

## Project Title: **Steering, Brakes, Wheels & Tyres**

Supervisor: TBC

### Project details:

The move from Challenger Class to Cruiser Class brings with it many new challenges, primarily related to the increased size of the vehicle. This project covers three systems, and each bring their own challenges. The steering needs to be adequately light and comply with the safety regulations. The steering wheel must be designed in cooperation with the “Driver Interface and Telemetry” Engineer. Each of the braking systems must be independent and capable of stopping the car reliably and stably in all likely scenarios. This involves routing and securing brake lines in a robust manner. The wheels and tyres must be capable of supporting the dynamic load of the vehicle and all its occupants at all times. All these systems must be designed in such a way that they can be easily maintained, which is particularly vital under racing conditions.

Much of the design work will be informed by the regulations for the 2019 World Solar Challenge, which will be released in June. These will include restrictions on turning circle and stopping distances as well as safety requirements, in addition to those set internally by CUER. In addition to ensuring that each individual system works as intended, the design must allow for integration with other parts of the vehicle, particularly the chassis and suspension systems.

A successful design for these systems will not only be vital in providing the vehicle with reliability and safety but also in securing a strong performance in Australia in 2019.

**Closely linked projects:** “Suspension”, “Chassis Structure”, and “Driver Interface and Telemetry”.

### Desired Skills and Experience:

*Note: These are not essential (unless listed in **bold**) and those who receive roles will be offered training to compensate for any gaps.*

- **Proficiency in CAD, particularly Solidworks**
- Proficiency (or willingness to learn) FEA, particularly Abaqus
- Some experience in designing with composites
- Knowledge in race bike design useful
- Good communicator of ideas
- Willing team player
- Prior interest/experience with solar cars/CUER
- Flexible and able to work to tight deadlines