BEST

Boosting Engineering, Science & Technology™

Welcome to our first BEST National Championship Competition

We hope you enjoy your day!

BEST (Boosting Engineering Science and Technology) is a program designed to show youth how engineering can be fun through a sports-like technology contest where local high school students design and build a remote controlled machine (robot) to accomplish a given task. Education and industry professionals volunteer their time as coaches and mentors to offer guidance in the design and construction processes. Restrictions apply to help make the competition simulate a "real world" business and engineering environment. Constraints include:

- Constrained development time (6 weeks),
- Constrained design components (identical kits provided),
- Specific design requirements (size, weight, etc.)

The BEST program goals are intended to inspire and motivate students toward studies and careers in engineering, science and technology. It's about changing the way students of America think about science and technology while gaining the rewards of excitement and fun.

BEST accomplishes these goals through local "hub" competitions, regional championships and now our first national championship. Hubs currently exist in 15 states across the US with regional championships hosted at the University of North Texas (TEXAS BEST), Auburn University (SOUTH'S BEST) and University of Arkansas – Fort Smith (FRONTIER TRAILS BEST).

Today, the best from those regional championships compete for the national title here in Dallas! Good luck!

National Championship Sponsors

The BEST program receives vital support from local industry, school administrators, local businesses and individuals within the community. We thank you for supporting the cause. The 2010 BEST National Championship sponsors are:

The MathWorks™

VEX ROBOTICS DESIGN SYSTEM

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Gears Educational Systems, LLC

Competition Schedule

7:30 am	PIT Opens	
8:00 am	Team Briefing	Rm A201
8:30 am	Opening Ceremonies	Arena
9:00am	Preliminary Competition (8 matches per team)	Arena
12:00pm	Lunch Break	
1:00pm	Preliminary Competition, Continues	Arena
	Wildcard Match	Arena
2:00 pm	Teacher Recognition	Arena Floor
2:15 pm	Semi-Final Competition (Round Robin – 6 matches)	Arena Top 8 Teams from Prelims
3:00 pm	Awards Presentations	Arena
4:00 pm - 6:00 pm	Final Competition (Round Robin – 3 matches) & Awards Ceremony	Arena Top 4 Teams from Semi-Final
6:00pm	VEX/BEST Celebration Party	

All times are approximate.

The Game – *High Octane!*

Recent fluctuations in oil prices have captured the attention of political leaders, investors, and fuel-researchers alike. It has been common knowledge that our dependence on foreign oil is a long term liability to our economy. Though many have lobbied for investments in alternative fuels, research and development of high-density energy sources has yielded only limited success. Thus far, no other energy source has been able to dislodge fossil fuels as “king of the hill.” Collectively, our cost/benefit analysis for moving to alternative fuels has left us indulging in the comforts that fossil fuels allow. However, the relative costs are about to change.

Scientists in the BEST Robotics think tank have recently made breakthroughs leading to a new renewable resource. We have discovered a superchlorophyll catalyst that, theoretically, will facilitate the production of long hydro-carbon chain molecules from plentiful CO2 and H2O…at least we think it will. In short, we aim to make combustible fuels from common resources and a catalyst derived from plant tissue.

Before going public with the discovery we need to prove the concept and demonstrate that the reactions can be performed efficiently in an automated environment. This will be a very expensive exploration and we are under dire time constraints (the world awaits!).

Fortunately, investors have contributed funding to conduct this exploration. Unfortunately, the funding is rather limited and the test environment has to be scaled down…way down. Resource quantities, production facilities, and chemical inventories must all be carefully controlled in this exploration phase in order to precisely predict cost and efficacy of production on the national scale. Accordingly, the size,

weight, and construction materials for all automated units, i.e., “robots,” will be restricted during the tests. If the process can be completed under these tight constraints described in this document, then we’ll know that it can be accomplished in industry.

The BEST Octane Research Team is issuing the following call for assistance. Teams of pre-collegiate students are invited to contrive strategies and associated robots to maximize production of isooctane in a resource restricted environment. The strategies and automated units will be demonstrated concurrently with other teams’ designs within strict time limits in order to prove that the processes can be conducted safely and efficiently even when raw reactants are limited. As in the real-world, no points will be awarded. Rather, the relative strength of each team’s design will be measured by the accumulated inventory of reactants, intermediate products, and final product at the end of the competition event.

