



# Warrior Racing

## *Continued Success at MIS*

We completed our competition at Michigan International Speedway. Long story short, we had another successful competition taking down more team records and having fun while doing it. Read more about our adventure at MIS starting on page 2! Also be sure to look for our next publication describing our performance in Lincoln, Nebraska!

Event	Time	Points	Place
Cost	—	79.8	2nd
Presentation	—	61.8	13th
Design	—	100	T-12th
Acceleration	4.99	35.2	71st
Skid Pad	5.64	10.1	67th
Autocross	58.41	48.3	68th
Endurance	—	19	T-65th
Overall		354.3	66th

### **Issue 23 - July, 2016**

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Our journey to Michigan International Speedway started a bit rough the night before competition. Members of the team dropped off our truck filled with equipment and registered the team early. RWX would arrive the next morning. A small leak was discovered on the clutch cover of the engine, and the team had to remove the engine and reseal the cover that night.



As soon as we arrived on site Wednesday morning, we prepared for pre-tech and sailed through without any issues. Later, we would pass the scrutineering portion of technical inspection after addressing a small list of items that needed to be fixed. One of the items was that the restrictor size was too big. In order to pass technical inspection the team built up a small layer of adhesive to the inside of the restrictor to comply with the 20mm rule.



Shortly after receiving our first tech sticker, the team took the car to be weighed. Road Warrior X came in at 211kg with a weight distribution of 47% front bias and 53% rear bias.



Wednesday went smoothly, and the team spent the rest of the day doing final checks and preparing for the static events on Thursday. In addition to managing the time between our static presentations, we would also need to pass the final three portions of technical inspection: tilt, noise, and brake.

On Thursday morning we were the third team in line for the tilt test. We thought it would be simple and straightforward, but fuel leaked when the car was tilted. After several attempts to fix the problem, the leak persisted.







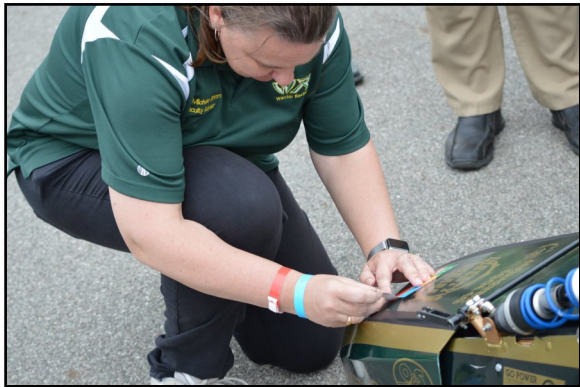
Due to our tight schedule, we had to put the tilt test on hold and present our car at the Cost Event. Richard, Erin and Hunter did a fantastic job with the report and Real Case Scenario presentation. Their hard work earned us another trophy and a second place finish. Making this the third competition in a row where Warrior Racing has taken home second place.

After the Cost Event, we were mentally preparing ourselves for the Design Event. This event is an opportunity to present our designs in front of professional engineers from the automotive and motorsport industries. We shared a 12<sup>th</sup> place finish with other top FSAE teams from around the world. This was a major milestone for Warrior Racing as we broke our record for design at the Michigan competition. Mahesh Umasankar received great comments and assurance from top judges that our suspension design was on the right track. Frame design was especially well received; we scored the highest possible design points for a Non-aero frame.



While the car was at the Cost Event, Powertrain director- Justin Bekker & Fuel Captain- Muhammad Miftari discovered the cause for the fuel leak, which stemmed from a loose fitting on the top of the tank. Immediately following the Design Event, we cleared the Tilt Test without further issue and went on to the Noise Test. It was still early afternoon so the team was confident we could get past the final hurdles by the end of the day.

The Noise Test has haunted us in the past, especially during our 2015 season at MIS. To make sure we didn't face similar issues, the team did a pre-noise check before we left for competition. While we were confident about passing the Noise Test, it did throw us off initially when we didn't pass on the first attempt. With some additional engine tuning by Mohammed Kakli, we managed to clear it on the second attempt.



RWX made the short trip over to the brakes area with about 2 hours to spare before the close of all tech stations for the day. RWX, and our driver performed exceptionally well, with all 4 wheels locking perfectly on the first try! As a special treat, our driver and brakes captain Tirath got a piece of candy from the tech inspectors for passing on the first try!

Our team had tackled all of technical inspection on the first day for the first time in many years. This meant we were ready to show what RWX could do in the dynamic events on the following day. The team made some final checks on RWX before heading home to rest up for another busy day of competition.







Day three of the Michigan competition started out rough due to a mishap with our battery. The team worked quickly to recover and would like to extend a thank you to Florida Tech for letting us use their spare voltage rectifier.



The morning was busy with some final calibration work from Mohammed Kakli with the assistance of alumnus Sanket Sirpotdar. During this time, our design judges came to our paddock for the design review. The feedback was helpful and encouraging as the judges explained that we were on the right direction and just came up short of making it to the design finals.



The first event was the acceleration run. This was held on pit road of the speedway and was an amazing atmosphere to be a part of. Justin Bekker drove first, and put down a time of 5.2s. Tirath Matharu was our second driver and had a slightly faster time of 4.9s. Although we finished all runs of this event, we weren't as fast as other teams with times of around 4 seconds.



After our acceleration runs, Mahesh Umasankar weighed RWX and tuned the suspension for the skidpad event. Brandon Horsch drove this event first and did well to achieve a 5.6s time. Mahesh also wanted the chance to put down a skidpad time, and was able to post his fastest time of 5.7s. However, this too was off the mark as the fast time of the day was a full second quicker than Brandon's time.



