

**FRC Team 2486 “The CocoNuts” Present:
2013 Chairman’s Award
“We are the CocoNuts”**

Six years after meeting FRC 2486, the CocoNuts of Flagstaff, AZ (FLG), Rocky the Squirrel spent some time wandering through Northern Arizona (NAZ) & reflecting on the natural beauty, cultural diversity, & wide open spaces of home. He confided to 2486 that he had yet to find his calling & he asked the red-clad team for advice. One by one, 2486 spoke from the heart.

“We are about more than just building robots.”

Each year we demo at more than 20 outreach events locally & in our region. We’re featured at the FLG Festival of Science, the largest festival of its kind. We drove 2 hrs to Tuba City on the Navajo/Hopi Reservation to demo for 2 days at the Moenkoepi Sustainability Festival. We demo annually at the Coconino County Fair which draws 40,000+ people/yr & march in CHS’s Homecoming & FLG’s July 4 Parades. We’ve presented to professional education groups such as the National & AZ Science Teachers Association, Center for After School Excellence & American Association of University Women.

Community service is key for us. Each ‘Nut volunteers at least 10 hrs with team sponsored events such as cleaning our adopted Avenue & Trail or individually with other organizations. Since Aug. we’ve provided 500+ service hrs!

NAZ knows about FIRST because of us. Almost 10,000 people follow us on 8 social media sites plus our website. We’ve been featured 70+ times in local & statewide media including newspapers, radio & TV.

“We are about making a difference in the life of every single child in Northern Arizona & beyond.”

In ‘08, we started FLL in FLG & the number of teams has grown rapidly. In 5 yrs, FLL has spread to 16 NAZ cities in 5 counties with teams from 39 organizations including 7 Native American Reservation communities. In ‘12 we rallied 25 ‘Nuts & adult volunteers to help run the 1st Winslow FLL Tournament for 12 rural teams. The ‘Nut-run FLG event had 24 teams. 15 ‘Nuts volunteered at the AZ Championship in PHX.

We support the teams in our area by providing annual coaches training & scrimmages in FLG & Winslow. Most local teams have a mentor from 2486 working with them weekly. With our help, 1 coach created an easy to use guide called “FLL in a Nut Shell” which was sent to all NAZ teams. We mentor outside FLL by tutoring, coaching sports teams & volunteering with other STEM groups. We’ve spent 270+ hrs mentoring just this season.

Since taking over as AZ FTC Affiliate Partner in ‘09, the number of AZ FTC teams has grown from 8 to 28. The ‘12 AZ FTC Championship grew to a 2 field event with 32 teams, including 5 outside of AZ. Since the max capacity for a 2 field event is 36, AZ will move to a qualifier model in ‘13 with 2-3 statewide events feeding a Championship. We continue to run a yearly kickoff & scrimmage to prep teams. Additionally, 3 ‘Nuts mentored the FTC team at CHS, keeping the program going after the last coach stepped down.

We’ve numerous FRC collaborations. We’re the only AZ Beta Test team in ‘12. We presented the Chairman’s workshop at kickoff for the last 2 yrs with Hall of Fame team 842. We plan to host a “Chairman’s Exchange” at our FRC events to give teams time to practice & share ideas before Fri. We constantly help other teams with the Chairman’s process in AZ, WA, ID, GA & UT in person & via social media.

“Being a CocoNut is about embodying all aspects of FIRST & making it your own, then taking it with you wherever you go.”

The experiences gained on 2486 have a huge impact on all members. All 8 AlumNuts are in college & 7 are in STEM. The 8 grads were offered \$2 million+ in scholarships. 3 AlumNuts directly mentor 2486 & many volunteer at FIRST events. 9 ‘Nuts will graduate in ‘13, & many seniors want to pursue STEM careers.

“Being a CocoNut means being passionate, dedicated & professional. We are spirited & loud & we are proud of it!”

We exemplify all that FIRST stands for in everything we do. Peggy Elrod, Winslow FLL coordinator, said, “Our warmest thanks for your enthusiastic & dedicated thoughtfulness in volunteering at our 1st FLL Tournament. We’re sure you’re aware that we wouldn’t have been able to pull it off without **you**. Your positive & upbeat enthusiasm was contagious & our students came away with a keen desire to strive even harder next year. In other words, the kids are singing “Ooh-bi-doo, I wanna be like you!” We’re creating a culture that celebrates STEM.

“We’re always having a good time because we don’t compete, we celebrate.”

We’ve truly become a household name in NAZ. Our efforts have earned recognition outside of FIRST. In ‘12 the FLG City Council declared FLG “America’s 1st STEM City” citing the outstanding STEM organizations that call FLG home, including Lowell Observatory, WL Gore, T-Gen, & USGS. 2486 was recognized as 1 of these organizations due to our contributions in providing quality STEM & FIRST programming throughout NAZ. We were honored with STEM Student of the Year, STEM Leader of the Year & STEM Teacher of the Year finalist.

