



FIRST Equity & Inclusion Financing Initiative for
FIRST in Upper Midwest
(FEI FI FO FUM GRANT)

GRANT REPORT
Team 3291
May 24, 2023

Dear FEI FI FO FUM committee and FIRST in Upper Midwest members,

There are not enough ways to express how thankful we are for this grant. We could have requested the grant and thrown a pizza party but the heart of inclusion on our team is removing barriers for team members and their caregivers to be active participants in all of our activities. We are in our 8th year and our first year where new members are saying that they joined because they saw our students, students that look like them, at a parade or at an event at their elementary school. We know that research indicates that representation matters to students in their inclusion and joining and we feel that the best way to increase participation by underrepresented populations is to continue to eliminate barriers.

On team 3291, our mentors know that there is high correlation between our robotics co-curriculars and our Career and Technical education courses and that persistence in STEM beyond high school for underrepresented populations is highly tied to having strong relationships in high school through co-curricular, mentoring programs, and meaningful coursework. As such it is our first priority on our FIRST teams that we work to work towards our team population mirror the student populations in our school in regards to race, ethnicity, gender, and religion. In a school of nearly 50% multilingual learners and over 70% in socioeconomic need, the forefront of our efforts is to remove barriers to inclusion and participation for all students and to create an equitable experience for all.

The report below has graphs of our journey as a team and one could note that although we never fully reached a mirror of our school, that we approached it in 2019. The hard lesson learned from that time on is that the reasons students persist are complex and varied and largely built on relationships they form on the team after they stay through the first few weeks and in some cases convince their caregivers that the time investment in robotics is worth it. Most of our team members participate in our team for no out of pocket costs and yet many

family members, from a variety of cultural backgrounds, do not see the value (as reported by students) and cost can be an easy reason for them to tell their student no to participation especially if it takes away from the student working to make money to help support the family, take care of siblings, or if the family doesn't see their female students necessity to pursue education past high school.

Below is our report for the grant. We understand that this was a one time opportunity but want you to know that there is enormous impact in allowing for inclusion by removing barriers like cost and that these types of investments have long term benefits for these students lives; in year eight we are now watching our first freshman members launch into adulthood in science, engineering, business, and medical careers.

Thank you,

Tanya Drake

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Head Coach/Mentor FRC 3291, Assistant coach/mentor FTC 19595, 19594, 22130, 15425*

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FEI FI FO FUM Grant.

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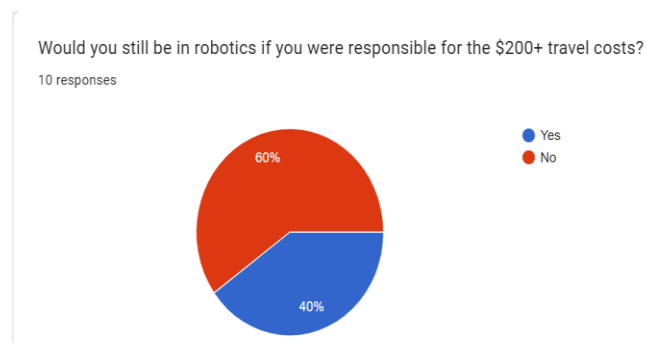
[Photos/videos of your activities that were supported by the grant.](#)

Goals of the project

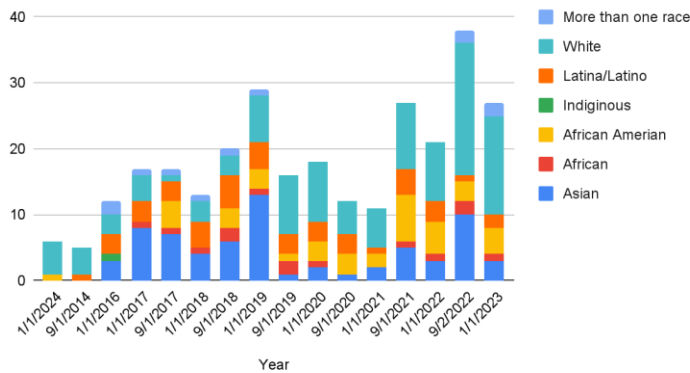
The goal of the project was to increase retention of underrepresented populations by letting it be known that the cost of travel (including meals) was covered as we know from past surveys and experience that even if “grants” are available to cover costs for those in need, that the act of needing to ask can scare many in need away. The goal was also to keep the team together and at the DECC for the duration of the competition to increase engagement and camaraderie. Due to the grant we were able to retain students who came to the initial meeting, keep everyone at the DECC during competition days, provide meals together as a team 2 evenings, and cover costs for all meals for homeless youth on our team.

At the end of 2022 we conducted a survey and asked if students would remain on the team if there was a cost for travel. The graph below includes their responses. This data shows high correlations to our site’s free and reduced lunch data. In reviewing the raw data, the students that reported “yes” are also the families that are the primary sponsors in our fundraisers and

donations to the team of food, time, and money. There is a high correlation between the “no” votes and our female, gender nonconforming, and underrepresented populations noted in this report as black, indigenous, and people of color (BIPOC).



