

Belmont High School

EXHIBIT A
1-21-14

Mr. Daniel E. Richards
Principal



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January 8, 2014

Dr. Kingston:

On behalf of the Belmont Solar Club Team, I am attaching their proposal for travel to Dallas Texas to participate in the Solar Challenger 2014. This event will be held on July 18-25, 2014. This Team has been working on design engineering, physic dynamics and learning about solar power and 3D modeling. After several months of hard work, the Solar Club Team has built a road-worthy solar car and would like to register to compete in the Solar Car Challenge in Dallas, TX.

We hope to receive your approval for this opportunity to represent Belmont Public Schools, specifically Belmont High School. Go Solar!

Sincerest regards,


Daniel Richards
Principal

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BELMONT PUBLIC SCHOOLS
OFFICE OF
SUPERINTENDENT

* Learn * Think * Create * Serve

Proposal for Belmont Solar Car Team Travel

Destination Travel from Belmont, MA to Dallas, TX (Plane)
Travel from Dallas, TX to Belmont, MA (Plane)

Dates Travel Dates/Texas Event: July 18-25

Educational Rationale The Belmont Solar Car Team was created to give students the opportunity to explore engineering, physics, learn about solar power, and 3D modeling at Belmont High School. The Belmont Solar Car Team set out to build a full-size road worthy solar vehicle. The ultimate goal is to compete in the Solar Challenge in Dallas, Texas.

Participants will gain valuable experience competing in a two day track event as well as a two day cross-state event starting in Dallas, Texas and ending in Austin, Texas. As a capstone to their work, students will have the opportunity to network with various professionals and students from around the country.

Participants will gain experiences working on an advanced solar vehicle and competing in a nationally televised event.

Number of Students 12-16

Number of Adults 2 adults will supervise and travel to the event (2nd Adult TBA)

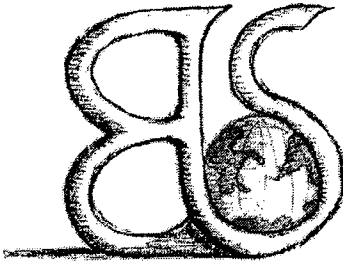
Advisor Leon Dyer

Itinerary The group will travel by plane to the Solar Car Challenge in Dallas, Texas. The solar car will be shipped to the event.

Solar Challenge Website <http://www.solarcarchallenge.org/challenge/>

Projected Costs Estimated travel cost: \$700-\$800 per student (with the intent of being offset by various fundraisers). The student expense covers travel, lodging, and food.

TRAVEL PROPOSAL



BELMONT SOLAR CAR TEAM

Team History

The Belmont Solar Car Team originated in November of 2011 with goals of exposing the student body to an engineering project that could provide an opportunity for high school students to be exposed to the cutting edge technology of a solar car. Building and designing a full sized car that ran entirely on solar power. The end goal of the project was to create a car that could compete and complete the Solar Car Challenge in Texas.

The first meeting was attended by four students but the group quickly expanded. Within a few weeks our team comprised over twenty students, including freshmen all the way up to seniors. For the first few weeks we worked out of a classroom of Belmont High School. We met every Friday after school as we tried to wrap our minds around the project. We spent the early months researching vital components of the solar car such as solar cells, motors, and the carbon fiber body. During this time, we tried to reach out to corporations and businesses, both in the local community and throughout the nation. The MIT Solar Electric Vehicle Team, one of the nation's leading solar car teams. They offered to mentor us, and since then, they have provided help, from tours of their facility to answering questions and offering old equipment for our use. In addition, we researched solar cars from other teams also competing in the challenge to gain a deeper insight into the designing process.

Once our team had expanded to 22 students, we decided to hold an election for positions so that each person can specialize in a component of building up the team. This allowed us to create a bureaucracy that optimized team function. We also started to host team dinners that offered a bonding experience for the entire team, a necessary part of our rapidly growing group.

