Team Updates

Business Team

The Business Team has been busy keeping up with the financial demands of the team. Due to the recent tire purchase, the team’s funds are running low. If you would like to donate to the team, or know someone who would be interested in donating, please see our website for the ISU Foundation page.

From May 16th through the 20th, the team will be traveling around the state of Iowa for the SunRun! During SunRun, the team travels to schools, sponsors, and community events to support STEM education, thank our generous donors, and educate people about the future of transportation. In order for this event to take place, the team has decided to raise funds through FundISU. FundISU is similar to Kickstarter but is exclusively for Iowa State University organizations. This page will be up and running soon, so be sure to check it out for information about SunRun as well as to sponsor the team!

Systems Team

The Systems Team has been wrapping up their work on Phaeton and has begun investing more time on P14. Recently, the Systems Team also got a chance to view the assembly of the car in METaL, the 3-sided virtual reality facility in Black Engineering. This experience helped the team visualize what it will be like to interact with our new vehicle. As a result, the team has been working on some design changes that will help with passenger comfort, ease of access, aesthetics, and functionality of the vehicle.
Mechanical Team
The Mechanical Team is nearly completed with assembling Phaeton to compete in the American Solar Challenge this summer. Active fairings were completed and installed, wheel covers were fabricated, the battery box was assembled (with battery/board installation beginning soon), and a carbon fiber steering column was installed to replace the previous one, which was made of steel.

The team also continues to make substantial progress on P14. The aerodynamics team has finalized the design for the exterior shape of the car and the process of mold construction has begun. The team would like to thank Gorilla Glue for their generous donation which allows us to assemble our molds.

With the goal of P14 being 100% street legal, the dynamics team is coordinating with the Department of Transportation to ensure the steering and suspension components will be up to par. The R&D group is actively training new members how to complete carbon fiber layups in preparation for the team’s trip to Delta Airlines to cure all composite parts of P14, which will happen very early in the Fall 2016 semester.

Electrical Team
The Electrical Team has finished assembling the battery modules that will be used in Phaeton during the American Solar Challenge this summer. This would not have been possible without the help of Interstate Batteries, who performed all of the necessary welding.

Additionally, the team has finished wiring the solar array. Moving forward, the team will be assembling the battery pack, verifying that all boards are functioning properly, and making sure we have spare boards for the race.
Phaeton Unveil Event

Before the team heads to the race this summer, the new and improved Phaeton will be revealed in a public unveiling event on Thursday, April 21st at noon.

The event will be held on the south side of Iowa State’s central campus. Everyone is invited to stop by and see the new Phaeton, enjoy some refreshments, and possibly win some PrISUm prizes!

This is a chance for the community, sponsors, and anyone who is interested in the future of transportation to come out and see the car, ask the team questions, and learn how to get involved with the team.

We look forward to introducing everyone to Phaeton 2.0!

Mark your calendar for Thursday, April 21st, 12 PM and keep up to date with all Team PrISUm events on social media!
Spring Training

Ever wonder how Team PrISUm makes sure the car is ready for race day? The Iowa State solar car team conducts test drives all around Ames throughout the year, but for their Spring Race Training, they drive around the parking lot near Jack Trice Stadium.

During the Spring Race Training, they set up a mock pit stop and run through race scenarios, race tasks, battery impound and road training. Matt Goode, PrISUm's project director, said, “The goal is to have every member of the race crew do every task.”

Some of these tasks include changing front tires, installing and removing the top shell, changing the auxiliary battery pack, swapping drivers and jacking the car. “After all the members know each job, they specialize in one. The specialization allows for fast pit stops,” said Goode.

All the hard work PrISUm puts into the spring race training has definitely paid off, the team currently is the fastest in the United States for pit stops. The test drives are extremely beneficial to the drivers. Since the car is 100 percent street legal, the drivers practice stop lights, passing, turning, basic solar car driving and anything else to get them comfortable with the car on actual roads.

Conducting the different test drives prepares the team for race day, but also makes sure the car is prepared. Lio Bardina, the aerodynamics manager and a past driver, said, “They allow us to see what on our vehicles needs improvement before the races.” The team would rather something go wrong during a test drive than during a race, so the test drives are the key to success.

Anyone and everyone is welcome to come watch the team prepare for race days and “experience the future of transportation,” as Bardina said. The date for this year’s Spring Race Training is Sunday, April 24th.
Family Legacy

In the late 1980s, Dave Swift attended the first-ever meeting for Team PrISUm. Dave was the Design Manager for his team and oversaw the mechanical, electrical, solar, logistics, telemetry, and strategy teams. Dave also was in charge of the power electronics group and designed the power trackers for the first Iowa State solar car.

The legacy of working on these solar cars for Team PrISUm continues in his family. Dave’s son, Matt Swift, is currently working as the Research & Development/Technology Manager. Matt enjoys this role because he gets to look into all the new ideas the group comes up with to improve the car and figure out if the ideas will work. Testing is one way to find out if the new ideas are practical. Matt said they have tested “casting suspension components, effects on solar cell efficiency, and new carbon fiber forming methods.”

Since Dave’s time on the team, there have been many changes in technology. Today’s model is much more efficient and lightweight. This is mainly due to improvements in solar cells and battery life. Also, the body of the car is lighter today because the team now uses a carbon fiber-based material which is much stronger and lighter than the material used 30 years ago. Another change is the motor used in the solar car. The first motor was a UNIQ motor, which was about 70 percent efficient, as compared to the current NGM motor which is 80 to 85 percent efficient.

Matt says these changes are important because “they make the car lighter and more energy efficient, meaning it can drive longer, farther and faster.” He said the changes make the car easier to use and more dependable. He also said that improvements to the solar panels have been one of the most important advancements in technology for the cars. This change has allowed the car to have better power output and run more efficiently.

Matt and Dave have both enjoyed working on Team PrISUm. One of the things that Matt looks forward to most is seeing the finished car driving down the road. After he and his team members have worked endless hours and put in a great amount of effort, it is very rewarding for him to see the finished product.

The Swifts have started a legacy at Team PrISUm that was built around a passion for technology. Matt and Dave both have had a strong desire to innovate their team’s solar cars to take them to the next level. They are able to share their experiences together about being able to build a car from scratch. Matt said, “Being able to see the complete car driving down the road, given the amount of hours and effort that went into it, is pretty cool.”
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