Race / Ethnicity by season



The graphs to the left show our race/ethnic demographics for our team over time. We continue to work to recruit and retain BIPOC students into our team. We have measurable gaps in our Latinx and Southeast Asian population engagement as compared to our school demographic. Our mentors have learned through this process that our efforts to recruit and retain BIPOC students must be intentional, personal, and must address their underlying

concerns about flexibility for family and job responsibilities, transportation, costs of travel, overcoming family concerns over purpose/value of robotics, and allowing members to meet cultural and religious obligations throughout the season. The request of this grant was to remove one cost barrier from students and families engaging on the team and to level the field across our team. As we continue to grow our teams, those costs increase. As we make our team more accessible to all, we also note an increase in participation from our student population that has higher economic needs and includes working students, and includes caregivers working multiple jobs. We continue to look for community partners to offset those costs to keep the team accessible to all. Overall our school site is approximately 70% free and reduced lunch (with our area middle schools and elementaries closer to 89% so the number is likely actually higher) and of those the vast majority qualify for fully free lunch making feeding students while traveling a necessity for their health and safety.

Use of funds

Funds were used to cover the costs for meals at the DECC for all traveling robotics students and to pay for the bulk of the cost of two meals at the hotel for two nights of travel. The DECC does not allow outside food in any parts of the building and more recent rules outlaw food in the skyway outside the building.

Cost to feed the team at competition included \$769.50 to feed 27 team members at the DECC, \$50 to discreetly cover meal costs otherwise not covered by the team (where students were on their own for homeless/very high socioeconomic need youth on our team, and the bulk of the costs for two team meals in our hotel room for the team including one of pizza and one of sandwiches for our 27 traveling team members and adults (2). Between this grant and breakfasts provided by our school food services team we were able to provide meals or cover the costs of 8/10 meals (over 4 days) for most team members and 10/10 meals for those in the highest economic need for 27 team members.

Outcome and impact of the project on your team

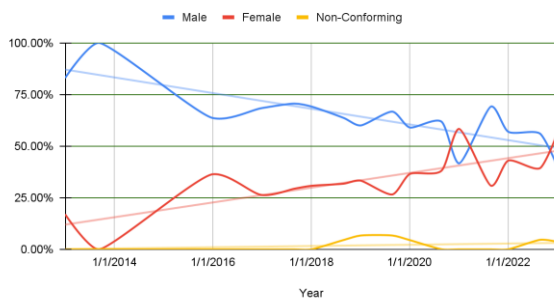
Due to this grant, we were able to keep everyone at the DECC during the day. This is a change for us as we have been sending our team back to the hotel for bag lunches packed by our amazing school food services team. We are fortunate to have a school lunch team that will package us lunches for school days but due to DECC rules we can't bring them into the DECC or the skyway near the DECC so we send our team back in shifts to get lunch ready and then to eat. This half mile journey each way takes longer than the lunch period at the DECC but allows us to feed our team - but due to time constraints we often buy lunches for our drive team at the DECC creating a different experience for those members. The results of this grant were then twofold - We were able with confidence at the beginning of the season to assure families that the costs of meals were covered and to students that they wouldn't need to hike ½ a mile for bag lunches. We also didn't have to pull one of our two traveling mentors from the DECC to accompany the students going back to the hotel. Additionally, all of our team members had the shared experience of lunch at the DECC with other teams, with former classmates on team 2526 (a district sibling school), not lose their seats in the DECC due to extended absence, and be there to support our drive team all of the times they were on the field (they would often miss matches for the travel to and from the hotel).

The immediate impact was that the team was all there for the duration of the day which is something we haven't been able to do before. The short term result that can be directly related to keeping everyone at the DECC and not sending them back to the hotel for lunch is that they were able to secure the Spirit Award and have their *first trip across the FRC stage in the eight years since we rebooted team 3291 (formerly the PiRats)*. The results of the Spirit award has raised the visibility of the team across the district and in our district social media where the award was shared to the Brooklyn Park, Osseo, and Maple Grove communities. This highlights to families that we exist and the photos allow families to see that our team is for everyone in our community which will increase our long term impact. In the long term it helped us to retain members - particularly of our business team. We often find that young women are more likely to join business and then we find that we can move them into coding or building after they see others doing that work. We also find that our business team members are more likely to engage with our future members at events like these at local elementary schools.



In addition to being much more likely to support our outreach events and start in business, our survey results and anecdotal discussions also indicate that our young women would be less likely to persist in robotics if there were costs associated with travel. The graph below shows our demographics by gender (FTC and FRC) including the 2013 PiRats. We do not know why the female members report that they would be less likely to rejoin if there were a \$200 cost but it could be because they already have trouble envisioning themselves as roboticists and therefore

Self Identified Gender % by season



would be less likely to persist as barriers like cost get in the way. Removing costs is, however, just one of many steps our team makes to continue to support inclusion for all of our students. To bring this full circle, we use our FTC teams as our space to build confidence in our young women on an all girls team. As our mentors were debating whether to continue this all girls team in practice, it was overheard at the DECC lunch tables - to a few new freshman FRC female BIPOC members - that they should be

sure to join the all girls FTC team in the fall. This conversation and encouragement from older team members to younger ones may not have happened in the bag lunches tucked away in their friend groups in the hotel rooms or without the shared experience of nonstop YMCA together in the stands facilitated by everyone staying on site.



Future plans

We stepped up our fundraising this year and were able to raise \$1600 from four fundraisers in our community (including restaurant and CUB bagging) to be used towards future costs. This increase in fundraising is a direct result of increased participation from business team members who indicated in that survey above that having costs of travel covered is vital to their continued participation on the team. We are also forming a booster club which we hope will engage a larger number of parents and caregivers to be mentors and involved in our team.

Photos/videos of your activities that were supported by the grant.

We have many pictures and videos from our season and our competition. We are choosing to share a photo of our team taken in Duluth and one of our team celebrating the Spirit award in the pit during teardown.

