

FIRST Impact Award - Team 7531

2025 - Team 7531

Team Number

7531

Team Nickname

Servos Strike Back

Team Location

Dubuque, IA - USA

Describe the impact of the *FIRST* 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 *FIRST* programs.

"No excuses, just solutions" is an inspiring phrase from alum Verrick that drives our team, with 95% of alumni in STEM fields. In 2023, Alum Sydney, a BME startup founder, inspired us with career insights. Alum Kayleese, coaches a state-qualifying FLL team as a college freshman. 100% of our alumni have graduated high school and attended college. They majored in CS, engineering fields, environmental education, and more. They apply FIRST skills daily, proving Servos Strike Back's lasting impact.

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.

Dubuque, IA, built on the Mississippi River, is rooted in a deep history of manufacturing, agriculture, and commerce. With support from 12+ local businesses, we gained industry knowledge and funding. Using these skills, we raised \$500+ and spent 30 man-hours building a gaga ball pit for our lowest-income elementary school. We created a shared space for 400+ students and families at the school and nearby multicultural center for 2023-24 and many years to come—turning STEM skills into real impact.

Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* Mission in ways that are effective, scalable, sustainable, and creative.

From 2021-2023 we conducted Servos STEM Sessions for Dubuque 5th and 8th graders to teach them about future FIRST opportunities and complete STEM activities. We spent over 100 hours planning and pursuing SSS, impacting around 2000 students. In 2024, we created Servos STEM Kits that went to all 36 public 5th grade classrooms in Dubuque, impacting around 900 students. SSK included activity materials, videos, worksheets, and a teacher lesson plan for the gravity and shadows science unit.

Describe your team's goals and the progress you have made towards them to fulfill *FIRST's* Vision.

To fulfill FIRST's vision, we aim to make robotics a CTSO (Career and Technical Student Organization). In 2022, we worked with senators to introduce SF398, which passed in the Senate. Now known as SF61, we've spent 2025 advocating for the bill by working with robotics teams, senators, and legislators to expand robotics access statewide. We hope to inspire future science and technology leaders to be in politics by equipping robotics students with firsthand experience in the legislative process.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?
Our efforts have raised legislative awareness of robotics, leading to greater support for STEM education in Iowa. By working with FRC ICE & FTC THOR, we've strengthened connections with policymakers and lobbyists. The passage of SF61 will make robotics a CTSO, benefiting 520K Iowans. We measure our impact through legislative milestones and the opportunity it creates for every Iowa high school student to join robotics. This goal would shape future STEM enrichment for all students.
Please provide specific examples of how your team and team members act as role models within the <i>FIRST</i> community with emphasis on the past 3 years. How do you share these best practices with other teams?
On the Iowa FIRST Student Leadership Board Ella serves as president and a member of the legislative committee and Christiana is on the creating community and leadership training committee. Through the board they have shared and collaborated with other FIRST teams to organize FIRST Days at the Capitol, hosted an ED&I seminar, and lead training sessions for rookie FIRST teams. They have devoted over 80 hours to organizing efforts to support the FIRST community, impacting around 1,000 people.
Describe your team's initiatives to Assist, Mentor, and/or Start other <i>FIRST</i> teams with emphasis on activities within the past 3 years.
In the past 3 years, we've mentored 4 FLLC teams, assisted 2, started 2, mentored 1 FLLE team, and started and mentored 4 FTC teams, assisting 3, reaching over 230 students. 25% of our team mentors and we create a monthly mentoring calendar. We have spent over 400 hours supporting coding, CAD, building, and outreach. One student shared, "Riley helped us with encoders so we could code our robot's autonomous accurately, saving us time and problems. His guidance also improved our claw prototypes."
What other initiatives have you created, grown, sustained, or participated in (<i>FIRST</i> 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?
We have participated in 4 Dubuque County Fair Kids Days, and 4 Iowa State Fair STEM Days. During our time at the fairgrounds, we have inspired children to further their interest in STEM by exhibiting our robot and challenging kids to LEGO and popsicle building challenges. Through this we have impacted over 24,000 people. The main supporter of the bill we started, Senator Jochum, began work with our team because she recognized us from the County Fair, one of the many outcomes from these efforts.
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 partner with Roosevelt Middle School to inspire young minds through STEM. At Dubuque FLL and FTC events, we volunteer together—setting up, field resetting, and showcasing our robot to educate and excite students. At their Spooky STEAM Night, we engaged our community, spreading FIRST through the exposure of our team and robot. This partnership expands our reach, strengthens our impact, and creates a pipeline of future innovators. Through our partnership we have impacted around 1,000 people.
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.
To inspire young students, we have written and illustrated two books: Suzy Wants to be an Engineer, and Maya Wants to be a Marine Biologist. The books follow girls on their journeys of discovering their love for STEM, promoting themes of women empowerment and inclusivity. We have distributed a copy of Suzy to every Dubuque Elementary classroom, an Elementary library in all Iowa counties, and a library in a low-income county in every state, and numerous countries, impacting around 41,100 people.