We have hosted and participated in many fundraising events during the 2011-2012 school year. The following school year, we intended on building the car and competing in the 2013 solar challenge in Texas. We were unable to raise enough funds to build a complete solar car. We spent the better part of the 2012-2013 school year fundraising and refining our plans. Our team adjourned for the 2013 summer, a much-needed break for the team. However, once the 2013 school year started, we quickly got back to work. This year we adjusted the budget and made several cuts to our solar car design. Based on those cuts and additional funds raised, we now have enough money to build a road worthy solar car. We are now in the process of welding the frame and building the car. It is our intention to compete in the upcoming solar challenge this summer in Texas.

Timeline

- Belmont Solar Car Club created November 2011
- Renamed Belmont Solar Car Team in December 2011
- Team expanded to 22 students by February 2012
- Held a canvassing event in March 2012
- Organized fundraising event at Belmont Town Day in May 2012
- Organized fundraising event at Sacco Bowl Haven in October 2012
- Held a canvassing event in November 2012
- Team expanded to 38 students in November 2012
- Designs for Solar Car finalized by March 2013
- Start building Solar Car in March 2013 - *Postponed*
- Fundraising March 2013 – September 2013
- Solar Car Design Reevaluation – June 2013
- Welding the frame – December 2013
- Building the remaining parts of the car – January 2013 to April 2013
- Testing solar car – May 2013
- Solar Challenge 2014 – July 18-25, 2014 Texas

Texas Event

The Solar Car Challenge was first established in 1993. Created to raise awareness of alternative energy, specifically the power of solar cells, the Solar Car Challenge has helped to inspire high school students both nationally and internationally to learn more about science and engineering. The event every year switches off between a closed-track event which races on the Texas Motor Speedway, and a cross-country event. Past cross country events have started in Texan cities such as Round Rock and have travelled to cities such as Los Angeles, Newburgh NY, and Columbus IN. The average distances of the cross country events which have occurred in the past are about 1470 miles.

The 2014 Solar Challenge will start on July 18th, consisting of a two day track event and a two day cross state event starting in Dallas, TX and ending in Austin, TX. The main purpose of the event is not to crown a winner, but rather to provide students the ability to show off their engineering exploits to the rest of the country, as well as to test the limits of their own ingenuity. All high school students participating in the event will build, design, and ultimately race their own fully sized solar car. The cars must be road worthy and run completely off of solar power, a testament to the program's ability to motivate students and communities alike to learn more about science and engineering.

Solar Car Challenge website - <http://www.solarcarchallenge.org/challenge/>

The History of the Hunt-Winston School Solar Car Challenge

In 1993, the Winston Solar Car Team launched an education program to provide curriculum materials, on-site visits, and workshop opportunities for high schools across the country. This program, a part of The Winston School (Dallas, TX), was designed to motivate students in the sciences, engineering, and technology. The end product of each two-year education cycle is the Winston Solar Challenge: a closed-track event at the Texas Motor Speedway, or a cross country race designed to give students an opportunity to display their work. The Winston Solar Education Program has been shared with more than 900 schools in 20 countries.

The first Challenge in 1995 attracted ninety schools leading to nine schools actually building cars for the 1995 race. Three cars qualified to run. The 1997 Challenge grew to over three hundred fifty schools in five countries. Eight cars qualified to run the 1997 race, a 600-mile cross-country event from Dallas to San Antonio. The 1999 race, a 1600 mile event from Dallas to Los Angeles, saw eight teams enjoy the fun of high school solar car racing. The 2001 race started in Round Rock, TX at Dell Computers and traveled 1400 miles to Columbus, Indiana. In 2003, ten challengers endeavored to race from Round Rock, TX to the Florida Solar Energy Center (Cocoa, FL).

In 2009, the Hunt Oil Company accepted the role as "Title Sponsor" for the Winston Solar Challenge. The Hunt-Winston School Solar Car Challenge now hosts annual events based on the support of the Hunt Oil Company, The Winston School, The Texas State Energy Conservation Office, and the Texas Motor Speedway.

