

FIRST® & Qualcomm: A Pioneering Partnership to Inspire Young Innovators



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— MARK GIORDONO, VICE PRESIDENT OF DEVELOPMENT AT *FIRST*

It’s a future understood by two like-minded organizations: Today’s students will be the drivers of tomorrow’s breakthroughs. Together, *FIRST*® and Qualcomm Incorporated™ are working to engage and empower those future innovators.

Qualcomm is a world-leading wireless technology innovator, and a driving force behind the development, launch, and expansion of 5G and other foundational technologies that transform how the world connects, computes, and communicates. To stay at the forefront of innovation, Qualcomm invests in developing tomorrow’s workforce through STEM (science, technology, engineering, math) education. Since it was founded more than 35 years ago, Qualcomm has provided education technology, funded youth programs, and promoted the importance and access of STEM engagement.

As the world’s leading youth-serving nonprofit advancing STEM education, driven by a 30-year-strong global robotics community preparing young people for the future, *FIRST* and its programs enable Qualcomm to have lasting impact on young people ages 4-18.

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Driving STEM engagement and outcomes

Qualcomm began supporting *FIRST* in 2006 and has been a Strategic Partner since 2014. As a *FIRST* Strategic Partner, Qualcomm directly supports:

- Programs, events, and thousands of teams globally.
- Time and engineering expertise donated by hundreds of employees.
- Equity, diversity & inclusion initiatives such as the *FIRST* Stem Equity Community Innovation Grants, which have helped increase participation in *FIRST* for girls/young women and other historically underrepresented groups in STEM.

As Qualcomm’s support has grown, so has *FIRST*, across the globe, initially reaching an estimated 91,000 students in ~30 countries during the 2005-06 season to 679,000 students in 110+ countries during 2019-20.

FIRST alumni are **more likely than their peers** to pursue careers in STEM, especially in engineering and computer science, based on findings from the *FIRST* Longitudinal Study.

81%

of *FIRST* alumni declare majors in STEM* compared to 58% of their peers

68%

of *FIRST* alumni declare a major in engineering or computer science* compared to 29% of their peers

* by their fourth year of college

Source: *FIRST*® Longitudinal Study: Findings at 84-Month Follow-Up, Brandeis University, March, 2021.

The impact of *FIRST* is extensive for students and alumni. More than seven years into a **longitudinal study**, research shows *FIRST* participants, across all backgrounds, are significantly more likely to have stronger outcomes in STEM knowledge, STEM interest, STEM career interest, STEM activity, and STEM identity compared to their classmates. Notably, **girls in *FIRST* report the largest differences** in STEM outcomes over time when compared to their female peers, and other male students.

Engaging employees, developing an innovative workforce

FIRST provides a platform that:

- Helps build Qualcomm's workforce pipeline.
- Helps to engage students with hands-on Qualcomm technology and learn the skills needed to become the next generation of STEM leaders and problem solvers.
- Engages Qualcomm employees across the globe as volunteers (During the 2019-2020 season alone, **hundreds of Qualcomm employees spanning four countries donated more than 15,000 hours of volunteer time** to support *FIRST* participants as mentors, volunteers, and judges)
- Provides Qualcomm opportunities to **collaborate with other businesses** in meaningful ways and to demonstrate collective impact.

Additionally, Qualcomm engages and recruits *FIRST* alumni for its internship program each year, which brings in hundreds of interns from across the globe. Many of these *FIRST* alumni go on to build their careers at Qualcomm, like Joy Cho, who is an engineer for Qualcomm Technologies Product & Tools Stability division. Joy discovered her passion for electrical engineering in high school as a member of her school's *FIRST*® Robotics Competition team, where she built her skills and confidence on the electrical sub-team, then went on to an internship at Qualcomm Technologies. "One word I would use to describe my experience with *FIRST* would be 'eye-opening.' It opened my career path toward engineering, and it opened up so many amazing people who motivated me to move forward, including my mentors, friends, other students, and volunteers," Cho said.

