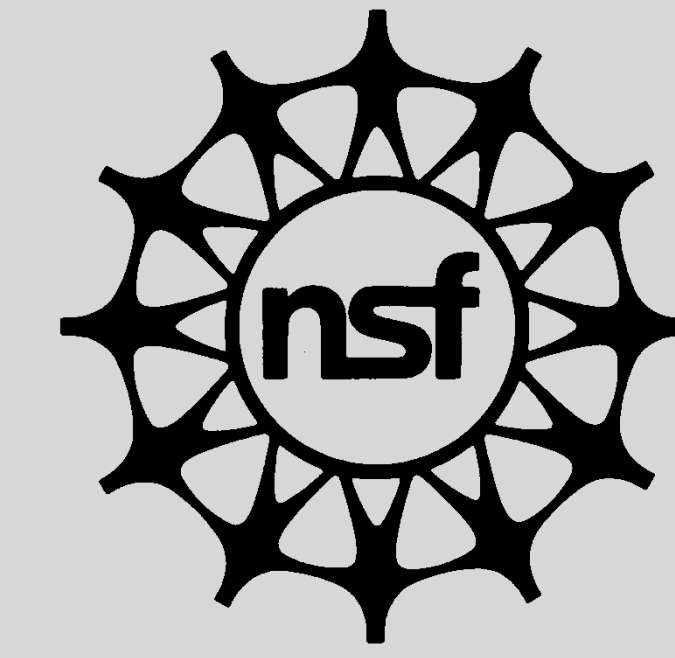
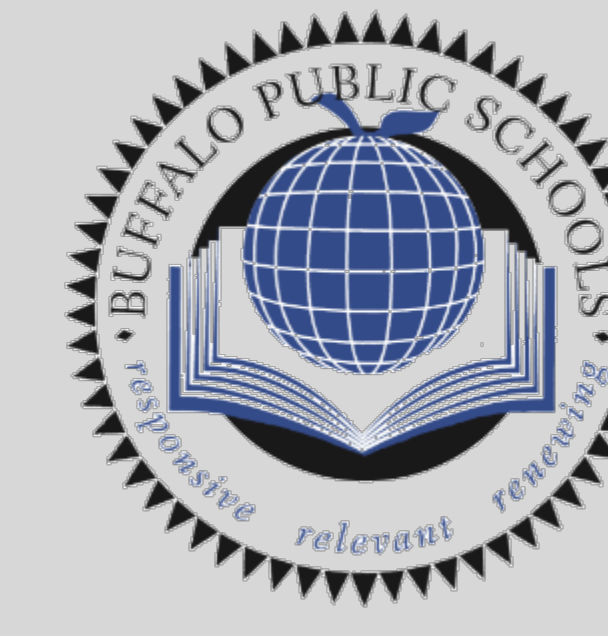


# The Science and Engineering of Radio Controlled Flight

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## School and School's Science Theme:

School: **Hutch Tech**

School Science Theme:

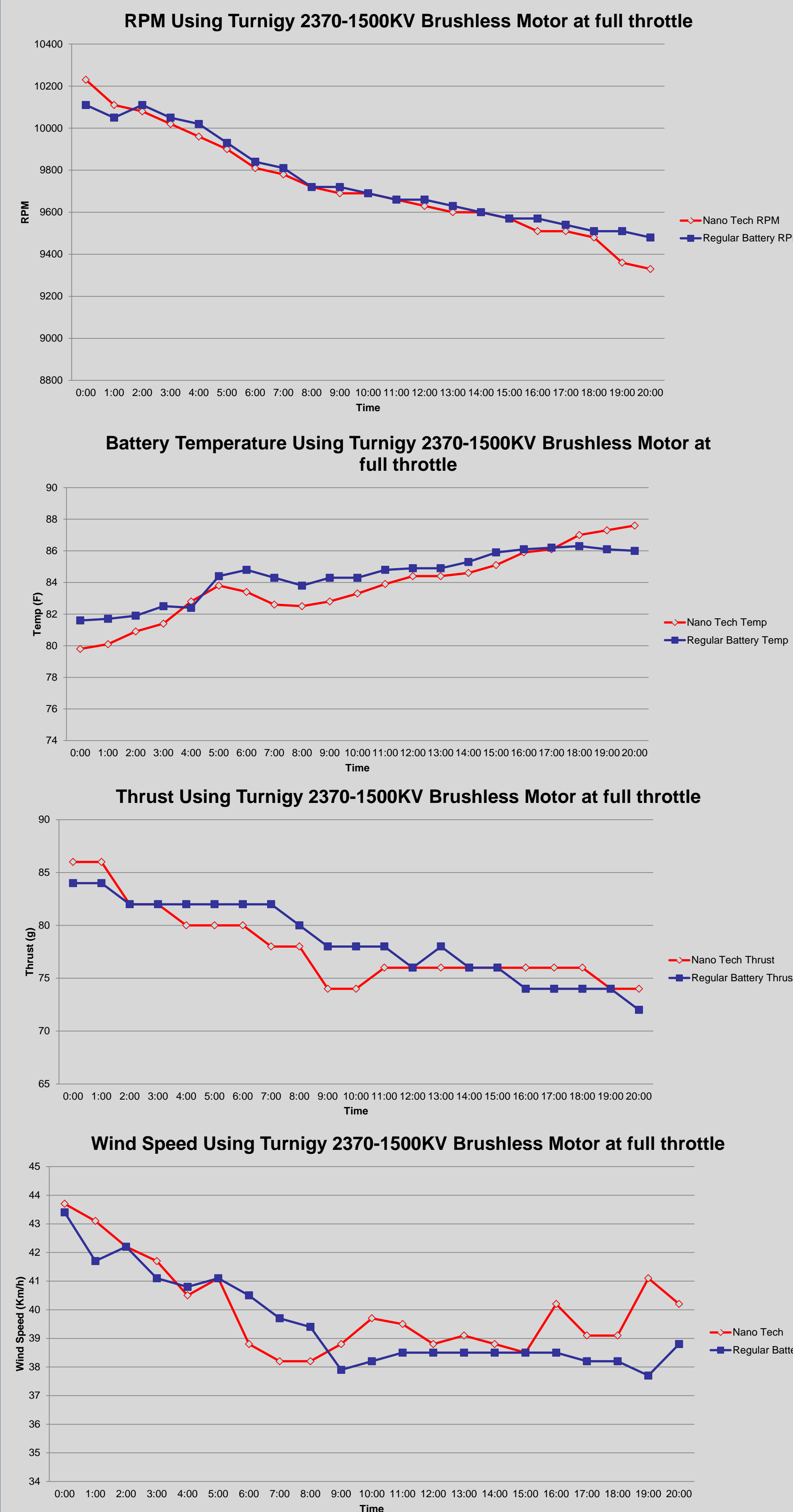
Improving the four engineering majors through interdisciplinary lessons.

