

## Harnessing the power of the sun

Texas A&M Solar Motorsports Team designing solar car from the ground up

By Amelia Williamson  
THE BATTALION

In the summer of 2005, the Texas A&M Solar Motorsports Team will race across the United States in a car it designed and built, powered by nothing but the sun.

The solar motorsports team was created in 1993 and was originally part of the electrical engineering department and the engineering technology department as part of the curriculum for engineering students. The team is now part of the aerospace engineering department and is open to anyone who wants to join.

"The main reason the team was created was to introduce students to real world engineering beyond the classroom," said Josh Seifert, a sophomore electrical engineering major and team manager.

The team allows students to apply what they learn in class toward designing and building an actual solar car to race.

"Being on the team provides me with an opportunity to get hands-on experience in my major," said Dave Casey, a sophomore electrical engineering major and one of the team's two chief electrical engineers. "It also provides me with a substantial challenge."

The solar motorsports team designs and builds a new solar car every two years to participate in a biennial nationwide race. A solar car is similar to an electric car but is solely powered by the sun. The car consists of a solar array with hundreds to thousands of individual solar cells, Seifert said. When sunlight hits the array, it creates energy that is used to power the car. The car also contains batteries that store the energy collected from the sun and are used for reserve power.

The team starts from scratch and builds the entire solar car based on designs created by members of the team.

"Everything on the car that we have the ability to design or make, we do," Seifert said.

While designing and building the car, students must take into account cost, reliability, durability, the shape and weight of the car and system integration, Seifert said.

"The team completely designs the car — all the way from the shape down to the guts inside," said sophomore electrical engineering major and solar motorsports team member Jonathan Rice. "This includes building the shell and frame of the car, as well as the battery pack that stores the solar energy."

The team manager organizes the team's activities and watches over the team to make sure everyone is on track and all is running smoothly. The team also has directors who focus on certain aspects of the car, such as the logistics, electronics, mechanics and solar array. All other members of the team work on parts of the car and contribute to the general design and construction.

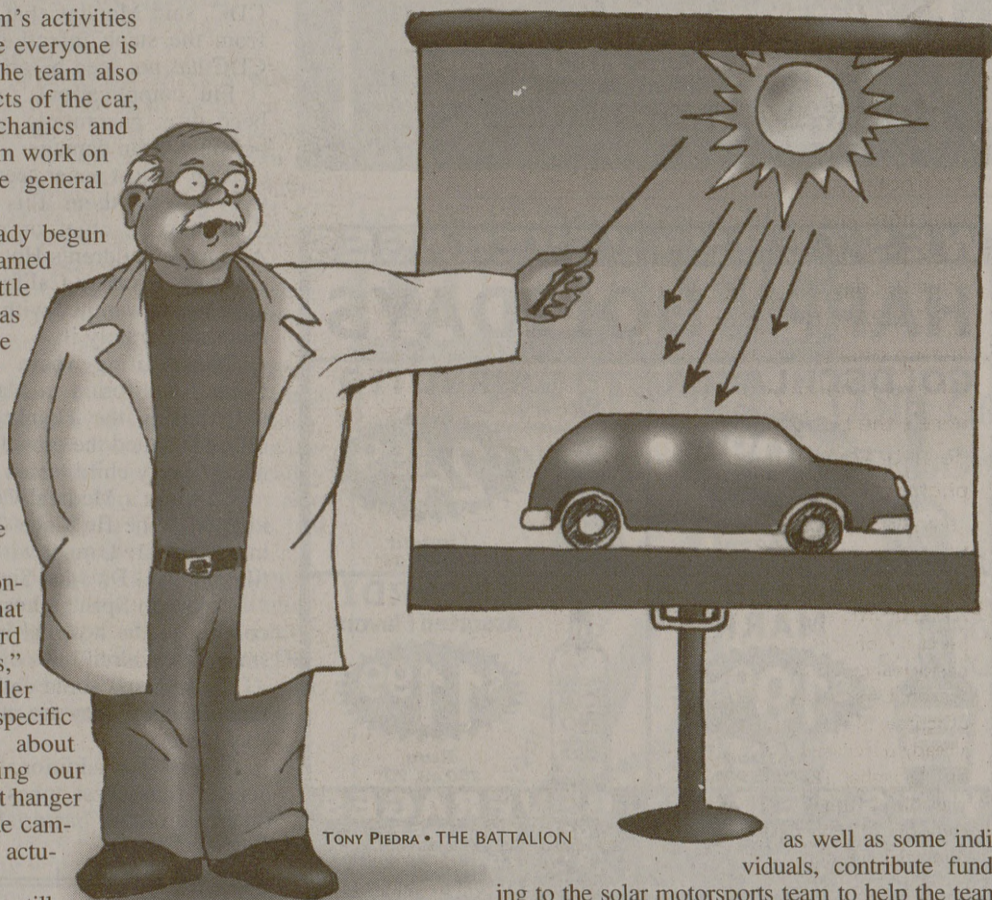
The solar motorsports team has already begun work on its solar car for 2005, which is named Columbia in honor of the Space Shuttle Columbia. Over the years, the team has learned that small oversights can cause major problems when designing anything from a solar car to a space shuttle, and one must work diligently to make quality parts and avoid making errors, Seifert said.