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— JOY CHO, *FIRST* ALUMNI AND ENGINEER FOR QUALCOMM TECHNOLOGIES PRODUCT & TOOLS STABILITY DIVISION



FIRST alum and Qualcomm intern-turned-employee Joy Cho continues to volunteer and support her team, *FIRST* Robotics Competition Team 2537 "Space RAIDers".

Providing global hands-on experience with leading technology

Qualcomm's support has been critical in driving *FIRST*® Tech Challenge forward on the global stage and expanding access to STEM. With this support, *FIRST* Tech Challenge:

- Provides an accessible *FIRST* program in which teams of students ages 12-18 design, build, and program robots to compete in an alliance format against other teams.
- Introduced the Android operating system as the basis for its robotics platform in 2015, featuring the Snapdragon® mobile processor.
- Gives students hands-on experience with mobile technology that is easy to access and use for students across socio-economic and geographic borders.

"Implementing Qualcomm's Android operating system allowed team participation to expand to more than 40 additional countries," said Ken Johnson, Program Director of *FIRST* Tech Challenge. "With Qualcomm's support, more students than ever have access to real-world technology and are gaining hands-on experience that will better prepare them for any future career path."

During the 2016-2017 season, Qualcomm became Season Presenting Sponsor for *FIRST* Tech Challenge, the first ever title sponsorship of a *FIRST* program. With Qualcomm's support, *FIRST* Tech Challenge has grown from 4,445 teams in 2015 to more than 7,600 teams in 2020 and has reached hundreds of thousands of students in 60 countries

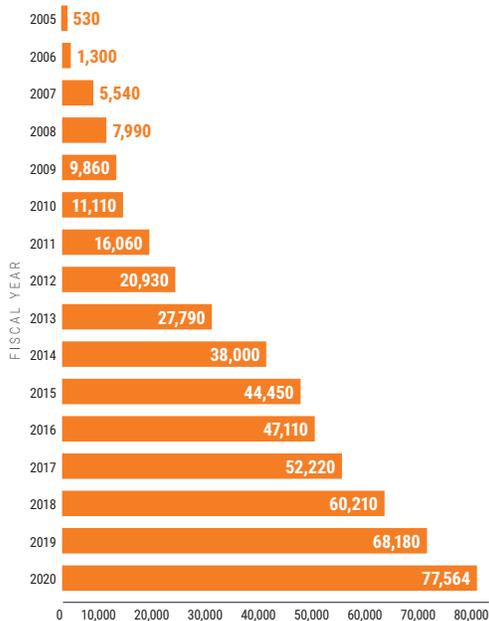
Ensuring all students have a pathway to innovation

During the challenges of the COVID-19 pandemic, Qualcomm continued to support the *FIRST* community through leadership, expertise, and funding. Their commitment:

- Allowed *FIRST* to adapt program opportunities and give all *FIRST* students hands-on access to the innovation process.
- Enabled *FIRST* to expand remote innovation programming during the 2020-2021 season with the *FIRST* Innovation Challenge presented by Qualcomm.
- Allowed teams to compete remotely, where more than 1,000 *FIRST* Robotics Competition and *FIRST* Tech Challenge teams created solutions to a societal problem inspired by the season's health and fitness theme.
- Led and supported patent education for participating teams to encourage people from underrepresented backgrounds to get involved in the innovation and patent processes.

The *FIRST* Innovation Challenge helped students develop their confidence and skills in programming and manufacturing, business and marketing development, understanding and using research findings, strategic and design thinking, and the entrepreneurship and innovation process. Participating teams developed **creative solutions** to increase safe, inclusive, and equitable opportunities for movement and play for all ages and participants. Because of the new programming opportunity, more students than ever are empowered to tackle the world's toughest challenges and have the skills to build a better future.

Since 2015, Qualcomm's support has been critical in growing student participation in *FIRST* Tech Challenge across the global stage, now reaching nearly 80,000 students in 60 countries.



