The Northwestern University Solar Car Team

Overview

The Northwestern University Solar Car Team is an undergraduate student group dedicated to learning, and to educating others. The education we both give and receive is quite unconventional, however. We have internal education, which is very practical and where most things are learned by doing and we operate in a very hands-on environment. Because of the turnover of students every year to graduation, and the recruitment of new freshmen, we’re constantly holding education sessions where our upperclassmen teach new members the basics of mechanical and electrical engineering, marketing and fundraising, management and logistical planning, and overall business-like conduct. Through our education and design processes, we promote innovation and creativity, and give students an environment unlike anywhere else on campus where they can use their imagination paired with their engineering skills to design the most efficient car possible.

Externally, NU Solar is dedicated to educating the public and demonstrating the potential that solar and alternative energies have in today’s world. In fact, the entire purpose of our car and competition is to show the world that it is possible to travel thousands of miles without a single drop of gasoline – all using just the power of the sun. We take our car to dozens of outreach events every year where we show the public what our team is all about and answer any questions they have. We explain the basics of alternative energy (solar, wind, hydro-power, geothermal, etc.) and just how our car is able to drive so far on just solar power.

2010 ASC

We competed in the 2010 American Solar Challenge (ASC) last year due in no small part to the funding provided by ISEN. The competition lasted from June 12 to June 27. June 12 to June 15 was time designated for scrutineering, which is when the race officials inspect every car thoroughly to ensure safety during the race. We were pleased to have only minor issues in passing scrutineering. The American Solar Challenge followed immediately afterwards, beginning in Tulsa, Oklahoma and ending in Naperville Illinois. The entire race took place on secondary highways, in particular on historic route 66. In the end, we proudly took 10th place in the 2010 American Solar Challenge!

2011 Formula Sun Grand Prix

The week of May 2nd through May 7th our team’s current, 5th-generation solar car will race its last competition. Over the past few weeks we have been doing testing on the car and correcting minor issues that sprang up during months prior. We had a meeting to ensure that new FSGP rules and regulations were all met by the solar car. We are proud to say that our 5th-generation solar will go out shining to make way for the new car next year.

The Next Solar Car

Since spring of 2010 we’ve been designing our 6th-generation solar powered car, to-be-named Montu, after the early Egyptian god of war and sun. This car is scheduled to begin construction in just a few weeks, and should be fully completed by next Winter Quarter, and will be raced in the 2012 American Solar Challenge. Our team’s focus is on maximizing efficiency, especially in aerodynamics,
where next design is over twice as efficient as our current car. Once it is completed, we should be able to drive 40mph using less power than a hairdryer. Also new for our next car is a monocoque structure made of carbon fiber, instead of a standard steel or aluminum tube frame. Our team has never done this before, but we expect it to reduce both weight and overall size of the car, both of which are important to maximizing efficiency.

The money that would be received from ISEN will be used to obtain the new solar cells for the car. An important aspect of these cells is that it gives our members a chance to use cutting edge technology in a very hands-on environment. The solar cells would have an efficiency ratio that is on par with current technologies already out there. Using these cells to power a car teaches us students that sustainability is not just an idea but that there are actually technologies out there that are pushing the boundaries with alternative energy sources.

Conclusion

Our solar car team is committed to education - whether it’s educating our team members, the NU community, or the public as a whole – we teach valuable, practical, hands-on engineering knowledge while demonstrating the power of alternative energy.