

## Chairman's Award - Team 4607

[Print](#)[Close](#)**2018 - Team 4607****Team Number****4607****Team Name, Corporate/University Sponsors**

ARCONIC/Federal Cartridge/Vista Outdoors/VEIT USA/VONCO USA/Becker Robotics Booster Club/Liberty Paper Inc./Xcel Energy/Exhibit Partners/Darter Plastics/NDSU - Bison Robotics/Clear Lake Lions/Franklin Graphics/Santiago Lions/Northland Refrigeration and Power/Becker Furniture World/Vern Jurek Construction/Midcontinent Communications/Great River Energy/Monticello Lions/Minnesota Limited/Sherburne State Bank/Batteries + Bulbs/AZCO, inc./SEH, Inc./Elk River Winlectric/Excaliber Collision and Conversion Center/Lanzer Computer Systems/STARCOR Credit Union/Becker Lions/Park Industries/Becker PTSA/Gold'n Plump Chicken/Country Lumber/Bernick's Pepsi/Central Minnesota Manufacturers Association/Joe's Bobcat and More/Treated Air /Saint Cloud State University/FRC 3026 Orange Crush/FRC 5542 RoboHerd/Central Minnesota Robotics Hub/Becker HS;FRC 4607 Alumni/Initiative Foundation/COR Robotics&Becker Senior High

**Briefly describe the impact of the FIRST program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years**

CIS is a platform for partnerships and pre-professional skills to be established and prepares students for post-secondary education and careers Over half of all CIS graduates have committed to STEM careers CIS takes students from every realm of involvement in our school and brings them together to practice coopertition and gracious professionalism

**Describe the impact of the FIRST program on your community with special emphasis on the 2017/2018 year and the preceding two to five years**

We bring growth and sustainability throughout Minnesota with our ever-growing number of training and support initiatives JUMPSTART has grown from 280 participants to over 540 Partnering with one of our sponsors, Trunk-or-Treat has grown to 350 attendees in 2017 CIS works with multiple charities to raise awareness for their causes CIS and NDSU mass-mentor teams through Robot in 3 Days Our partnership with Manufacturer's On The Road connects students from area schools to careers in STEM

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

Our motto is "Innovation Cannot Happen in Isolation" We model this with JUMPSTART, JUMPSTART for Mentors, and new in April, JUMPSTART for FTC Created the Programming Helpline to help other teams with coding issues in Labview, JAVA, C++, and Python GreenGirls camps for young women interested in engineering Founded the Central Minnesota Robotics Hub (CMNRH) and other robotics hubs and alliances Started SpecCheck which allows teams to experience a mock robot inspection and work with CSA's

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

Our mentors Chris Roadfeldt and Ryan Swanson created Minnesota Mentors On Call allow teams to request mentor help through the MN FIRST website Following the GreenHorns Ri3d, we invited Minnesota's Lead Robot Inspector in to go through a mock inspection that is now being used to train other Robot Inspectors world-wide Our shop is open to any teams that need help; last year 15 teams worked with us in our shop Advocating for and assisting rookie teams such as teams 7028, 7068, 7193, and 6709

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

We provide guidance and resources to existing teams and help to establish new teams Since 2015 we have mentored 19 FRC teams and started 9 of them To support local teams, we started the Central Minnesota Robotics Hub and helped start 2 more hubs The CMNRH has grown to 16 teams This work led CIS to organize all of Minnesota's Hubs, Alliances, and Coalitions This network of HAC's has been the precursor of the Minnesota Robotics Coaches Association

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

In 2015 CIS started the Becker Robotics Booster Club to form youth programs in the lower-level schools in Becker 6 years in, Becker boasts 9 robotics teams, 10 robotics/STEM outreach events, and has FLL Jr, FLL, FTC, and FRC teams in a community of 4000 people With Elk River we piloted FTC League Play with the guidance of High Tech Kids We have secured funds to host a training event for FTC members and mentors called FTC JUMPSTART Future plans include FLL Jr and FLL training events

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

We have found that mentors are our most valuable culture-changing resource We've made an organizational chart where current FTC mentors that are trained in FLL, FTC and FRC will remain in FTC to help transition students from FLL to FTC and from FTC to FRC JUMPSTART Training Events focus on both the mentors and members as they go through the sequence of FIRST 4 FTC teams work side-by-side with our FRC team so we can mentor them FRC team members work with FLL Jr and FLL teams as model members

**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)**

CIS members directly mentor our FTC, FLL, and FLL Jr teams to ensure continued culture in STEM and membership within our FRC team We currently mentor 19 teams, including 3 rookie teams this season We have developed robotics hubs for teams to connect and to gain experience from established teams Host multiple FTC events and scrimmages for teams to gain experience