Source - <http://www.solarcarchallenge.org/challenge/history.shtml>

Members (21)

- Leon Dyer (Advisor)
- Joe Fitzgerald (Captain)
- James Stadler (Project Manager)
- Colin Stievater (Alternate Spokesperson)
- Sam Burt (Fundraising Co-Chair)
- Keith Burns (Fundraising Co-Chair)
- Michelle Hayner (Team Logistics, Secretary)
- Mark Zhu (Electronics Manager)
- Henrik Rhodin (Controls Manager)
- Kyle Bridburg (Team Member)
- Robert Phillips (Team Member)
- Phoebe Mesard (Team Member)
- Shyam Sukumar (Team Member)
- Bryton Lawrence (Team Member)
- Mahesh Yarasi (Team Member)
- Sofia Startford (Team Member)
- Sam Kerans (Team Member)

- Michael El-Hayek (Team Member)
 - Kerri Lynch (Team Member)
 - Meggie MacAulay (Team Member)
 - Tess Hayner (Team Member)
 - Ani Somers (Team Member)
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- Adam Belkadi (Alumni) graduated 2012

Meetings

Since the start of the team in November 2011, meetings have taken place on Friday afternoons. At first, the team was located in a (sometimes) vacant classroom, but thanks to support from Belmont Public Schools, a space was allocated inside the modules that reside behind the school. Since then, the Belmont Solar Car Team has met inside the module almost every Friday afternoon of the 2011-2012 school year. In addition to the weekly Friday meetings, the team has also had additional meetings and team dinners at local establishments or at members' houses.

Starting in the 2012-2013 school year, the team has continued to meet Friday afternoons in the modules, but in order to incorporate both the larger team and more varied time needs, the team started to have meetings Thursday nights and Saturday mornings in Mr. Dyer's room in the Chenery Middle School, in addition to the Friday meetings.

Meetings begin with a summary and check in of recent events and any updates to ongoing projects by team members. Once the agenda has been updated with updates, the team then splits off and continues work on individual projects, encompassing everything from fundraising opportunities to researching parts for the solar car.

As we progress in developing the solar car, team meetings have taken place outside of school time. We now get together each Friday for a quick check-in and update on team progress.