Explain how you ensure your team and the initiatives you have created will be sustainable.	
We ensure our team’s sustainability by building strong, lasting relationships with sponsors. To recruit them, we send postcards, emails, make calls, and visit businesses to highlight our mutual benefits. We keep them engaged through an annual open house and media day, where they see their impact firsthand. This year, we introduced sponsor levels based on donations, offering recognition on shirts, our robot, and more, along with a copy of Suzy Wants to Be an Engineer as a token of appreciation.	
Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.	
We struggle with prioritization on important projects, causing misplaced focus and delays. To tackle this, we dedicated a workshop wall to highlight our major and minor goals, keeping the team aligned. During build season, we also introduced a Microsoft OneNote system to track daily progress. Each day, we log to-do lists, accomplishments, blockers, and photos of our work. These tools have improved our organization and in turn helped us widen our impact.	
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.	
Every year at competition, after the Thursday practice matches, we gather as many people as possible to do an annual yoga session to help relax teams for the upcoming days. Additionally, to create stronger relationships with other teams at competition we like to add silly questions to our pit scouting survey such as "do you prefer duct tape or zipties?" These are great ways to spread gracious professionalism and encourage people to laugh and have fun during stressful times! (We are team zipties)	
Judge Feedback	
	Is there something we can do to improve our essay, executive summary questions, or our presentation? An area the team has an opportunity to improve. Something that really impressed the judges.
Essay	

MAKING WAVES IN OUR COMMUNITY AND BEYOND

DIVING IN “No excuses, just solutions.” A motto from a wise mentor that we live by daily. We are Servos Strike Back #7531 from Dubuque, Iowa, and our mission is to inspire young people by creating a welcoming and inclusive STEM community where confidence and excellence grow. Over the past six years, we’ve made some serious waves—from mentoring teams to advocating for STEM education to launching impactful outreach initiatives that directly impact our community. Before FRC, we started with two FTC teams, Clockwork and Stripped Servos. Our team's name, “Servos Strike Back,” is a nod to our FTC roots and the 2019 FRC game, “Deep Space,” when we first joined FRC. Our rookie robot had wooden side panels, and a teammate painted alien heads on them, which led to our reputation as “the alien team.” Now, we’re a student-led team of 43 students from Dubuque Senior and Hempstead High School. We are led by our project manager, Ella, who keeps us running smoothly alongside our team leads: build lead Will, code co-leads Jordan & Christiana, design lead Cody, strategy lead Spencer, impact co-leads Max & Lydia, inventory lead Isla, and communication lead Ruah. From those early days to today, we’ve stayed true to our commitment to

growing STEM in Dubuque and beyond, and our leadership team has been crucial in ensuring that all of our members are empowered to lead and succeed.

POURING OVER POLICY In 2022, a bill was enacted requiring all Iowa high schools to have a Career and Technical Student Organization (CTSO). Due to this bill, many small schools with limited CTE teachers could no longer support robotics teams because of the time commitment required. In January 2023, we sent emails to Iowa legislators about our concern that robotics was NOT a CTSO, and we wanted to change that. Through collaboration with Senator Sinclair and former Senator Jochum, we helped draft bill SF199, which was later integrated into SF398. To advocate for this bill, we sent emails to legislators, communicated with numerous Iowa teams, and distributed stickers and fliers at the 2023 Iowa Regional. SF398 unanimously passed through the Senate but stalled in the House in 2024 due to other higher-priority bills. In January 2025, Senator Sinclair reintroduced a nearly identical bill, SF61, into the Senate. Since then, we have worked closely with Des Moines-area teams, FRC team I.C.E., and FTC team T.H.O.R., by spreading the word about the bill and helping them understand the legislative process and the reasoning behind this bill. As of February 12th, 2025, SF61 has been updated to SF278, and is mirrored by companion bill HF204. To further support this bill, we have also given Dubuque Representatives and Senators tours of our workshop to help them understand the impact of robotics, so they can advocate for us at the Capitol. We plan to continue our advocacy, creating a united front with as many Iowa FIRST teams as possible, to get the bill passed before the legislative session ends.

OCEAN OF OPPORTUNITY On a snowy day in January 2024, our teammate Ella had a bold idea: to create a children's book to inspire young girls to become engineers. Written by Ella and illustrated by another teammate, Lydia, *Suzy Wants to Be an Engineer* came to life in just one day of writing and a month of illustrating. Since then, it has been making waves in the STEM world. In November 2024, we received our copyright license. In February 2025, we distributed copies of *Suzy* to every elementary classroom in Dubuque, elementary libraries across all 99 Iowa counties, and one low-income school in every U.S. state. We took it global by working with FRC teams from China, Brazil, Mexico, South Africa, Australia, and Canada. We also leveraged personal connections in the Philippines and South Korea to distribute books, gather feedback, and spread our message worldwide. In September 2024, we sought to build on *Suzy's* momentum by creating a second book, *Maya Wants to Be a Marine Biologist*. This book centers around Maya, an African American girl, with two fathers, who dreams of studying the ocean. We wanted to take this year's water theme and incorporate it into *Maya* and plan to distribute it like *Suzy*. We plan to have the first copy of *Maya* printed before the Iowa Regional. Long before our books, we pushed for STEM accessibility within our district. In 2020, we created 1,400 STEM kits as part of our district's free lunch initiative. The kits included growing corn, a water pressure activity, a pompom catapult, and a balloon rocket. As well as supplies for activities, a video tutorial, and instructions in English, Spanish, and Marshallese to ensure accessibility for all.

