Toyota Sponsors NASC 2008

Thanks to Toyota, NASC 2008 will take place once again in the United States and Canada! Toyota responded to NASC’s calls for help late this summer, and our team could not be more thankful!

Over the past year, NASC organizers have worked tirelessly to find sponsorship for the race, and we urged our supporters to write letters and seek support as well. The tremendous response we received was overwhelming, and it is clear this event would not have continued to exist without the support of so many race fans.

With rule changes and a three-year hiatus from solar racing, this race could very well prove to be one of the most exciting ever. While most teams are strapped for time due to the late release of final regulations, we have all had a little extra time to consider our options.

Design challenges breed change, and so this race might surprise a few fans. Cars will be differently shaped to accommodate new driver seating rules. In addition, many electrical and array-related rules have changed the way we power our cars.

The race route for the North American Solar Challenge is shown below. The route is similar, but not identical to NASC 2005. Up-to-date information on the race and the teams can be found at:

www.americansolarchallenge.org

You’ll notice the website lists our car name as P9. Pretty boring! Our naming contest is up on our website, and there is also a form enclosed in this sundial for entries! Help us name PrISUm 9!
Welcome to year 3 of Project 9 of the Iowa State University Solar Car Team! Over the summer, team member Jared Leonard designed a new website for the team, so our information is now easier to access, and it’s easier for us to get updates to all of you: our loyal supporters! Please take a moment to check it out! www.prisum.org

With the confirmation of NASC 2008, the Team has started to move forward with more determination than ever. With molds almost finished and designs being finalized, the team will soon be traveling all over the Midwest to fulfill our machining, lay-up, and fabrication needs.

As always we are being met with tremendous support from our sponsors, the surrounding community, and Iowa State. It’s refreshing to know that you all want this as much as we do!

The team has made some aggressive goals to be driving P9 (still unnamed) by April 1st. We’ll be working overtime for the next 5 months!! With that, PrISUm 9 will be completed in time for the race in summer 2008, and it needs a name! Please take a look at the details of our naming contest located on page 4 of the Sundial.

Sarah Kelly
Project Director

Mechanical Update

The start of the new school year marked the beginning of a busy schedule for the mechanical team. Last spring we were able to finalize the design for the frame and body for the next car and over the summer I designed the braking system.

Now we are working on the molds for the shell of the car and finishing the design work. Design meetings take place once a week to get new members active in designing the rest of the car. The suspension design will be finalized soon and a frame will be built within the next month! We have been running into some problems though.

With the new design requirements it is taking longer than expected to build the molds. We have been working on them for about two months and require about two more weeks of work to finish them. Worse, we have not been able to secure a company to machine the molds. We are currently researching alternative ways to build a light shell for our car.

After the molds are completed we would get them machined out in the desired shape of the body. Then the molds are sprayed with Duratec and sanded to create a nice smooth, firm surface to lay up carbon fiber on. There is about a two week wait between the molds getting machined out and the laying up of carbon fiber. We have to apply multiple layers of Duratec and then sand it down really smooth to make the lay up process easier. After that we take the molds up to Northwest Airlines to use their autoclave to lay up the carbon fiber. The body of the car consists of carbon fiber along with a nomex honeycomb core, for strength and rigidity.

The plan for the rest of the semester is quite busy. We are hoping to have a rolling chassis and the body completed by New Years. In order to do this we have to finish designing the rest of the car and getting all the parts ordered/made so we can assem...
With NASC 2008 less than one year away, the electrical team is hard at work designing and building the electrical system for the car. Last year, the team designed the layout of the array and placed an order with SunCat Solar for the cells and encapsulation services. The new car will have over 700 cells—over one hundred more than our previous car, Fusion. Due in part to our large array, we expect this to be one of our most competitive cars ever—but we need your help! Only 400 of the cells have been sponsored through our Adopt-a-Cell program. You can help Team PrISUm cover the cost of the array by adopting a cell using the flier included in this newsletter.

In addition to the array, the electrical team is also making good progress on all of the custom electronics for the car. All of the high-voltage modules that will be housed in the battery pack have been designed and are on order. The only critical component that we have not yet acquired is the batteries. We have chosen the make and model of battery that we will use in the car, but will not order them until this winter.

Lithium ion batteries slowly lose capacity over time, so we can maximize our pack’s capacity by waiting as long as possible to order them. Like the array, the batteries represent a large cash purchase for the team; you can help us offset the cost of the pack through our Adopt-a-Battery program.

This fall, the team has been focusing heavily on recruiting new members. Several new members have joined the electrical team, and have already shown great enthusiasm for the project. Senior members have been busy bringing the new recruits up to speed on the car and the electronics in it. The new members have even taken over some design work for the new car in order to get hands-on involvement with the team.

Several electrical team members have also started developing a race strategy for NASC. We will be placing a solar array on the roof of our garage to collect information on its performance under various weather conditions and at various times of the day. The team is also conducting a series of test runs with Fusion in which we record speed and power data. With this information, we can model a solar car’s operating characteristics to optimize our driving throughout the race and help us achieve a first-place finish!

