!Executive Summaries:

**1~Briefly describe the impact of the FIRST program on team participants with special emphasis on the 2013/2014 year and the preceding two to five years**
To aid in their future endeavors, Exploding Bacon(EB) students learn communication, teamwork & problem-solving skills in addition to robot skills, because EB is about more than just the robot. A recent alumnus at UCF's Honors College is a prime example of FIRST's impact on EB students: the skills he learned on EB helped him attain an internship at our sponsor, Lockheed Martin(LM), & he continued to help EB by creating a strategy workshop, & he even started his own company to help inventors. 495

**2~Describe the impact of the FIRST program on your community with special emphasis on the 2013/2014 year and the preceding two to five years**
In our community, the Central FL High Tech Corridor, we partner with influential companies, such as LM, Comcast & EA Sports, to grow STEM awareness. These partnerships exemplify the cooperation with professionals that FIRST models. With LM, we have made FIRST a permanent fixture at the Orlando Science Center's technology event, Otronicon, & conveyed the importance of STEM education to FL officials at the FL Capitol's 2014 STEM Day, where EB also encouraged government support for FIRST. 490

**3~Interesting/Creative Method for spreading the FIRST Message:**
In the past 3 years EB has participated in & held over 78 events & has been told by community members that we are "everywhere," including online. Our unique #OinkOinkBoom hashtag brings our award winning image online, & allows us to spread FIRST beyond our physical means & create a consistent, recognizable image across multiple platforms, including Facebook, Twitter, Instagram & Youtube. We also use #omgrobots to connect with the FIRST community & share resources for other teams on our website. 499

**4~Role Model Characteristics:**
Our students are eloquent & effective advocates of FIRST, attaining praise for their speaking skills & professionalism from community members & even an HRM America reporter. At an FLL tournament, our student co-president's speech about her FIRST experience ignited the competitors' enthusiasm for FIRST & empowered girls to appreciate STEM. To help FLL team Falcon's Fury with their World Class Challenge, EB students shared our newest teaching method: Spark, a series of hands-on STEM activities. 497

**5~Describe the team's initiatives to help start or form other FRC teams**
EB has a passion for supporting other FRC teams, especially rookies. In our past 9 years we have accumulated image & marketing experience, which we share yearly through presentations at FIRST events, our kickoff event & Champs. These workshops opened opportunities to mentor 5295 Aldernating Current, 4064 Inzombiacs & 3932 Dirty Mechanics. Until we have enough funds to start other FRC teams, we will continue to provide these resources & serve as a role model for rookie teams to excel in FIRST. 497

**6~Describe the team's initiatives to help start or form other FIRST teams (including**

**Jr.FLL, FLL, & FTC)**
EB increases FIRST participation in our community by connecting interested students with FIRST teams, including our Jr. FLL & 3 FLL teams, or helping them start their own. This year we hosted an FLL Coaches' Training for 23 new coaches & worked with FTC team 5937 to share FIRST with New Journey Youth Center, which led to the creation of a new FTC team. Our annual STEM camps resulted in multiple campers' participation in FLL & the establishment of a self-sustaining FLL program in our community. CC498

**7~Describe the team's initiatives on assisting other FIRST teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the FIRST program**
EB students serve as an "inspiration for the future" of FLL students by showcasing our FRC robots at FLL tournaments & sharing FRC's positive impact on our students' lives. We also hold monthly Club meetings that include our Jr.FLL, FLL & FRC students, which helps our younger members visualize their future in FIRST. In fact, 37% of our FRC students have FLL experience. Additionally, EB helps established teams by presenting workshops about image, programming & robot design. 477

**8~Describe how your team works with other FIRST teams to serve as mentors to younger or less experienced FIRST teams (includes Jr.FLL, FLL, FTC, & FRC teams)**
In 2014, EB joined FIRST and FTC Team Tesla to share our fundraising tips with the FIRST community. We pooled our information about sponsor relationships & fundraising in FIRST & shared it on a public webcast. We also teamed up with Central FL FIRST teams to present information regarding fundraising in FIRST at a Fluid Power Society event. In addition, one of our programmers worked with FTC teams 9277 & 5937 at an FTC League Meet to ensure that all teams in attendance were able to compete. 494

**9~Corporate Sponsors:**
We diversify our sponsors to build relationships with professionals & bring FIRST to new areas. LM, one of our main sponsors, funds all levels of EB. Magnus High Tech has machined & powder coated our robot parts for the past 3 years & gave our students a tour of their facility. This year we gained sponsor Comcast NBC Universal due to our success at sharing FIRST over social media. Thanks to Comcast's mentors, our students can visualize the future application of the skills they are learning now. 499