Proposed Solar Car Budget

Solar Car -

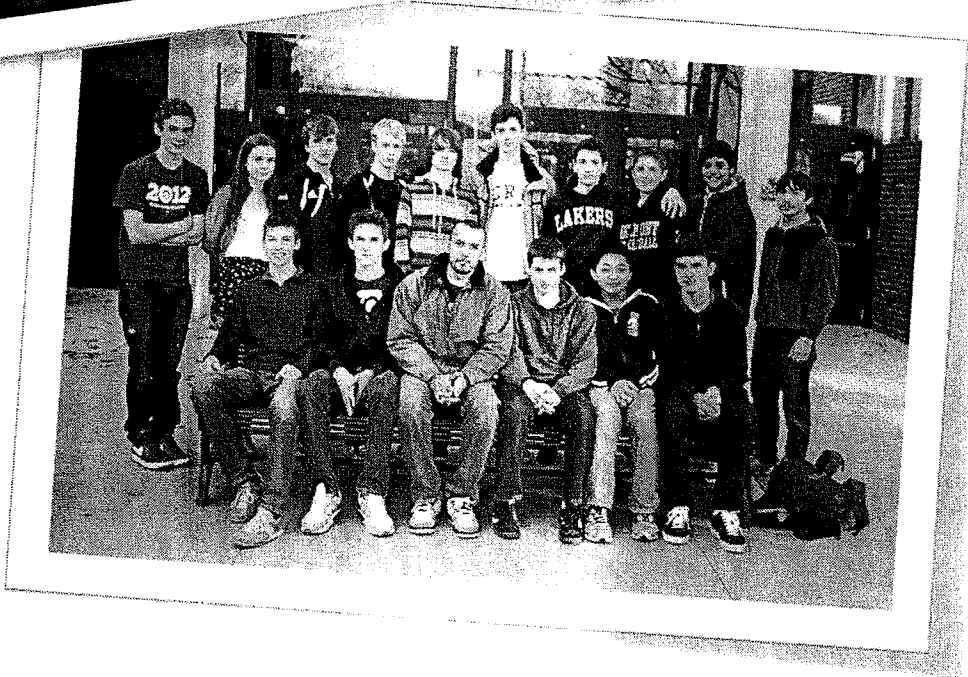
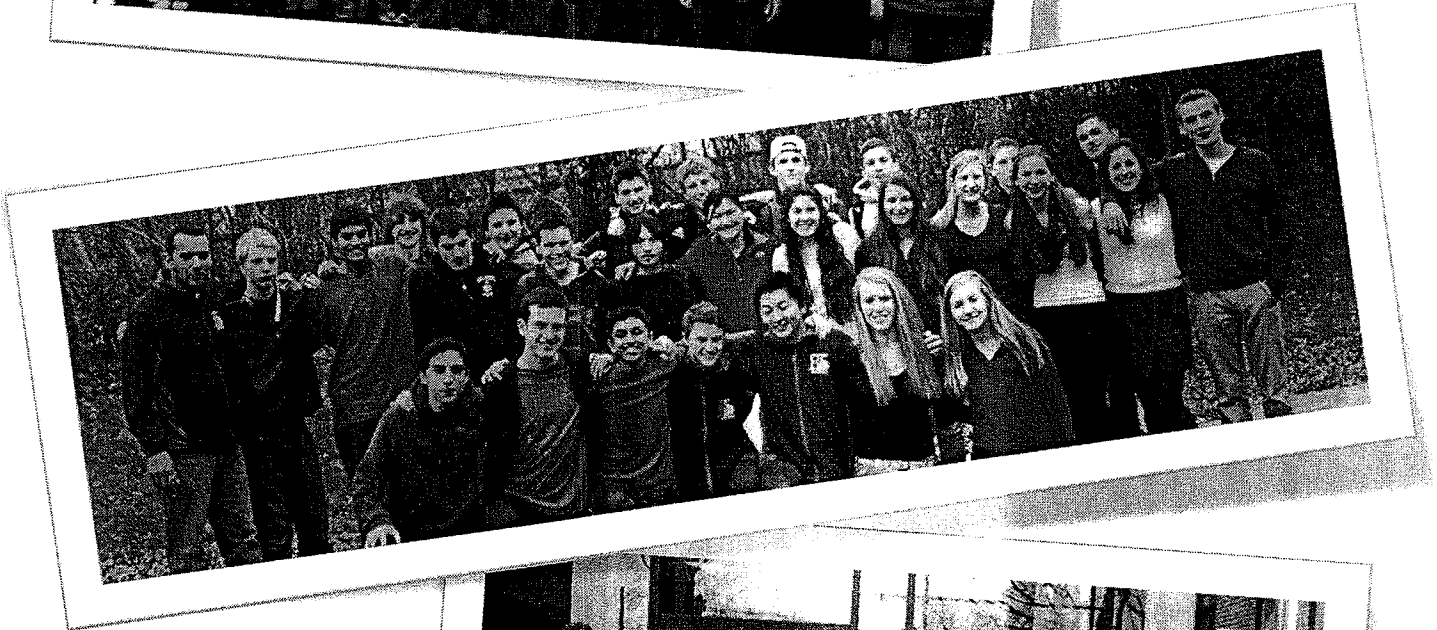
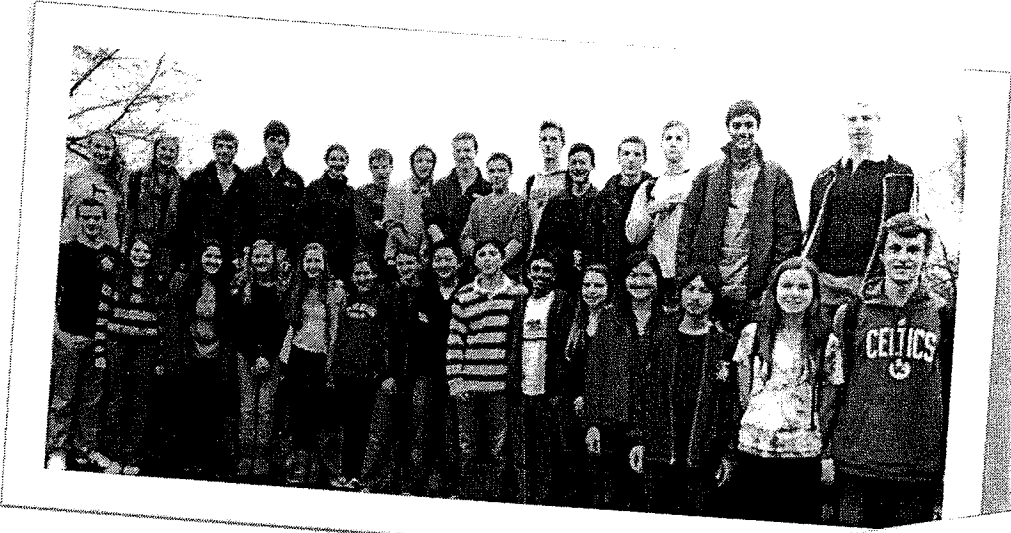
\$8,000 (includes frame, wiring, motor, wheels, parts, solar array, etc.)

