



# **FRC Team 2486, the CocoNuts**

**Flagstaff, Arizona**

## **2014 Chairman's Submission**

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### **FRC Team 2486, the CocoNuts, Presents: 2014 Chairman's Award "FIRST at a Higher Elevation"**

We are team 2486, The CocoNuts, from Coconino High School in Flagstaff, Arizona. In 7 years as an FRC team, we've created the landscape of FIRST in the 61,400 sq. miles of Northern Arizona (NAZ) that we call home. We live at 7000 feet, and believe in FIRST at a higher elevation. Everything we do to elevate FIRST happens on a scale that is larger and louder than we ever imagined. "ELEVATE" has 4 dictionary definitions, each showcasing our team's accomplishments in a different way.

#### **"1: To move to a higher place or position from a lower one"**

11,441 miles. That's how far we've traveled to elevate FIRST. In 6 years, we've traveled all over the country to 13 different cities in 3 states to teach workshops, run FIRST scrimmages and tournaments, and reach out to new communities and organizations. More than 65,000 community members and students have had personal contact with the CocoNuts. But what we do is not just about numbers. We understand that to truly impact a life, it's about making that personal connection with a hand shake that promises support. We deeply care about the people in our region, and will do everything we can to insure their success in FIRST and in life. Every single FIRST team in our region has had that handshake with us.

#### **"2: To increase the amplitude, intensity or volume of"**

We were the 1st FIRST team in our region. After an inspiring rookie season, we realized that this opportunity needed to be shared with our whole region. In 2008, we began a massive outreach effort to elevate STEM in Northern AZ. In 6 years, we've done 130 events, presentations, and workshops. We've been spotlighted at prestigious events such as the Flagstaff Festival of Science, the largest event of its kind in the western hemisphere. We've presented to 24 professional organizations, including the National Science Teachers Association, the AZ School Board Association, the AZ Science Teachers Association, and the American Association of University Women. Our outreach extends into cyberspace with 900+ followers on Twitter and 490+ likes on Facebook. We've been featured in print and television over 85 times. This outreach allows us to form vital partnerships and spread FIRST across our region, resulting in new coaches, new sponsors, and dozens of new teams annually. Our team has spent 5000 hours in our community and beyond spreading the message of FIRST.



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In 2008, we took Northern AZ from a few FLL teams to 22 teams and a new tournament. Since then, we've hosted 87 different FLL teams from 46 organizations in 18 Northern AZ communities. In 2012 we started the Winslow FLL event to allow the Navajo and White Mountain Apache Reservation teams to compete closer to home. In 3 FLL seasons, 21 teams have competed from these Reservations. In 2013, 46 Northern Arizona teams competed. Each was started, mentored, or in contact with us. Every year since 2008, we've traveled to Arizona State University in Tempe to fill key volunteer roles at the Arizona FLL Championship. We believe strongly in the success of every team: we personally host annual scrimmages and train coaches. In 2013, 16 of the 18 local teams were mentored in person by a CocoNut. This philosophy of mentoring has always been a cornerstone of the success of FLL in our area. In 2011, 3 coaches and mentors flew to South Dakota to help run their FLL Championship after a tragic plane crash killed several of their head volunteers.

When our coaches became FTC Affiliate Partners in 2009, FTC was in danger of disappearing in AZ, with only 8 active teams. We knew that putting on quality events and championing FTC, it would grow: we didn't know it would grow by 525% in 5 years! This year, AZ had 42 teams and we took responsibility for the fledgling FTC program in New Mexico, for a total of 52 teams. This growth meant that we couldn't run just one Championship event. Qualifying events were held in Flagstaff, Albuquerque, Mesa, and Tucson prior to the AZ Championship. We personally traveled to each event armed with the fields, electronics, and key volunteers needed to elevate every event to our high tournament standards. Teams competed at multiple qualifiers, heightening the level of competition on and off the field; qualifying matches were at the caliber of the final matches in previous years. We opened our build space to 2 local FTC teams to practice on a full field and use our tools and resources. The FTC teams worked alongside us during FRC season, and were closely mentored by 2486. This resulted in a strong alliance between the 2 teams who built compatible robots that could double hang. Each year, we run a live kickoff event in Phoenix and programming workshops to help teams start the season strong. Since 2009, we've hosted 67 different FTC Teams from 52 organizations from 28 communities in 5 states and Mexico.