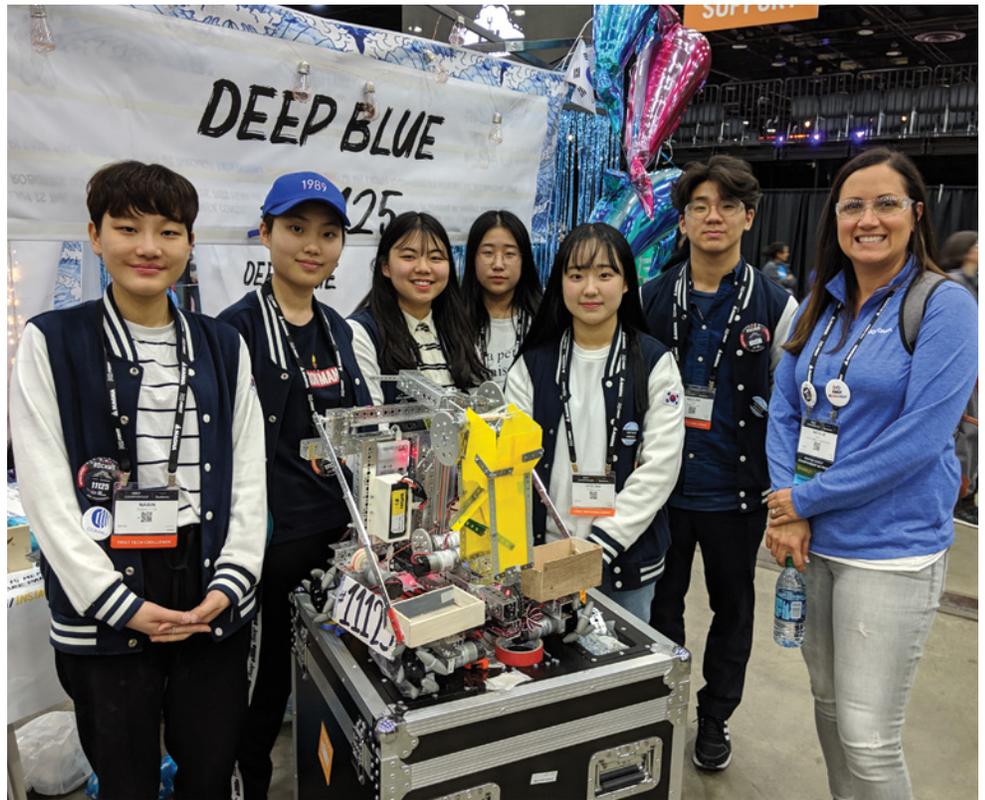
FIRST Robotics Competition team, "The Holy Cows" showcase their *FIRST* Innovation Challenge solution during an interview with Cheddar News.



FIRST Robotics Competition Hall of Fame Team 1538 "The Holy Cows" receive sponsorship and mentorship from Qualcomm, headquartered in the team's hometown of San Diego.

“... all-girl robotics teams are very rare in Korea. Qualcomm’s team sponsorship helped us grow the number to 10 and helps female students get interested in robotics and STEM.”

– KYOUNGMIHN DO, THE FEDERATION FOR EDUCATION OF CREATIVE SCIENCE & TECHNOLOGY AND *FIRST* PARTNER FOR REPUBLIC OF KOREA



FIRST Tech Challenge Team #11125 at the 2019 *FIRST* Championship.

Providing regional support for growth and sustainability

Qualcomm’s leadership in promoting STEM education internationally, including the Republic of Korea, India, Singapore, United Kingdom, Israel, Ireland, Mexico, Canada, and China, has played a significant role in the global expansion of *FIRST*. Qualcomm’s sponsorship of the 2016 Korea Robot Championship enabled the number of *FIRST* Tech Challenge teams to more than double from 13 to 29 that year. The event has continued to grow to include *FIRST* Tech Challenge and *FIRST* LEGO League teams. The 2020 Korea Robot Championship, which was a remote event, **included 100 teams and 700 student participants**.

“Qualcomm’s support has helped us offer the most advanced, well-designed, and best STEM nurturing programs in Korea. Many of our students go to universities in science and engineering,” said Kyoungmihn Do of The Federation for Education of Creative Science & Technology, the *FIRST* partner for Republic of Korea. “Additionally, all-girl robotics teams are very rare in Korea. Qualcomm’s team sponsorship helped us grow the number to 10 and helps female students get interested in robotics and STEM.”

