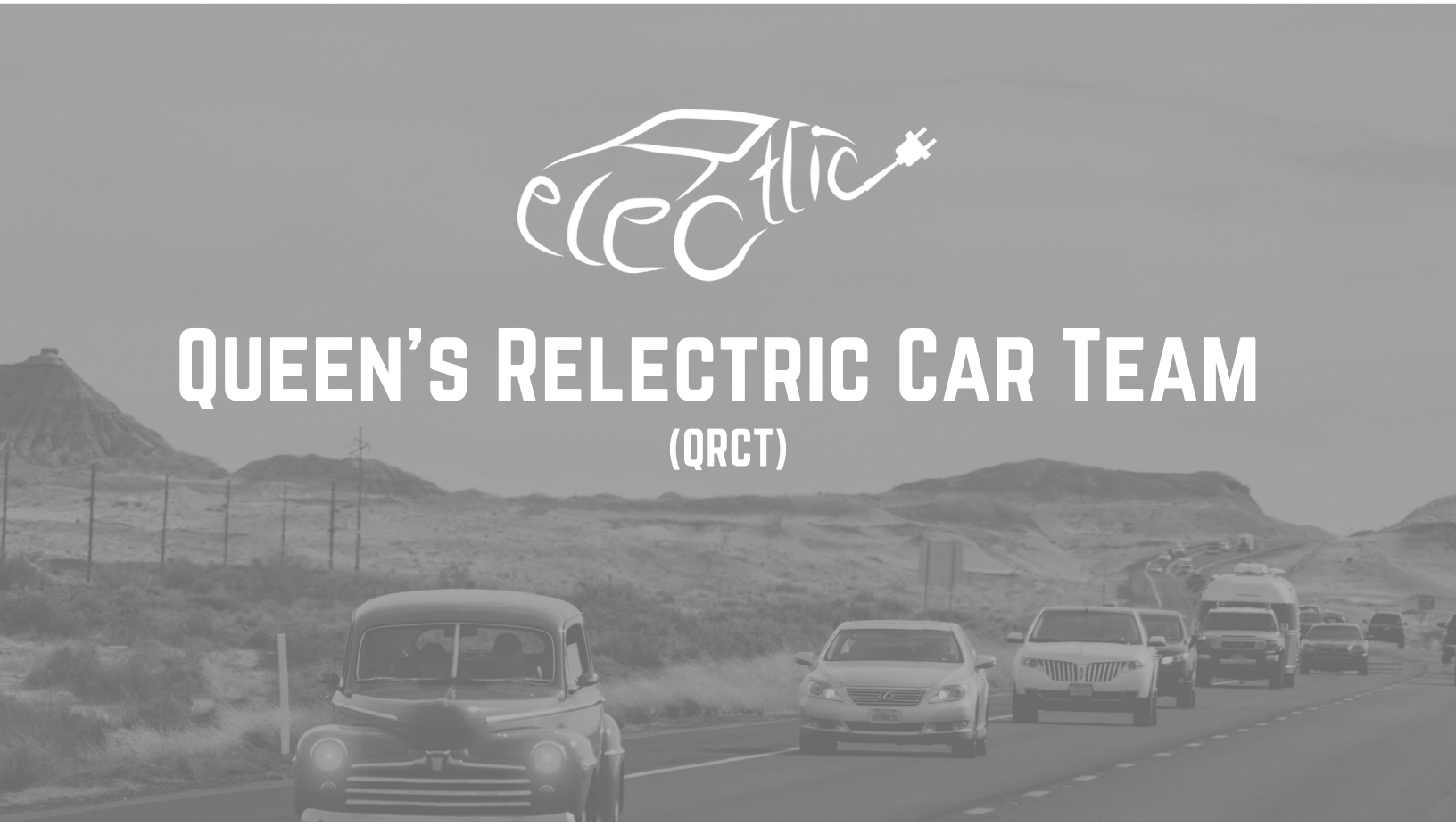

Queen's Relectric Car Team

(QRCT)

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Queen's UNIVERSITY

Who We Are

An electric vehicle design team focussed on providing undergraduate students with hands-on experiences working with and designing EV technology.

Our Mission

To reduce the waste generated by the global transition to electric vehicles.

Our Vision

Queen's Relectric aims to provide consumers with a streamlined approach to EV conversions.

50+ members

5 sub-teams

Why Relectric?

In just the short amount of time since we started the club, we have seen an immense amount of interest from students.

It is clearly a subject that many Queen's undergrads are passionate about, and we want to give them a team-oriented, inclusive group to put those interests to work!

Learning Opportunities

Team members will get hands on experience with electric vehicle technology, a subject that most universities have yet to incorporate into the curriculum.

Leadership Experience

As a student run club, members can apply for more responsibility within the team, no matter what year of study they are currently in.

Real World Impact

Our main long term goal is to re-engineer existing EV technology and become recognizable in this emerging field.