Proposed Research

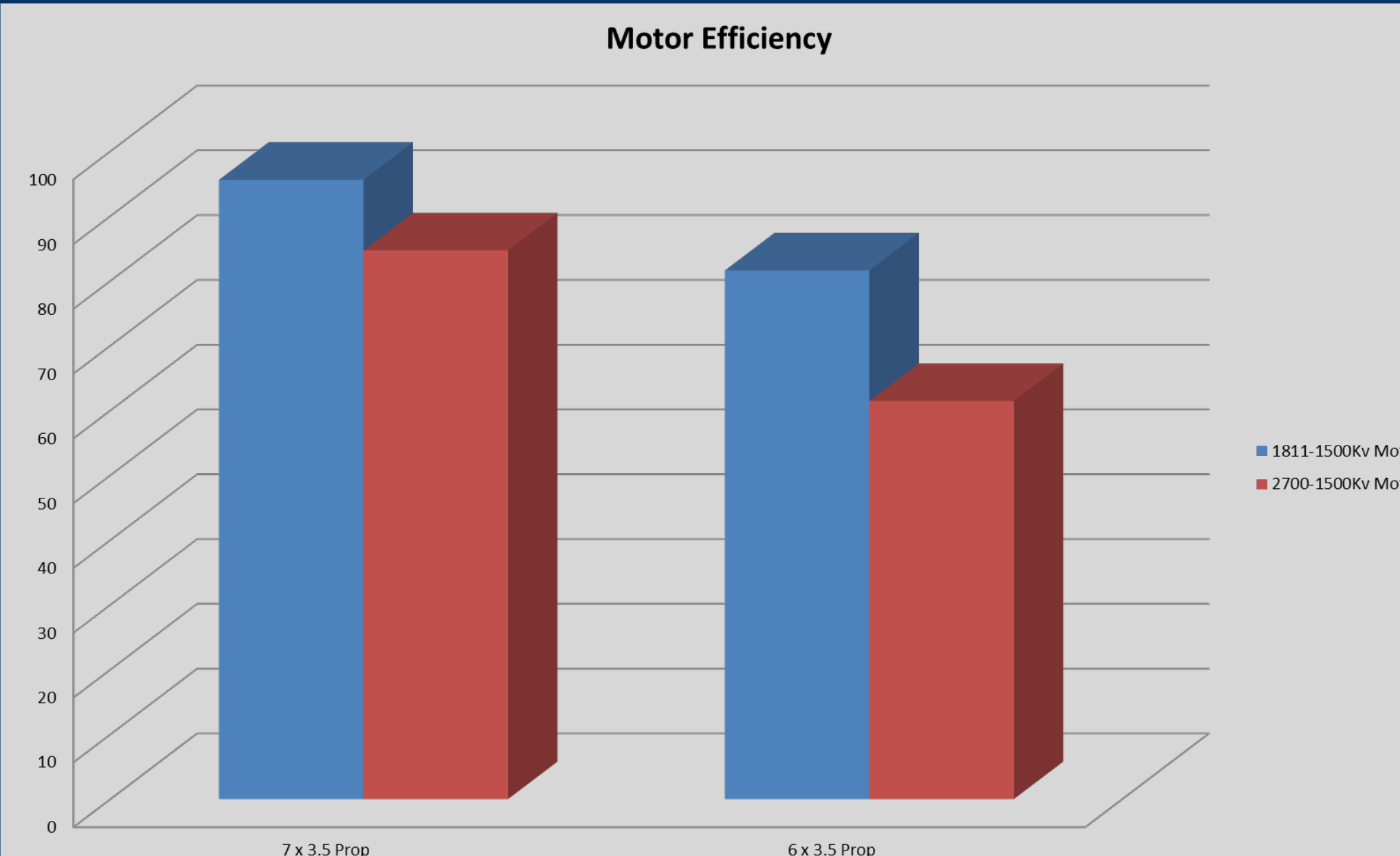
Concept/Experience or Coursework:

Our proposed research concept was to develop curriculum for students to apply knowledge of physics and Electrical Engineering in their Mechanical Engineering classroom to design and manufacture their own magnetically levitating cars and Radio Controlled (RC) airplanes. In these lessons, students will learn how to explore complex problems with perspectives from many disciplines. For example, when we teach them how to design and manufacture an RC airplane, they will have to explore the physics principals of flight, the engineering principles of design and the electrical engineering principals for designing the controls for the RC aircraft. This research is aligned to the Information and Computing Technology strategic strength of the UB 2020 strategic plan.