**10~Sponsor Relationship strength:**
To thank our sponsors & maintain strong relationships, we send thank-yous & newsletters, hold an annual Sponsor Dinner & help them spread STEM appreciation. Due to our well spoken, enthusiastic students & recognizable image, our sponsors frequently request our assistance at STEM events. 4-H provides us with printing, insurance & an off-season meeting place. In return we volunteer at the 4-H kickoff, make a 4-H booth for the Central FL Fair & have revitalized 4-H's project books for FIRST teams. 499

**11~Elevator Speech:**
We train all our students to be able to quickly explain FIRST in terms anyone can understand, from professionals to children. An example is, "FIRST, For Inspiration and Recognition of

Science and Technology, is an international organization that hosts exciting robotics competitions for children ages 6-18. These competitions promote STEM education in a fun & effective manner & inspire students to learn more about science & technology, preparing them to be innovative future leaders in STEM." 498

**12~OTHER:**
With 9 families actively engaged in EB, 6 of which participate in 2 levels, our team is a family. Younger siblings are welcome at build, allowing parents to be actively involved in FIRST, cultivating siblings' passion for STEM & FIRST at an early age, & creating a family atmosphere. One of our families is helping our students teach STEM to a homeschool class, which has resulted in 2 new members. Additionally, we invite our students' school administrators & FL officials to be involved in FIRST. 498

**ESSAY:**

4-H Exploding Bacon Team 1902 inspires more than just one community. With students hailing from 12 schools in 4 counties, plus homeschools, encompassing an area of approximately 652 square miles, our efforts to spread appreciation for STEM subjects reached more than 83,000 people in 2013-14 & have already reached over 26,700 people in 2015. To help blast our rocket to the next level, we created Spark, which helps STEM reach greater altitudes & expand globally. Over the past 10 years, we have been making a booming impact in our communities by triggering explosions in FIRST participation & STEM appreciation.

Exploding Bacon (EB) has cultivated a diverse & involved audience on Facebook, Twitter, YouTube, Pinterest, LinkedIn & Instagram, spreading the message of FIRST with our 1,268 Facebook fans, 2,005 Twitter followers & through our 11,341 YouTube views. We attract the public's attention through consistent posts & our unique #OinkOinkBoom hashtag, which has helped us reach over 20,000 people in January alone. Our media excellence also attracted Comcast NBC Universal, who now funds & mentors EB.

Our unique efforts in media & imagery have allowed us to mentor other FIRST teams through our Big Bacon Theory of Image & Marketing workshop. Since 2011 this workshop has been presented 14 times at Regional & offseason events, our kickoff event & Champs. Regularly, we help other teams' rockets blast off by answering their imagery, recruitment & award questions. Our consistent image has erupted in 11 new members over the past 2 years.

Our lab is located in Orlando, part of the Central FL High Tech Corridor, which enables us to work with professional mentors from Disney, Comcast NBC Universal, Lockheed Martin (LM) & EA Sports. Our sponsors support us & in return we support them. LM specifically requests our assistance in igniting interest for STEM subjects at Otronicon, an annual event at the Orlando Science Center that celebrates technology, & at the 2014 FL Capitol's STEM Day, where we

worked in tandem with LM to promote STEM & FIRST to state officials.

To show our sponsors what their aid has helped us achieve, we send them quarterly newsletters & hold a yearly Sponsor Dinner where we display our seasons' explosive triumphs. Our methods result in a high sponsor retention rate & produce relationships that yield benefits for not only our team & sponsors, but our students as well, who have received tours, demonstrations & internships from our sponsors.

EB was the first 4-H FRC team in the SE US, igniting a mutually beneficial partnership between FIRST & 4-H in 2009. Today over 100 4-H FRC Teams exist. To better integrate FIRST & 4-H, we modified 4-H's standard project books to encompass 4-H & FIRST values for each level of FIRST. These books are currently available to Orange County 4-H FIRST teams & are being reviewed for statewide application.

Orlando is home to the 2nd largest convention center in the US, which attracts many large STEM conferences, such as The Society for Laboratory Automation & Screening, I/ITSEC, ECC & Emerson Global Users Exchange. FIRST in FL regularly asks us to demonstrate our robots to these conventions' worldwide attendees. Due to our efforts & excellence at sharing the message of FIRST, FIRST in FL has awarded EB the status of a Showcase Team. At these conferences, we "relate FIRST to event goers' experience & interest(s)" & have shared FIRST with approximately 12,300 professionals & their families. FIRST in FL also asked us to demonstrate at Orlando's first Maker Faire, at which our student co-president spoke to educators from across FL about the benefits of FIRST.

