

## Chairman's Award - Team 2451

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2019 - Team 2451

### Team Number

2451

### Team Name, Corporate/University Sponsors

Genesis Automation/Savanna Group/Ace Metal Crafts/SolidWorks/OEC Graphics/Power/mation/Industrial Steam/Unilock/Carbinite/Chillicothe Metal Co./Tele-Pro/Campfire/Milwaukee School of Engineering/Bank of America/SMC/New Corp.&Family/Community

### Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2018/2019 year and the preceding two to five years

We empower students to take leadership roles in 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 with special emphasis on the 2018/2019 year and the preceding two to five years

PWNAGE unites students from many communities through their passion for STEM. The team hosts a Girls Who Code club, 3 summer camps, an inclusive FLL Jr club, and Girl Scouts engineering & robotics workshops. The team hosts an average of 18+ different outreach events each year, including demos at 2 international trade shows, STEM fests, a MakerFaire & community events. Our community service also includes highway and river clean ups, troop support boxes, Feed My Starving Children, & other projects.

### Team's innovative or creative method to spread the *FIRST* message

PWNAGE demo'd 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 families.

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

We look beyond tech to professionalism & leadership. We mentor our team's rookies, and learn while we teach. We have 18+ 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 hosting a 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. We are mentoring an all girls' team #7609 (Chicago) and #7575 (Turkey). We help rookie teams with a bumper guide (2,500 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 mentor & 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 5 FLL teams & 1 FLL Jr. team. We are 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 #3828 on chairman's.

**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, a team in their chairman's, 5 FLL teams, FLL Jr, and have helped 2,500 individuals with bumpers. We started an inclusive FLL Jr. club, host "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 to create our robots, and dedicated mentors. The team is also sponsored by the Milwaukee School of Engineering, Ace Metal Crafts, Center Tool Company, SMC, Balluff, Industrial Steam, Enersys and others. Our sponsors come from many backgrounds, and each brings a new way of thinking to the team. Our students are work on sponsorship, are provided fundraising training, & are the point of contact.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to 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**

*FIRST* teaches us to be leaders in science & technology, and encourages us to use innovation while competing with robots we build ourselves. Through school and beyond, *FIRST* provides us with opportunities that build science, engineering, technology, business and life skills. We work with 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. We are PWNAGE.

**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 & always exhibiting gracious professionalism. The team is proud to create robots with a professional level of craftsmanship; however our metric for success is not the robot, but encouraging curiosity, problem solving, inclusion and innovation.

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

Audrey Pack

## Essay

Planet PWNAGE. PWNAGE is a stellar team that fosters an intergalactic love of STEM shared by being role models, introducing FIRST activities to our communities, mentoring, and seeking innovation in everything we do. Growing in size and impact since 2010, our team is working to expand the universe 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 skills we learn through FIRST.

Planet PWNAGE's inner core is fueled by INSPIRATION; for ourselves, younger students, other teams, & 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 host 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 at 12+ FIRST competitions, mentor 4 FLL teams, host a special needs inclusive FLL Jr. club, a Girls Who Code club, have helped start FLL & FRC teams, mentor a FLL Jr. team (#6420 Dino-Botics), and offer training and advice for other FRC teams. Last year we hosted electrical training for newer teams, this year are helping an all girls' rookie FRC team & a team from Turkey, a team up their game on chairman's, and an Israeli team out with motors so they could finish competing their rookie season. One of our alumni mentors created a resource guide on bumpers that has been downloaded from Chief Delphi over 2500 times. We assist at two off season events that rookie teams attend to understand how regionals work. We manufacture parts for FRC teams with less resources. We also help newer teams by inviting them to our practice space. In addition to FIRST involvement, our team hosts several VEX robotics teams. We want everyone to have access to STEM activities. 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.

Our outer core is packed full of GRACIOUS PROFESSIONALISM in the shop, out in the community, at competitions, and at every activity. Gracious Professionalism is our priority and expectation. We help other teams, are kind, serve, and respect others' opinions. We 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, value of others, and model respect for individuals and the community. We also work hard to compete, but know that respect and learning is more important. We agree with Woody Flowers when he said that "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 have the most fun with and reach the most people through is the Electric Light Parade in St. Charles, IL. The team builds a large float which travels down Main Street. It is a large event for St. Charles and the team has won Best in Show multiple years in a row. Through our display, we encourage people to check out more information through our team social media. We also do demos and have a booth at an international trades show, the Assembly Show, and promote what FIRST is to cutting edge technology companies. Over 7,000 people attend. Our team also hosts 3 summer camps. 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. We know that the skills gained through Gracious Professionalism will help us beyond competition and will be a part of our future success.

Our mantle is made of TEAMWORK, held together by PWNAGE students working together. 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!"

SPONSORS form our Asthenosphere and fuel our success in FIRST. Genesis Automation, since the beginning, has provided our team with 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 on a personal level. Our other sponsors come from a variety of backgrounds, and each brings a new way of thinking to the team. 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 students learn more about industry.

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SCHOLARSHIP, the Lithosphere layer, is planning for our future. Our scholarly efforts come first, and we 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 of them 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."

The oceanic crust is made up of our MAD SKILLS. We are 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. 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, & 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. Our team captain, 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."

The continental crust, RISK TAKING, is the innovation of our team. PWNAGE has shown innovative robot designs, tried new approaches to solving problems, not shied away from hard change to team structure or ways of doing things, 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 creative ideas and are willing to help test them out.

The elements of our ATMOSPHERE are the core values that keep our team together and strengthen us individually. Each of us are fueling up and getting ready to blast off from PWNAGE to destinations unknown....but we have the technical skills, desire to learn, leadership, confidence, and the support of an awesome ground control to help us each spread the core values of FIRST wherever we travel to on our adventures.