

***FIRST* Impact Award - Team 201**

2025 - Team 201
Team Number
201
Team Nickname
The FEDS
Team Location
Rochester, MI - USA
Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in <i>FIRST</i> programs.
The FEDS, with a family-like culture, create leaders and build connections, with 100% of FEDS having graduated high school in the last decade and over 90% pursuing post-secondary education in STEM fields. An eminently diverse team, the FEDS maintain lifelong connections with the FIRST community through volunteering at FIRST events, mentoring teams, and facilitating team sponsorships. Alumni often return to mentor the team, with one alumni mentor recently hired to teach robotics in our district.
Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.
Our community is a multicultural tapestry of ethnicities, religions, and worldviews, with a high density of robotics companies and FIRST programs. Our FIRST network benefits from MDE grants supported by our state legislators. Our coalition with our sister schools, Rochester United, allows us to have “power in numbers” when advocating. Our school and community leaders are FIRST champions. We ensure all team members can fully participate in the team regardless of their financial situation.
Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> Mission in ways that are effective, scalable, sustainable, and creative.
We spread our mission to expand access to STEM education through relationship-building and protecting our inclusive team culture, resulting in the FEDS overseeing the 2nd largest network of FIRST teams in Michigan. Feedback surveys inform improvements, enabling us to engage 4k+ people and 1500+ volunteers since 2022. Over the past 3 years, the FEDS hosted 15 FIRST events, delivered 267 free STEM workshops to 600+ students, and raised \$1K+ for STEM outreach by selling 3-D printed products.
Describe your team's goals and the progress you have made towards them to fulfill <i>FIRST's</i> Vision.
Agents researched, developed, tested and refined STEM workshop training curricula with a focus on maximizing participant excitement for STEM. We received positive feedback with many participants joining our team. We also aimed to reduce our team's eco footprint with 5 distinct projects. Our H.E.A.R.

campaign advocates, educates, and provides programming toward greater inclusion of students with hearing impairments in FIRST. We celebrate student achievements with “Agent of the Week” recognition.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?

We measure impact by comparing outcomes to goals in an annual SWOT analysis of the team and each subgroup, identifying growth areas. Annual participant surveys, interviews, and alumni surveys show impact over time. This year, 57% of our team are new students, who we supported through higher-quality training. Protecting team culture to build lifelong bonds and a commitment to continuous improvement resulted in more inclusion, technical readiness of new students, and overall team sustainability.

Please provide specific examples of how your team and team members act as role models within the *FIRST* community with emphasis on the past 3 years. How do you share these best practices with other teams?

FEDS model FIRST values of inclusion, innovation, exploration, teamwork, and fun through H.E.A.R., STEM CADettes, G201 initiatives and our Gracious Professionalism Taskforce which helps other teams at comps. Our website shares resources with the FIRST community including an ASL FRC library, Sponsor Scouting Tool, operations manual, business plans and impact documents. We host Peace Summits at Worlds to foster intercultural dialogue about how FIRST values can help make the world a better place.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

We sustain a vast pipeline of future FEDS through 78 feeder teams (53 FLL-E, 20 FLL-C, and 5 FTC), with 500+ volunteers, and helped start two new FRC teams in Mexico this year, raising money for their registration fee, bringing FIRST across the continent. Agents host an annual FTC qualifier, 4 FLL tournaments, and assist at various FIRST events. FEDS mentored 400+ hours to our feeder teams over the past 2 years. Our workshops and STEM CADettes are all-inclusive, inspiring many students.

What other initiatives have you created, grown, sustained, or participated in (*FIRST* or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?

A new initiative “G201” aims to reduce our eco footprint, piggybacking on the FRC rule “be a good human.” Agents maintain a longstanding bond with STEAMEX in Mexico who we are proud to have supported in starting 2 new FRC teams this year and helping sustain feeder FLL/FTC teams. We donate funds from selling 3-D printed jewelry to support STEM curricula at Yuwa all-girls school in India. We successfully advocated for a districtwide robotics practice field and a FIRST-inspired robotics course.

Describe the partnerships and relationships that you've created with other organizations (teams, sponsors, educational institutions, government, philanthropic entities, etc.) and what you have accomplished together, with emphasis on the past 3 years.

