University of Idaho
Vandal Hybrid Racing

The Vandal Hybrid Racing Team is a non-profit organization which advances the education of future engineers by designing and building a vehicle to compete in the annual Formula Hybrid competitions.

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Background Information

Mission Statement

The mission of the Vandal Hybrid Racing Team is to build the best Formula Hybrid vehicle possible using our acquired engineering and real world skills while having a good time. The Vandal Hybrid Racing Team is a great way for students to gain appreciation for the hands on side of engineering. Many skills used to build the formula hybrid vehicle are not taught in the class, but gained through trial and error along with plenty of practice. Because of the vast range of skills students learn while being a team member, the project produces very well rounded engineers with an appreciable understanding of how to apply engineering principles to every day challenges.

What is SAE?

The Society of Automotive Engineers is a non-profit educational and scientific organization dedicated to advancing mobility technology for use in everyday life. Formula Hybrid™ is a design and engineering challenge for undergraduate and graduate college and university students. They must design, build, and compete an open-wheel, single-seat, plug-in hybrid racecar and eventually compete in the first week of May every year. Restrictions are placed on the dimensions of the car’s frame as well as the displacement and power of the engine, which puts focus on the ingenuity and problem-solving skills of the students. The competition was created and is currently managed by Thayer School of Engineering at Dartmouth. The races are held at New Hampshire motor speedway where driving events include acceleration, endurance, and autocross. Static events such as cost, design, and presentation highlight organizational skills which will be useful in the professional world. The technical inspection and presentation aspects of the competition are judged by other engineers and industry professionals making top notch design imperative.

SAE: UI Branch

The University of Idaho has a history of collegiate racing teams. Idaho has been competing in the Formula SAE competition, since 2001 where they earned rookie of the year honors. The team struggled the next few years due to a lack of funding and some mechanical issues that occurred at competition. However in 2008 the team made a huge improvement from finishing 58th overall out of 125 teams in 2006 to finishing 14th overall. This year we have switch to the Formula Hybrid competition and we are looking forward to putting our skills to the test and make a car that will perform beyond expectations.
The 2010-2011 Car

Vandal Hybrid Racing is designing the 2011 car to be more aggressive than previous cars. This means improved reliability, improved manufacturing processes, as well as an overall reduction in the center of gravity, height, mass and overall cost of the car. We also hope to improve sustainability with the implementation of a hybrid electric engine.

Car Specifications

Power Train
Yamaha YZ250F Four-Stroke Engine w/
Yamaha WR250F Starter Assembly
Throttle Body Fuel Injection
Planetary Limited-Slip Differential

Transmission
4 Speed constant mesh w/ Electronic Shifting
Rekluse Motorsports Z-start Pro clutch
WR250F Gear ratios

Suspension
Fully Independent, Double Wishbone
Non-Parallel, Unequal Length A-Arms

Frame
4130 Chrome-moly Welded Steel Frame
Carbon Fiber Composite body

Hybrid System
Parallel Hybrid Configuration
Integrated 46 hp Lynch LEM200-135 RAG Motor
Grrreen batteries
Kelly KDH09401A Motor Control

Wheels/Tires
13” Aluminum Wheels
Hoosier Racing Tires
Brembo Calipers and Custom steel Rotors
Sponsorship Program

Vandal Hybrid Racing is a non-profit organization that depends entirely on monetary donations, materials, products and technical support from corporations and individuals. The generous support of our sponsors allows us to build a car that is on cutting edge of GREEN technology.

Recruitment of Future Leaders

Formula Hybrid provides a real-world experience not available to students in the traditional classroom environment. It gives students insight into new hybrid technologies that can help make a more efficient race car. Vandal Hybrid Racing team members are challenged to think creatively and to develop practical skills such as time management, organization, teamwork, leadership, and meeting the needs of a customer. These abilities give them a professional advantage over their peers and put them among the top candidates in their field.

Company Recognition

To show our appreciation, all sponsors’ names and/or logos are displayed on our car. The car will be displayed on the U of I campus, newsletters and website thus providing your company with exposure and recognition to parents, students and professors at a major research and development university.

There is also further exposure when attending the Formula Hybrid competition, as well as to the general public when we show off the car at other open events.

Tax Deductible Donations

The University of Idaho FHSAE team is a sponsored student group of the Associated Students of the University of Idaho, a non-profit unincorporated association. This means that any donations may be claimed as charitable and tax-deductible.
Sponsorship Details

A sponsorship could potentially entail one or more of the following:

- Aesthetic design consideration for entire car (company colors, prominent branding stickers, etc.)
- Company logo on homepage of website, promotional materials, transportation vehicle (i.e. truck or trailer)
- Invitations to testing and competition events
- Unrestricted access to weekly meetings
- Short company profile on website
- Availability of team and car to company events
- Company link on website
- Company branding display at public car showings

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<th>Benefit</th>
<th>Donation</th>
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<tr>
<td>Title</td>
<td>Design consideration for entire car (Logo, Color Scheme, Prominent Branding in any location)</td>
<td>Largest single monetary donation received</td>
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<tr>
<td>Platinum</td>
<td>Very large Decal/Sticker</td>
<td>$10,000+</td>
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Tax Information

University of Idaho’s Society of Automotive Engineers is sponsored by the Associated Students of The University of Idaho.

**IRS Class # 501(C)3**

Upon reception of donation, the University of Idaho SAE will generate a receipt and a letter of thanks that contains the above tax information.

If you choose to contribute, please make checks payable to:

**University of Idaho SAE**

Contact Information

For more information please contact us at:

**Team Advisor, Edwin Odom:** eodom@uidaho.edu

**Team Lead, Samuel Wos:** wos9722@vandals.uidaho.edu

**Team Web Site:**

http://seniordesign.engr.uidaho.edu/2010-2011/hybridformula/Index.html

**SAE President, Zack Porter:** zackary.porter@vandals.uidaho.edu

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