

Chairman's Award - Team 1671

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2021 - 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.

FIRST has had a major impact on Team 1671 students. 85.5% of Bird Brains reported considering a STEM career in the future, and 61.5% started early by taking CTE Engineering Pathway classes. 61% of team leaders pursue STEM careers in the future--and 1 in 5 of those leaders go on to volunteer for FIRST after high school. Our coach, teacher advisor, and assistant coach are all alumni of Team 1671, and other alumni have gone on to work for SpaceX, Disney, NASA, Tesla, and even Hollywood.

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

Team 1671's nest lies in Clovis, an agricultural hotspot housing immigrants, refugees, and socioeconomically-challenged families. Despite the lack of state funding for our school district, we have a highly engaged community that supports our school's efforts to expand STEM programs. This allows Bird Brains to provide opportunities to neighboring schools that may lack similar support through our open shop policy, direct mentorship, and STEM programs.

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 STEAM Workshop has been taken online with our virtual Bird Search game--kids compete by coding a robot to score points against peers. Our online FLL Flight Manual is open source for any FLL team to start or improve; and our children's book has been translated, animated, and voiced to reach a global audience. We also learned where our current team members attended elementary school to better target underserved schools and more effectively spread FIRST to these groups.

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

Team 1671 has been a FIRST role model for years. We've hosted and volunteered for FLL, FTC, and FRC qualifiers, scrimmages, competitions, and more. Our reputation is built on volunteerism--Bird Brains volunteer on the regional and even world championship level. FIRST returns this love: a Bird Brain has won a volunteer award at 14 of the last 36 events we've attended. Many teams also attribute success in their rookie years to our open-shop policy, where we provide facilities to any team.

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

Team 1671 works across all levels of FIRST. We mentor two FTC teams (14323, 17094) at our feeder school, Alta Sierra Intermediate, and even visited FRC Team 7589 in Taiwan (2019) to assist in team organization. We've assisted over 100 FLL, FTC, and FRC teams altogether. Our Hatching-It-Out program started and mentored FLL teams at 24 workshops in project and core values. This year, we transferred our efforts online with our FLL Flight Manual for any team to access and use to improve or start.

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?

Inspiring Young Minds to Spread Their Wings is Team 1671's mission. We created the G.E.M.S. program to facilitate female STEM empowerment where 48 middle school girls learned the basics of code, fabrication, and CAD. Our team's STEAM Workshop has challenged 824 students' critical thinking skills from Fresno to Laos. Our children's book motivates kids to explore STEM; it has even been translated into 12 languages including Lao, French, and Spanish to spread the word to a global audience.

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 tight partnership between our robotics program and our school's CTE Engineering Pathway, working with admin to budget a \$500,000 grant to fund the effort. We co-host events like Stable Stomp and Madtown Throwdown with FRC Teams 6305 and 1323. Strong sponsor bonds with Harris Manufacturing, EECU, and more secure funding for our robot and STEAM initiatives. We partnered with nonprofits A Hopeful Encounter and FIRM to bring our STEAM Workshop to refugee and rural Lao students.

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

Team 1671's naturally-inclusive ideals promote a rich team culture. Bird Brain women strive to lead, with 7 of our last 9 CEOs being young women. 58% of members represent cultural minorities, and 28% also identify with the LGBT+ community. The STEAM Workshop and G.E.M.S. have served 704 socioeconomically challenged students at home, Title I schools, and abroad. Grants like the \$4400 Equity and Access Grant (2020) are funding the start of FLL teams at underserved elementary schools.

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

Young members are encouraged to shadow experienced leaders, allowing for a smooth transfer of knowledge and an effortless transition into leadership positions. This can be seen through pit training, where veteran members train rookies to present about the team, and the extensive curriculum that ST leaders developed this season to train their new members. Our meticulous documentation and curricula for initiatives empowers incoming leaders to execute and expand on past successes.

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

Recruitment and retention of sponsors depends on a direct approach; a simple "ask campaign" requesting existing supporters to involve their friends with similar sponsorship values. To retain, we provide standard benefits like sponsor logos on our robots and team shirts. To engage, we invite them to attend shop tours, banquets, open houses and even competitions which provide an interactive and immersive experience so they can see the result of their donations first-hand.

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

Team 1671 has challenges building and maintaining government relations. While we've had successful individual efforts in the past, we have yet to sustain ongoing efforts in the legislative field. This year, we decided to change that by implementing a government relations subgroup and director. We've made consistent progress talking to local officials to implement a STEM Recognition Day in the Central Valley, and we are continually working to create and expand relationships with legislators.

