

Chairman's Award - Team 2451

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2020 - Team 2451

Team Number

2451

Team Name, Corporate/University Sponsors

Genesis Automation/Ace Metal Crafts/PowerMation/Hexagon Metrology/OEC Graphics/The Good Family/The Motorola Company/Fennell Holdings LLC/Salesforce/Schwemin Family /McCann Family/Henderson Engineering /TelePro, Inc. /LiveRamp /SMC &Family/Community

Briefly describe the impact of the *FIRST* program on team participants within the last five years.

We empower students to take leadership roles on the team, FIRST, service organizations, and the community. PWNAGE students gain skills in leadership, engineering, business, communication, safety and project planning, while working with industry professionals. Since forming in 2010, 100% of PWNAGE students pursued higher education, 95% in STEM fields. Gracious professionalism and innovation prepare PWNAGE students for college, careers, and contributing to making a real-world difference.

Describe the impact of the *FIRST* program on your community within the last five years.

PWNAGE unites students from our region through a passion for STEM. We run a Girls Who Code chapter, 2 summer camps, assist at a summer camp, run an inclusive FLL Jr club, and Girl Scouts engineering and robotics workshops. The team participates in 20+ outreach events annually, including demos at 2 international trade shows, STEM fests, a MakerFair and community events. Our community service includes environmental clean ups, troop support boxes, Feed My Starving Children, and other projects.

Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.

PWNAGE demos robots in 9+ school districts, int'l expos, and many events & festivals, sharing FIRST's message with over 500,000 people. PWNAGE uses a website, FB, Instagram, Youtube, Twitter, and Chief Delphi, doubling our followers this year. We are Preferred Partners with Girl Scouts of Northern Illinois & partner with 2 park districts. We were featured on Fox News, local CBS, & print media. Our float for the St. Charles Electric Light Parade introduced FIRST to thousands of families.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

We value professionalism & leadership. We mentor our team's rookies, and learn while we teach. We have 20+ annual outreach activities/camps and educate others about FIRST & STEM. We have started a community STEM workshop, scouting events, a Girls Who Code chapter, & an FLL Jr. club. We are leaders in Scouts, churches, schools and through mentoring of other FIRST teams. This year our team is running our second annual Women in STEM panel at Midwest Regional, for students, mentors, & professionals.

Describe the team's initiatives to help start or form other FRC teams

We focus on helping rookie teams near & far. Last year we assisted girls' team #7609 (Chicago) and #7575 (Turkey). We help rookie teams with a bumper guide (4,000 downloads) & electrical training. We assist 2 off season events that rookies attend, manufacture parts for 2 other teams, & invite newer teams to our practice space. Alumni & mentors started 5 FRC teams. Last year, we helped an Israeli FRC rookie team by providing 2 motors they couldn't order, enabling them to compete.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

PWNAGE mentors have started & sustained 5 FLL teams in the past 3 years. This year, team members are starting a FLL Jr. club with students that are Nero A-typical (inclusive) and plan to be a team next season. With the high number of FLL & FTC teams in the area, PWNAGE members volunteer at FLL jr., FLL and FTC regional and state competitions this year. At outreach events, we refer interested families to resources for starting or joining teams.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

PWNAGE is an opportunity for FLL & FTC teams in 9+ school districts to progress to FRC. This year we are mentoring 2 FLL & 2 FLL Jr. teams, and working on plans to mentor more FLL Jr. teams in the coming year, as well as model how *FIRST* can be inclusive and move on to FLL. Through community events and camps, we demonstrate to younger *FIRST* teams what is possible if they continue to progress through the *FIRST* program. We also help FRC teams step up their game, like #3928 on Chairman's award.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

Mentoring is a part of our team culture. We have mentored all levels of *FIRST*, & this year that includes 2 rookie FRC teams, 2 FLL teams, 2 FLL Jr, and have helped 4,000 individuals with bumpers. We started an inclusive FLL Jr. club, run "play dates" for FRC teams who lack resources, attend off-season events, and represent *FIRST* at events. We connect students interested in *FIRST* with teams. We judge FLL & FRC, assists at regionals & volunteer as student ambassadors.

Describe your Corporate/University Sponsors

Our primary sponsor is Genesis Automation, providing a workshop, training, equipment, and dedicated mentors. The team is also sponsored by Savanna Group, Ace Metal Crafts, SolidWorks, OEC Graphics, Power/mation, Industrial Steam, Unilock, Carbinite, Chillicothe Metal Co., Tele-Pro, Campfire, MSOE, Bank of America, SMC, New Corp & Family, and Community. Students serve as a primary point of contact and work hard to find new sponsors each year.

