

CURRENT EVENTS

Project updates, STEM events, and Harley-Davidson visit

Hello Buckeye Current friends, family, alumni, and sponsors! The team has been hard at work during this first month of the Spring semester. The battery pack build is in full swing along with other RW-3x3 projects including IDU backpack modifications, cooling system refinements, and the fabrication of our bellypan.

January also brought our official acceptance as a competitor in the 96th running of Pikes Peak International Hill Climb. The team will return to Colorado in June for the 4th consecutive year to take on America's Mountain with rider Robert Barber of the UK.

As for RW-4, the team is continuing its split bike development process by narrowing down the final frame design of our future bike, which you can read more in depth about in the Technical Highlight section on the next page.

The team welcomed in the new year by taking part in an A2sw STEM Education event for elementary level kids at the Columbus Center of Science and Industry on January 6th. There, team members Luke Chen, Chris Liu, and Brody Ringler presented our bike and fielded questions from the young attendees. "It's always great to see kids get involved in STEM events and be fascinated by projects like ours." Liu said. "We strive to build the

best bike possible and if we can inspire the youth along the way, that's just an added benefit."

Not long after the STEM event twelve team members traveled to Milwaukee, WI to visit one of our sponsors, Harley-Davidson Motor Company, for the 3rd consecutive year. The trip was mutually beneficial as the team started their day with a tour of their facilities, followed by exclusive presentations, and networking opportunities

with some of the most knowledgeable minds in the motorcycle industry. In return, we then presented an in-depth review of the team's accomplishments from the past year and our ongoing and future projects. "The team is venturing into an area of design that we haven't previously explored," Team member

Aaronn Sergent said, "The wealth of knowledge pooled at Harley is only possible with the 100+ years of experience they have designing motorcycles. The opportunity to pitch our ideas and be given feedback is invaluable." The team rounded out their day in Milwaukee with a behind the scenes tour of the Harley Davidson Museum.

As the team looks on into February, the timeline for getting a functioning vehicle creeps closer and closer. We intend to be testing the bike with its new pack in early May and until then it's all hands on deck.



RW-4 Removable Headstock Design

Our RW-4 design standards require modularity between the main frame, front steering/suspension system, and rear suspension system. This allows us to design a custom frame termed 'EMP' or expandable modular platform. The disconnection between the steering system and main frame allows the vehicle to adapt to different competition requirements without requiring a frame redesign.



Technical Highlight

Expandable Modular Platform, EMP for short, is the term for the custom frame design that the team is developing. Moving away from a more organic ICE structure, the hope is to increase the packing efficiency of our electric powertrain with a BEV specific structure. "This modular platform can be expanded and modified in the future to be more applicable to specific competitions without requiring an entire structural redesign," Project Manager Brody Ringler said.

This frame project has multiple team members developing unique designs within the broad BEV category in a friendly-competition manner. Two of these members working on designs are Project Captain Luke Chen and Team Member Quincey Patterson. "Certainly everyone would like to have their design be on the bike," Patterson said. "Especially since it's a critical component structurally and aesthetically. In the end though, whichever design is chosen we'll all pull together to refine it and make it safe and effective."

The teams inspiration is often drawn from other electric bikes. "I showed similar design concepts to the Mission R bike by using parallel tube side rails and integrate a more centered mounted motor," Chen said.

Over the next couple of months these design concepts will transition to simulated structural validation and then to initial prototyping by this summer.



RW-3 Battery Pack Constrained by ICE Structure



RW-4 Frame Design Concept: Luke Chen

Luke Chen



Hometown: Cleveland, Ohio

Year: Junior

Major: Electrical Engineering

Favorite Hobby: Video games

Projects: "In the past, I've helped out here and there with in-between projects doing a lot of supplemental hands on work. I am currently working on a suspension & handling project and the main frame design for our future development project of Rw-4."

Favorite Part of Team: "Winning the Electric Motorcycle class this past summer at Pikes Peak International Hill Climb was definitely one of the best feelings."

Favorite Part of Ohio State: "I really like the football games, there's always a ton of energy in the stadium and it's contagious."



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