Girlstart Program Impact Statement 2012

Girlstart is deeply grateful to you. Your support in helping us provide thousands of Central Texas girls with high-quality science, technology, engineering, and math (STEM) programs. In 2012, your support has made it possible for us to offer more programs that impacted more girls than ever before.

Numbers Served Summary

Program	***Participants Served***
Girlstart After School	4,443 (est 3,999 children; 444 adults)
Public STEM Education/Science Extravaganzas	9,661 (est 7,247 children / 2,414 adults)
Girls in STEM Conference	528 (528 girls)
Girlstart Summer Camp	563 (563 girls)
Girlstart Annual Luncheon	420 (36 girls / 384 adults)
Teacher Professional Development	400 (400 adults)
Total	***16,015 (12,373 children; 3,642 adults)***

Program Impact

Girlstart After School
Total number of girls served in 2012: **705**
Additional parents, teachers, and other members of school communities served (includes related Public STEM Education outreach numbers and est. parent/teacher reach): 3,738
Total number of schools: **35**

Girlstart After School is an intensive intervention where we provide free STEM programming every week throughout the school year at our partner schools, as well as wraparound services to support STEM in each partner school. Girlstart After School involves sequential, informal, hands-on and inquiry-based activities across the STEM acronym. Girlstart After School is only one of two full year, research-and standards- based STEM education program for girls in the nation, and Girlstart's programs reach vastly more girls (35 schools, compared to 2 reached by the other program).

Girlstart After School is particularly impactful for participants because of the consistency, length, and rigor of the program. Our 2012 program evaluation found that all grades showed an increase in the number of girls who demonstrate competence in using the scientific method. Progress against desired goals include:

Goal 1: Increase participants' competency in/mastery of the scientific method and facility in STEM knowledge/skills

- 91% of participants demonstrated that they understand elements of critical thinking necessary for mastery of the scientific method.
- 90% respond positively to the statement: 'I understand that it is okay if my Girlstart activity does not work on the first try.'
- 87% of participants realized after participating that they use science frequently outside of school.
- 90% indicated interest in creating things and 85% reported that they 'like to try new things.'
- Although only 52% of participants expressed a strong affinity for science in general, 87% reported enjoying the scientific activities they did at Girlstart.
- At the program's end, 73% of girls reported knowing what 'STEM' stands for compared to only 32% on the pre-survey (a 130% increase).

Goal 2: Increase # girls interested in selecting STEM at HS/college

- 93% of participants demonstrated an awareness of the importance of higher education as a way to broaden their career options.
- 86% responded positively to the statement 'I want to try more science activities.'
- 96% of participants expressed intent to attend college after high school.
- 79% reported interest in taking further STEM classes in middle or high school.

Goal 3: Increase # of girls interested in pursuing STEM careers

- All After School participants were invited to attend the Girls in STEM Conference on March 31, 2012. We offered free registration, free bus transportation for each school, and a Girlstart chaperone to and from the program.
- 94% of participants demonstrated an awareness that success in STEM in high school or college is likely to broaden their career options.
- 75% reported that after participating in Girlstart STEM careers seem more interesting.
- 68% indicated a strong interest and 93% indicate at least a moderate interest in entering a STEM career.

Science Extravaganzas/Public STEM Education

We had anticipated serving 5,000 girls, family, and community members with Community STEM programming. In calendar year 2012 alone, we have reached **9,661** girls, family and community members. A detailed list of how we accomplished this is below:

Community STEM Education programs offered at Girlstart partner schools in 2012:

January 10 - Wells Branch Elem Science Night - 80
January 12 - Pecan Springs Elem Science Night - 60
January 26 - Wells Branch Elem Science Fair - 75
February 23 - McCoy Elementary Science Night - 75
March 6 - Forbes MS Science Night - 5
February 25 - Club Girlstart STEM Saturday Workshop at Ortega - 14
March 20 - Wells Branch PTA Meeting - 60
April 4 - Wooten Elementary Health Fair - 65
April 12 - Caraway Elementary Science Night - 150
April 14 - Club Girlstart Saturday Workshop at Ortega - 8
May 9 - Taylor MS Career Fair - 80
August 20 – GISD Community Day – 30
October 25 – Caraway Elementary Science Night – 150
October 27 - Palm Elementary STEM Saturday – 8
November 13 – Wieland Elementary Science Night - 48
November 17 - Wooten Elementary STEM Saturday – 20