We work with sister schools through Rochester United to advocate for STEM resources. We maintain relationships with sponsors by visiting and thanking them at our FEDS Sponsor Night. We host a Peace Summit at the FRC Championship to connect with global teams for intercultural dialogue. We are m.e. Coordinators, ensuring access to menstrual products at FIM events. We provide robot demos at area schools and meet regularly with local teams, district officials and community leaders to promote STEM.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, <i>FIRST</i>, and your communities.	
Our continued support of STEAMEX makes the FIRST program available to students in one of the poorest areas in the world, where positive opportunities are limited. Our team's annual participation in the Bloomfield Hills All Girls Comp highlights and empowers female leadership on our team. STEM CADettes aims to prevent attrition of girls in FIRST during middle school. The H.E.A.R. campaign led to a new FLL team for students otherwise not included in FIRST: students with hearing impairments.	
Explain how you ensure your team and the initiatives you have created will be sustainable.	
We create a comprehensive annual business plan. We use a Sponsor Scouting Tool to cultivate new sponsors/fundraising while advocating for resources. Goal development includes extensive analysis of feasibility and sustainability. A new Operations Manual with how-to guides ensures consistent growth year to year. Relationship building is at the core of the FEDS sustainability. Alumni play a critical role in the team's longevity as they become mentors, volunteers and connections to new sponsors.	
Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.	
Through a SWOT analysis, we determined a need to improve our project management approach. We are working to improve this through the use of a new progress tracker, special projects that each FED contributes to, regularly scheduled leads and mentors meetings, refining a build season progress tracker, and integrating intro and end meetings into each team meeting to monitor progress and improve peer accountability. We revisit team goals and display team values in our workspace as mental reminders.	
Briefly describe other matters of interest to the <i>FIRST</i> Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique, particularly noteworthy, or had a large impact.	
Fostering family-like connections is at the core of being a FED. We maintain close relationships with school leaders, successfully advocating with our sister schools for a practice field. We celebrate Agents' long-term FIRST involvement with our motto "once a FED, always a FED". We enjoy team traditions like FEDS Day, Agent of the Week, FEDSgiving, a robot naming ritual, midnight build sessions, and epic bonding bus rides. We love oreos almost as much as we love making an impact through STEM!	
Judge Feedback	
What stood out with the most distinction in our presentation & portfolio to the judges and why? An area the team has an opportunity to improve. Something that really impressed the judges.	
Essay	
The FEDS (Falcon Engineering and Design Solutions) are a 28-year agency within Rochester High School in Rochester Hills, Michigan. Our 52 students and 10 full-time mentors oversee the 2nd largest network of FIRST programs in Michigan, the state with the highest density of FIRST programs worldwide. Our mission, "to inspire students to be STEM leaders through mentoring and innovation", aligns with the	

FIRST vision and is activated by our Agents through three core Operations: Operation FIRST, Operation Outreach, and Operation Global. The FEDS culture prioritizes human connection, a sense of belonging, and high quality learning experiences for all team members. Our motto, “once a FED, always a FED” is reflected in the overwhelming number of FEDS alumni who remain connected to our team after high school, many of whom become mentors for FIRST programs across the country. Our agency places a high value on continuous improvement, sustainability, and protecting our inclusive team culture. We challenge ourselves to improve using student-driven feedback, performance evaluation, and SWOT analysis to identify future goals. The long-term impact of our program is illustrated by the fact that more than 91% of our participants go on to pursue STEM careers. Our team structure includes an Operating Committee of mentors and student co-captains (one for each of the three team groups: Build, Technical, and People and Culture), and 6 subgroups (CAD, Mechanical, Electrical, Programming, Machining, and People and Culture). Our team culture is rooted in our “compelling why”. We are motivated to be Agents of Change in the world due to our deep passion for STEM education and our desire to share this with others. By teaching STEM skills, we inspire excitement, confidence, and unlock potential in others that they may not have envisioned for themselves. We are committed to empowering others to contribute to STEM in ways that fuel enjoyment and inclusivity. We strive to provide a program in which fellow Agents experience lasting connections and individual and collective growth. We want to maximize the number of students who have access to similarly meaningful and rewarding experiences that we have had the privilege to enjoy in the FIRST program. Students set season goals in an annual leadership retreat, followed by a project planning process that helps us accomplish our goals. We use this plan to guide our team meetings, starting with a recap of what we need to accomplish and ending with a team debrief to celebrate accomplishments and sustain progress. In addition, we include multiple special projects in this plan that align with team goals, including outreach activities, advocacy, business planning, fundraising and more. Each agent contributes an equitable amount of special project points to ensure full team contributions toward team goals. This plan also includes other team resources towards multi-faceted sustainability, including our award-winning Business Plan and our Sponsor Scouting Tool, a resource available for use by other teams on our website which helps us connect with local STEM-based companies and solicit new sponsorships. Due to our record growth this year, we prioritized improving engagement of new students, which we accomplished by delivering higher quality training, intentional engagement by all subgroup leads, constant communication about progress, and soliciting feedback from new students to ensure we accomplished this goal. This year, we kickstarted a fourth operation which we call OPEX (Operation for Performance and Excellence) combining past projects with new ones that focus directly on ensuring sustainability, efficiency and year to year continuity. Creating “how to” guides for each subgroup and student-led special projects, we hope to provide future FEDS with a foundational base of knowledge. 8 years ago, our team began a transformation from one that exclusively prioritized building a competitive robot to one that matched our ambitions with a goal to expand access to the FIRST program and STEM education. In this time, our team went from never starting a single FLL or FTC team to starting, running, and mentoring the largest number of teams in Michigan in 2024 and the 2nd largest network this year. To run our 78 feeder teams, we have had to fundraise, recruit and train coaches/mentors, coordinate team meeting schedules, order and deliver supplies, ensure grant requirements and applications are completed, work with our district to secure meeting space, and host events for these teams to compete. Our feeder program has grown substantially over the past few years, from 39 total teams five years ago to 53 FLLE teams alone today. Our advocacy to ensure long-term sustainability of these teams over time resulted in our district hiring a full-time CTE director to help support FIRST teams, establishing 3 FIRST-inspired robotics elective courses offered at each of our three high schools, hiring one of our alumni mentors as a robotics teacher, providing more space for our teams to work, and allocating space and resources to build a districtwide robotics practice field. Our