Describe the strength of your partnership with your sponsors within the last five years.

Genesis Automation, since the beginning, has provided our team with mentors, equipment, and a home. This has also led to internships and employment of alumni. Genesis owners attend every meeting, and are dedicated to the success of our team on a personal level. We provide demonstrations at events for all our sponsors, and work to organize tours of their facilities for our team members to help students learn about industry. Most of our sponsors renew their support of our team year after year.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

The *FIRST* program provides framework which enables us to be leaders in science & technology, and encourages us to use innovation while competing with the robots we build. *FIRST* provides us with opportunities to build science, engineering, technology, business and life skills. We work with professional mentors that help us learn well-rounded capabilities like self-confidence, communication, time management, delegation & leadership. We learn, experiment, serve, compete and have fun together.

Briefly describe other matters of interest to the *FIRST* judges, if any

Our motto is "Inspiring Youth Through STEM." Students seek knowledge, challenges, and relationships that help them understand the world and contribute in meaningful ways. We keep a positive attitude while learning, competing and exhibiting gracious professionalism. The team is proud to create robots with a professional level of craftsmanship; however, our measure for success is not the robot, but encouraging curiosity, problem solving, inclusion and innovation.

For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.

PWNAGE gives students the opportunity to participate in STEM & *FIRST* not offered by high schools in the area. Student founders of the team didn't find the support or priority at their schools for an FRC team. A community partner offered mentorship, space, sponsorship and resources, a long term commitment and continuity needed for a sustainable team. Our team fills an unmet need in our region. The students in our communities need to know their passion for STEM is valued. PWNAGE does that.

Team Captain/Student Representative that has double-checked this submission.

Audrey Pack

Essay

PWNAGE is a charged-up team that fosters an infinite love of STEM shared by being role models, introducing FIRST activities to our community, mentoring, and seeking innovation in everything we do. Growing both in size and impact since 2010, our team is working to build up our skyscraper in the City of FIRST.

PWNAGE means to win in the gaming world. We aren't referring to the matches or competitions. Our name reflects our real-world strategy of improving ourselves, our community, and the world around us by using the skills we learn through FIRST.

Our foundation is INSPIRATION; for ourselves, younger students, other teams, and the community. This is the driving force in all we do as a team. From the outreach events (reaching over 500,000 in 4 years) to team service projects, we want to show the world what we can do when we work together to solve problems using STEM. Our team runs summer camps, Scout badge workshops, and demos to inspire younger kids to explore STEM. Our mentors, alumni, parents and team members are involved in all levels of FIRST through volunteering and mentoring. They volunteer annually at 10+ FIRST competitions, mentor 2 FLL teams, run a Girls Who Code chapter, ran a community FLL information event, helped start FLL & FRC teams, started & mentor 2 FLL Jr. teams (one of which is for kids with special needs), and offer training and advice for other FRC teams. During the past few years the team has run electrical training for FRC teams, assisted an all-girls' rookie FRC team and a team from Turkey, assisted a FRC team on chairman's, and an Israeli team with motors so they could finish competing their rookie season. This year we are mentoring and assisting two additional FRC teams. One of our alumni mentors published a resource guide on bumpers that has been downloaded over 4,000 times on Chief Delphi. We assist at two annual off-season events that rookie teams attend to understand how regionals work. For FRC teams with fewer resources, we manufacture parts when asked and share our practice space. We want everyone to have access to STEM activities. Last year we ran 3 Boy/Girl Scouting workshops and are a preferred partner with the Girl Scout Council for engineering and robotics. One team member said, "I wanted to have the resources available to make some of my ideas turn into reality." PWNAGE is the resource to do that. Our team motto is Inspiring Youth Through STEM.

The next level of our skyscraper is GRACIOUS PROFESSIONALISM in the shop, out in the community, at competitions, and every activity; Gracious Professionalism is our priority and expectation. We help other teams, are kind, serve, and respect others' opinions. Then teach this through example. Over the past four years, our outreach has expanded from 32,000 people to over 500,000. Through this outreach, we encourage quality work, the value of others, and model respect for individuals and the community. We also work hard to compete but know that respect and learning are more important. Woodie Flowers said it best: "Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity."

