

# off-road illini NEWSLETTER

TERM: FALL | DATE: AUGUST 2, 2019

## Positive Season Reflection

Pollock's competition season has been a huge leap in the right direction for the Off-Road Illini! The most impactful improvements have been our overall vehicle dynamics behavior with three additional inches of ground clearance as well as the success of our loaded u-joint half-shafts. Acting as a suspension member, these loaded half-shafts decreased our weight significantly while improving overall rear drivetrain packaging.

Suspension behavior has also been successful due to specific shock settings for each event, allowing us to put our best foot forward in any challenge thrown at us. Overall, Pollock has shown us that taking big risks can result in great rewards. We can't wait to continue making big strides for our team in 2020!

## Highlights

- 3rd Place Maneuverability in Tennessee
- 13th Place Design Presentation Rochester
- Overall Vehicle Dynamics Behavior
- Fantastic new member engagement
- Frame weight efficiency

## Critical Competition Reflection

The 2019 competition season proved to be both exciting and challenging for us. One of the most challenging aspects revolved around drivetrain durability. After experiencing gear failures at the first competition and a poor CVT tune throughout the season, we knew our drivetrain would need to be a greater focus for the 2020 season. Despite these setbacks, we are incredibly proud of our suspension characteristics as shown by our best maneuverability finish in Off-Road Illini history.



Another area we strive to improve is sub-system integration. Although Pollock's rear packaging saw a visible improvement from the 2018 vehicle, Roamer, our front tab reliability suffered failures that caused major setbacks during dynamic events. As an overall vehicle, we believe that Pollock has surpassed Roamer in many areas, but our overall competition results did not reflect this as well as we had hoped.

# Between a Bone Grinder and a Hard Place

If there's one lesson to be learned during Baja competition season, it's that nothing ever truly goes as planned. We found ourselves in quite an unexpected situation at Baja Tennessee Tech when a gear in Pollock's gearbox broke during brake check, leaving us with nearly 12 hours to make repairs and pass brakes before dynamics events began. With only one spare gear with an undersized bore, we had two real options left - to find a way to modify the spare or to head home for the weekend. Things were looking bleak.

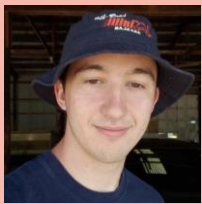


In true Baja fashion, though, we weren't about to give up that easily. After a few Google searches and phone calls, we found a local machine shop with a wire EDM machine willing to help. Within the hour, Adam (Captain), Keira (President), Marcin (Brakes Lead), and Megin (Drivetrain Lead) were on their way to Suburban Tool in Cookeville, TN. After a quick and cheap wire EDM, machinist Randy gave the few of us a tour of the machine shop. He talked all about the various machinery and tooling housed on the property, the numerous jobs the shop has worked on, the bone grinder Suburban Tool designed and created for use in the medical field, and even let us pet the calves on Suburban Tool's farm!

That same evening, we were able to replace the broken gear, with Pollock passing brake check first thing the next morning. Thanks to Randy at Suburban Tool, Pollock was able to compete in every dynamic event at Baja Tennessee Tech with an overall finish of 30/86<sup>th</sup>. If you're ever looking for quick and reliable machining in Cookeville, the Off-Road Illini wouldn't hesitate to recommend Suburban Tool.



## Member Impressions – Competition Season



### Sasha Lozuk (Sophomore)

- **Subteam:** Drivetrain, Business
- **Competitions Attended:** Baja Rochester, Winter Baja
- **Favorite Moment(s):** Watching Pollock conquer the difficult suspension course and celebrating with the team



### Esmée Vernooij (Sophomore)

- **Subteam:** Suspension
- **Competitions Attended:** Baja California, Midnight Mayhem
- **Favorite Moment(s):** Watching S&T push cars to their best ability, seeing everyone's cars do well, seeing cars crash, cooking dinner with the team at the Airbnb in Cali



### Olivia Holland (Sophomore, pictured on right with teammate Jen)

- **Subteam:** Chassis
- **Competitions Attended:** Watching Pollock compete in the endurance event
- **Favorite Moment(s):** Working carnage with teammates Rutvi, Haley, and Jen at Midnight Mayhem



### Cassie Kim (Junior)

- **Subteam:** Suspension, Manufacturing
- **Competitions Attended:** Baja California
- **Favorite Moment(s):** Team Bajonding (Baja bonding) on the drive out to Baja California, accidentally slam-dunking trash onto Veronica because of the wind ("Sorry V-ron!")

# Where Are They Now?

## Graduated Seniors 2019

- Adam Schmitt - Northrop Grumman
- Joe Schaefer - Navistar
- Steven Michelotti – Atlas Engineering Group
- Graham McGlagan – Looking for work this fall
- John Goeckner - CAT



Saying goodbye to the team's past leaders and not having some of our best friends on campus anymore is sad, but seeing what they do after graduation is really exciting! All of our alums entering the workforce bring great technical experience and insights, so it's always fun to keep up with where they end up! As these teammates move on we say goodbye to Adam's positivity, Joe's sense of humor and maneuverability prowess, Steven's MacGyver-like ability to solve problems, Graham's ability to bring the team together, and John's great shop-day attitude. We have learned a lot from all of them and can't wait to see what their future holds!

## Looking Forward

Looking forward to next season, we have a lot of things to be excited about. Our team grew significantly last year, so we are excited to have a lot of young leaders on our team to start taking on more projects and responsibilities. For the administration of the team we're adapting to our large roster by introducing the role of 'technical lead' in our management and removing the responsibility of a large project from subteam leads so that they can focus on managing their groups.





For the car itself, we have created a strict design and manufacturing schedule in order to ensure we can get our drawings to sponsors early and end the build season with more time for testing. Another push we are making for the season is to get more driver seat time both in old cars and the new car. We are really proud of Pollock, but we believed its competition performance didn't meet its full potential. This upcoming year we want to improve upon Pollock's design and truly be able to show that off at competition. We're excited for the next round of designing, building, competing, and all we have to learn from that!

## Contact Information

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