

Executive Summary

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2017

1. Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the current season and the preceding two to five years

Members of 3928 are taught by mentors of varying ages & backgrounds to work in a real-world environment. As co-captain Rucha says, "3928 encouraged me to take on leadership roles, pass on the importance of service and STEM awareness, and be involved in an organization that shapes who I am." FIRST has inspired members to secure internships, jobs, and take classes in STEM at Iowa State. From start to finish, members become leaders and innovators. 87% of alumni have gone on to pursue STEM careers.

2. Describe the impact of the *FIRST* program on your community with special emphasis on the current season and the preceding two to five years

3928 works with PTOs to integrate FIRST in each school by securing space and materials for new teams. 3928 exposes Ames students to STEM by running a booth at Ames High School's club fair along with informational study halls. 3928 engaged in 100+ demos & volunteer opportunities over 5 years. A parent assisting with outreach said, "You had Girl Scouts, firefighters, farmers, retired folks, City of Ames employees and LOTS of others cheering for you. The community is VERY proud!"

3. Describe the team's innovative or creative method to spread the *FIRST* message

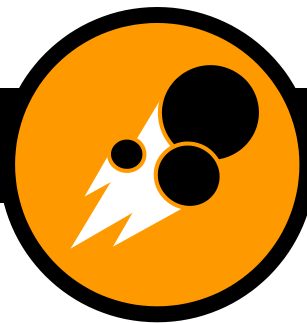
3928 annually leads 8 camps for 2nd-8th graders over robotics, engineering, circuitry, coding, and 3D drafting & printing. Two camps utilize a MakerSpace the team helped develop at Edwards Elementary. At the Iowa State Fair STEM Day, 3928 worked with 967 to put on a stage act involving time travel and stolen goats to introduce 146 spectators to FIRST, the most visited act on the stage. 3928 spoke to legislators about FIRST at past STEM Town Hall Meetings and STEM Day at the Capitol.

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

In 2013, 3928 member Sarah mentored Tiffany's FLL team.

As a 3928 member, Tiffany later mentored Joel's FLL team.

Joining 3928 in 2016, Joel has mentored 3 FLL Jr. teams.



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Completing the circle, now-alumna Sarah mentors 3928 while studying engineering at ISU.

Giving back to the program that built the team is a commitment all members grow to make as they fall in love with FIRST. They share strategies, tips, and documents through running booths at events like the Iowa FRC scrimmage.

5. Team's initiatives to help start or form other *FIRST* Robotics Competition teams

3928 has expanded FRC in Iowa by forming a solid base of FIRST in Story County and planning the growth of Iowa FRC teams. 3928 mentored 5935 during their first year. 3928 inspired 4646 to form by demoing for interested students and teachers at their high school, and provided support throughout their rookie year. Over the summer, 3928 facilitated a panel on team organization, fundraising, and advice for the 11 rookie teams in Iowa.

6. Describe the team's initiatives to help start or form other *FIRST* teams (including *FIRST* LEGO League Jr., *FIRST* LEGO League, & *FIRST* Tech Challenge)

FIRST is available to all K-12 students in Ames & Story County due to the 27 teams 3928 started, mentored, and funded over five years:

~3 FLL Jr. teams at Edwards Elementary in 2015 & 18 teams at 3 more schools since.

~1 FLL team in Ballard in 2014, 2 FLL teams at Edwards in 2015 & 2 at other elementary schools in 2016

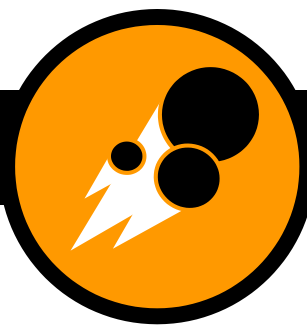
~Currently in talk with FTC mentors & coaches to start teams

3928 prepares the coaches so teams are sustainable after 1-3 years, then remains available to mentor/provide resources.