“Being a CocoNut is about knowing that science, technology, engineering & math aren’t just a good career choice: they’re a good lifestyle choice.”

2486 created numerous curricula to encourage the growth of STEM. In the summers of ‘09-‘11 we taught at-risk teens NXT in the NAU Summer Enrichment Program using our own missions & challenges. 72 kids in 2 years participated in COCONUTS 1.0, introducing basic NXT programming & the Around NAZ challenge. 37 kids participated in last year’s new 2.0, emphasizing design & a Mission to Mars. Each year we demo at numerous STEM nights & judge youth science events. Our area has added STEM clubs & teams modeled after the programs created by 2486. Students in our area now progress through STEM programs with the goal of coming to CHS to join 2486.

“We are about being a family & safe haven for anyone & everyone.”

Since ‘07 our team has grown tremendously. This year our team size has nearly doubled to 35 members including 12 girls & 1/3 minority. Members belong to 18 different clubs & sports. Of our 14 mentors, 57% are from Gore. Although we’ve grown, we’re still a family. Team parties, our annual camping trip & team building days keep all students feeling valued. “I could tell by watching the interactions of the students & adults that their team has grown into a community. The CocoNuts have worked hard to fulfill the *FIRST* ethos of changing the culture. It's the passion for robotics & dedication to fulfilling the mission of *FIRST* that has transformed them & countless other *FIRST* teams into families.” –Timm Huffmann, FTC coordinator.

“We are about bringing out the best & the FIRST in every child & adult we meet.”

We maintain a strong support base in FLG because the community recognizes the good we’re doing. Our sponsors are all local businesses who see that investing in STEM education is beneficial for their businesses & our region. Mayor Nabours stated our FIRST events are a boost for the local economy. This year we created a tier system for sponsorship levels with a clear outline for benefits at each level. We honor every business & individual who supports our team via financial or in-kind donations. Last year we

hosted a reception to thank our sponsors & partners & sent every donor a letter & picture. We were a jcp team for 2 yrs & although there are no '13 FIRST grants, our local jcp store still supports 2486 by providing space for demos, fundraising & in-kind donations. Numerous FLG citizens give tax credit donations each year though they have no direct connection to the team.

We have several partners that support us beyond sponsorship. The Grand Canyon Trust paid our way to the Moenkopei Festival in Tuba City. CHS provides the venue, build space & equipment for us to participate in FRC & to host all our FIRST events. NAU has several groups that provide volunteers, such as the FIRST club, NAUTeach classes & the engineering college. WL Gore assists with our manufacturing process, providing materials & technical support via our mentors.

Because of our success in building STEM programs, we've been approached by several prominent organizations in our region to foster partnerships to build STEM education. 2486 is partnering with WL Gore, the FLG 40, the Arizona Science Foundation & the new STEM Consortium to create a strategic plan for growing FIRST in NAZ.

"We're not just a robotics team building a robot, we are a FIRST family building a community centered around the ideals & message of FIRST."

Our vision for NAZ is to create STEM opportunities in the rural, underrepresented areas outside of FLG. Our partners share this vision & are ready to support the personnel & infrastructure needed to make it a reality. We will create professional development opportunities for teachers in key locations. Teachers will be paid for their time & receive hours for salary advancement & recertification. Coaches who participate will receive robot kits that the team can keep if they compete in an official event. FLL, FTC & FRC coaches will be paid a stipend for their time if the team competes. Personnel in key locations will be trained as mentors & lead event volunteer roles. We will train event staff on site by supporting new tournaments for at least 1 year. We will create a mobile FIRST tournament & training vehicle that has all the robots, computers & training materials needed to take FIRST on the road. We will create a paid NAZ FIRST coordinator position who will act as liaison between FLG & the surrounding areas to provide training & support. We will create a detailed curriculum guide built on FLL in a Nut Shell for coaches to train their teams for the new season.

Rocky realized then that he, like 2486, was destined to change the culture of NAZ one life-changing experience at a time. In his words, "Your passion, dedication & leadership are bringing the light of FIRST to our region & inspiring so many!"

"We couldn't do it any other way. We are the CocoNuts."

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2012/2013 year and the preceding two years.

2486 provides opportunities for excellence and growth for students, mentors and volunteers.

100% of "AlumNuts" are attending college

Total scholarships for 8 graduates is over \$2 million

Most AlumNuts pursuing STEM careers

All 'Nuts gain self-confidence, passion, enthusiasm for service & 21st century skills

Minority students are empowered to continue to higher education

Students gain leadership opportunities & skills outside FIRST

One coach is creating a FLL training program for Master's Degree

Examples of role model characteristics for other teams to emulate.

2486 exemplifies the values of FIRST in everything we do.