## Thrust Stand Results

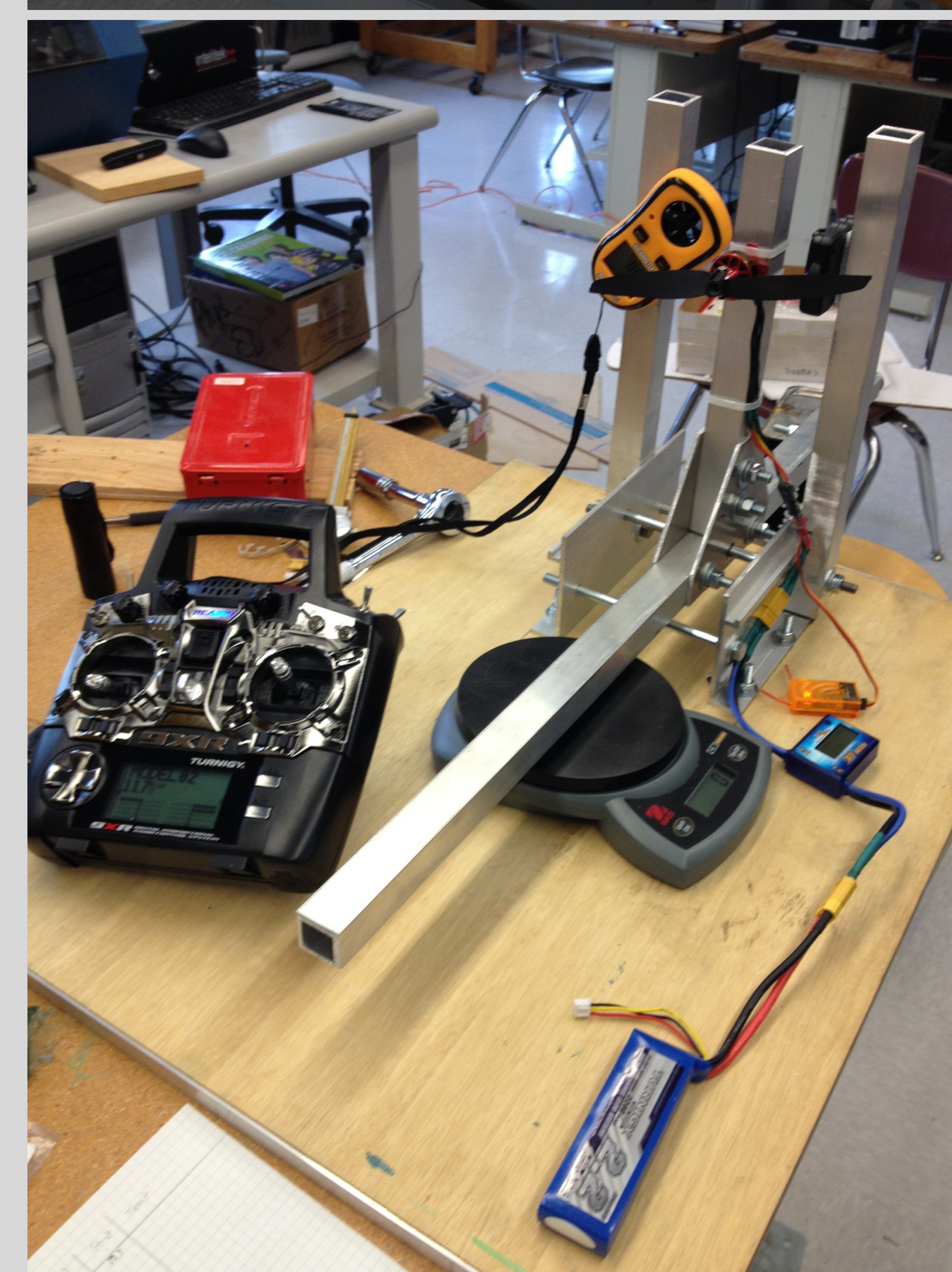


## Torque Stand Results



## Testing Devices

In order to conduct our research, we had to first construct some testing apparatus in order to carry out the tests that we wanted to perform. We Built a Thrust tester (bottom) and a torque tester (top).



## Plane Construction



During our research, we decided to make templates for a 32" Yak 55 RC Airplane so that it would be very easy for students to cut out and build their own planes. After making the templates, we built an aircraft. We had to do a lot of research on the construction of the aircraft such as how to attach the control surfaces together, what types of adhesives to use, how the control surfaces mate together and so on. Our faculty mentor, Dr. John Cerne was a tremendous help in this process bring a wealth of RC Aircraft knowledge to our team.