7. Describe the team's initiatives on assisting other *FIRST* teams (including *FIRST* LEGO League Jr., *FIRST* LEGO League, & *FIRST* Tech Challenge) with progressing through the *FIRST* program

At 3928's founding, FIRST presence was limited to FLL. Now, 3928 has made FIRST available to all K-12 students in Ames, creating programs at 7 of 8 Ames schools, as well as 2 schools outside Ames. Since 2012, 3928 has mentored FLL at Ames Middle School, organized their scrimmage since 2013 and run tryouts since 2014. 3928 has mentored 40 teams since 2012. 3928 remains available to answer questions and mentor as needed so more kids can grow to be part of 3928.

8. Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (including *FIRST* LEGO League Jr., *FIRST* LEGO League, & *FIRST* Tech Challenge)



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The team works with other FRC/FTC teams to present the next level of FIRST to younger students, amounting to 2000+ hours.

- ~Science Center of Iowa robotics day with FRC 4646 & FTC 5126
- ~Iowa State Fair with FRC 167, 967, & 4646 & 3 FTC teams
- ~SCI Mini Maker Faire with FRC 4646 & FTC 5126
- ~Demo for FTC 7491 at Iowa State University
- ~SCI FLL Regional volunteering
- ~Iowa FLL State Championship demo & presentation with FRC 525
- ~Volunteered as a team at Marshalltown FLL Regional

9. Describe your Corporate/University Sponsors

3928 appreciates the support of their 17 sponsors & partners that provide the team with financial and in-kind support, mentors, and workspace. By pursuing and maintaining strong sponsor relationships, 3928 is able to fully fund the \$30,000 budget through sponsor contributions. Thanks to sponsors, 3928 has assistance with transportation, sheet metal, batteries, and more. Iowa State University has a major impact on the team; besides providing mentors, 3928 has machine access and work space.

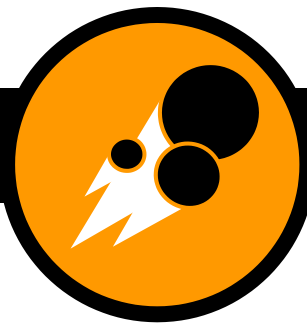
10. Describe the strength of your partnership with your sponsors with special emphasis on the current season and the preceding two to five years

3928 updates their 17 sponsors & partners via regular visits, newsletters, thank you cards, and posts on their website & social media. Sponsors are displayed on the robot, pit, and promotional materials. The lead mentor is an employee of John Deere, a primary sponsor since the beginning. Quality Manufacturing provides parts and gives students tours of their facility. For the past 2 years, 3928 has been invited to the annual 4-H legacy awards to network with corporate 4-H supporters.

11. For *FIRST* Robotics Competition teams older than 5 years, briefly describe your team's broader impact from its inception

3928 inspires, educates, and improves, working to carry out the FIRST message. Since inception, they have:

- ~Mentored 500+ kids through 40 teams and 8 camps annually
- ~Impacted 479,000+ people at outreach events
- ~Volunteered for 5,500+ hours across the state of Iowa
- ~Partnered with the ISU Program for Women in Science & Engineering and created a Girls Who Code club at Ames High School
- ~Instituted a MakerSpace at an elementary school for students



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

FIRST is designed to inspire K-12 students in the advancement of STEM; the passion for the program is what makes it successful. Students develop leadership, communication, technical, teamwork, and time management skills through designing, building, and programming a robot in addition to performing community outreach, mentoring, and fundraising. FIRST prepares participants for college and a career, providing technical training, scholarships, and the drive to succeed.

13. Briefly describe other matters of interest to the *FIRST* Judges, if any

~Over 65% of 3928's current members are FLL and FTC alumni, 40% coming from Neutrino-led programs.

~Females hold 5/11 student leadership positions and make up 36% of the mentors

~Underrepresented STEM groups make up 61% of 3928

~3928 has grown 400% over 6 years

~ At the first Iowa Regional, the team organized a Chairman's Exchange for 7 teams

~ 3928 is not affiliated with an individual high school, but rather draws talents from 5 different schools