Agents, alongside students from CyberCats 5436 and AdamBots 245 meet with district leaders regularly to advocate for robotics resources including additional build space, transportation assistance, and the purchase of equipment, making an impact for students throughout our district. We are proud to have won Impact/Chairmans five years in a row at districts, two years in a row at MSC. We've maintained a long-term relationship with STEAMEX in Monterrey, Mexico since 2019. After learning about the lack of resources for FIRST programs coupled with high rates of poverty in this area, our Agents felt compelled to help. We were inspired to fundraise \$5K for three consecutive years to cover STEAMEX's FIRST registration, while simultaneously building a peer-to-peer mentoring relationship with their students. Their past success with Chairman's made them an amazing resource to us as we expanded our outreach activities. Agents were able to spend time with STEAMEX in person at the World Championships and continue ongoing communication and consultation remotely. This year, we learned that STEAMEX had an opportunity to expand their program to include two new FRC teams in highly marginalized communities, one of which being held at an LGBTQ+ center. After team discussion, our Agents decided to prioritize support and raised \$3K in a community-wide returnables drive to contribute towards this effort. Both of these new FRC teams will serve students that would not have otherwise had an opportunity to experience the FIRST program, so we felt compelled to do our best to help. Our H.E.A.R. campaign started off as a collaboration with Team Matrix in India, advocating to FIRST to include closed-captioning at all major FIRST events. Once this was achieved, our Agents thought it would also be helpful if FIRST added "sign linguist" to the list of volunteer roles for all FIRST events. This was determined after talking with an all-deaf team in India and gaining a better understanding of the barriers to inclusion they experience in the program. Our petition underlying this goal continues to be circulated and will soon be sent to FIRST HQ. Building on these efforts, many of our Agents opted to take an ASL class and are teaching our team a few signs at each of our meetings. One of our Agents proposed an idea to explore starting an FLL team for students with hearing impairments, to which we reached out to our special education director to learn more about what this would entail. This interaction led to a meeting with a small group of parents and students, culminating in our first FLL team for students with hearing impairments. This team met at our high school, was mentored by our Agents, and participated in our FLL expo. One takeaway from our end of season debrief and SWOT analysis last year was that our team could reduce our carbon footprint and overall environmental impact through examination, intentionality, and planning. We decided to call these projects "G201" inspired by FRC rule G.201: be a good human. Part of how we, the FEDS, can do our part to be good humans is by reducing our team's eco footprint. Agents brainstormed ideas and agreed on five initial projects: 1. calculate our team's carbon footprint; 2. create a solar battery charging cart; 3. establish an improved recycling program; 4. explore ways to reuse 3-D printing filament, and 5. share what we've learned with other teams. In the project's first year, we have been able to accomplish more than half of these goals. Another major accomplishment of this past year includes the delivery of 41 high quality STEM workshops to students in grades 6-12. These workshops followed an extensive planning process of curricula development, pilot deliveries, feedback sessions, refinement, and final delivery. Topic areas included intro and advanced training in almost all of our primary and secondary subgroups. These training workshops were developed and delivered by our team's students with guidance from mentors. Because we were more intentional about planning than previous years, the quality of our workshops was greatly improved. This increased engagement of participants, and displayed positive feedback; many attendees of these workshops joined our team or a feeder team in the fall. We have a documented archive of this curricula which we continue to refine and build upon for the future. Our agents were intentional and committed to ensuring maximum engagement of new students this season and our current strong cohesion reflects the success of these efforts. As Agents of Change, the FEDS are proud to maintain a supportive and diverse network,

prioritizing relationship-building and inclusivity. We strive to model the FIRST mission and values with our commitment to spreading our passion for STEM as we collaborate to make the world a better place. ;