The team meets every other week to discuss the progress made on each of the parts of the car.

"We hold regular on-campus meetings that lean more toward administrative issues," Casey said. "Smaller groups that work on specific projects meet just about everywhere, including our shop in an old aircraft hanger at the A&M Riverside campus, where the car is actually built."

Much of the car is still in the design stage, but it is scheduled to be completed and ready to race in the American Solar Challenge in July 2005. More than 30 universities from around the world will compete in the race. The path for the 2005 race has not yet been decided, but the last two races have been along Route 66 from Chicago to Los Angeles, which is 2,300 miles, Seifert said. The team's solar car will travel on common roads, highways and interstates with the normal flow of traffic. The top speed reached by one of the team's solar cars was 84 miles per hour, but the average speed during the race is between 55 miles per hour and 65 miles per hour.

Large companies, such as Vought Aircraft, Shell and Reliant Energy,



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as well as some individuals, contribute funding to the solar motorsports team to help the team get the supplies it needs to build its solar car.

"The team gets all its money from corporations and individuals that sponsor the team," Seifert said. "It takes around \$10,000 to build a new car as well as many material donations."

The solar motorsports team brings together students from different majors at A&M to work toward a common goal. Everyone from freshmen to graduate students can join the team and work on the solar car.

"Anyone, regardless of major or year, who is motivated and ready to learn can tackle any design or construction issue for the car," said Seifert.

For more information about joining the team, contact Josh Seifert at [jseifert@tamu.edu](mailto:jseifert@tamu.edu).

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— Jonathan Rice  
sophomore electrical engineering major

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will Open the Following Locations  
to Students for Finals Study:

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**Sterling C. Evans Library & West Campus Library**

Open Thursday, December 11, 2003

and

Sunday, December 14, 2003 - Tuesday, December 16, 2003

8:00 pm - 2:00 am

Complimentary coffee

provided by Sterling C. Evans Library and  
Department of Food Services

**Hullabaloo! Food Court**

Open Thursday, December 11, 2003

and

Monday, December 15, 2003 - Tuesday, December 16, 2003

10:00 am - 8:00 pm (regular hours)

Coffee from 4:00 pm - 8:00 pm

**Rumours Coffee House & Deli**

Open Thursday, December 11, 2003

and

Sunday, December 14, 2003 - Tuesday, December 16, 2003

7:00 am - 2:00 am (regular hours)

Coffee from 8:00 pm - 2:00 am

#### Late Hours at Food Services' Locations

**Commons, Duncan & Sbis Dining Centers**

Open Thursday, December 11, 2003

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Sunday, December 14, 2003 - Tuesday, December 16, 2003

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Complimentary coffee & beverages

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**Commons & Underground C-Stores**

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Open Thursday, December 11, 2003 &

7:30 am - 12 Midnight

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**Poor Yorick's Coffee House**

Open Thursday, December 11, 2003 and

Monday, December 15, 2003 and Tuesday, December 16, 2003

7:30 am - 12 Midnight

and

Sunday, December 14, 2003

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