Chairman's Award - Team 1671

Print Close

2022 - Team 1671

Team Number

1671

Team Nickname

Buchanan Bird Brains

Team Location

Clovis, California - USA

Describe the impact of the *FIRST* program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in *FIRST* programs as mentors/sponsors.

92% of Bird Brains reported considering a STEM career in the future and 66% started early by taking CTE Engineering Pathway classes. At least 16 members have returned as mentors for Team 1671 including our current head coach, teacher advisor, and 2 assistant coaches. 18 Alumni have returned to work with FIRST; 16 became volunteers and 2 Program Delivery Partners with FIRST. 5 team leaders have received full-ride scholarships to CSU Fresno.

Describe your community along with how your team addresses its unique opportunities and circumstances.

Team 1671 nests in the heart of the Central Valley of California, an agricultural-based community. We recognize this unique geography and utilize farmer's markets as a cornerstone for opportunities to share the message of FIRST, reaching around 500 people in 2022. In the past year, our community saw a 66% decline in FLL teams. To ensure all returning teams continue participating, we waived fees to our annual FLL scrimmage and conducted programs for younger kids to get involved with FLL.

Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?

Our FIRST Flight initiative, "Workshop in a Box," uses low-budget materials so anyone can learn STEM principles, even from home. With many nearby libraries and elementary schools, we can easily demo our robot and read our children's book to thousands each year. As a result, 1671 has reached nearly 1400 potential FLL participants. Our consistent, diverse posting schedule on Instagram, Twitter, and YouTube reaches nearly 75,000 users every 90 days, resulting in an annual 12% increase in followers.

Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

Ethan mentors local FTC teams, sharing design and fabrication skills. Caroline created an online resource, Hatching It Out Digitized, to guide rookie FLL teams and coaches. Our reputation is built on volunteerism- with a Bird Brain winning the volunteer award at 16 of the last 38 events we have attended. We are reputedly the driving force at local FIRST events, volunteering at the FLL championship each year since its creation. This season, we have volunteered 1,096 hours at FIRST competitions.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

We mentor two FTC teams (14323, 17094), 3 FLL teams (50630, 12550, 30762), and visited FRC Team 7589 in Taiwan (2019) to assist in team organization. Our Hatching-It-Out program assisted 10 FLL teams with the project and core value challenge by providing in-depth curriculum and interactive activities- simulating a real competition day! We also expanded to an online audience by digitizing our FLL Flight manual and Hatching it Out programs to help new teams and coaches navigate the world of FIRST.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

Our Flight School pathway has impacted 1510 kids at 45 events. With pre-k students, we read our children's book, "Three Little Birds: Reach for the Stars" and share our activity book. With elementary students, we host FIRST Flight workshops, a hands-on experience to explore STEM. Our GEMS initiative gives 6th-8th grade students an introduction to the fundamentals of FRC. From creating FLL teams with our younger attendees to training next year's Bird Brains, Flight School paves the path to FRC.

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

1671 maintains a partnership with our school's CTE Pathway, helping obtain a $500,000 grant. We co-host the Madtown Throwdown with FRC 1323 and FLL events with Central Valley Robotics. Our FLL Scrimmage was sponsored by BCT Consulting and CSU Fresno's physics department brought science demos for the attendees. We partnered with A Hopeful Encounter and FIRM to bring workshops to Laotian students. With our outreach, we developed partnerships with 6 elementary and 1 intermediate feeder schools.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

Our team received FIRST's Equity and Access grant to create FLL teams for socioeconomically disadvantaged youth. Our Flight Workshop has reached 440 students at Title I schools. To introduce girls to STEM, we created a Girl Scout robotics badge workshop planned for May 2022. By reviewing feeder school data from our team, we ensure schools without robotics programs are target areas for our outreach. Our team welcomes all, evidenced by 62% of our team consisting of racial minority backgrounds.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

The addition of 2 games to our newly digitized Flight Workshop highlights our team's adaptability. Changing with the times, the programs are guaranteed to stay effective and ongoing. At outreach events, new members are encouraged to converse with attendees to perfect their presentation skills. Our pit schedule pairs new and veteran members together for an exchange of knowledge and fostering new relations with other teams. All details of initiatives are organized on a team Google Drive.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

The team recruits sponsors via cold calling and visiting companies. We created a specialized sponsor packet that outlines benefits, operational costs, and mentorship needs. All donations are tracked through a database and regularly updated. With our weekly social media shout-outs, we highlight sponsors' gratuity and allow them to connect with a larger audience. From shop tours to invites to our annual Open House, we ensure that sponsors have the chance to see their contributions come to life.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

With a large team, keeping every student engaged and interested has been an obstacle. The team created a mock build season, giving newer members the opportunity to emerge into robotics and develop a diverse skill set. Exploring each subgroup is encouraged; from media to CAD, members can discover their passions and find their place on the team. Squawk Talk, a fun Q&A segment in our team vlog, team jeopardies, and parties unify our team which boosts participation and communication.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

Team 1671's mission is to inspire others to spread their wings and introduce a love for STEM to all. Our G.E.M.S, Flight Workshop, and Hatching-It-Out programs inspire kids to get involved in FIRST. Our children's book has been translated, animated, and voiced to be more accessible to younger audiences. In three years, we have impacted close to 3000 future engineers. Team 1671 embodies the FIRST message and directs young people towards a positive outlook: if we can do it, you can do it too.