Other Community STEM Education programs offered in Central Texas during 2012:

January 10 - Chisholm Trail MS Science Club - 12
January 18 - Canyon Creek Elem Science Night - 50
January 19 - Murchison Elem Science Night - 70
January 27 - Bridge Point Elem Science Day - 48
January 28 - Austin Family Camp Fair – 1,000
February 9 - Purl Elementary StarLab - 150
February 9 - Mathews Elementary Math Night - 40

February 11 - Cupid's Secrets STEM Saturday Workshop - 25
February 11 - Round Rock Summer Camp Fair - 50
February 17 - AISD Exhibitor Fair - 50
February 25 - Weather Fest Science Extravaganza at Bob Bullock - 337
February 25 - UT Girl Day - 275
March 2 - Dripping Springs Elementary Extravaganza - 100
March 6 - Hernandez MS Science Night - 35
March 7 - Eanes Science Day StarLab - 100
March 8 - Odom Elementary Science Night - 80
March 8 - Carver Elementary – StarLab - 120
March 15 - IKEA Spring Break Science Extravaganza - 100
March 23 - Fern Bluff Elementary Science Night - 170
March 24 - Crazy Concoctions STEM Saturday Workshop - 32
April 2-6 - National Afterschool Association Conference – 1,500
April 4 - National Instruments Volunteer Fair - 20
April 14 - Junior Vets STEM Saturday Workshop - 49
April 14 - Knowles Elementary – StarLab - 230
April 21 - Arctic Family Day at Bob Bullock - 109
April 28-29 - USA Science & Engineering Festival - 800
May 3 - PayPal Take Your Child to Work Day - 30
May 12 - Austin Mini Maker Faire – 305
August 18 – Science of Sound at Bob Bullock - 30
August 19 – Expo de la Familia - 100
September 8 – Back to School STEM Saturday - 109
September 22 – Sheriff's Extravaganza - 50
September 23 – Women in Science - 500
September 23 – Space Junk Day at Bob Bullock - 300
October 13 – Girl Scouts of Centx STEM Fest - 83
October 18 – Cooper Elementary Literacy Night - 32
October 18 – Girls' School of Austin Science Night - 150
October 20 – Mina Elementary Spooky Extravaganza - 68
October 20 – Weather Watch STEM Saturday @ Girlstart - 30
October 24 – Texas Conference for Women - 350
October 26 –Spooky Science at Bob Bullock - 522
October 27 – Bluebonnet Elementary Spooky Extravaganza - 48
October 29 – Boys and Girls Club of Georgetown Spooky Extravaganza - 42
November 3 – We Are Girls Conference - 90
November 10 – Girlstart Games STEM Saturday @ Girlstart - 30
December 1 – DeSTEMber Fest - 252
December 8 – It's Just Rocket Science STEM Saturday @ Girlstart - 30

Total Central Texas residents served through all Community STEM Education programs 2012: **9,661**

Girlstart found that our Community STEM Education programs (surveys were administered to Science Extravaganza and STEM Saturday Workshop participants) achieved the following positive outcomes:

- 93% of participants expressed a strong interest in creating new things after attending Girlstart.
- 81% said that they like science and, after attending the program, 87% report that they want to try more science activities.
- 98% of participants report that they want to attend college when they grow up.
- 72% feel that their ideas can solve real world problems.
- 81% report that they enjoy doing science activities with their families.

Girls in STEM Conference
Total number of girls served: **528**

Girlstart offers the Girls in STEM Conference annually to 4th-8th graders in Central Texas. The program, which takes place at the UT-Austin University Teaching Center, includes a day-long progression of workshops where girls participate in hands-on activities led by women who work in STEM careers. The conference is designed to introduce girls to female role models in STEM who will inspire and encourage them to consider and pursue STEM careers.