In order to make sure we secured our spot for the endurance event, we made the short trip over to the auto-cross track. Tirath Matharu's fastest time was 69s, but Michael Warmbold's 58s lap time put us at 34th for the run order of endurance on Saturday.

The team spent the rest of the evening making preparations for the endurance and fuel economy event. While RWX didn't perform quite as well as the team would have hoped, we were still excited for the final event.

The morning of endurance started out bleak, with an overcast sky and a light drizzle. Our two drivers, Michael Warmbold and Justin Bekker made their way over to the endurance track for one final walk. Meanwhile, the team elected to make the change from dry to wet tires before rolling the car to the fueling station.

Once the car was fueled, RWX lined up for endurance. Based on the autocross time the day before, our run order put us in the morning heat. While waiting in line, the skies were clearing up and the track was drying off. Seeing the change in conditions, we again decided to swap the tires back to the racing slicks. Just as we were finishing, we were called to push the car to the starting line.

Justin started on the track for the first 10 laps, and completed them with ease having very consistent lap times. After the driver change, Michael would finish the final 10 laps of endurance. As expected, Michael was a couple seconds faster than Justin, continuing to get quicker as the laps wound down. The car began to make its way around the track for the final time while the team watched anxiously.

About one third of the way around the track, Xena came to a stop and was towed off of the track. As soon as the car exited the endurance area, we discovered that we had run out of fuel. This was devastating for the whole team to come so close to back-to-back competitions completing all events.

Leaving MIS we were determined to make improvements to succeed the following month at Formula West. We were also extremely confident in our performance in the static events. Finally, this was another opportunity where new members gained invaluable experience from attending their first SAE competition.



## ***New Records!***

	<b>Previous Records</b>		<b>2016</b>
<b>Overall Points</b>	<b>2015</b>	64th - 270.1 Points	<b>66th - 354.3 Points</b>
<b>Cost</b>	<b>2015</b>	2nd - 93.6 Points \$9,342 Kristina Vujic	2nd - 79.8 Points \$9,334 Erin Kronell Hunter Hollister
<b>Presentation</b>	<b>2015</b>	19th - 61.7 Points Adam Niner Kristina Vujic -	<b>13th - 61.8 Points</b> <b>Tirath Matharu</b> <b>Erin Kronell</b> <b>Noah Lovins-Wiluz</b>
<b>Design</b>	<b>2015</b>	57th - 70 Points Mohammed Kakli Richard Le Page	<b>12th - 100 Points</b> <b>Mahesh Umasankar</b> <b>Justin Bekker</b>
<b>Acceleration</b>	<b>2009</b>	59th - 19.93 Points 5.243 seconds Sanket Sirpotdar	<b>71st - 35.2 Points</b> <b>4.99 seconds</b> <b>Tirath Matharu</b>
<b>Skidpad</b>	<b>2009</b>	51st - 12.05 Points 5.887 seconds Sanket Sirpotdar	<b>67th - 10.1 Points</b> <b>5.64 seconds</b> <b>Brandon Horsch</b>
<b>Autocross</b>	<b>2015</b>	66th - 44 Points 61.030 seconds Michael Warmbold	<b>67th - 48.3 Points</b> <b>58.41 seconds</b> <b>Michael Warmbold</b>
<b>Endurance</b>	<b>2009</b>	31st - 81.01 Points 1903.7 seconds Sanket Sirpotdar The Muffin Man	65th - 19 Points DNF Justin Bekker Michael Warmbold
<b>Fuel Efficiency</b>	<b>2009</b>	31st - 3.75 Points 1.425 gallons / 5.39 L	DNF

## ***Next Up: Formula West***

During the time between Michigan and Lincoln we continued to test RWX to the limit , and did as much as we could to make sure the chassis and powertrain were fully tuned before heading out west. With our exceptional performance in the static events from MIS, we were confident that dialing in the vehicle could see us take another top finish at Formula West! Keep a look out for another newsletter detailing our performance in Nebraska in the coming weeks!



*Warrior Racing's success and growth would not be possible without the generous support of our sponsors, families, friends, classmates and Wayne State University. We would also like to acknowledge all of the team members that made this year a success.*

Tirath Matharu  
Filippo Caro  
Mahesh Umasankar  
Justin Bekker  
Michael Warmbold  
Brandon Horsch  
Muhammed Miftari

Samer Allomary  
Hunter Hollister  
Gursewak Matharu  
Pranav Sridhar  
Elliot Carter  
Andrew Cucciara  
Sai Prashanth Kamble

Vishal Jaykumar  
Sreeram Raj Rajasekaran  
Erin Kronell  
Noah Lovins-Wilusz  
Angad Panesar  
Arjun Venugopal  
Rashad Soboh

Sheba Ahmed  
Dalya Kabbani  
Syed Haque  
Jesse Dye  
Madeline Betterly  
Ashura Molla  
Abdul Fayed

**Advisors:**  
Mohammed Kakli  
Richard Le Page  
Kristina Vujic  
Adam Niner  
**Faculty Advisor:**  
Dr. Michelle Grimm

# Thank You





# Warrior Racing 2015-2016 Sponsors

*Our team's success is made possible through the generous donations and support from the following companies. Without them our team would not have the resources needed to provide invaluable hands on experience and to manufacture our formula cars. From all members of our team, thank you Warrior Racing sponsors!*

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# Wayne State



The Chrysler Foundation



# Woodward



**MOTOR CITY STATIC**  
Wasting your quality time, since 2008!



# Special Thanks

Brian Geraghty  
Dr. Michele Grimm  
Dean Richard Darin Ellis  
Carl Occhialini  
Jim Vito  
Dave Chegash

Michael Royce  
Suzanne Royce  
The Niner Family  
The Bekker Family  
The Le Page Family  
The Umasankar Family



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