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

During the pandemic, to allow teams to compete digitally, we created FRC Robolympics. More than 20 teams signed up, ranging from Istanbul to Taiwan. For hospitals and those in need, we created and donated over 1500 PPE masks. We have even received attention from former California governors Arnold Schwarzenegger and Jerry Brown. We were featured on news stations ABC 30, KMPH 26, and Clovis RoundUp to discuss the impact of our outreach in the community.

Essay

OUR NEST
The Buchanan Bird Brains are a team of 58 members, 15 student leaders, and 7 adult mentors. Our leadership team consists of 4 chiefs and 11 directors, all specialized, simulating the structure of a business. Our team promotes diverse skill sets by modifying the subgroups to fit the needs and talents of the students. The Bird Brains consist of engineers, animators, marketers, and most of all, innovators.

With FIRST under our feathers, we always catch flight.

FLIGHT SCHOOL
Our team helps cultivate a life-long passion for STEM by creating sustainable and scalable outreach initiatives. We created our Flight School pathway containing programs tailored for students at every grade level. Join us at each "stop" of our Flight School, where students have an opportunity to join FLL, FTC, and one day, the Bird Brains!

First Stop (Children's book/Robot demo): Our team-written children's book, "Three Little Birds: Reach for the Stars" and the accompanying "Bird Brains Activity Book", teaches elementary students about basic STEM concepts in a fun and engaging way. To broaden our impact, we translated the book into 8 different languages, including Spanish, French, and Mandarin. We also animated and voiced the book to allow access to all. Now, our book has been taken to various libraries and elementary schools throughout the Central Valley, reaching an audience of 530 people in just 2022.

Second Stop (First Flight): The First Flight workshop, created in 2018, is essentially a "Workshop in a Box". Using household materials and our instructional manual, the workshop experience can be replicated by anyone - making it our most scalable initiative yet. Our workshop includes tower building and programming games that foster teamwork and collaboration while allowing kids an opportunity to gain technical knowledge. Through this workshop, we strive to introduce underserved populations to STEM and encourage entry into FLL. Over the past 3 years, we have hosted 36 workshops, reaching over 900 people.

Third Stop (Hatching-It-Out): The Hatching-It-Out initiative is a multi-session bridge between our First Flight workshop and the formation, coaching, and maintenance of new FLL teams. With our immersive training sessions, we provide rookie teams and coaches with all the necessary details needed to complete their FLL seasons smoothly. So far, we have assisted 11 FLL teams with the project and core values challenges, simulating a real competition day!

Last Stop (Girls and Guys in Engineering, Math, and Science): G.E.M.S. was created in 2019 to provide an engaging curriculum open to 6th, 7th, and 8th graders. Through G.E.M.S, we teach students computer-aided design, fabrication, programming, digital marketing, and graphic design. During the first 2 days, students use SolidWorks to create a pencil holder and then Java to create a working calculator. Later on, students fabricate the pencil holder they previously 3-D modeled to master basic machinery and hand tools. On the last day, students get to create their own outreach event and digitally design a logo. With G.E.M.S., we have taught 54 girls and 18 boys the fundamentals of FRC.

FLYING WITH FIRST
Branching out of our own school, 1671 has become the most active FIRST team in the valley. Our volunteerism is widely regarded in both the valley and the FIRST community.Team 1671 makes an effort to collaborate with other teams and organizations to bring FIRST events to life. Many FIRST events hosted by Central Valley Robotics rely on 1671's labor pool to operate smoothly. Some events include the Central FLL Qualifier, FLL Regional Championships, FTC qualifiers, Offseason FRC events, and the FRC Central Valley Regional.

We co-host the MadTown Throwdown with FRC 1323, Stable Stomp FTC Qualifier with FRC 6305, and the FLL Championship with Central Valley Robotics. We also host several events, including the Battle at the Nest FLL Qualifier, Fll Jr. Central CA Championship Expo, and Free Flight FLL Scrimmage (the only FLL scrimmage in the Central Valley!). We revived FIRST in the Central Valley by hosting the first robotics event in over two years! With our efforts, we have been accredited a total of 16 volunteer awards at the last 38 events we have attended. In the last three years alone, we have assisted with over 20 FIRST events, with a total of 2,960 volunteer hours.