Results include:

- 528 4th-8th grade girls from across Central Texas attended the program; 545 registered
- Girlstart awarded 328 need-based scholarships to attendees (60%)
- Student groups came by bus (provided by Girlstart) from 23 area schools and 8 local ISDs
- 82 professional women served as volunteer presenters, leading hands-on activities in science, technology, engineering, and mathematics (STEM) related fields.
- 118 community, corporate, and student volunteers contributed over 300 volunteer hours.

In a post-event survey, girls shared the following feedback about their experience:

- 98% of participants demonstrated increased awareness of importance of higher education as a way to broaden their career options and 98% reported intent to attend college;
- 92% of participants demonstrated increased awareness of STEM careers;
- 87% of participants reported that Girls in STEM made the MORE interested in STEM careers and 78% of participants reported specific intent to enter a STEM career;
    - 93% of participants expressed a strong interest in creating new things after attending; and
- 86% of participants demonstrated interest in doing more STEM activities in the future.

Summer Camp
Total number of girls served in all Summer Camps: **563**
Number of full scholarships awarded to Central Texas campers: 89
Total number of full scholarships across all camps: 228

Girlstart Summer Camps are week-long STEM programs for girls in the 4th-8th grades. These programs achieve consistent positive outcomes by combining formal and informal educational strategies with challenging and relevant STEM curriculum. Girlstart Summer Camp provides individualized experiences that develop a strong conceptual understanding of STEM subjects and increase participants' interest in STEM activities and careers.

Girlstart Summer Camp is rigorous, intensive, and age appropriate at the same time it is fun, informal, and collaborative. Each week, Summer Camp participants engage in 40 hours of challenging content balanced with informal learning experiences, time for reflection, and opportunities to share their thoughts and ideas. Through their experience at Girlstart, participants develop an increased interest in STEM subjects and careers through real-world experiences in subject areas such as video game design and computer programming, industrial design and engineering, robotics, physics, chemistry, biology, ecology, oceanography, digital media production, and website design.

This summer, Girlstart expanded its Summer Camp program to offer 14 camps at the Girlstart STEM Center in Austin, TX, as well as 8 Summer Camps 'to Go' in other Texas locations and states (California, Minnesota, and Nebraska). Girlstart offered the following camps at the Girlstart STEM Center and other locations:

June 11-15: World Tour (4th-5th grades) at Girlstart STEM Center

	World Tour (6th-8th grades) at Girlstart STEM Center
June 18-22:	World Tour (4th-5th grades) at Girlstart STEM Center World Tour (6th-8th grades) at Girlstart STEM Center Designer Paradise (4th - 5th) at Ralph Pfluger Elementary, Buda, TX
June 25-29:	Pet Vet (4th-5th grades) at Girlstart STEM Center Pet Vet (6th-8th grades) at Girlstart STEM Center Designer Paradise (4th - 5th) at Hemphill Elementary, Kyle, TX Designer Paradise (4th - 5th) at Bishop Elementary, Sunnyvale, CA
June 9-13:	Pet Vet (4th-5th grades) at Girlstart STEM Center Pet Vet (6th-8th grades) at Girlstart STEM Center Designer Paradise (4th - 5th) at Boys & Girls Club in Lincoln, NE
July 16-20:	Pet Vet (4th-5th grades) at Girlstart STEM Center Pet Vet (6th-8th grades) at Girlstart STEM Center Designer Paradise (4th - 5th) at Boys & Girls Club in Lincoln, NE
July 23-27:	CSI Girls (4th-5th grades) at Girlstart STEM Center Scrub In (6th-8th grades) at Girlstart STEM Center
July 30 – August 3:	CSI Girls (4th-5th grades) at Girlstart STEM Center Scrub In (6th-8th grades) at Girlstart STEM Center Designer Paradise (4th - 5th) at Boys & Girls Club, Candlewood El, San Antonio, TX Designer Paradise (4th - 5th) at Boys & Girls Club in Minneapolis, MN
August 6-10:	Designer Paradise (4th - 5th) at Boys & Girls Club in Minneapolis, MN