The competition event (i.e., game day) will consist of three stages: the seeding competition, the semi-finals, and the finals. After each stage, the teams with the most valuable inventory will continue to the next stage of testing.

Game Objectives

During the demonstrations, the objective is for teams to collect and employ common molecules (CO2, H20) and essential resources (energy, catalysts) to complete a series of chemical reactions. The eventual goal is to produce isooctane, or alternatively, the lesser valued naphtha. Intermediate products (ethylene, benzene) that are generated in the process are retained in the team’s inventory for later use.

During the seeding competition, teams will collect H20, Catalysts, Energy, and CO2 in an effort to synthesize ethylene molecules according to the reaction equation:

[Equation 1]
2 CO2 + 2 H20+ Energy + Catalyst -> C2H4 (ethylene) + 3 O2

In other words, it takes two CO2 units, plus two H20 units, plus one Energy unit, plus one Catalyst unit to produce a single unit of ethylene and oxygen (which is altogether ignored in these demonstrations).

Advancing teams will use their previously accumulated ethylene (a maximum inventory of three units can be carried over from the seeding rounds) and ethylene that they can synthesize during their matches to synthesize as much benzene as possible according to the reaction equation:

[Equation 2]
3 C2H4 + Energy + Catalyst -> C6H6 (benzene) + 3 H2

As with the O2 in equation 1, the H2 product is waste gas and is not added to inventory. Teams can then choose to apply Benzene to two final objectives. They can either synthesize naphtha by:

[Equation 3]
C6H6 + 4 H2 + Energy + Catalyst -> C6H14 (naphtha)

Or they can employ additional ethylene to make the more valuable isooctane according to the reaction:

[Equation 4]
C6H6 + C2H4 + 4H2 + Energy + Catalyst -> C8H18 (isooctane)

Teams are **not** restricted to any one of the above reactions during any stage of the competition event. They are free to pursue any of the reactions that their inventory and available reactants/resources might allow them to complete. For example, it is theoretically possible during seeding for teams

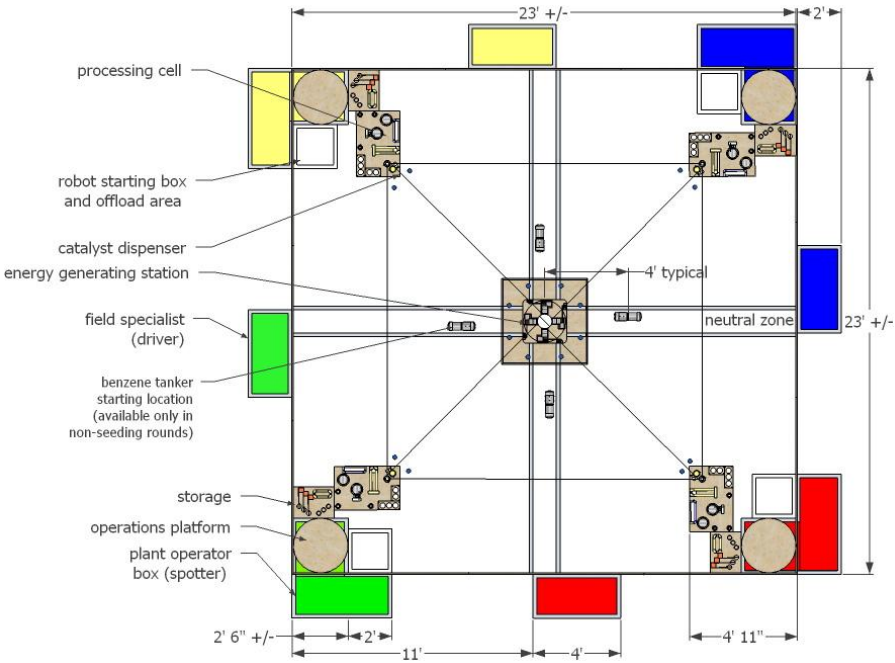
to produce sufficient quantity of ethylene such that benzene can be generated.