But it’s closest to home where Qualcomm, headquartered in San Diego, California, has had its greatest regional impact. In its headquarters region, Qualcomm:

- Invests directly in growing and sustaining *FIRST* teams and events across all programs, including as the title sponsor of the San Diego *FIRST* Robotics Competition Regional and presenting sponsor for *FIRST* Tech Challenge events, which are attended by thousands in Southern California.
- Supports local *FIRST* partners in delivering *FIRST* programs to 11,200 students across over 1,000 teams in Southern California.

David Berggren, *FIRST* regional director for Southern California, has been working with Qualcomm leaders for well over a decade to grow *FIRST* in the region and inspire more California students to pursue careers in STEM. “It is very easy to say that *FIRST* would not have had the wonderful growth and reach that we do without the incredible support of Qualcomm over the years. We and all the students that *FIRST* positively impacts are incredibly grateful for Qualcomm’s belief in and support of *FIRST*, which allows us to continue to inspire more and more students to be innovators in STEM fields,” he said.



Qualcomm’s Vice President of Engineering, Charles Bergan discusses how STEM professionals are critical to solving the greatest problems on earth, and how this generation of students will change the world.

“For the past 16 years, we’ve been fortunate to have helped grow these *FIRST* programs and look forward to inspiring even more participants in these essential programs this season. As we enter a new 5G era of connectivity and opportunity, these students will become the drivers of tomorrow’s discoveries.”

– SUSIE ARMSTRONG, SENIOR VICE PRESIDENT OF ENGINEERING FOR QUALCOMM INCORPORATED AND A MEMBER OF THE *FIRST* EXECUTIVE ADVISORY BOARD



Teams pose with droids during 2019-2020 *FIRST* Tech Challenge season kickoff celebration at Qualcomm Headquarters.

Celebrating young innovators from around the world

Qualcomm brought energy and engagement to the *FIRST* community’s most prominent event by helping make student robotics a spectator sport for people across the globe. Together, we hope to inspire our society to celebrate STEM in the same way our culture celebrates sports and entertainment. *FIRST* Championship is a culminating, international event for our youth robotics competition season, attracting spectators, celebrities, and media figures. Since Qualcomm became the event’s Presenting Sponsor in 2014, *FIRST* Championship has grown from a one-city event attended by 30,000 people to a two-city event double in size; in 2019, 77,000 attendees from 70 countries attended *FIRST* Championship in Detroit and Houston. Following the 2020 *FIRST* Championship’s cancellation due to COVID-19, Qualcomm collaborated with *FIRST* to pivot funding to *FIRST* mission support, sustainability, and to produce a season-culminating virtual celebration for the *FIRST* community.

Moving *FIRST* FORWARD: Full speed ahead

Qualcomm’s generosity continues to grow. In May 2021, *FIRST* announced Qualcomm as the presenting sponsor for the 2021-2022 cross-program season, *FIRST*® FORWARDSM presented by Qualcomm. The transportation theme is inspired in part by the UN Sustainable Development Goal focused on building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation.

“Qualcomm is committed to ensuring youth from all backgrounds have the opportunity to learn the foundational skills that are critical to advancing a strong, competitive pipeline of STEM innovators,” said Susie Armstrong, senior vice president of engineering for Qualcomm Incorporated and a member of the *FIRST* Executive Advisory Board. “For the past 16 years, we’ve been fortunate to have helped grow these *FIRST* programs and look forward to inspiring even more participants in these essential programs this season. As we enter a new 5G era of connectivity and opportunity, these students will become the drivers of tomorrow’s discoveries.”

With its ongoing support of *FIRST*, Qualcomm is doing its part to bring innovation, collaboration, and STEM education to students all over the world. As technology and digital literacy become essential components of more careers than ever before, proficiency in STEM has emerged as a foundational 21st century skill. Qualcomm and *FIRST* are continuing to work together to expose students early and give them the confidence they need to succeed in the STEM workforce and to innovate to build a better world.



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