

Chairman's Award - Team 1868

[Print](#)[Close](#)

2018 - Team 1868

Team Number

1868

Team Name, Corporate/University Sponsors

NASA/NASA Ames Research Center/St. Jude Medical Foundation/Google/Nvidia/Brin Worcicki Foundation/Qualcomm/Intuitive Surgical/Motorola/World Metal Finishing/Applied Welding/Weiss Enterprises/Solidworks/Wildbit/Fiber Internet Center & Girl Scout Troop 62868

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

Our inclusive environment enables all Space Cookies to develop strong technical and leadership skills. In addition to running 30+ student-led workshops that teach skills from programming to public speaking, this year we debuted a mock game challenge to teach rookies strategy, prototyping, and design via a simulated build season. 100% of our alumnae have attended college, and over 90% have pursued STEM majors, receiving \$900,000 in scholarships and 32 STEM internships.

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

Space Cookies has promoted FIRST values at over 100 outreach events in the last 3 years. We invest 2000+ hours in service each year, demonstrating our robot and encouraging youth to pursue STEM at events like Bay Area Science Festival, Silicon Valley FOAM, and SF Zoofest. In 2016, Space Cookies organized the FRC section at Maker Faire Bay Area. This year, we organized the FRC presence at Silicon Valley Fall Festival. We also demo at fairs, schools, and Girl Scout and company events.

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

We spread FIRST's message of STEM inclusiveness through many channels, including books, badges, and creative projects. Enthusiastic response to our first children's book, "Amy & Jada Rescue a Robot", inspired us to write "P is for Prototype". We created 5 STEM Girl Scout badges which are available nationwide, and host frequent hands-on workshops. We have more than 3700 followers on digital media platforms, which we use to share information about FIRST and assist other teams.

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

Our members are role models beyond our FIRST engagement. In the spirit of Gracious Professionalism, we welcome rookie teams to FIRST, offering prompt technical and business support through our Cookie Helpline. We are proud to have been awarded 1 Woodie Flowers Finalist, 4 Dean's List Finalists, and 1 Dean's List Winner. Outside our team, Space Cookies are journalists, musicians, peer tutors, student government leaders, club officers, and sports team captains.

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

We have started 4 FRC teams, 3 of which are international. Space Stars in Bogotá was the first FRC team in Colombia and first all-girls FRC team in South America. We hosted them in our lab and homes and helped them create Wolf Team Robotics in Cundinamarca. We helped form Mars Style, one of the first FRC teams in Beijing, and Carrillo Cybernetics, by registering and training them in our lab. We are aiding schools in Greece and China to create new FRC teams for the 2019 season.

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

We have started 2 Jr. FLL, 15 FLL, and 3 FTC teams, many of which are in under-resourced/Title 1 communities. This year, we started two FLL teams in Niwari, India, one of which is the only all-girls team in the region. Through weekly video calls, we helped team mentors create curriculum about teamwork and FLL skills. One team won the Core Values award at their regional tournament. Last year, we started a Space Cookies FTC team, who won the 2018 Fresno FTC Regional.

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

With a sponsor, we provide free video conferencing to all FRC teams. We opened our lab to 4 teams, offering technical help and a practice field. We are helping teams practice presentations as part of the CocoNuts Chairman's Exchange program. We contacted 120+ rookie teams and provide prompt technical and business support through our Cookie Helpline. Over the past 6 years, we have hosted 11 FLL tournaments, encouraging 32 teams annually to continue with FIRST.

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)

Our team mentors 5 FRC, 4 FTC, 11 FLL, and 2 Jr. FLL teams. We ran two comprehensive workshops covering mechanical, programming, and business topics for FRC teams. We mentored FRC 5737 in China and FRC 5871 in Idaho via email and video chat. This year, we started and mentored EPAPA, a middle school FLL team, so students in EPACS, our elementary FLL team, could continue with FIRST. We also teach CAD, public relations, pneumatics, and finance for local FRC teams at WRRF workshops.

Describe your Corporate/University Sponsors

Our generous sponsors empower girls to become STEM leaders. NASA and Girl Scouts have sponsored us since our founding and NASA graciously provides our lab at Ames Research Center. Other multi-year sponsors include Intuitive Surgical, NVIDIA, St. Jude Medical, Brin Wojcicki Foundation, Cooler Master, Qualcomm, Google, and local welders and fabricators. By providing financial and in-kind support, our sponsors help cover the cost of robot build, community outreach, and competition.

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

We proudly represent our sponsors' STEM education programs. We were honored to represent Girl Scouts at Salesforce's Dreamforce convention, the venue for Girl Scouts' national launch of a comprehensive STEM program. We attend NASA's Take Your Kid to Work Day, holiday parties, and Ames Open House. We demo our robot at many corporate events. We participated in Cooler Master's DREAM challenge and were featured in both Qualcomm's and NVIDIA's FIRST partnership videos.