In these scaled-down demonstrations, the inventory that can be carried from one match to the next is strictly limited. No more than three units of each reactant/resource can be carried forward. Fortunately, excess reactant/resource will automatically be traded for the next higher value reactant/resource on the “open market.” The automatic trades cannot be overridden. The relative value of each reactant/resource is as follows. Four units of H20 will be automatically traded for one unit of catalyst. Four units of catalyst will be automatically traded for one unit of energy. Four units of energy will be automatically traded for one unit of CO2. Four units of CO2 will be automatically traded for one unit of ethylene. Four units of ethylene will be automatically traded for one unit of benzene. Four units of benzene will be automatically traded for one unit of naphtha. Four units of naphtha will be automatically traded for one unit of isooctane.

During the demonstrations, each team will be equipped with an automated virtual lab that will automatically utilize any available inventory to complete the previously described equations whenever possible. This automated process cannot be overridden and will be performed at the end of each match using newly acquired commodities as well as any previously existing inventory.

It is worth restating that the H2 waste gas (in Equation 2) is NOT added to inventory when benzene is created. It is also important to note that the H20 units can be used for either H2 or H20 as needed in Equation 1 through Equation 4.

Game Field Layout



Game Scoring Summary

No points will be awarded and no “score” will be kept. Rather, the relative progress of each team through the day will be indicated by the team’s accumulated inventory of commodities (reactants, resources, and products).

Teams can accumulate inventory by either:

- collecting game pieces (catalyst units, energy units, H2O units, CO2 units, and Benzene Tankers) and placing said game pieces in an appropriate scoring receptacle by the end of the match; or by,
- accumulating sufficient inventory to complete reactions to produce ethylene, benzene, naphtha, and isooctane.

At the end of each match, any earned inventory is added to the team’s inventory accumulated in previous rounds. Inventory levels will be tracked for each commodity and published as single digit columns listed in the following order:

```
_________________
| Overflow
|
|       _________________
|       | Units of isooctane
|       |
|       |       _________________
|       |       | Units of Naphtha
|       |       |
|       |       |       _________________
|       |       |       | Units of Benzene
|       |       |       |
|       |       |       |       _________________
|       |       |       |       | Units of Ethylene
|       |       |       |       |
|       |       |       |       |       _________________
|       |       |       |       |       | Units of CO2
|       |       |       |       |       |
|       |       |       |       |       |       _________________
|       |       |       |       |       |       | Units of Energy
|       |       |       |       |       |       |
|       |       |       |       |       |       |       _________________
|       |       |       |       |       |       |       | Units of Catalyst
|       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       _________________
|       |       |       |       |       |       |       |       | Units of H20
```

The Teams

Team#	School
36	Academy of Science & Technology The Woodlands, Texas (North Houston BEST)
123	Circle High School Towanda, KS (Kansas BEST)
185	Conway High School Conway, MO (NorthArk BEST)
129	McFadden School of Excellence Murfreesboro, TN (Music City BEST)
229	Metro Homeschool Blue Springs, MO (River Valley BEST)
291	Milton High School Milton, FL (Emerald Coast BEST)
6	Texoma Home Educators Sherman, TX (North Texas BEST)
16	United Engineering & Technology Magnet Laredo, Texas (San Antonio BEST)
251	W.P. Davidson High School Mobile, AL (Jubilee BEST)
25	Wetumpka High School Wetumpka, AL (War Eagle BEST)
17	Whitewright High School Whitewright, TX (North Texas BEST)
121	Wichita Homeschool Wichita, KS (Kansas BEST)

Congratulations to all of the teams for making it to the National Championship!

#36 Academy of Science & Technology

Hub: North Houston

Team: Academy of Science & Technology

Robot: Nom Nom

Students: Erika Cook, Chris Ditter, Nate Fagnant, Katherine Frangos, Vibhav Ganesh, Emily Jensen, Philip Le Goubin, Stephanie Mallard, Eric Martin, Conor McMahon, Michael Metz, Brendan Murray, Sean O'Neil, Paul Richardson, Marta Rippetoe, Nirav Suraiya, Douglas Turk, Valentin Tuzhilkin, Harish Vangavolu

Sponsors: Scott Rippetoe

BEST Robotics has been an amazing experience. Not only have I been immersed in the engineering and design process, but I have learned how to be a stronger student leader and have become more confident in my ability to use tools and to create a working machine. Those many late nights that our team spent fixing our robot and practicing our driving skills really brought our team together. I have enjoyed the time I have spent in this program, the people I have met and the friends that I have made. I look forward to participating in engineering and design programs like BEST in college.

