printing PLA because of the complexity of the design and size of the vehicle. Solar supports were made using sheet metal which was bent, and threaded inserts were press fit for all attachments. All other supporting part was purchased and assembled to body. The vehicle is remote controlled, and codes were done with Arduino.

### Competition Rules

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### Unloading mechanism
- Principal stress of 1.26MPa and 0.8MPa for loaded and unloaded, respectively. The body has a safety factor of 5.19 and 7.77 for loaded and unloaded, respectively.

### Back swivel wheel
- Remote control
- Motor with motor tabs
- Solar support