Our professionalism is important to the success of our community events. One of the events we enjoy and reach the most people through is the Electric Light Parade in St. Charles, IL. The team designs and builds a float which travels down Main Street in front of over 28,000 people. Through our display, we encourage everyone in attendance to learn about FIRST. We also do annual demos and have a booth at an international trade show, the Assembly Show, and promote what FIRST is to cutting edge technology companies. Over 7,000 people attend each day. Our team also runs 2 summer camps and participate in another. Through this, we have started other sustainable programs and teams. Our team has received Illinois State Assembly recognition and presented at area Chambers of Commerce. Our students serve as ambassadors at regional and Championship competitions to introduce FIRST to guests. Our team presents awards to other teams at our competitions to recognize their accomplishments. In 2019, we ran the inaugural Women in STEM luncheon at the Midwest Regional for the International Day of the Girl which had over 180 people in attendance. As a result of the success, we founded the FIRST Illinois Women in STEM group and were invited to run another event this year. We know that the skills gained through Gracious Professionalism will help us beyond competition and will be a part of our future success.

Our third level is TEAMWORK. We support each other's efforts, listen, encourage innovation, & help to pick up the pieces when things fall apart. Our team structure uses a business model with sub-teams and committees that work together and report to the entirety. We have an active student board of directors, have students that serve on the BOD for the sponsoring organization, and participated in a strategic planning retreat. Our team meets throughout the year, and members invest over 120 hours during the build season in addition to 20+ hours of community outreach. One of our teammates, Evelyn, was grateful for the culture of inclusion and said "I had always wanted to be on a robotics team and learn about robotics, but my high school didn't have a team. Luckily I found out about PWNAGE which accepts students from all over!"

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SPONSORS make up our next level and fuel our success in FIRST. Genesis Automation, from the beginning, has provided mentors, equipment, and a home. This strong relationship has also led to internships and employment of alumni. The owners of Genesis attend every team meeting and are dedicated to the success of our team. Our other sponsors come from a variety of backgrounds, and each brings a new way of thinking to the team. Students take a leading role in finding sponsors and our public relations. We provide demonstrations at company events for all of our sponsors and work with sponsors to organize tours of their facilities for our team members, to help them learn more about STEM.

SCHOLARSHIP is an important level of our building. Our scholarly efforts come first, and help each other, encourage one another and recognize priorities. Most students plan to pursue a career in STEM. What we learn through FIRST and PWNAGE helps us be prepared for what comes next. Older team members mentor rookies to pass on knowledge for continuity of the team. Our team's success and the skills gained have helped alumni receive FIRST scholarships and all have pursued higher education. Mentors encourage students to learn about opportunities in higher education and career options. One of our seniors last year, said "Being on PWNAGE solidified my decision to pursue mechanical engineering. It taught me a lot more about what it's really like to be an engineer and I feel a lot more prepared for college having been on the team." Another senior said, "I will have a leg up on college because I am getting the chance to work with professional engineers and use sophisticated machines, I will have better problem-solving skills from FRC games, and I will have more experience applying knowledge to real-life problems."

MAD SKILLS keeps our team rising. Our team is unique in that we work with professional mentors in a professional facility to gain real-life engineering skills. PWNAGE team members learn communication, project management, industrial safety, problem-solving and other non-technical skills that lead to success. We learn to turn ideas into reality. We have over twenty mentors that work with us in all areas, from machining and engineering to marketing and safety. Veteran team members help rookies learn the ropes. Learning from each other and together creates team unity. Our 2018 team captain said it well, "Even though we're relatively small compared to other bigger name teams, we have an extreme level of dedication to and passion for engineering. Even those who do mostly business-related things have a place on PWNAGE. We are also lucky to have many mentors who work very well with the students. We don't just have mentors building the robot, the kids are taught the skills and do it themselves with mentors standing by to offer help." One of our alumni, Danielle, benefited from the skills she gained with the team. She said, "I had gained communication skills, compatibility skills, and the ability to adapt to situations. It has also given me a chance to extend my interests and ideas to a new level." Students say that as they were given responsibilities and gained skills, they were able to use those and share what they have learned. Another alumni, Rosie, said "Our mentors have taught me a lot about engineering and teamwork. The team has expectations of all students and this made me more responsible. Being on PWNAGE has made me realize the need to introduce STEM to more places and more kids through our outreach events."

RISK TAKING is the innovation of our team. PWNAGE has shown innovative robot designs, new approaches to solving problems, not shied away from making changes, and explores all the potential solutions to a problem. Our mentors try to foster that mentality with our students, especially with prototyping. Mentors encourage students to come up with creative ideas and are willing to help test them out.

These CORE VALUES are the structural integrity of our skyscraper that keep our team together and strengthen us individually. We are one building in the huge FIRST city; but we are working hard to make sure our building radiates these core values throughout FRC and beyond. Each of us are getting ready to leave the PWNAGE skyscraper and go off to build our own future. We have gained the leadership, confidence, technical skills, desire to learn, and blueprints to help us spread the core values of FIRST wherever we travel to, on our own adventures.