All in all, the team is on track to have one of our best-performing cars ever! Be sure to check out our website at www.prism.org for additional updates on the team’s progress.

Scott Elliott
Director of Electrical Systems
Outreach Update

Congratulations on a successful SunRun 2007! This past May, the team showcased our eighth car, Fusion, to several schools and communities all across Iowa promoting renewable energy. This year’s route included stops from Le Mars all the way to Keokuk! A big thank you to our host schools and communities, the team was well received with interested students and great questions!

After a long summer, Team PrISUm’s outreach follows the SunRun momentum into a new fall semester! The team has been busy with on and off campus outreach events, most recently participating at the University of Iowa Energy Expo and a big outreach event in Oskaloosa, Iowa.

In Oskaloosa, we visited students at the Middle and High School and our sponsors at Musco Sports Lighting! The team was greeted with students who were amazed that our eighth car, Fusion, fully works and drives with other cars on the highway! After the school visit, a great reception was held at Musco Lighting, where we were able to showcase the technologies and success of Fusion to the employees of Musco and the students of William Penn University.

At the end of the day, the team’s visit to Oskaloosa was a huge success, so a big thanks to Oskaloosa School District and Musco Sports Lighting for your hospitality!

Looking forward, we will be participating in the Remmele Engineering open house in Big Lake, MN. Remmele has historically machined the team’s molds at no cost, and their open house gives the community a chance to see what they do, including helping solar car teams!

Our website includes a schedule of our upcoming events, so continue to check for updates on our outreach page at www.prism.org.

If you would like Team PrISUm to visit your school or community please contact us at solarcar@prisum.org.

Hilda Garma
Director of Outreach
NAME TEAM PRISUM’S NEXT CAR!!!!

Got an idea for the name of our car?

Team PrISUm is now taking ideas for the name of our ninth car. The team will vote on the top names shortly before we unveil our newest creation! The winner will get two Team PrISUm t-shirts and their name on our race trailer. Submit your idea now at prism.org or by mail to:

Team PrISUm: Naming Contest
110 Marston Hall
Ames, IA 50011-2151

Contact Us!

Questions or comments? Suggestions or concerns? Feel free to contact us!

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Fundraising Update

Even though we have only just returned to school, work on the car and fundraising has never stopped. I’m delighted to inform you that over the summer up to now we have secured several sponsorships of cash and in-kind products. These along with our adopt-a-program have resulted in real fundraising progress. However we need to constantly be striving for more support in order to see that our new car and team has access to all of the resources that can help us win.

We were thrilled that Garmin donated three GPS units to the team, one unit for each of our vehicles we will use on the race and SunRun. They were a 7500 StreetPilot for support, a 396 for chase and a nuvi 250 for our lead vehicle. These GPS units will not only save time and simplify traveling with the car; they will free a team member from planning out a route, and allow them to do something more productive. We are especially enthusiastic about the unit donated for chase, the 396, is capable of receiving real-time XM weather data such as current cloud cover and radar along our route in addition to forecasted information that will allow us to strategize our power usage for the car on the race.

Once again, Boeing aircraft made handsome donation to Team PrISUm. The gift was in the form of 6 rolls of carbon fiber to be used for the shell of P9. This donation was worth over $40,000. To show our appreciation, and thank Boeing for their generous support of our team, this summer we made a trip to St. Louis and gave them a gift of our own, a beautiful, hand made, carbon fiber 1:6 scale copy of PrISUm Fusion. I found it ironic that we gave them a gift made with their original gift.

The wonderful folks at Allsteel also made another fabulous in-kind donation worth several thousand dollars. This time we snagged tables, lateral file cabinets and 6 of their extremely comfortable Re- late office chairs from them. This donation coincided perfectly with a new donation from the dept. of mechanical engineering of computers for the team.

These were just of few of the many sponsorships and donations we received. We are extremely grateful to all of our sponsors and donors. We could not do without them. Despite all of the progress we have made we still have a long way to go, and are always looking for more help. If you or your business or employer, are interested in sponsoring the team or making a donation please let us know. Our contact information is included in the back of this newsletter along with our Adopt-a program flyer. We still have hundreds of cells that will be on the new car that are yet to be adopted. Please consider contributing to our team and thanks for your continued support.

Luke Martz
Director of Fundraising

Team members present the car at Musco Sports Lighting in Muscatine, IA during SunRun 2007.

For more information on Team PrISUm, or if you have received this publication in error, Please contact us at (515) 294-0899. You can also e-mail solarcar@iastate.edu. And please feel free to check for updates on our progress on our website at www.prisum.org
Team PrISUm would like to thank all of the sponsors of PrISUm 9

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- Coastal Enterprises
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- Cushion Seats, Inc

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- City of Ames Electric

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- Forth Dodge Machine and Supply
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**Adopt A Battery (cont’d)**
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- Eagle Window and Door
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**Adopt A Cell**
- Paula Bridwell-Vallone and Joseph Vallone
- Brody Construction
- Elisabeth and John Thene

**Adopt A Cell (cont’d)**
- Howard and Ann Raffety - Grinnell
- Middle School 6th Grade
- Norma Buss
- Carlton Peterson
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