**Describe your Corporate/University Sponsors**

Though our school recently adopted FRC as a varsity sport, we are primarily sponsor-funded Sponsors help the team's needs and allow us to assist other teams and provide resources to improve STEM education Our corporate/university sponsors help in local and global STEM outreach Our work with NDSU's Bison Robotics led NDSU to adopting it as an award-winning student organization With SCSU we have brought FRC training to 1700+ people Sponsors provide equipment, tools, and materials

**Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years**

4607 recognizes our sponsors as true partners, involving them in every aspect of the team Our partnerships allow CIS to build a successful competition robot and to attend regional competitions Allow students to gain "real world" business and engineering experience Allow CIS to give resources to other teams and fulfill FIRST mission of coopterition Their investment in STEM based activities spurs interest in these careers, helping to build a well-skilled Minnesota workforce

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

FIRST is an organization that provides participants a learning environment that stimulates a pre-professional program through robotics. It empowers students and mentors from all backgrounds to unite and use their unique abilities to work together and to strive toward common goals through cooperation, competitions, and intellectual challenges that can be implemented in changing the culture to celebrate STEM.

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

CIS ran Becker RoboCamp for 4 seasons which has since become a small business owned by one our our Alum, Ryan Swanson in the form of COR Robotics In 2017, COR Robotics ran camps that introduced students in grades K-12 to STEM as well as increased knowledge about FIRST Last season COR put on 13 camps in 11 different schools for over 150 students

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

Blake Paulson

## Essay

### Our Squad and its Mission

4607 produces leaders by engaging students in a pre-professional program that fosters technical, communication, business and problem-solving skills. CIS provides students with a solid foundation of opportunities upon which to build future success. We have firmly established ourselves as a force in the FIRST world by enhancing education in schools, expanding FIRST, and developing strong community partnerships. The dedication each member has to our mission has allowed CIS to grow and become a model team.

### Enhancing Education in Schools

CIS has improved educational opportunities by increasing student exposure to STEM and to the purpose and goals of FIRST. The team has a strong relationship with the Becker School District due to our regular meetings with school administrators to develop strategies on how to best reach students. Because of this relationship, CIS is able to have weekly segments that promote robotics on the student news broadcast, which is seen by the entire high school student body.

CIS sees the value in communicating FIRST ideals with all students at our schools. Some of the ways our team accomplishes this is through appearances at school pep fests and activity fairs which allow CIS to reach a large volume of students and to engage in conversations regarding the team, STEM concepts, and FIRST Robotics. Student presentations throughout the school district have inspired the creation of a schoolwide STEAM Day at both elementary schools and a STEAM club in the high school. A day of code was facilitated in the high school by the team to give students the opportunity to learn basic coding skills during their regular class time.

To spur STEM growth in our schools, CIS purchased curriculum and materials so that robotics and computer programming courses would be added in the high school. This year alone, over 150 students will take these courses. These classes help to introduce a large number of students who are not in FIRST programs, to STEM and to the ideals of FIRST.

CIS recognizes the importance of exposing all students to STEM fields and careers. By bringing local businesses to our high school in the form of Manufacturers on the Road, CIS provides a unique experience for students to explore STEM outside of the classroom. High schoolers from Becker and surrounding schools are exposed to career opportunities in STEM fields.

With inspiration from 4607's RoboCamp, COR Robotics was founded in 2016 by a 4607 alumnus with a purpose to lead educational summer robotics camps in collaboration with FRC teams. 4607 has been influential in running and presenting at these camps, which has impacted over 250 students through 20 different sessions. COR has also influenced the start of multiple FLL and FTC teams. While working with Ken Rosen, the Regional Director of FIRST in MN, COR assisted in the establishment of new FRC teams.

CIS alumni have continued to expand STEM and robotics education in their college communities. Bison Robotics, created in 2014 by alumni of 4607, is a collegiate robotics organization at North Dakota State University. Its purpose is to allow students to enhance their engineering knowledge by competing in robotics competitions and to give back to the community through volunteering. This organization now includes over 150 members and has been recognized by NDSU as an award-winning program. Bison Robotics coaches 8 FLL teams, runs a Robot in 3 Days team at Becker High School, and provides over 35 volunteers each year at FRC Regionals. This has led to an average of 5,000 combined volunteer hours each year, primarily for FIRST Robotics.

### Developing Strong Community Partnerships

FRC 4607 recognizes how instrumental sponsor and community relationships are to the success of the team and to the mission of FIRST. Every spring, CIS hosts an open house that families, sponsors, and the community are invited to attend. CIS members answer questions, give personal tours of our workspaces, highlight the team's achievements, and most importantly, celebrate our sponsors. The team is dedicated to visiting and keeping sponsors informed. CIS members share the work we do with our sponsors and also develop essential communication and speaking skills when delivering professional presentations and writing high-quality newsletters.