Summer 2012 Camp Themes

World Tour
In World Tour, girls learned about principles of engineering through an integrated set of a travel-themed curricula and activities. Girls completed hands-on projects that taught a number of engineering lessons: designing boats and hot air balloons to explore buoyancy, creating and testing the efficacy of a durable and water-resistant suitcase out of household materials, examining structural engineering by designing a bridge, creating a glider, learning how fin attachment and nose shape impact a rocket's aerodynamics, and designing accessories made with LED lights, among other examples. Girls in this camp explored a wide variety of engineering specializations including chemical, biological, aerospace, computer, electrical, mechanical, energy, and structural engineering. Girls also designed their own cruise ship, using Girlstart's 3D 'technology toolbox,' learning about principles of 3D modeling and design, including Cartesian coordinates, designing in 3D, and 3D printing.

Pet Vet
In our Pet Vet camp, girls learned about careers in veterinary medicine and biology, mastered skills and principles in biology, chemistry, genetics, computer science, and start to finish 3D as they used technologies that support these activities and disciplines. Female veterinarians, with animal visitors in tow, visited the camp throughout the week to discuss their careers and educational experiences with the girls. Girls designed and printed a 3D pet toy prototype using Google Sketchup and Girlstart's 3D printers. Girls also programmed a computer simulation and video game to save animals in harm's way, using our game development toolbox.

CSI Girls
Girls learned about forensic science as they solved a week-long mystery. Lessons included cryptography, chromatography, and handwriting analysis, fiber and hair investigation, footprint and fingerprint analysis, blood testing/typing, DNA extraction, a 'stomach contents' analysis, and a 'mystery powders' chemistry activity. Thematic technology activities also introduced girls to computer programming and engineering; all participants created a video game and a computer simulation (using our game development toolbox).

Scrub In
At the Scrub In camp, girls learned about medicine and medical careers as they explored creative lessons designed to introduce medical and biological concepts and skills. Girls not only met with female doctors and nurse practitioners throughout the week, but they learned about—and conducted—clinical trials, discovered mysteries of the human brain, grew and analyzed bacteria, learned about heart health and dissected a sheep heart, as well as activities about prosthetic devices, kidneys, and explored lungs and respiratory functions. Girls also programmed a virtual clinical trial using our game development toolbox, created a 3D skeletal model, printed 3D bones, and, with electrical engineering skills, built an 'Operation' board game.

Designer Paradise (Theme used for all 2012 Camps 'To Go')
In Designer Paradise camp, girls learned principles of engineering, industrial and 3D design, robotics, and computer programming. Girls participated in creative engineering and design projects (designing an amusement park ride, an LED bracelet, solar cars and ovens, and windmills) allowed them to explore a wide variety of engineering specialties including chemical, electrical, mechanical, and structural engineering. In addition, girls explored other types of 'building', including biological/molecular structures. Throughout the week, hands-on activities and immersion in Girlstart's computer-based technology toolbox helped girls explore STEM concepts and build essential STEM skills.

Girlstart Summer Camp 'To Go': Program Expansion in other Locations / States
In 2012, Girlstart is affirming that our programs can address the national STEM crisis on a larger scale by offering more Summer Camps in more locations to serve more girls. By the close of this summer, we successfully delivered Summer Camps in new high-need locations in San Antonio, Kyle, and Buda, Texas and three other states (California, Minnesota, and Nebraska). This 'To Go' expansion makes it possible for Girlstart to bring our high-quality STEM programming to community organizations (like Boys and Girls Clubs) that serve a high-need population but do not have many STEM resources at their disposal. Because these programs are designed to reach girls who otherwise might never have access to this kind of programming, all camps 'to Go' are offered to girls at no cost.

