

Cyber Blue 234 FRC Robotics Team

2010 Chairman's Award Essay

From our beginning, Cyber Blue has created a legacy of impact on students, school, community, and FIRST, inspiring interest in science and technology to all we meet. Our outreach begins with kids in kindergarten, and the impact continues after a student graduates from the team.

Using FIRST as a vehicle, we develop valuable skill sets that will benefit us now and in the future. We pride ourselves on our team's professional practices like preparing resumes, interviewing, preparing presentations and practicing public speaking skills. We learn critical thinking and problem solving skills in our brainstorming and design processes.

To practice our communication skills, while expanding excitement for FIRST and Cyber Blue, we are encouraged to contact community individuals, businesses and government officials to explain our program and ask for their support. The response has been successful with our community sponsors, and we often maintain partnerships with these sponsors for many years.

Our professionalism has enabled us to develop a year-round partnership with our largest sponsors. Allison Transmission began an internship program last summer and specifically requested Cyber Blue students as interns. This new Allison opportunity and our ongoing involvement with Rolls-Royce internships expose us to the real world of engineering as high school students. Just this year, we've had 9 interns with Allison Transmission and Rolls-Royce.

Working with Rolls-Royce, we led robotics sessions at an all-girls engineering camp. Next, we built a robot for this group to use in special pre-rookie events at the Indiana Robotics Invitational. The following year, POWER Storm 2360, was formed. Five Cyber Blue alumni now serve as mentors.

We continue to build strong partnerships with our major sponsors through our Critical Design Review. We explain our robot design for review to engineers from Rolls-Royce and Allison Transmission. We gain engineering knowledge, communication skills, ideas to improve our robot, and learn to defend our ideas. We hold an open house the day before ship day, inviting our sponsors, school staff, students and the community. Our open house draws over 250 people and is a great way for us to inform the community about Cyber Blue and FIRST.

We now also host a new member open house and orientation. We introduce new students and parents to FIRST and Cyber Blue through a formal presentation where we introduce the basic role of each sub team. Their first few weeks, new students are encouraged to rotate to each sub team to see which interests them most. Another new activity we started to help new members is our mock kick-off. We invite other local teams to participate in a simulated kick-off event to prepare new members for the upcoming season. We show a previous game video, and in one evening each small group designs a robot to accomplish the game task.

Before attending the Washington DC regional in 2009, we contacted Indiana Senator Richard Lugar's office and then visited him and his staff to introduce them to FIRST. We were also invited to the Indiana Statehouse by the State Superintendent of Education and recognized for our impact on our community.

Each year we discover innovative ways to spread the excitement of FIRST. We discovered that the Indianapolis Children's Museum, the largest children's museum in the world, was having a "Robots+Us" exhibit, and wanted to get involved. We contacted the museum, explained our program and FIRST, and asked to explore the possibilities of a partnership. In the weeks leading up to the unveiling of the exhibit, we built four small robots and two obstacle courses. We worked at the museum on weekends, teaching hundreds of children and their parents about robotics, FIRST, science, and technology.

After our work with the Children's Museum, we couldn't wait to find new ways to connect with children. A local elementary school asked us to build bookshelves in coordination with their new literacy program, but we didn't

stop there. We wanted to connect with the kids who were using the shelves we made. We visited the kindergarten class several times to read to the students, make pattern necklaces, and teach them a simple robotics lesson. We taught them about the parts of our small robots, let them drive the robots around an obstacle course, and demonstrated our FRC robot. Our relationship with the school continues this year as we built more bookshelves and expanded our interactive demonstrations for classes in grades 3-5.

For almost ten years, we've led VEX, LEGO, and FTC programs. We have started multiple teams at local schools and support them with student mentors, building relationships with them, and creating an interest in math and science for years to come.

We volunteer at many camps in our community hoping to spark excitement for science and technology. At a YMCA camp for elementary age children, we taught them about FIRST by giving them hands-on experience with our small robots. We led a one day event for high school students from an engineering camp at Marian University. We created a game challenge for them to simulate an entire season in one day, going through the kick-off, brainstorming, build, and competition process. We taught them how to use some of the machines in our shop, and with help from our team members they were able to make some parts themselves.

We continue our involvement in the American Cancer Society's Relay for Life (RFL). We demonstrate our FRC robot and share our program and FIRST with other participants and visitors. We invited community members to sponsor our RFL team to raise money for cancer research, raising \$2500 for cancer research. We are committed to a 2010 RFL event, and the RFL planning group has expressed its appreciation for our team's energy and enthusiasm.

Each build season, we send nearby rookie and other young teams "care packages". In this box of snacks we include a personal letter welcoming them to the FIRST family, wishing them the best of luck, and offering our help and support during the season and at competitions. Through this initiative, we have created lasting relationships with other FIRST teams.

We have formed a special bond with Team 2783, Engineers of Tomorrow. In 2009, severe weather cut into their time to build their robot. Members of our team traveled to Kentucky to work on design ideas and then to explain competition details when they qualified for the championship. This year, we invited them to our lab to discuss the game and share ideas. We help several teams with welding, Chairman's presentation ideas, programming, and extra parts and materials.

Cyber Blue is more than a six-week team; we search for new projects year round. During our post-competition season, we participate in challenging design projects and attend off-season events. For several years, we have considered building a swerve drive robot. This became our 2009 fall design project. We evaluated designs, and then found that a company was developing modules for FIRST teams to purchase. We partnered with the company, receiving prototype units, providing the company with feedback, and writing assembly instructions. Our instructions are included with each module purchased.

We co-host the Indiana Robotics Invitational (IRI). Seventy-two teams from around the country come together for this event – the largest of its kind. More than a great robotics competition, the IRI focuses on community outreach activities, including the collection and distribution of donated, filled backpacks for local 2nd graders, a FIRST memorabilia auction to benefit local charities, and college scholarships for seniors. We cook and serve dinner for 1400 IRI participants. With the money donated in the IRI auction, we shopped for food for Hunger, Inc. a local food pantry. After shopping, we delivered nearly 1000 pounds of food to the pantry.

Cyber Blue also works to impact the global FIRST community. One way is through participation in the Championship Forums. At the 2009 Championship, we hosted two forums, one about our belt versus chain analysis and one about our business and continuity plan. We designed and delivered our presentation with only a little guidance from our mentors, and were one of the first student led presentations at the Forums. FIRST now

encourages teams to include students in Forum presentations. We recently hosted programs for the Society of Women Engineers and a Rolls-Royce Engineering Career Fair, explaining our program and introducing many attendees to FIRST programs. We encouraged them to get involved either as mentors for any of the Indianapolis area teams or as event volunteers.

We are proud of the increased excitement of FIRST and Cyber Blue within our school. Several times during build season, we air videos on our morning announcements to keep the school updated on our activities. We also have Facebook groups, a Twitter account, and a blog to update friends and alumni. Last year, we had the privilege of having our principal join us at The Championships. We've expanded our outreach to teachers, too. We each invite a teacher to "sponsor" us. By being our sponsor, the staff member receives a Cyber Blue poster to hang in their room and a "Cyber Blue Supporter" shirt to wear when we are at competitions. We continually update our teacher sponsors on our team activities and progress. This group even made a "Cyber Blue Day" in 2009 to celebrate the team.

We support multiple organizations in our school, donating money and time to their causes. We are also supportive of our Project Lead the Way classes sharing our lab with them. More than half of our students have been involved in PLTW courses.

Over the past 12 seasons, Cyber Blue has built a lasting legacy. Alumni continue to play an important role in FIRST, with over 20 still active. We continue to find unique and creative ways to spread the message of FIRST to students, our school, and our community.