Inclusiveness: Team is composed of students with different ethnic, social, economic & educational backgrounds, homeschooled & rival school members

GP: We honor sponsors, volunteers & other teams at events

Mentoring: We volunteered over 270 hours since Aug'12

Service: Numerous team & individual events add to over 500 hours since Aug'12

Passion: We enthusiastically spread the word of FIRST at every opportunity

Spirit: CocoNut Shirt Fridays

Describe the impact of the *FIRST* program on your team and community with special emphasis on the 2012/2013 year and the preceding two years.

35 'Nuts: 40% girls, 1/3 minority

High Altitude Robotics Extravaganza (1 FTC, 2 FLL events)

FTC: 8-32 teams in 4 yrs; '13 event had 2 fields, teams from 4 states, '13 adds qualifiers

FLL: 36 teams in NAZ, 11 Reservation teams, 1st Winslow tourney, new NAZ events in '13

FLL & FTC Kickoff & Scrimmage events in Flagstaff, Winslow & PHX

Flagstaff named America's 1st STEM City, in part due to our efforts to grow FIRST

Member of the new STEM Consortium collaboration between business & education leaders

Team's innovative methods to spread the *FIRST* message.

NAZ knows about FIRST because of the CocoNuts.

Expanding Outreach: 440+ hrs in 5 months in Flagstaff & beyond, 18+ events/yr

1st demo at Tuba City festival on Navajo/Hopi Reservation

Presentations in Winslow & Show Low

2486 is the 1st & only team to reach out to rural NAZ

Camp COCONUTS:

1.0: 72 kids in 2 yrs, basic NXT programming, NAZ challenge

2.0: 37 kids in 1st yr, design concepts, Mars Mission challenge

Camp curriculum was used in pilot "FLL in a Nut Shell" guide for NAZ coaches

Describe the strength of your partnership with special emphasis on the 2012/2013 year and the preceding two years.

2486 has strong partnerships that enable our success.

Flagstaff 40: financial support

NAU: FIRST mentoring club, faculty mentors/judges

WL Gore: mentoring, sponsor, materials

FUSD: opportunities to expand FIRST

CHS: venue for events, build space

Local businesses: financial support, in-kind donations

Community members: tax credit donations

2486 is partnering with Gore, Flag 40 & SFAz to initiate a strategic FIRST expansion plan for NAZ

We recognize donors with plaques, thank you letters & pictures

Team's communication methods and results.

"CocoNuts" is a household name in NAZ due to our extensive media coverage.

70+ mentions in 5 yrs in local & state newspaper, radio, TV: high attendance at events

FLL coaches workshop: successful rookie & veteran teams at regional & state level

Website integrates 8 social media methods to reach nearly 10,000 people

Presentations to AZ After School Excellence, AZ & National Science Teachers Associations, 2 school boards, Association of University Women: expanding growth & support of FIRST

Other matters of interest to the *FIRST* judges, if any.

Flagstaff is a rural community 2 hours away from major cities in a county with a population density of 7 people/sq. mi. Many Reservation students are at poverty level with few amenities, miles of empty space, high dropout rates & a very low rate attending college. 2486 has helped FIRST reach 8 rural Native American communities. With the support of our partners, we plan to bring professional development & competition opportunities, mentoring & support programs to key areas in our region.

Judges Questions:

Briefly describe your team history

This is our 6th year. Due to our extensive outreach, mentoring & FIRST expansion efforts in NAZ, we've been the proud recipients of 3 Chairman's & 2 Engineering Inspiration Awards. Our team welcomes 35 students & is a flagship STEM program in Flagstaff.

Team's effort in promoting STEM education

2486 provides STEM training, curriculum, mentoring & event support to the 61,000 sq.mi of 5 NAZ counties. We taught our own STEM curriculum to 109 kids/2 yrs @ Camp COCONUTS & 200/3 yrs @ NAU Summer Enrichment Program: it's becoming an FLL coach guide.

Team Strengths

Our team strengths are diversity, inclusiveness, quality craftsmanship, work ethic, pride, Gracious Professionalism, spirit, a big dose of humor & a sense of family! Mentoring & service are cornerstones of 2486. Our passion for FIRST & STEM is infectious!

Robot and Game Strategy

Our robot features over 120 machined parts designed in SolidWorks. We will climb for the 3rd level using telescoping arms coupled with a winch system. Our robot can shoot for the 3 pt. goal using camera tracking, and uses a mecanum drive.

Team's Community Involvement

Since August 2012, 2486 has donated 440+ outreach hrs, 270+ mentoring hrs, 500+ community service hrs, & 945 hrs hosting FIRST events. We demo at 18+ community events per year, and we're a reason for Flagstaff being declared a "STEM City."

Most Significant Challenge Overcome

Our biggest problem is a good one: FIRST is growing so fast in our area, sustainability for growth is imperative. With our partners WL Gore, Flagstaff 40, & Science Foundation AZ, we will put infrastructure in place to provide more FIRST opportunities.