

University of Wisconsin – Madison
SpaceX Hyperloop Pod Design Competition
BadgerLoop Team



Corporate Sponsorship Packet 2015-2016



Dear Future Sponsor,

The existence of the UW-Madison Hyperloop Pod Competition Team relies on the strong support of companies like yours. This support offers innovative engineering students the opportunity to collaborate on this challenging project gaining valuable design and fabrication experience. Taking this concept from idea to reality is no small feat, and we hope that you will consider sponsoring the BadgerLoop Team by contributing consultation services, monetary gifts, equipment/materials, or anything you feel would be beneficial to our endeavor.

On June 15, 2015, SpaceX announced their intention to host a competition and build a test tube at their headquarters in Hawthorne, CA. Within two months of the announcement, over 1,200 teams had registered to participate. As of January 31, 2016, the University of Wisconsin-Madison was awarded the 3rd best overall design by Judges at [Design Weekend](#) in Texas. We will be joined by 30 other international teams building pods for the test track in Hawthorne, CA. Competing in this talented arena will be a challenge, but we are confident in our ability to succeed.

To gain a competitive edge, we are going above and beyond the competition requirements by incorporating innovative designs such as regenerative power axles, redundant brakes, industry-grade control systems, magnetic propulsion, virtual reality, and much more.

As a sponsor, your company will experience many benefits, depending on sponsorship level. For more information about these benefits, please see our sponsorship tiers on page 5.

This packet includes a team overview, competition weekend description, projected budget, and information on how to make a donation. We would be more than happy to answer any questions or concerns you may have. We are extremely passionate about this project and cannot wait to help build the future of high-speed transportation. We hope you will consider sponsoring our team to promote innovation, engineering, and education. More information about our team and the competition can be found on our website: <https://www.badgerloop.com/>.

Sincerely,

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Team Overview

Within days of the competition announcement, motivated students formed what is now BadgerLoop: the official UW-Madison Hyperloop team. The innovative nature of this contest made it easy to recruit not only members but also faculty advisors. The talented professors of the College of Engineering have been extremely supportive, helping the team create aggressive timelines and providing expert knowledge. Today the BadgerLoop team has over 150 general members (majority undergraduate students), two dedicated faculty advisors, and continues to grow. The collective team background boasts various engineering research pursuits including the [CanSat Competition](#), the Wisconsin Space Grant Rocket Competition, creation of a small-scale object-avoiding rover, and intuitive drone control through the [UW Internet of Things Lab](#).

For the 2015-2016 year, our team entered the competition with the intent to design and build a full, competition-scale pod to be tested at the test track this summer. During the fall '15 semester we successfully raised \$10,000 in private and corporate donations in addition to 2000 square feet of carbon fiber prepreg. Thanks to the Physics Department at UW and Professor Duncan Carlsmith of Garage Physics and Venturewell, we have been provided 400 square feet of manufacturing lab space. This space includes lathes, mills, a crane, a TIG welder, sheet metal bending and cutting equipment, a band saw, and shop tools. In addition, it is around the corner from the Physics workshop and one wall of our lab space opens up to the building's loading dock.

On January 29-30 we presented our design and booth to sponsors, SpaceX and Tesla engineers, and renowned professors from around the world at the [Design Weekend](#) event. Joining us were 121 other teams representing 20+ countries. Our design receiving third best overall design and a Technical Excellence award – trailing only MIT and Delft University of Technology (Netherlands). We are beyond proud of what our incredibly talented team has been able to accomplish, and strive to be the first successful Hyperloop pod ever launched.

In addition to presenting our design and creating “one of the coolest booth setups” (Texas A&M Engineering), our team submitted a 252 slide-deck Final Design Package. Pending legal consultation, this document will be made available to the public and will be sent to interested sponsors.

Competition Weekend – Summer 2016

The Competition Weekend will take place at the SpaceX Hyperloop test track in Hawthorne, CA, in August 2016. The competition weekend will consist of a Pod Loading Procedure, Pod Launch Procedure, and Pod Unloading Procedure – all with very specific line-item requirements. More information about the competition can be found in the [Rules and Requirements](#) Document, including the judging criteria rubric.



The BadgerLoop Pod



Figure 1: Diagram of the pod as submitted in our Pre-Build Design Package.

Scalability and manufacturability were key aspects of our pod's design. In Figure 1 (above), you can see the pod that we will be building. Every component has been designed to be built by the students on the BadgerLoop team, except for two. The ribs will be water jet cut, and the aluminum for the Halbach wheels laser cut, by the College of Engineering for free. Our pod can easily be scaled: extend the front and back sections, insert copies of the inner two ribs, and increase the length of the magnetic levitation modules. Once this is done, you have a pod seen in Figure 2 that is able to house 24 passengers.



Figure 2: Diagram of our pod and systems scaled up to full size.

Projected Budget:

Item	Amount
Competition Weekend Transportation	\$6,000
Systems Overview	
Electrical	\$11,278.21
Propulsion/Stability	\$23,983.15
Levitation	\$8,999.70
Braking	\$4,800.03
Safety	\$9,020.00
Structures	\$7,990.42
Software/Controls	\$250.00
Tools and Workshop	\$3,455.52
Prototyping/Testing	\$2,500.00
Fabrication Total	\$72,277.03
GRAND TOTAL	\$78,277.03

Donations:

BadgerLoop has partnered with the UW Foundation in order to help manage our incoming finances and to allow donations to be tax-exempt. All donations made to BadgerLoop via the methods below will be tax exempt.

Check: Checks should be payable to "UW Foundation," with "BadgerLoop Fund" in the memo line. Please include a cover letter stating gift amount, intended purpose, and contact information.

*UW Foundation C/o Brad Green
1848 University Ave
Madison, WI 53726*

Online: Make a private donation online to BadgerLoop by visiting the link below. Also tax-exempt.
<http://supportuw.org/giveto/badgerloop>

Materials: Please contact Sid Smith (sbsmith5@wisc.edu) regarding material donations.

Sponsorship Tiers:

Category	Platinum	Gold	Silver	Bronze
Gift (monetary/material)	\$20,000	\$10,000	\$5,000	\$1,000
Logo on pod and trailer	Most Prominent	Very Prominent	Prominent	Present
Logo on competition apparel	Most Prominent	Very Prominent	Prominent	N/A
Logo on website/newsletter	Section I	Section II	Section III	Section IV
Handbook of member resumes	✓	✓	✓	✓
Invitations to campus events	✓	✓	✓	✓
Speak at Reveal Event (opt.)	✓			
Social Media Shout-outs	✓	✓	✓	
Monthly newsletter	✓	✓	✓	✓

For more information and to maximize your sponsorship value, please contact Sid Smith at sbsmith5@wisc.edu



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