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

Team 1671's main goal is to provide STEAM opportunities to as many young minds as possible. At home, our G.E.M.S. and Hatching-It-Out programs continually inspire kids to get involved in FIRST and other STEM opportunities. Local efforts, like our STEAM Workshop and children's book, make STEAM personal and have motivated over 1,253 children to get involved; we've taken these efforts overseas, translating books and travelling to serve kids across the globe, and our reach continues to grow.

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.

Our team has made it loud for STEAM and FIRST on a local and global scale. We've received attention from former California governors Arnold Schwarzenegger and Jerry Brown. We've even been recognized by Mary Robinson Climate Justice Award Winner Manoly Sisavanh and U.S. astronaut Greg Chamitoff. Our team embodies the FIRST spirit via partnerships with nonprofits A Hopeful Encounter and FIRM to reach underserved communities of refugees, immigrants, and impoverished students at home and abroad.

Essay

Team 1671 (The Buchanan Bird Brains) has reached new heights each year of our 17-year legacy. From starting podcasts to leading major efforts to help girls and socioeconomically-challenged children get involved in STEAM, Team 1671 doesn't just check boxes. We make change happen.

TEAM SUPPORT

The Buchanan Bird Brains have outstanding relationships with local and international entities. Our school, Buchanan High, has supported us through and through, recently granting us a new, expanded shop facility which allowed us to grow our team and support other FRC and FTC teams. We receive funding from a combination of corporate sponsors such as Lockheed Martin, Harris Manufacturing, EECU and parent donations. To sustain these relationships, the Bird Brains employ the use of shop tours, monthly newsletters, social media shoutouts, company logos featured on the team merchandise and the robot, and annual sponsor banquets.

We also look to grants for funding. In the past year alone, the team applied for and earned FIRST's Equity and Access and Wheels-on-Carpet Grants. Last year, the Bird Brains received a grant from Fresno Rotary to fund our STEAM Workshop efforts as well.

Furthermore, nothing could be done without the support of our Bird Brain Boosters, a group of parents dedicated to providing support via donations, food, and fundraising assistance. Together, these connections help the Bird Brains soar every season.

TEAM CULTURE & HISTORY

As a FIRST team, we place creating a healthy, collaborative atmosphere as one of our highest priorities. The Bird Brains are known for having a rich family culture that encourages the development of trust and camaraderie between members. We foster this sense of fellowship through activities such as Team Jeopardy, weekly meals, and raffles. Our togetherness makes us an efficient unit, earning us tickets to FIRST World Championships in 2005, 2012, 2013, 2015, 2016, 2017, and 2019.

FIRST

When it comes to spreading FIRST, the Bird Brains are no strangers. We organize, volunteer, and host events for all levels of FIRST.

- 1) FLL Qualifier: Battle at the Nest is the qualifier that Team 1671 has hosted for the last 7 years, providing a great competitive environment for growing FIRST students. The intentionally designed atmosphere allows teams to learn, have fun, and demonstrate gracious professionalism while our own members assist the teams with technical difficulties.
- 2) FLL Championship: The Bird Brains host the CVR FLL Championship event where nearly all of the volunteer staff consists of Bird Brains. This event, bursting with opportunity and excitement, provides FLL members a first look into the world of FIRST and what they can expect if they continue their journey by joining a local FTC or FRC team.
- 3) FTC Qualifier: At our feeder middle school, Alta Sierra Intermediate, there are two FTC teams. The Bird Brains support the teams and provide them with mentorship and resources. We picked a local, qualifying competition that we could volunteer at, and just like the FLL events, we filled a great majority of volunteer spots, acting as a support system for all of the teams that attended.
- 4) MadTown: Besides FLL and FTC, we also help out with a large number of FRC competitions, including the MadTown Throwdown hosted by Team 1323. Bird Brain mentors and students fill various volunteer spots and help in cleanup efforts.
- 5) Hatching-It-Out: This mentorship program targets rookie and even veteran FLL teams, emphasizing core values and working to improve teams.
- 6) RobOlympics: A program we started this year to connect teams across the globe in a COVID-friendly competition.
- 7) FLL Flight Manual: The FLL Flight Manual was created in lieu of our in-person FIRST efforts. This manual is open source for any team to access to improve or start their team.

DIVERSITY, EQUITY, AND INCLUSION

The Bird Brains are pioneers for equality and diversity in FIRST and beyond. We stand by a proud record that doesn't simplify people to statistics. We are a force for change locally and even internationally in underprivileged and underserved communities. We work closely in our own community (Fresno County) and around the world to provide opportunities to Title I students, women, and children across the globe.

- 1) Women in STEAM and FIRST: The Bird Brains' naturally-inclusive culture has encouraged women to step up and be leaders, with 50% of the current C-Suite leaders being women. 7 of our last 9 team CEOs were young women. Women and cultural minorities represent 63% of our leadership structure overall.

