Cruiser Class

Team PrISUm has its sights set high. The team plans to design and build a cruiser class vehicle to compete in the World Solar Challenge in 2017.

The new cruiser will take about two years to complete: one year to design and the last year to build. The team plans on designing four aerodynamic shells for the new cruiser car. Each potential design has a unique quality to it. The plan is to design four solid options, and then decide as a team on the best one. Cruiser cars are a new classification of solar car racing that focuses more on making a practical design that can be viewed as a “real car” rather than the outright speed and efficiency of the challenger class.

The cruiser class vehicle seats a driver and passenger in a more traditional upright position as opposed to the challenger cars. Challenger cars only have a driver and it positions them in a lower, more racing style seat. Since the cruiser car has this focus on practicality, the competition is a scored event rather than an outright race. The making of this new cruiser car will be no simple task.

Garret Coleman, a Senior in Aerospace Engineering, and the Systems Director within Team PrISUm, states, “Our previous two cars have cost approximately $350,000. Since the new cruiser car is more complex and will have more components, we are estimating its cost to be around $500,000.”

Not only is the price different on the new cruiser but the entire design, which will take a year to create, is more complex. “The main difference between our new cruiser car and Phaeton is that they are built for completely different purposes,” says Coleman. Phaeton is a challenger class car, which won Team PrISUm first place at the Circuit of the Americas in Austin, Texas. Phaeton is not a typical car one would see out on the road; its low bucket seats are not the traditional seats, which would make it uncomfortable for travel.

The new cruiser will look like a typical car you see on the road today; it will have at least two seats, cup holders, a ventilation system, glove box and much more.

One of the goals for the new cruiser is the option to take it to supporters and sponsors across Iowa. “Our aim is to design a unique, diverse car, with a spacious interior, that can one day take President Leath or one of our sponsors on a cruise around town,” says Coleman.

The main purpose for building the new cruiser is in two years to ship it down to Australia to compete in the World Solar Challenge, “We are planning to take the new cruiser that will be built over the next year and a half to Australia in 2017,” says Coleman. The funds needed for this trip range from $50,000- $150,000. This amount can fluctuate due to how the team decides to ship the car. This race will be a week long but the team will be there for three to four weeks to prepare. However, the car can be shipped up to 60 days prior to the race. The team has been fundraising for this trip but will start a new program to aggressively fundraise.

“For many years, PrISUm has competed at the national level with the American Solar Challenge and the Formula Sun Grand Prix events here in the United States. The World Solar Challenge is the premier event for solar car racing. Doing well at the World Solar Challenge is a way to bring credibility and recognition to our organization, Iowa State, the central Iowa region, as well as our sponsors and partners,” said Ewan Shortess, member of Team PrISUm.

“Above all, it would mean international recognition for the team, the university, the state of Iowa, and our sponsors,” says Outreach Director Jace Hegg.

For many members, this trip means more than just another race. Since many of its members have been a part of this team for the duration of their college career, this trip serves as a bonding experience for all. “The recognition, pride, and sense of accomplishment is something that will be with us for the rest of our lives,” Shortess said. Since winning with Phaeton in 2015, the new cruiser will hopefully give Team PrISUm another first place finish in 2017 while in Australia.
Design Review

On Sunday, November 8th, 2015, Team PrISUm will be holding a design review for our 2017 World Solar Challenge cruiser-type vehicle. On behalf of the entire team, PrISUm would like to invite you and your colleges to join. Either over Google Hangouts or in person, this meeting will discuss the 4 different cruiser-type vehicles PrISUm has designed. After an overview of each, a final verdict will be reached as to which car PrISUm will construct and race.

*Please RSVP to solarcar@PrISUm.org*

**Sunday, November 8th**

12:00pm—5:15pm

2055 Hoover Hall, Ames, IA
Director Spotlight

Daniel is the Mechanical Director for Team PrISUm and this is his fourth year on the team. Most of Daniel’s Mechanical Director position involves advising. He teaches the team everything from how to design the car to how to manufacture the car. Daniel manages all five of the sub teams under the mechanical umbrella: suspension design, aerodynamics, frame design, manufacturing, and research and development. “I also take on some of the work myself, focusing on some of the more challenging design components,” said Daniel Goldman, Senior in Aerospace Engineering. Daniel is currently focusing on the new wheel design. The team needs to switch to tires that are treaded, like a normal car tire, instead of the current racing slicks, but no manufacturers currently make treaded tires for the current wheel size. Daniel is also working on a hands-on instruction manual for making carbon fiber composite layups, which will teach people how exactly the car was built. Daniel’s favorite part about being on Team PrISUm is watching the car he helped build drive around the track. He added that being at the race is extremely stressful and the lack of sleep takes its toll, but it’s a great feeling to see the finished product.

Daniel is excited to see the team head to Australia for the World Solar Challenge in 2017. He knows it’s a big step for the team and for the university as a whole. Daniel said it will be much different competition from what the team is used to, but he believes they will be able to perform well on this new playing field.

In his free time, Daniel likes to play music, specifically on his guitar.

New Member Spotlight

Ryan Perera is a Sophomore in Aerospace Engineering and a recent addition to Team PrISUm, but has already shown great potential. In his short time of having a role on the business team of PrISUm, he has made the business team proud by revamping the corporate sponsorship packet. Along with new ideas like the sponsorship packet revamp, Perera looks forward to what is to come and brings an overall attitude of innovation and excitement to the team.

Perera likes the fact that the team is expanding quickly and that he could join along with many others this year.

Perera says his favorite aspect about being on Team PrISUm is that it is so hands on. He likes that they build the whole car from the ground up. It is a huge learning experience because all of the work is done in their workshop, an experience he is already thankful for.

By being part of the business team, Perera is able to have the experience of getting in touch with sponsors and keeping the conversation going after those doors are opened. Perera says if there was one thing he wanted people to know was that “We’re on the way up, I don’t know where we’ll end up but we’re going to be doing better and better.”
The stories in this month’s Sundial were written by PR 321, taught by Erin Wilgenbusch
Adopt-a-Program

Adopt-a-Cell
By donating $30, you can adopt a solar cell! There will be nearly 400 solar cells on the car, and this is an inexpensive way to become part of our team. When you adopt a cell, we send you a free team shirt and a certificate which includes the identification of your cell or cells.

Adopt-a-Tire
For a $100 donation, you can adopt a tire! Many tires are used over the lifetime of a car. When you adopt a tire, you will receive a certificate and two free team shirts.

Adopt-a-Battery
By contributing $250, you can help us purchase a module in our battery pack. We will have over 200 lithium ion batteries in our car, which are grouped into modules. For adopting a battery, you will receive a certificate and your choice of two free polo shirts or four free team shirts.

Many companies match employee donations to 501(c)(3) nonprofit organizations like Team PrISUm. Please check with your employer. As a team PrISUm supporter, your name will be listed on our website and in our Sundial!

To join our Adopt-a-Program, please email business@prisum.org with your chosen donation amount and shirt size(s).

If you donate online through the ISU Foundation, please email business@prisum.org with your donation amount and selected shirt size(s).