#123 Circle High School

Hub: Kansas

Team: Circle High School BEST

Robot: Thor

Students: Blair Benton, Seth Blaha, Rachael Bruce, Ashley Crisler, Jill Davenport, Ryan Davis, Josephine Delborg, Shelbie Drinnen, Jasmin Droste, David Fisher, Leslie Geist, Sarah Gile, Perry Gowdy, Will Gregg, Nick Hale, Ben Harstine, Jack Henry, Jared Holliday, Mitch Horner, Sahar Hossinei, Liz Jaax, Molly Jaax, Amber Junkins, Brian Kessler, Nick Lytton, Matt Pello, Casen Perry, Gulcin Polat, Britnee Pond, Briana Reece, Megan Reece, K.C. Roberts, Chris Robins, Adam Ronnebaum, Kyle Sage, Michaela Schaal, Karley Sechler, William Sellers, Ana Signorini, Cody Sneden, Kimberlyn Stephens, Madison Stephens, Kayln Wagner, Lukas Weber

Sponsors Matt Hogoboom

The Circle BEST Team, composed of 51 members, is one of the largest in the BEST competition. Team Thor has 27 women and 24 men on its team, as well as four foreign exchange students from Germany, Brazil, and Sweden. Team Thor is led by Head Coach Matt Hogoboom, Assistant Coach Brian Jaax, and several other dedicated mentors. The Chief Operations Director (a student position) is Ben Harstine, who aids in almost every imaginable purpose. Team Thor has placed second this year in both the award and robot competitions at both State and Regional competitions. This is Circle's tenth year as part of the BEST program and the team is very excited that the unique experience of Nationals marks this occasion.

#185 Conway High School

Hub: NorthArk

Team: Conway High School

Robot: F.R.E.D.

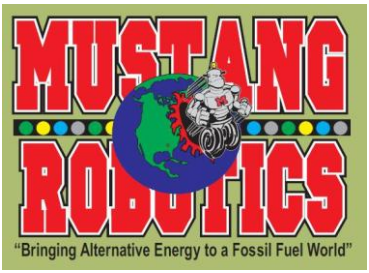
Students: Paul Coryell, Phillip Foust, Lloyd Oberbeck, Grant Rumfelt, Shane Sell,

Sponsors: Bob Gibson

This testimonial is from the viewpoint of the Conway Public High School Robotics Club sponsor.

I have been a teacher for many years, and have never witnessed a more rewarding activity for students. I have heard the question, "When will we ever need to know this?" hundreds of times in Algebra and Geometry classes, but never during Robot Time. This is a real-life activity that requires organization, dedication and a lot of time and effort. The students who participate in the B.E.S.T program are able to demonstrate and share their knowledge and skill in a variety of ways: artistic, mechanical, programming, fund-raising, business management and marketing. But most of all, this activity fosters teamwork and develops good social skills. After six weeks of intensive preparation, these kids have laughed, cried, prayed, fought, made-up and more than a few have shed blood. They're survivors. I couldn't be more proud of all of them, no matter how large or small their individual contributions.

#129 McFadden School of Excellence



Hub: North Houston

Team: Mustang Robotics

Robot: Macgyver

Students: Alex Abner, Aysha Abualrob, Logan Altmyer, Megan Ash, Randi Bivens, Caleb Burris, Andrew Clark, Kennon Cliche, Jonas Cooper, Ryan Cripps, Evelyn Drake, Lane Grizzard, Lauren Grizzard, Hannah Guthrie, Seth Harrell, Will Hawks, Andrew Heim, Kelsey Henderson, Corbin King, Joey Ligon, Conner McCabe, Collin Miller, Colton Miller, Anna Moseley, Bronwyn Mullen, Allie Nadeau, Colby Nicholson, Adam Raymer, Paul Robertson, Savannah Rogers, Ben Slater, Hannah Slayton, Jacob Stolze, Brayden Terry, Austin Tipton, Dylan Upchurch, Josh Walker, Savannah Welch

Sponsors: Marc Guthrie

McFadden School of Excellence is a K-8 magnet school located in Murfreesboro, TN. The team began in 2006, when David Lipscomb University began a hub that would serve teams from Tennessee and surrounding states. This is McFadden's fourth year to compete in the BEST program. This year McFadden won South's BEST at Auburn University beating 54 other high schools and middle schools for the top honors. The McFadden Robotics team has 38 members from across Rutherford County, Tennessee.