The Leadership Team

Team Lead - Josh Block

Mechanical Lead - Thavish Perrera

Battery Systems Lead - Affaf Amjad

Thermal Design Lead - Daniel Martin

Electronics & CAN bus Lead - Luke Ivan

Roadmap

Relectric at Queen's: A Brief History

FEB 2021
Relectric at Queen's is born with just 5 members.

MAR 2021
Relectric attracts attention from alumni donors.

APR 2021
General member recruitment brings in 30+ students.

SEP 2021
Ratified as a design club.

DEC 2021
Research projects completed by all members in Powertrain, Batteries, and Thermal sub-teams.

FEB 2022
Component selection and preliminary CAD completed.

MAR 2022
Additional member recruitment and lead hiring.

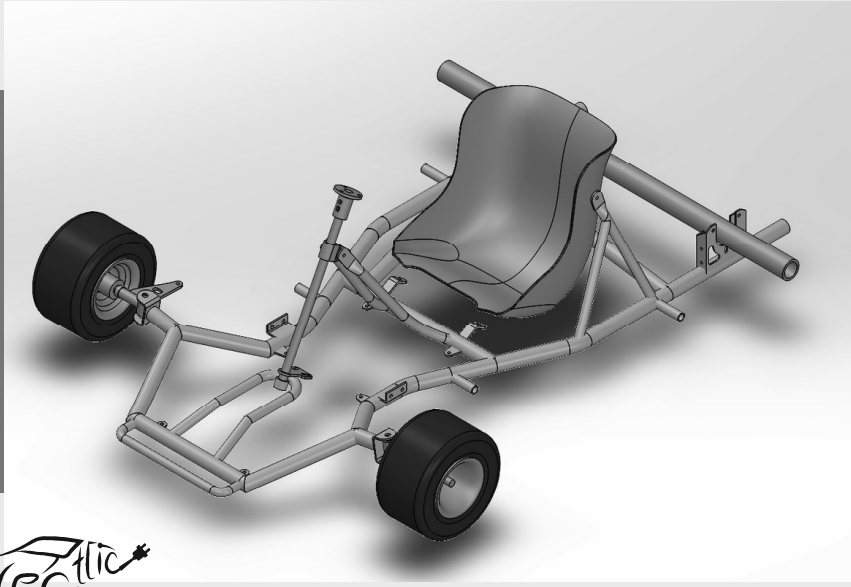
JUNE 2022
Ordered components and developed plan for current year.

AUG 2022
Received designated space in the ILC design bay.

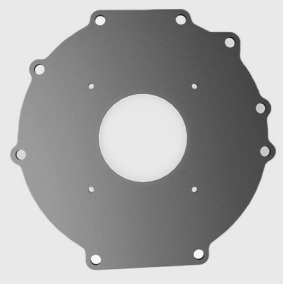
NOW
Additional member recruitment. Conduct weekly team meetings and workshops.

Current Project

Working with a scaled down version of the technology we will use on a full EV conversion!

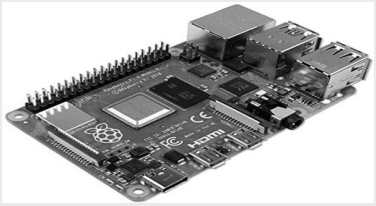


Sub-Teams



Mechanical

Battery Systems



Electronics & CAN bus

Thermal

Meetings & Workshops

- One or more workshops each week to provide learning opportunities focussed on different design/analysis topics.

- Weekly general team meetings on Sunday at 2 PM in the ILC

Software Learning Opportunities

Raspberry Pi

Altium

SOLIDWORKS

ARDUINO

Ansys

SOLIDWORKS FLOW SIMULATION

eleCtric

The Competition

We are currently working with the University of Calgary and the University of Central Florida to finalize the competition details.

Current Competition Format:

- Technical presentation
- Business style sales pitch presentation
- Vehicle demonstrations
- Industry based keynote speaker

It will be hosted in the first couple weeks of March with the venue still to be confirmed. Last year we had a virtual presentation event with both schools and over 80 attendees.

The Goal of the Competition

- Promote collaboration and ideas sharing
- Develop both technical and business presentation skills
- Drive innovation and goal setting
- Develop a team spirit within a competitive environment
- Gain exposure to industry based engineers
- Network with students across North America

2022-2023 SCHOOL YEAR

Technical Plans

Stage 1

Design and analyze current go kart components.

Stage 2

Manufacture custom components and begin wiring up computer/controller systems.

Stage 3

Implement assembly protocol and preliminary testing.

Stage 4

Shift to full-scale car conversion R&D.

Stage 5

Obtain a vehicle.

Stage 6

Begin hands on work with the vehicle, adapting initial designs to meet specs.

Team Improvements

- Created a clear and firm Relectric Code of Conduct for all members to sign
- Wrote rules into our Charter to promote the ongoing effort to improve EDI at Queen's
- All executive team members have or will be taking Queen's Positive Space Training
- Sent out an anonymous survey over the winter break (2021-22) and adapted team culture accordingly
- Another survey will be sent in December

Queen's Relectric Car Team (QRCT)

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