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2) G.E.M.S. & CaT for Girls: CaT for Girls was a program started in 2017 and funded by NCWIT to encourage girls to learn about STEM. Today, it has been transformed into G.E.M.S. (Girls in Engineering, Math, and Science) where girls undergo a 26-hour workshop that provides a safe space to learn STEAM concepts like coding, fabrication, CAD, media, and outreach.

3) STEAM Workshop: The STEAM Workshop is a 3-hour program that encourages children to challenge their problem-solving and critical thinking skills via games simulating coding and building. Team 1671 serves students from Title I schools across Fresno and Clovis.

4) Ban Phawaii, Laos STEAM Workshop: In November 2019, the Bird Brains traveled with local nonprofit, A Hopeful Encounter, to bring the STEAM Workshop to 90 impoverished school children in the village of Ban Phawaii, Xiengkhouang. The school was then gifted 15 copies of our original Children's Book after having heard a reading of it (in Hmong) during the workshop. These were the school's first books.

5) STEAM Workshop Coding Game - COVID Edition: In lieu of physical workshops, the Bird Brain programmers put together a STEAM Workshop virtual coding game based on our STEAM Workshop's most popular game: Bird Search. Kids can log on with friends to control their robots by coding them and compete for points to win the game!

6) Open Shop Policy: Our team has an Open Shop Policy that allows any team to use our shop facilities to build or test run their robot. We have housed many teams at our shop, and many attribute success in their rookie years to our Open Shop Policy.

MEDIA & SOCIAL REACH

We have made our presence known in the Central Valley and beyond through a combination of media appearances and social outreach. In the past, we have been featured on local news stations, such as KFSN and ABC 30, and in local newspapers, such as The Fresno Bee, Clovis Roundup, and Clovis Independent. In 2015, we were featured in AT&T U-Verse Buzz's FIRST documentary, known as RoboLeague, and in 2019 we had the opportunity to present our team efforts to two esteemed California politicians: Governor Jerry Brown and Governor Arnold Schwarzenegger. We've even received attention from Mary Robinson Climate Justice Award Winner Manoly Sisavanh and U.S. astronaut Greg Chamitoff.

Our most notable endeavor is our ongoing social media campaign on platforms including Facebook, Twitter, Instagram, TikTok, and Youtube. Across all platforms, we have a total of 5,547 followers and 81,560 views. During build season, we give our followers updates on our progress through our Youtube video series, "A Bird's Eye View"; and now with the stay-at-home orders, our media team has started a podcast called "Bird Talk", which serves to excite interest in team affairs and introduce familiar faces. We've also revived our animation team to spread the word of FIRST and Team 1671 in a more enthusiastic but safe manner.

VOLUNTEERISM

Our volunteering has been crucial in constructing our team's reputation as a positive and supportive labor pool, and it clearly shows. At 14 of the last 36 FIRST events we've attended, a Bird Brain has received a volunteer award. We volunteer regularly at our regionals (including the Monterey Bay and Central Valley Regionals) and even on the World Championship floor.

Team 1671 is a dependable and reliable source of volunteers for organizations within our community. Our team has strong relationships with the Clovis Botanical Gardens, Old Town Clovis, A Hopeful Encounter, and more nonprofits looking to spark community engagement or encourage international support. We have held numerous food and toy drives to serve those in our community that are facing difficult times. Volunteerism has always been a Bird Brain forte.

SUSTAINABILITY & LEGACY

Our team functions like a corporation with a resume and interview process to select our student leadership. 4 C-level and 12 D-level positions lead our team throughout the season. Student leaders go through Leadership Camp prior to off-season, which is focused on teaching leaders how to create team synergy and hold themselves accountable. This year, the topics switched gears to address our bizarre conditions and how we would overcome them. Mentors, including team alumni, local business owners, and STEM wizards, challenged our team to think outside the box in order to keep our efforts going.

MAKING A GLOBAL IMPACT

Our original children's book: Three Little Birds: Reach For the Stars, created in 2014, has been a large success since its conception. However, The Bird Brains were not satisfied. After translating our children's book into Lao for our 2019 trip to Ban Phawaii, we decided to take our efforts further. This year, our team has translated the children's book into 12 languages, including Spanish, Hmong, Punjabi, Japanese, Chinese (Simplified & Traditional), Korean, Filipino, French, and many more. The Bird Brains are excited to share this project with as many children as possible to introduce the incredible world of STEM.

CONCLUSION

World Championship Team 1671, The Buchanan Bird Brains, is so much more than robots. Over the past 17 years, we have blazed new trails working locally, internationally, and even astronomically. From meeting two California governors to reaching thousands of children, Team 1671 represents the mission of FIRST by Inspiring Young Minds to Spread Their Wings.