A few of McFadden's accomplishments since the team began four years ago:
* McFadden has finished 1st or 2nd every year at David Lipscomb

competition since the program began in 2006.
* McFadden has qualified for the South's BEST at Auburn University for 4 straight years.
* McFadden has been the #1 middle school for the past 3 years at South's BEST.
* McFadden has placed in the top 10 for the past 3 years at South's BEST, 4th three years ago, 7th last year, and 1st place in the robotics competition this year.
* McFadden has won the IGUS Top Gun award for the highest score in a round in 2007 and 2009.
* McFadden has won the engineering and design award twice both at Lipscomb and at South's BEST.
* McFadden is the only middle school to qualify for this year's BEST National Championships.

This is McFadden's last year to compete as a middle school. When Central Magnet School opens next year, the middle school grades from McFadden will move to the new Central Magnet School and the robotics program will continue there. The team will then consist of both middle and high school students and will continue to compete in BEST Robotics.

#229 Metro Homeschool

Hub: River Valley

Team: Metro Homeschool Robotics Cyborgs

Robot: Assimilator

Students: Daniel Catton, Camerson Chartier, Aaron Clevenger, Philip Clevenger, Nathan Glasgow, Caitlyn Hetzel, Chandler Hetzel, Bret Hoy, Jessica Jolly, Brian Mehl, Tony Mehl, Matthew Mohler, Macy Rios, Sal Rios, Sam Rios, Hunter Smith, Shea Stacy, Trevor Stacy, Mariah Sterling, Jordan Taranto, Jacob Thiel, Brandt Vircks, Michael Ward, Alex Wilcoxon, Sam Wilcoxon, Bryant Young, Damon Young

Sponsors: Lisa Stacy

The Metro Homeschool Robotics Cyborgs have an interesting history. The Duerksen family was part of the Wichita Homeschool Team in Wichita, Kansas. After moving to the Kansas City area, they started the Johnson County Homeschool Robotics Team and hosted the team at their home in DeSoto, Kansas from the Fall of 2004 until the Spring of 2007. At that point, the team needed to find a new place to meet. They were unsuccessful until January 2008 when one of the Johnson County team members offered to host the team in their garage in Blue Springs, Missouri on the other side of the Kansas City Metro area. One other Johnson County team member followed. After recruiting 10 new team members and competing in the FIRST Robotics Competition as JCH Robotics, the team formally changed their name to the Metro Homeschool Robotics Cyborgs and prepared for BEST 2008 Just Plane Crazy. We now have 27 team members who travel from all over the Kansas City Metro area, as well as, a great group of dedicated parent/mentors. Thank you BEST for giving us the opportunity to have so much fun while learning!

#291 Milton High School

Hub: Emerald Coast

Team: Milton High School

Robot: Destroyer

Students: Harold Henderson, Michael Ralich,
A. J. Schang, Erik Wright, Brandon Yarbrough

Sponsors: Arthur Schang

After 5 years of trying, we have broken the top 2 in our regional competition. For the past 3 years we were #3 and thought we were jinxed. We are proud to represent South's BEST and look forward to meeting other teams and competing against them.

#6 Texoma Home Educators

Hub: North Texas

Team: THE

Robot: Squee!

Students: Keith Baker, Kevin Baker, Chris Beall, Matthew Boswell, Nicholas Boswell, Frank Bowling, Kristen Bowling, Jeannine Bryan, Jennifer Bryan, Jesse Childress, Nathan Childress, Josh Clark, Justin Clark, Alaina Cox, Sarah Cox, Payton Crawley, Chip Dodd, Trent Dodd, Catie Flood, Mollie Flood, Anderson Frazier, Dillon Frazier, Roy Grimes, Jarryd Hall, Justus Hall, Hadyn Kirkland, Bailey Lewis, Stefanie Lidington, Christian McGowan, Tyler Olin, Austin Oliver, Joey Oliver, Bailey Page, Micah Ramer, Jared Robinson, Trevor Robinson, Zach Robinson, Abigail Schilli, Ashley Shannon, Sarah Stell, Christian Stephens, David Stephens, Joshua Stephens, James Tatsch, Katelyn Ward, Megan Ward

Sponsors: Joe Bryan

#16 United Engineering Technology Magnet

Hub: San Antonio

Team: ULTIMATE Robotics Team

Robot: MONSTER

Students: Gabriela Grajeda

Sponsors: Laura Rodriguez

Being part of BEST has been one of the most rewarding experiences for the ULTIMATE robotics team. In its eight years of participation ULTIMATE has continuously strived to improve and as our motto states we continue to "Build Futures Not Just Robots". Thanks to all volunteers, judges, and to the founders who had the foresight to invest their time and energy into such a wonderful program.