OUTSIDE THE NEST
In 2019, alumni, Elijah Hernandez and Annika Garza, went on a 7,968 mile journey to teach our First Flight workshop in Laos. Partnering with the nonprofit, A Hopeful Encounter, we translated our entire workshop to Laotian and Hmong. The Bird Brains brought the workshop to 90 students and gifted 15 translated copies of our children's book to Ban Phawaii Elementary- their first books! They also had the opportunity to engage with 2 other high schools as well as Laos National University.

Genie Lee, flew all the way to Taiwan to assist FRC team 7589. Starting with the technical side, the team learned about the mechanics of a robot and how to program. She also introduced the fundamentals of outreach and ways they can spread FIRST in their community. She went on to present about team organization to highlight the importance of a strong leadership structure.

Our third and most recent international trip was stationed in Ghana, courtesy of Erica Kokor. Erica shared our First Flight curriculum with 40 fifth-grade students at Odorgonno Secondary School in Accra. After the workshop, the students decided to create their own FLL team with the kit and computer our team donated.

REBUILDING THE NEST
After the pandemic, Team 1671 had to rebuild the nest, or rather, expand upon the foundations already built.

Going Online: Things went digital, and so did we. We animated our children's book and digitized our Hatching-It-Out curriculum and First Flight workshops for easier accessibility. Our team also created Robolympics, a virtual competition, for FRC teams to have a chance to compete in 3 different events. From Taiwan to Istanbul, teams from across the world signed up.

Recruitment and Retainment: By demonstrating our robot and giving presentations on behalf of the team, we engage with every 8th-grade student at our feeder school, roughly 620 students each year! To retain members last year, we created a mock build season to give our new members a real opportunity to explore building an FRC robot. Coined "Tennis Takeover", we created a game reveal video featuring trash cans on a tennis court and a game manual. Then, the team got to work. With over 20 first-year members navigating the robot design and engineering process, a fully functional robot was made.

Finances and Sponsorships: Our team's varied ways of obtaining sponsorships from grants, local businesses, major sponsors, and families helped us keep a reservoir of funds throughout the pandemic. We raised $23,400 by applying to grants or reaching out to alumni that work at organizations that match donations.

Outreach: Due to restrictions, our traditional methods of outreach, school carnivals, were put on hold. To make up for this, our team adapted and brought our children's book and robot demos directly to the schools. Just this year, we have visited 5 schools and 3 libraries, making an impact on 560 kids.

SOARING TO NEW HEIGHTS
Our media team has a sustained and growing history. We maintain year-round relationships with our school district along with local news media outlets, radio stations, and sports announcers. Our team has been featured on radio Stations: 940 AM ESPN, 790 AM ESPN 2, 1430 AM KYNO, 104.1 FM, 95.7 FM, 99.3 FM, and 105.5 FM. Additionally, we have appeared on television stations: KSEE NBC 24, KMPH Fox 26, KFSN ABC 30, and KGPE CBS 47. Our team was fortunate to have the opportunity to showcase our team and robot to former governors Arnold Schwarzenegger and Jerry Brown! Through our social media platforms, with roughly 5,694 followers, we consistently keep FIRST teams and team supporters updated and entertained. FIRST Robotics California featured us and 9 other teams in a FIRST video recruiting teams to be "ALL IN" for the 2021 FRC season!

The Bird Brains have helped our school diversify its involvement and investments, rebranding it to be more than just an athletic powerhouse - now a school that values STEM education. Partnering with our school administration, we helped obtain a $500,000 grant to introduce an environmental and engineering pathway for the student body. Students were granted access to STEM-oriented classes and resources for job shadowing and internships. The grant supplied professional-grade machinery to all engineering students, even expanding to local FRC teams. Additionally, the involvement of our team in the school rallies, social media pages, and school board announcements has helped bring the love for academic competitions to the school.

Now, we are partnering with local organizations to begin a new chapter of initiatives. To ensure engineering is truly introduced to all, we have created a partnership with the Girl Scouts. The girls will get the opportunity to work with EV3 kits to design, build, program, and present their robots. At the end, the girls will be awarded all three robotics badges. Our first Girl Scouts event is scheduled for May of this year. In addition, we are planning to extend our partnership with the Fresno County Library Systems by hosting summer robotics programs for children of all ages. During this workshop, we will draw activities from our First Flight and G.E.M.S. initiatives, proving their scalability and effectiveness.

CONCLUSION
Team 1671's mission is to inspire others to spread their wings and introduce a love for STEM to all. We exemplify the FIRST ideals in every meeting we run, every outreach event we attend, and everywhere we volunteer and compete. We embody the FIRST message by directing young people towards a positive outlook: if we can do it, you can do it too.