We also schedule our own demonstrations at conferences, such as the National Fluid Power Society & the World Future Society Conferences. At the latter, we introduced FIRST to the attendees & garnered coverage by HRM America. This article explained that FIRST is about more than just the robot; it also teaches valuable business & leadership skills. Complimenting our "well spoken" & professional students & calling us "a great model for [businesses] to consider," the article highlighted our successful integration of the "use of technology with teamwork & communication." This article triggered the discovery of EB by the cofounder of Classwish.org, who is working directly with FIRST & EB to create fundraising methods for FIRST teams. As of February 6, 2015, EB has a running Classwish.org site.

As a result of EB's demonstration at Orlando's Mini Maker Faire, we developed a symbiotic partnership with the downtown Orlando Library & their new technology center, the Dorothy Lumley Melrose Center for Technology, Innovation & Creativity. Because our missions coincide, we work with Melrose to flare up appreciation for STEM in Orlando. At Melrose's request, we demonstrated our robots to approximately 1,700 people at their 2013 Grand Opening & presented a Tech Talk about the engineering design process to their first large audience. Because we shattered their expectations, Melrose invited us back to demonstrate our robot at their 1st anniversary event. We also judged & demonstrated at the Orlando Library's LEGO Contests 2 years in a row. Additionally, we demonstrate our robot at community events such as farmer's markets, the Interlachen Country Club's science night & a Big Hero 6 Movie Premiere.

In 2014, our students volunteered over 1,000 hours & in the past 3 years EB hosted or volunteered at over 78 events, increasing FIRST participation & STEM appreciation in our communities. Our efforts to inflame our communities' appreciation of STEM have attracted Hagerty HS's yearbook & newspaper teams, who wrote articles about EB & FIRST.

This year, all 6 of our 2014 seniors returned as College Advisors & make it their priority to teach the students & share their FIRST experience. These alumni serve as tangible representations of the effects of working in EB's encouraging environment. One of our alumni, now a College Advisor, held Google Hangout meetings about strategic design in FRC & created a mock FRC game to prepare students for build season.

We welcome all college students to become Advisors on our team, as they bring a fresh view & help our students explore STEM subjects. Our newest advisor missed the chance to participate in FIRST, but an EB alumnus encouraged her to get involved & she says that EB & FIRST "give [her] life direction" as she guides our students' imagery efforts.

This past summer, EB met for a full day to set goals for the future of our team. At this meeting we established means of creating newsletters for our sponsors & families, ways to better prepare students for build season & an explosive international expansion of Exploding Science, titled Spark. Additionally, we have already scheduled our 2015 strategic planning meeting to build on these goals.

To help our students share their passion for STEM with our communities, EB developed Exploding Science(ES). ES uses hands-on experiments & activities to teach STEM to elementary & middle school age children. ES teaches Chemistry, Physics, Engineering, Alternative Energy & Simple Machines with LEGO Educational Kits & subject specific kits developed by our students. ES also promotes Gracious Professionalism(GP) & Coopertition through teamwork activities selected by our students. ES enables our team to ignite students' excitement for STEM & reach schools that lack a strong STEM program. One of our students compiled all 40 of our ES experiments with Directions, Explanations, Diagrams & Real World Applications for our Exploding Science Resource Book. As of February 2015, this book is available on our website to all FIRST teams, so together we may blast off a worldwide trend to inspire the next generation of innovative scientists & engineers.

We use ES at community & 4-H events & at our annual summer camps. These camps resulted from a 2011 robot demonstration for a local school's Cub Scout Troop. The principal was so impressed by our student's booming passion for STEM that he asked us to run a STEM camp. Our students have taught this camp for the past 3 years, teaching science, engineering & programming concepts. These camps allow us to create a STEM appreciating culture in our communities & refine our ES experiments, which now include engineering activities. We are expanding to 3 STEM camps this year, one through a school & two at our local 4-H building, which will enable us to broaden 4-H members' horizons to include STEM career opportunities.

This past October, we expanded ES internationally with Spark. Spark's goal is to send reusable science kits around the world to inspire children to make differences in their own communities.

Spark provides these children with the resources to explore science & hone their problem-solving skills. We recently sent Spark packages to 3 different Haitian schools & received booming positive feedback. Our member who took the kits said, “The teachers [in Haiti] were incredibly grateful to have hands-on material to help students relate to textbook learning & to promote interest in the study of science & technology.” This recent success empowered us to refine our Spark program & build connections for future Spark endeavors. We are currently assembling a kit to send to a Ugandan school that caters mainly to orphans.

Spark impacts not only children around the world, but our own students as well, who grow as they design & test experiments. Spark permits us to provide children with STEM tools to solve problems in their communities, thus fulfilling our mission to inspire youth to explore STEM & make an impact.

Exploding Bacon is a sustained program that successfully shares our explosive passion for FIRST & STEM with our local, state & global communities. With dedicated students from around Central FL, strong sponsor relations & widespread outreach, our passion will never fail to ignite explosions of appreciation for FIRST & STEM in our communities.