#251 W.P. Davidson High School

Hub: Jubilee

Team: RobotEx

Robot: Dalton

Students: Loryn Beachell, Hart Benton, Louis Buckalew, Adrienne Burch, Pranaya Chilukuri, Lauren Chisholm, Riley Davis, Suranjana Dey, Andrew Dollison, Lucas Donivan, Michael Dowdy, Anna Griffin, Nick Hawkins, Paquilla Jones, Kyle Laurio, Chris Lee, Kendall Lee, Kristen Lee, Bradley Mason, Kirk Smith, Miles Smith, Kaylyn Stanford, Stefan Stoffell, Jacob Watts

Sponsors: Mike Fletcher

The Davidson BEST robotics team, RobotEx, began five years ago in Mobile, Alabama. The beginnings of BEST at Davidson were humble with a few students asked to participate by a persuasive teacher. Those students set a precedent with their hard work and creative design talent that established a strong foundation for future teams.

Every year the program has grown in number and diversity of students, as well as in technical skill. It has enabled students to further discover the fields of math, science, and engineering outside of their classroom experience.

Davidson's team has won first and second place at South's BEST competition, and we are proud to participate in the very first BEST national competition. This year's team members have spent countless hours preparing for this competition and will carry what they have learned with them for the rest of their lives.

We hope all teams have found this experience as rewarding and challenging as we have. Good luck to all teams and game on!

#25 Wetumpka High School

Hub War Eagle

Team: Wetumpka High School Robotics, Inc.

Robot: Wetu Unleaded

Students: Jared Baggett, Nathan Basham, Chelsea Box, Dalton Cape, Daniel Cape, Nicholas Christensen, Ashtyn Clark, Codey Cline, Andrew Cribb, Alexandra Deem, Katie Dulak, Ryan Ebbinga, Elizabeth Ens, Joshua Estes, Kelly Glenn, Christian Golson, Danny Gray, Jennifer Harrison, Demetri Jones, Tanner Knight, Thomas Lockamy, Kayla Montgomery, Megan Moody, David Moore, Jonathan Mummey, Jonathan Oliver, Cassidy Overby, Tulsi Patel, Dixie Renfrow, Marie Reuter, Matthew Robison, Eduardo Rodriguez, Brandon Rogers, Jonothon Segars, Aaron Sexton, Chelsea Smith, Quinton Smith, Briana Spears, Julian Vilardi, Alex Webb, Robert Wilcox

Sponsors: Virginia Vilardi

Ever since our first involvement with the B.E.S.T. program, we have dreamed about a higher level of competition, such as the brand-new B.E.S.T. Nationals event. This event embodies our desire to expose the B.E.S.T. program to the public. This program also encourages the development of skills and techniques to fulfill the name of the event, Boosting Engineering, Science, and Technology. Our team motto is "On to bigger and better things!" With this competition, that goal can be achieved. As we continue approaching the dawn of a new era where nerd reigns supreme, we sincerely thank you for these bountiful opportunities and memories that we will carry with us throughout our lives.

#17 Whitewright High School

Hub North Texas

Team: Whitewright High School

Robot: Schrodinger II

Students: Chris Bearden, Grey Berry, Chance Castleberry, Stephen Decker, Michael Feller, Brett Hayes, Holly Hughes, Nathan Poindexter, Tyler Purdom, Don Rhoads, Carlton Roegner, Stephanie Schultz

Sponsors: Rodney Stanford

The Whitewright High School Robotics Team has been privileged to be a part of BEST since its inception. As one of the original teams, we have been able to participate every year in the competition. WHS has had the good fortune to experience much success at the local hub level, North Texas BEST, and the regional level, Texas BEST.