Travel to the Solar Car Challenge 2013 – **Current Fundraising Goal**

Travel - \$700-\$800 a person

A separate document details the Travel Summary

Team Pictures



2014 Solar Car Challenge

Texas Motor Speedway / Fort Worth, TX to Austin, TX

Calendar

Day	Time	Event	Location
September 1, 2013		<u>Intent to Race</u> Filing Starts	
Saturday September 7, 2013		<u>New Teams Workshop</u>	DFW Marriott
Saturday-Sunday January 18-19, 2014		<u>Specialty Workshop</u>	DFW Marriott
February 1, 2014		<u>Intent to Race and Preliminary Registration</u> Filing Deadline	
June 1, 2014		<u>Final Registration</u> Filing Deadline	
Wednesday July 16, 2014	5:00p	<u>Intern Program Begins</u>	DFW Marriott
Friday July 18, 2014	10:30a - 3:00p	Judges Training	DFW Marriott
	4:00 - 7:00p	Team Check-in	DFW Marriott
	7:00p	All Race Meeting	DFW Marriott
Saturday July 19, 2014	8:00a - 6:00p	Scrutineering Session I	Texas Motor Speedway
Sunday July 20, 2014	8:00a - 6:00p	Scrutineering Session II	Texas Motor Speedway
	7:30p	Opening Banquet	DFW Marriott
Monday July 21, 2013	9:00a - 5:00p	Race Day 1	Texas Motor Speedway
Tuesday July 22, 2013	9:00a - 5:00p	Race Day 2	Texas Motor Speedway
Wednesday July 23, 2013	9:00a - 5:00p	Race Day 3	Fort Worth to Waco, Texas
Thursday July 24, 2013	9:00a - 5:00p	Race Day 4	Waco to Austin, Texas
	7:30p	Awards Banquet	Austin, Texas



2014 Travel Summary

July 18-25 (1 week)

Item	12 (2)	16 (2)	Per-Person (14/18)
Hotel	\$2534	\$3167	\$181/\$176
Flight	\$3750	\$4821	\$268/\$268
Vehicle Rental	\$1416	\$1585	\$102/\$89
Fuel	\$240	\$240	\$18/\$14
Food	\$980	\$1660	\$70/\$93
Shipping	\$500	\$500	\$36/\$28
Event Registration	\$500	\$500	\$36/\$28
Solar Car Insurance	\$1000	\$1000	\$72/\$56
TOTAL	\$10920	\$13473	\$783/\$749

Student Total (## Adult Total)

Travel Fundraising Offset Estimates

Travel Offset	12 (2)	16 (2)	Per-Person (14/18)
\$1,000	\$9920	\$12473	\$709/\$693
\$2,500	\$8420	\$10973	\$602/\$610
\$5,000	\$5920	\$8473	\$423/\$471
\$7,500	\$3420	\$5973	\$245/\$332
\$10,000	\$920	\$3473	\$66/\$193
\$12,500	\$0	\$973	\$0/\$55