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Introduction to SAE Baja

SAE Baja is an international collegiate design competition sponsored by



the Society of Automotive Engineers (SAE). Engineering students are tasked to design, build, and test an off-road vehicle that will survive the severe punishment of rough terrain.

The objective of the competition is to provide SAE student members with a challenging project that involves the planning and manufacturing tasks found when introducing a new product to the consumer industrial market. Teams from different universities compete against one another to have their design accepted for manufacture by a fictitious firm. Students must function as a team to design, build, test, promote, and race a vehicle within the limits of the rules, but also to generate financial support for their project and their educational manage priorities. Complete information about SAE and their many student competitions and programs can be found at www.sae.org.

<u> 2014 - 2015 Team</u>

SAE is becoming an established student organization to the UK Paducah Engineering Program. It helps to recruit students interested in the engineering field while also applying what is taught in the classroom. This is the eighth year for this chapter in Paducah. We, as a chapter, plan to enter the SAE Baja competition with high aspirations for success. The SAE Baja competition gives the students participating,



a real life opportunity that encourages them to put classroom theory to work. All participating students will gain valuable hands on engineering experience while learning organizational skills as well as learning how to function as a team.

In April of 2016 at Baja SAE Tennessee, located at Tennessee Technical University, Tennessee, our team placed 87 out of 116 teams overall. Our goal for the 2017-18 year is to research, design, fabricate, and test a new vehicle, which, in hopes, will exceed the scores of the previous race. Our team plans to compete with the new vehicle in the 2017-18 competitions.



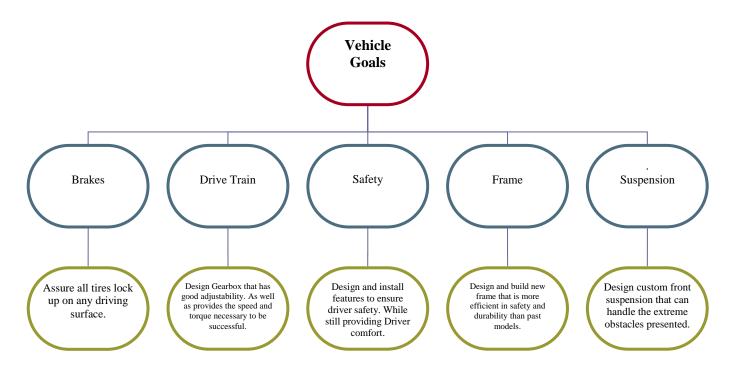


<u>2017 – 2018 Goals</u>

Team Goals:

- Gain sponsorship support sufficient for designing and constructing a new Baja car for future SAE events.
- Build skills that are necessary to succeed in team oriented tasks









About the Competition

This year's North American SAE Baja is divided into three competition locations: Cookeville TN., Rochester NY., and Gorman CA. While the format differs in each competition, they are all judged based on a static design portion and two days of dynamic events. Below is the point's breakdown for this year's competitions.

Event Type	Event Description	Tennessee	New York	California
Static Events	Design Evaluation	150	150	150
300 points	Cost Report	15	15	15
	Prototype Cost	85	85	85
	Sales Presentation (for all events)	50	50	50
Dynamic Events	Acceleration	75	75	75
700 points	Hill Climb or Traction	75	75	75
	Land Maneuverability	75	75	75
	Specialty Event			75
	Suspension	75	75	
	Endurance	400	400	400
	TOTAL POINTS	1000	1000	1000

Score Summary

Cost of Participation

Briggs and Stratton, Polaris Industries, and Solid Works are corporate sponsors of the SAE Baja competition; however, the individual student sections that enter the competition must raise all money, independently, used to build their vehicle. Briggs and Stratton donates the Vanguard model 19 racing engine every other year with small shipping and handling fee. Polaris Industries grants each team a discount on parts based upon their inventory and cost of the product. All other manufacturing costs must be funded by the local student chapter, which includes any aftermarket parts, raw materials, tools, and safety equipment that must be purchased in order to comply with all rules of the competition. Also, all travel expenses to and from the competition must be raised as well. A breakdown of these expenses can be found on the following page.





Rebuild/Design Costs

Engine	\$300.00
Transmission	\$2,500.00
Safety Equipment/Driver Seat	\$550.00
4130 ChromeMoly Tubing	\$1,500.00
Steel & Aluminum Plating	\$500.00
Suspension	\$3,500.00
Steering System	\$300.00
Disc Brake System	\$1,000.00
Fasteners	\$350.00
Wheels & Tires	\$500.00
Total Rebuild/Design Costs	\$11,000

Supply Costs

Metal Shaving Ventilation System	\$2,500.00
Welding Gas Ventilation System	\$1,000.00
Plasma Cutter	\$2,500.00
Grinding Disc, Drill Bits, etc.	\$300.00
Welding Gas, Wire & Safety Equipment	\$500.00
Miscellaneous Supplies (cleaning, etc.)	\$150.00
Total Supply Costs	\$4450

Travel/Race Costs

Race Entry Fees	\$1,250.00
Travel Fees (Hotel, Gas, etc.)	\$5,500.00
Total Travel/Race Costs	\$6,750.00
Total Cost	

\$22,200.00





Publicity

If your company chooses to sponsor our SAE Baja project, you will be helping provide UK Paducah Engineering students with the opportunity to develop life skills that cannot be learned in a classroom. As a reward, your company will be recognized on both a national and international level. Your company's name and logo will be seen by thousands of tomorrow's engineers, as well as countless spectators from all over the world. Your company's donation would also go toward funding many of the community outreach programs we participate in.

Sponsorship Benefits



Parts / Labor / Shop Time /Discount

- **1.** Sponsorship does not just have to be a cash donation.
- **2.** If your company has something you feel is beneficial to our team, feel free to contact us to inquire about sponsoring.
- **3.** Companies will receive a benefit package equivalent to the cash value of their donation.
- **4.** If your Company would like to receive any benefits not listed we would be happy to discuss any accommodations.



All Donations Are Tax Deductible





Thank You

We, as a chapter, thank you in advance for your time and consideration of our project. Your contribution to the SAE Baja car project will undoubtedly give our students valuable learning experience and help to expand the UK Paducah Engineering program.

Contact Information

If you have any questions regarding sponsorship, please feel free to contact any of the individuals listed below. If you are excited about sponsoring and ready to make your tax-deductible donation, you can fill out the sponsorship form attached and return it with your donation.

> Dr. Charles Lu Phone: 270-534-3115 Email: ycharelslu@uky.edu Faculty Advisor

> > Tommy Harper Cell: (270)-562-0982 <u>tlha239@g.uky.edu</u> President

> > Austin Bailey Cell: (270)-366-8441 jaba252@g.uky.edu Vice President

> > Jordan Garcia Cell: (270)-727-2209 jga246@g.uky.edu Treasurer

> > Brett Quigley Cell: (270)-559-3204 Brett.quigley@uky.edu Secretary





Donation Form

I would like to secure the following Sponsorship opportunity.				
Gold (\$1000 +)	\$			
□ Silver (\$250 - \$999)	\$			
Bronze (\$100 - \$249)	\$			
Parts / Labor / Shop Time / Discount	\$			
□ Other (Disc. :)	\$			
NAME:				
COMPANY:				
ADDRESS:				
CITY:STATE:	ZIP:			
PHONE:FAX:				
EMAIL:				

Please make checks payable to: **SAE STUDENT CHAPTER**

Return this form with donations to:

Charles Lu Faculty Advisor University of Kentucky / Paducah 4810 Alben Barkley Dr. Paducah, KY 42001 Attn.: Dr. Y Charles Lu