WAVES OF COLLABORATION Building strong community connections is key to our success. In November 2023, we partnered with Culver's for a Share Night, where we assisted employees by bringing customers their food. Through the Share Night, we raised over \$500 to purchase materials to build a Gaga Ball pit for Prescott Elementary, Dubuque's lowest-income school. By July 2024, the pit was finished, providing over 350 kids with a fun, active space improving their lackluster playground. This addition further benefits the community by being utilized by the nearby multicultural center. In December, we worked with Iowa FRC Program Delivery Partner Jeff Margrett to present to rookie FRC teams across Iowa. We shared advice on social media, fundraising, outreach, and event planning. In February 2025, we partnered with the Boys and Girls Club for a STEM activity making Wiggle Bots. There, we signed and donated 30 copies of *Suzy Wants to be an Engineer* with personalized messages for each of their 1st-3rd graders. We also have strong relationships with the Dubuque public middle schools. From 2021-23, we visited

Roosevelt, Jefferson, and Washington Middle Schools to conduct Servos STEM Sessions (SSS). At each school, we split the exploratory classes into 3 groups to discuss high school classes, our team and FIRST opportunities, and do a STEM activity to learn about the engineering design process such as Vex Bots and Sphero Bots. We also did SSS at 4 Dubuque elementary schools throughout 2021-23 for 5th graders. We began these sessions by discussing the engineer design process and future FIRST opportunities for these students. We then split the students into groups to show off our robot and to do STEM activities such as popsicle building and cup stacking. Due to circumstances out of our control, we could not continue SSS for the 2023-24 school year, so we wanted to find a way to do something similar to SSS. This is when we decided to begin our Servos STEM Kits (SSK) initiative. In these kits we included popsicle sticks, pipe cleaners, twisty ties, and string, for 5th graders to create their own little aliens. We created videos, worksheets, and teacher lesson plans to fit into the 5th grade curriculum of gravity and shadows. We donated a kit to all 36 public Dubuque 5th grade classrooms, impacting around 900 students.

STREAMS OF GUIDANCE In addition to the teams we have mentored, started, and assisted in the past three years, the Dubuque Community School District (DCSD) collaborated with us to establish four new FLL teams in our public elementary schools and all three public middle schools. We also mentor an FLL Explore team from Waukee, IA, virtually. Together, we've strengthened STEM opportunities, fostering curiosity and teamwork in Dubuque and beyond.

RIDING THE WAVES Our team has faced its share of challenges. In the fall of 2023, our head coach left, and our workshop was under construction which left us in a bind. To address this, we reached out to a district representative with the suggestion of using the old pool area at Hempstead High School as our new location. After considering our proposal, they agreed, and we were able to make the transition to the new space. In 2024, we organized a 5K to raise money for homeless shelters in Florida affected by hurricanes. Although over 50 people signed up, unforeseen circumstances forced us to cancel just four days before the race. Despite this setback, community members recognized the importance of this cause and donated \$65 to our team to donate to Feeding Tampa Bay, which equated to 325 meals for those in need.

STREAMLINING TOMORROW Over the next five years, we plan to expand our impact by increasing our sponsorships by 25% to optimize our robot and resources further. Strengthening our partnership with the National Mississippi River Museum remains a key priority, along with developing environmental initiatives such as creek cleanups, recycling programs, and bluff restoration. Additionally, we'll continue distributing Suzy Wants to be an Engineer, begin the process of publishing Maya Wants to be a Marine Biologist, creating STEM kits, and engaging with the local Boys and Girls Club to further our mission. Through sustainability and STEM outreach, we strive to positively impact 20,000 people before next season.

UNDERNEATH THE SURFACE We have shared a lot about our achievements and how we have accomplished them, but we haven't gone below the surface to discuss why we do what we do, the true meaning of impact. It's not about recognition, awards, or publicity. We truly want to create an impact because we understand that our actions can drive meaningful change in both individuals' lives and within our communities. Every ripple builds into a bigger wave. By making a splash in STEM, we help others dive into new opportunities and reach their full potential. We don't stand still. We move. We lead—we're here to create a current of change that keeps growing and connecting people to the world of innovation. Like water, we adapt, overcome, and focus on solutions—never excuses.;

