Michigan SAE Baja Racing has competed in national competitions that challenge student teams to design, build, and race a single-seat off-road vehicle for 26 continuous years. All class levels are represented, from freshmen to graduate students. Participating on such a team helps students develop valuable real-world skills such as time and project management, communication, teamwork, and practical engineering that give them a competitive advantage upon entering the your future workforce.
Frame: 4130 Chromoly Steel tube roll cage

Engine: Briggs & Stratton Intek Model 20

Brakes: 
Front: Custom Calipers
Rear: Wilwood PS1 Caliper, Custom Rotor

Panels: Carbon fiber reinforced Kevlar, custom layup

Drivetrain: Entirely custom continuously variable transmission, single-speed gearbox & axially-stressed driveshaft

Suspension: 
Front: Dual A-arm, custom corner assemblies
Rear: Trailing Link with single camber link per side
DESIGN

To design the vehicle, the team uses a powerful and versatile library of Computer Aided Engineering (CAE) software. The team approaches design as an iterative process including: component and system integration, manufacturing, and testing. The car is broken down into numerous subsystems, each having a responsible engineer. This approach gives valuable experience in both component and overall system design. CAE models are compared with on-car testing data using a robust and customizable data acquisition system. This organization and design process are evaluated by a panel of judges at each competition.
MANUFACTURING

Design for manufacturability and assembly is a key component to our success. Through involvement in the team, members gain valuable hands-on experience with many processes that reinforce this principle. Students manufacture their designs on manual and CNC milling and turning machines, and learn welding, composites layups, and 3-D printing. Processes not available in our shop are generously provided by numerous local sponsors.
COMPETITIONS

Every year, the team travels to all three U.S Competitions, around the country. The 2015 events were held in Auburn, AL Baltimore, MD, and Portland, OR. Universities from across the U.S and countries around the world compete in the grueling three day competition. Competitions provide the opportunity to compare our design with this diverse field of competitors.

Day 0  Briggs & Stratton engine inspection and sales presentation

Day 1  "Static Day": Technical Inspection, brake check, design review with industry professionals, cost audit

Day 2  "Dynamic Day": Acceleration, Maneuverability, Suspension & Traction or Rock Crawl, and Hill Climb or Sled Pull

Day 3  "Endurance Day": A grueling four hour long wheel to wheel race with up to one hundred vehicles
RESULTS

Portland, OR
May 27-30
1st Overall
1st Endurance
1st Acceleration
1st Hill Climb
3rd Sales
3rd Design

Baltimore, MD
May 7-10
2nd Overall
2nd Acceleration
1st Hill Climb
3rd Maneuverability
2nd Design

Auburn, AL
April 9-12
1st Overall
3rd Endurance
1st Acceleration
3rd Hill Climb
2nd Maneuverability
1st Design

1st Place
Mike Schmidt Memorial Iron Team Award
Acknowledging the team with the highest cumulative score from all three North American Competitions
THANK YOU SPONSORS!

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<thead>
<tr>
<th>Level</th>
<th>Title Sponsor ($15000+)</th>
<th>Diamond ($10000)</th>
<th>Platinum ($9999-$5000)</th>
<th>Gold ($4999-$2500)</th>
<th>Silver ($2499-$1000)</th>
<th>Bronze ($999-$250)</th>
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<tbody>
<tr>
<td>Appreciation</td>
<td>Diamond + company name on team t-shirts, loan of previous generation cars upon request</td>
<td>Platinum + Company banner displayed at competition, detailed company description on website</td>
<td>Gold + extra large website and vehicle logos, team Resume Book.</td>
<td>Large website and vehicle logos</td>
<td>Medium website and vehicle logos</td>
<td>Website link, vehicle logo</td>
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</tbody>
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Interested in learning more about the team? Contact the team Captain, Justin Lopas at jlopes@umich.edu, or visit our website: baja.engin.umich.edu