Vital partnerships with local organizations and sponsors have sparked the interest of individuals to become mentors and get involved with various FIRST teams in Becker. These relationships open the door to internship and career opportunities to members of CIS, because our sponsors acknowledge the advanced and unique skill sets students have after being a member of our team.

CIS raises awareness for many local charitable organizations including the Relay for Life Cancer Walk, Cystic Fibrosis Foundation, and Pain Free Patriots. CIS has also been a part of local celebrations and parades, such as Palmer Days and Becker Freedom Days, in which we showcase our robot, demonstrate community spirit, and forge deeper connections in our community. Each year CIS brings awareness to a chosen organization by putting their logo on our team badge that is worn by each member at competitions. The exposure at competitions serves as a conversation starter to educate others on these organizations. For example, CIS provided a free breakfast to veterans and their families before the Becker School District's annual Veterans Day program in partnership with Pain Free Patriots.

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Partnering with Becker Furniture World, CIS hosts Becker area's Trunk-or-Treat which has been one of 4607's fast growing events. This is an annual event that allows young kids to trick-or-treat in a safe and fun environment. This year, 16 organizations from the community hosted trunks, and more than 350 children participated.

### Expansion of FIRST

Expanding and promoting FIRST Robotics is a priority of the CIS squad. The team currently mentors FTC teams, FLL teams, and an FLL Jr. team in Becker. CIS has also been involved with piloting FTC Leagues in Minnesota and has hosted three events this year. CIS has established FIRST programs in all of the Becker schools.

Since 2015, we have mentored 19 other FRC teams throughout Minnesota and started 9 of these. To ensure success and lasting ideals of coopertition, we have provided mentor resources, sponsor leads, and workspaces to these teams. We also coordinate training sessions and donate tools to strengthen the network of area schools through these mentorships. Being able to mentor and train other teams allows CIS members to use their individual skills to assist others and, ultimately, work together for the mutual benefit of all involved.

By establishing the Central Minnesota Robotics Hub (CMNRH), CIS promotes gracious professionalism by connecting nearby teams. The Hub has grown from 6 to 16 teams and continues to provide a strong network of FRC teams committed to helping each other grow and succeed. Exchange of parts, ideas, knowledge, and support continues not only at the Hub's monthly meetings, but also at competition.

CIS hosts training sessions and events for other teams to help them achieve the goals of FIRST. SpecCheck is one of these events and was created to help teams prepare for competition. CIS invites robot inspectors and control systems advisors to our shop and allows teams to participate in a mock inspection. Along with SpecCheck, CIS has an "open build" philosophy and allows any team to use our workspace and tools throughout the year. In 2017, 14 teams took advantage of this opportunity.

CIS invites surrounding teams to view the robot game reveal and go through a cooperative process of analyzing the game and strategies at its annual Kickoff event. Along with the different breakout sessions led by CIS members, Bison Robotics completes the day with an in-depth strategy session. Throughout this event, teams network and develop relationships with each other.

CIS partners with St. Cloud State University to host an annual event called JUMPSTART. This is Minnesota's largest pre-season training event. JUMPSTART provides a wide range of training sessions and opportunities for students to learn about STEM and strategies for a successful FRC season. The day consists of 50 different sessions which cover topics such as outreach strategies, build, safety, awards, and fundraising. In its third year, over 540 members from 33 teams participated in this event. Because SCSU recognizes the value of FIRST, they have challenged CIS to grow JUMPSTART to 1,000 participants by 2020.

In order to strengthen the mentor corps of FRC teams across MN, CIS started & hosted JUMPSTART for Mentors. Over 50 mentors from 20 teams participated in this day-long, non-technical, training event at St. Cloud State University. This season, CIS introduced a new initiative, Minnesota Mentors on Call. This program was developed by 2 of our mentors and has now been adopted by FIRST in Minnesota and can be accessed through the MN FIRST website. The goal of this program is to distribute mentor resources to teams that do not have a strong mentor corps. The sharing of mentor resources has already been modeled and has succeeded among the 16 teams in the CMNRH.

### Innovation Cannot Happen in Isolation

CIS remains a lasting force that represents FIRST ideals by improving education and expanding and promoting FIRST. The team offers resources, experience, expertise, workspaces, and manpower to ensure the success of other teams and to fulfill the FIRST mission of coopertition. We will continue to develop strong community partnerships and work together as our members continue to grow and become catalysts for culture change.