While some years have been more successful than others in competition, each year has brought the opportunity for students to develop teamwork, use their creativity, engage in problem solving, and learn the value of hard work. This program has been an avenue to involve students who were previously not participating in any extracurricular activities. It has brought together students from various backgrounds and interests to work together with a common objective.

WHS Robotics would like to recognize the vision of founders Ted Mahler and Steve Marum. Their commitment and selflessness have been the driving force in the success and expansion of the BEST program. We know that this national championship is truly a dream come true. We would also like to thank both the local and corporate sponsors who have made it

possible for every team to participate and every competition to be conducted. We would also like to thank the Whitewright ISD administration and board of trustees for their continuing encouragement and support.

The WHS Robotics Team is honored to be a part of this first BEST National Championship. We congratulate every team on their accomplishment in the game competition and the BEST Award. Your achievement stands as a testimony to the worth and value the BEST robotics program has provided, not only this year, but throughout its history. Once again, thank you for the special privilege of being a participant in the 2010 BEST National Championship!

#121 Wichita Homeschool

Hub: Kansas

Team: Wichita Homeschool Robotics

Robot:

Students: Aaron Alexander, Joey Botros, Maggy Botros, Charlie Burnham, Joshua Chase, Jonathan Crook, Seth Crook, Ian Darrah, Andrew Dirks, David Dirks, Dillon Dishman, Kyle Doeden, Matt Drummond, Ryan Dunn, Caleb Edelman, Jonny Fosnight, Christopher Gaskill, Brett Harms, Laura Harms, Cade Hiebsch, Colin Hiebsch, Elizabeth Hixon, Joshua Hixon, Hannah Johnson, Lydia Johnson, Joseph Loop, Jeremy Marshall, Jacob Mendenhall, Grace Richardson, Brian Schreiber, Timothy Schwarz, Clayton Udd, Connor Udd, Kayla Udd, Bethany Weddle, David Weddle, Katie Weddle, Joshua Whitman, Tucker Wilkes

Sponsors: David Alexander

The Wichita Homeschool Warriors team has participated in the BEST program since 1999. We are from the Kansas BEST hub which is hosted by Wichita State University. Our team is made up of 39 students ranging from the 7th to the 12th grades of which 21 percent are female. Some students come from up to 47 miles away. All students are encouraged to be active participants in the engineering process which includes reading the requirements, brainstorming, rapid prototyping, and design concepts. As a team the Wichita Homeschool Warriors strive to teach engineering principles to high school age students and encourage them to pursue careers in engineering, science, and technology. As a Christian team we are also committed to building character and teamwork traits.

The Awards

Best Award Category

BEST Trophy	Accomplishes the greatest school interest in engineering, science and technology.
BEST 2nd/3rd	BEST Trophy runner-ups.

Machine Award Category

Most Robust Design	For the machine requiring the least maintenance during the contest.
Most Elegant Design	For best of show design and execution.
Most Photogenic Design	For the most eye-pleasing, functioning machine.
Founders Award for Creative Design	Demonstrates the best use of the engineering process to include brainstorming approaches, consideration of offensive and defensive strategies, etc.

The Awards

Team Award Category

Sportsmanship Award	The team that exhibits the greatest level of sportsmanship throughout the day.
MathWorks Best Programming Skills Award	Awarded to the team that shows the most interesting use of BRAIN programming.
SolidWorks CAD Design Award	Awarded to the team that shows the highest mastery and most creative use of CAD software.
Best Team Video Award	Best video submitted by a team based on innovation & creativity, best use of the game theme, and best production.

The Awards

Competition Award Category

1st/2nd/3rd/4th Place Awards	Top 4 teams in head-to-head competition.
igus Top Gun Award	Awarded to the first team who creates iso-octane during the competition.

Special thanks to….

VEX Robotics for inviting and encouraging us to host our national championship in conjunction with their VEX World Championship.

Our national championship organizing committee, Greg Young, Mary Lou Ewald, Robin Fenton and Rachel Dossman.

All of the many BEST volunteers who have spent many hours to make this event happen.

All of the judges and referees for their time and dedication to the program.

All of our wonderful sponsors without which a national championship would not happen.

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BEST

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Thank you for coming. See you again this Fall.

Please thank all of our sponsors.

Visit us at http://www.bestinc.org.

Notes