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

With a mission to inspire students to become engaged in STEM, FIRST is an international robotics competition in which teams design and build complex robots under extreme time pressure. Student-led teams learn technical and leadership skills while practicing Gracious Professionalism. FIRST is more than robots; teams also participate in year-round local and global outreach to inspire others to get involved in FIRST and STEM as mentors and participants.

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

As a Girl Scout troop and FRC team, we have the unique opportunity to spread FIRST's message of STEM inclusiveness to the Girl Scout community. The 5 badges we created are available nationwide, enabling us to share our STEM enthusiasm with over 2 million girls. Many Space Cookies earn the Gold Award—the highest honor in Girl Scouting. Projects include running STEM camps at Title 1 schools, creating an FLL Quickstart Guide, and developing a toolkit for volunteers in afterschool programs.

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

Malar Kumarappan

Essay

"The work of today is the history of tomorrow, and we are its makers."

—Juliette G. Low, founder, Girl Scouts

Since 2006, Space Cookies Team 1868 has inspired and prepared the next generation of technology leaders. Founded by NASA and the Girl Scouts, our unique combination of technical expertise and community outreach enables us to change people, create possibilities, construct programs, and challenge perceptions.

CHANGING PEOPLE

We transform our 76 members into technical experts through an inclusive environment with extensive training. Each fall, we hold an open house for prospective Space Cookies and their families. No prior experience is necessary to join; we welcome all girls. Members can attend 30+ workshops created by veteran girls on mechanical, electrical, programming, and business—totaling 2000+ training hours. Animation workshops allow rookies to participate in the Safety Animation Challenge.

New girls experience FIRST by attending offseason events, watching matches and touring the pits. Our Rookie Cookie program pairs new girls with veterans, ensuring consistent support and advice. Rookies can also join Zero Robotics, an international competition in which teams program miniature ISS satellites.

In our annual "CAD, Cookies, and Cocoa" series, girls learn Solidworks and participate in our CAD Snowman Challenge. We also run a rookie-led KOP robot project. We have created a build season simulation, "Shoot for the Stars" in which rookies experience a mock build season while learning technical, strategy, and teamwork skills.

Our 28-member leadership team plans everything from schedules to outreach events. To enhance communication between leaders and mentors, we have monthly meetings to plan and organize projects. Space Cookies are well prepared to apply their skills to their academic and professional pursuits. 100% attend college and over 90% choose STEM majors.

CREATING POSSIBILITIES

Space Cookies not only supports the growth of our members, but also assists many FIRST teams. Over the past 5 years, we have expanded our FIRST outreach worldwide.

We hosted local FRC teams 1280, 5728, 5940, and 6036 for day-long bootcamps in our lab, covering FRC fundamentals and providing field access. Overwhelming interest in our team prompted us to create and mentor a Space Cookies FTC Team 2 years ago; members can join FRC the next season. This year, they won the Fresno Regional. We've mentored 3 other FTC teams—Lick Robotics, Girlbots, and Polaris—and regularly invite them to our lab. We also host practice matches for mentee teams.

We've hosted 11 FLL tournaments and assisted 150+ FLL teams, offering technical, project, and presentation assistance. Space Cookies mentor and provide financial support to 11 FLL teams in under-resourced communities. We were thrilled when one team received the Judge's Award at their Championship event and another the Global Innovation Award for their solution to water waste. We raised funds and donated 4 FLL field kits to elementary school teachers in underserved districts to start teams and taught robotics at summer camps at a local community center.

Internationally, we started 3 pioneer FRC teams. Space Stars was the first FRC team in Colombia and first all-girls team in South America. With our help, Space Stars created Wolf Team Robotics in Colombia. We also helped form Mars Style, one of the first FRC teams in Beijing. We are currently working with schools in Greece and Shanghai to start new teams next season. We use email and videoconferencing to mentor and assist numerous teams outside of California and the US, including teams 5871, 2468, 6579, 6404, and 6435. As part of the CocoNuts Chairman's Exchange program, we help teams practice Chairman's presentations.

Continuing our international efforts, this year we founded two FLL teams in Niwari, India. Through weekly video conferences, we guided their mentors through the FLL process, with one team winning an award at their regional tournament.

Last year, we managed the FRC presence at Maker Faire Bay Area, attended by 125K people. We designed a game field, invited local teams, and maintained a continuous scrimmage over 3 days, ensuring that all could witness FRC robots in action and learn about FIRST. This year, we helped plan the WRRF conference and taught workshops on Computer Vision, Deep Learning, Intro to C++, and Solidworks. At Team 3256's STEM Weekend, we ran multiple technical and business workshops. Through our Cookie Helpline, we provide immediate online assistance to rookie teams. We work with our sponsor BlueJeans Network to provide free video conferencing to all FRC teams.