In 2013, we began the Chairman's Exchange (ChEx), a collaboration of teams held at FRC Regionals to promote the transparency of Chairman's teams and the award itself in addition to encouraging camaraderie among teams. ChEx allows teams to present and exchange ideas at the event before the judged presentations. During ChEx at the 2013 World Championship, 14 of the winning Chairman's Teams attended.



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This summer we released our extensive Chairman's Guide that covers all aspects of the award. The Guide was translated into Spanish by Team 2283 from Mexico City. The 2 versions have been downloaded 1100+ times on ChiefDelphi. We also hold weekly Google+ meetings with other Chairman's teams to discuss progress and questions. Overall, we've helped more than 35 teams with the Chairman's process, in addition to the 2 rural rookie teams we are mentoring this year.

### **"3: To raise to a higher moral, cultural or intellectual level"**

Flagstaff is the largest city in Northern Arizona. North of Phoenix, the distances between towns is vast. You can drive for hours without any signs of civilization. The average population density for the 5 Northern AZ counties that we're working in is 10 people/sq.mi. Many communities in our area have a poverty level of over 30%. Opportunities for involvement in STEM programs used to be nonexistent.

The success of 2486 has started a trend in Flagstaff. The Coconino HS administration has been incredibly supportive of our efforts, allowing us to use the facilities for free to host events and to build robots. We appear in pep rallies, school parades, and are well known by the student body. 2486 members are involved in many other school organizations, including clubs and varsity sports. When CHS put together a school-wide Lip Dub, we were center stage in the production, which has 14,000+ views. Many of the schools in our district have STEM clubs that are modeled after us.

Our 16 AlumNuts have been extremely successful: 100% are attending college and 88% are pursuing a STEM degree. 67% have continued as volunteers, mentors, or coaches in all levels of FIRST. Collectively our AlumNuts have been offered over \$3.0 million in scholarships.

We work hard to elevate the next generation of STEM leaders by teaching summer robotics courses. We've taught more than 150 high schoolers in the Northern Arizona University Summer Enrichment Program, and 180 elementary and middle school students in our Camp COCONUTS 1.0 and 2.0. This curriculum is being polished into the "FLL in a Nut Shell" guide for FLL coaches, which will be aligned to the Next Generation Science Standards and the College and Career Ready Standards. A 2-day professional development workshop for teachers will take place this fall thanks to our collaboration with NAU and the Coconino County Superintendent to prepare FLL coaches across NAZ to be successful.

We are actively involved with our local government officials. We've presented to our City Council and Chamber of Commerce. Flagstaff Mayor Nabours is a huge CocoNuts fan. He traveled to Phoenix and back to see 2486 compete in the FRC Arizona Regional and came to CHS homecoming in his CocoNuts shirt. We recently met with the Superintendent of the Navajo



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Nation, who is eager to put FIRST in the 200+ schools on the Reservation. Our professional development program will be vital to the success of these teams.

In 2012, Flagstaff was named America's First STEM Community due to the plethora of STEM organizations and the connections they make with our schools. The CocoNuts were honored with such prestigious organizations as Lowell Observatory and USGS. Since then, 2 'Nuts have been honored as STEM Student of the Year, and our coaches were named STEM Leader and Teacher of the Year at the annual Celebration of a STEM City. This event exemplifies the values and vision of FIRST. These festivities gave rise to the 1st Annual Community-wide STEM Night being held at the NAU Stadium, which we will headline.

Because of our tangible contributions to STEM in AZ, numerous corporate and local businesses support our team financially. One of our largest sources of funding is the AZ tax credit program. Each year, our team gets thousands of dollars from donors who have no affiliation to the team but want to support our efforts. Most of our mentors are engineers from WL Gore, and many of our hundreds of tournament volunteers are from NAU.

### **"4: To lift the spirits of; elate"**

We know the power STEM has to elevate a person's life. We've seen firsthand the personal impact FIRST has had on every single member of our team. At the 2014 Arizona FTC Championship, we witnessed every student come out of the stands to join a huge conga line, a crowd of 500 people cheer as one at a near double robot hang, and team members crying with joy when they were named Inspire Award winner. We do FIRST because we've seen the kind of culture change that reaches far beyond our team to encompass an entire region. In an area so rich in natural beauty that sometimes has so little to hope for FIRST has given so many something to believe in and cheer for. We truly have brought FIRST to a higher elevation.