Essay - page 2

When wildfires broke out in California this fall, many FIRST teams and their families were impacted. We worked with Team 100 to raise funds through the Red Cross. Last year, Team 5871 had a fire that destroyed their lab; we donated funds to help them get back on their feet. When Naatsis?áán Robotics Team 6546 needed funds to travel to Championships, Space Cookie friends and families raised more than \$3000 in just a few days. At Champs, we met with them and provided their lunches.

CONSTRUCTING PROGRAMS

As a Girl Scout troop and FRC team, we spread FIRST's philosophy of STEM inclusiveness beyond the FRC community. We lead the way in the FIRST-Girl Scouts alliance developing 5 STEM badges and making them available to nearly 2 million Girl Scouts nationwide.

Our badge program focuses on math, technology, engineering, programming, and robotics. In 2014, we created the Engineering in Action badge for Cadettes. In 2015, we introduced Number Navigator for Brownies and Tech Trek for Juniors. Since then, we have added Code Creator for Cadettes and Riveting Robots for Seniors. Each badge includes an activity guidebook. We run badge workshops at many Girl Scout events including our very own STEM Badge Day and have fielded nearly 200 badge-related inquiries on our website with 2500+ badge recipients; our badge guidebooks are now available online so troops/girls can earn badges on their own.

We enrich Girl Scout programs by participating in major events. We demo our robot at the annual Craftapalooza where 1000+ girls come together to make holiday crafts and complete badges. Each year 6000+ girls attend Golden Gate Bridging, where they are invited to drive our robots and learn about FIRST. We showcase FIRST and Space Cookies at "When I Grow Up" attended by 1000+ people. This year, a Space Cookie served as a delegate at the GS National Convention.

We were honored to represent Girl Scouts at Salesforce's Dreamforce convention, attended by nearly 175K people and viewed online by 10+ million, and where Space Cookies joined the Girl Scouts' launch of a national STEM initiative.

21 Space Cookies have earned the Gold Award—the most prestigious award in Girl Scouts, in which girls spent 100+ hours on a project with sustainable impact. Gold Award projects have included running STEM camps at Title 1 schools, creating a coding curriculum, and developing an FLL Quickstart Guide. The Gold Award project "STEM Education Using LEGO Mindstorms" has become the most downloaded resource on our website.

In preparation for the Canadian Pacific Regional, we contacted Victoria Girl Guides, offering competition tours. We hope to spark the same interest in robotics as we have with Girl Scouts.

The Space Cookies show countless girls that STEM is exciting and accessible. Our Girl Scout programs have a tremendous impact in our community and across the country.

CHALLENGING PERCEPTIONS

With 30+ outreach events and 2000+ annual service hours, we challenge perceptions of what young women can do. In the last year, we have reached 500K+ people.

In addition to popular events like Bay Area Science Festival, Silicon Valley FOAM, and San Francisco Zoofest, we create our own outreach platforms. We pioneered a Boy Scout event at Hiller Aviation Museum, inviting local teams to demo with us. We also demo robots and give talks at summer camps, company picnics, open houses, and formal corporate events. Many girls speak about the importance of STEM education and mentoring young women. This year, an alumna at Microsoft invited us to demo and lead activities at a STEM exploration day for girls.

We proudly participate in our sponsors' STEM programs. We are regulars at NASA's Take Your Kid to Work Days, holiday parties, and open houses and were the only FRC team invited to demo at NASA Ames' 75th Anniversary Open House. We also attend Intuitive Surgical's company picnic and Robonanza. We participated in Cooler Master's DREAM challenge, interacting with thousands of attendees at PAX West while demoing our custom workstation with a robotic airplane launcher. Both NVIDIA and Qualcomm featured us in their FIRST partnership videos.

We also help our community in ways beyond FIRST. We volunteer as Toys for Tots "elves" during the holiday season, make hundreds of cards to send to overseas military, and hold a prom dress drive for the Princess Project. Last year, we wrote personal letters to every woman in Congress, encouraging them to champion STEM programs.

We have charted a new course for outreach by writing, illustrating, and publishing two children's books with a message that girls can change the world through science and engineering. In "Amy & Jada Rescue a Robot," two girls embark on a galactic adventure to fix a robot. Inspired by the book's success, we created "P is for Prototype," which tells the story of a young girl who impresses her class by building a robot.

For the past 12 years, the Space Cookies have dedicated thousands of hours to extending FIRST programs and message of STEM inclusiveness locally and internationally. Through our efforts, we have reached over 1.5 million

people, inspiring youth by changing people into leaders, creating possibilities for underserved communities, constructing Girl Scout STEM badge programs, and challenging perceptions of women in STEM.