<u>Girlstart Summer Camp Outcomes</u>

Progress against desired goals include:

Goal 1: Increase participants' competency in/mastery of the scientific method and facility in STEM knowledge/skills

- 93% of participants demonstrated acumen in conducting scientific investigations and reasoning (using the scientific method and the engineering design process effectively).
- 71% of participants (a 150% increase) reported confidence in using engineering design process and 67% of participants (39% increase) reported confidence in using the scientific method.
- At the program's end, 88% of girls reported knowing what 'STEM' stands for compared to only 39% on the pre-survey (an 80% increase).

Goal 2: Increase # girls interested in selecting STEM at HS/college

- 82% of participants hope to take more STEM classes in high school.
- 91% of participants understand that success in STEM courses can help them achieve college enrollment.
- 95% of participants plan to attend college when they grow up.

Goal 3: Increase # of girls interested and confident in STEM

- Girlstart found a 37% increase in the number of girls who reported enjoying science and STEM activities after attending camp (96%) and 79% of participants indicated an interest in doing more STEM activities in the future.
- 95% indicated interest in creating things and 88% reported that they 'like to try new things.'

Goal 4: Increase # of girls interested in pursuing STEM careers

- 93% of participants expressed at least a moderate interest (72% demonstrate strong interest) in entering a STEM career.
- 81% of participants feel that STEM careers are more interesting to them after attending Girlstart Summer Camp.
- 89% of participants demonstrated awareness of the importance of higher education as a way to broaden their career options.

In addition, vis-à-vis game development:

- 96% expressed at least a moderate interest (78% demonstrate strong interest) in authoring additional video games.

Girlstart Annual Luncheon
Adults served: **384**
Girls served: **36**

On October 23, 2012 Girlstart welcomed 380+ civic and community leaders and girls to our Annual Luncheon. Keynote speaker Richelle Parham (CMO of EBay) spoke to the group about her passion for STEM and changing the world, and we also welcomed special guest Shree Bose (the first Google Global Science Fair winner). In addition, 36 girls from four Girlstart After School partner schools joined us. We have secured Kari Byron (presenter on *Mythbusters*) for our next luncheon on October 17, 2013.

Program Expansion Summary
Prior to 2010, Girlstart reached approximately 1,500 people per year. This can be roughly broken down to 220 girls in Summer Camp; 100 in After School (and approximately 100 parents); 300 at Girls in STEM; and the remainder in our Public STEM or other out-of-school time STEM education programs. In 2012, Girlstart has dramatically expanded its audiences, to reach 16,000+ girls and community members.

- Our After School program's scope has expanded significantly. In 2009-2010, we offered Girlstart After School programs at 4 area schools. In Fall 2012, we reached 35 schools in 10 ISDs and we plan to expand to serve 40+ area schools and additional ISDs in 2013.
- Our Public STEM Education programs, including StarLab presentations at schools and Science Extravaganzas, reached nearly 10,000 community members with free, hands-on STEM activities and programming in 2012.
- In 2012, we delivered 14 weeks of Girlstart Summer Camp in Austin (at Girlstart's STEM

Center) reaching 234 girls; we also did 5 camps outside of Texas (California, Colorado, Washington) as well as 1 week in San Antonio and 2 weeks in Hays ISD.

- The Girls in STEM Conference expanded to reach over 450 girls in 2011; owing to facility limitations at UT-Austin we do not expect that we will be able to exceed 525 attendees at 2013's conference (April 6, 2013).

Horizon

Girlstart updated its strategic plan in September 2012 that outlines the progress we seek to make: continue to expand Girlstart After School and Girlstart Summer Camp, bring Girlstart programs to scale as opportunity permits, and to sustain the organization for years to come. Because STEM education is all we do, and STEM education is our future, as well as our nation's future, Girlstart hopes to bring its programs to scale, so that more girls can embrace STEM learning. Girlstart knows that it is impossible to accomplish its goals without philanthropic support and investment.

Owing to your investments in our work, our programs are strong, and growing in Central Texas and beyond. They are becoming nationally recognized for their rigor and impact. They are also reaching ever greater numbers of girls, families, teachers, and schools. This ability to grow and scale up our programming has only been possible with the investments that you make in Girlstart. On behalf of the staff and the Board of Girlstart, thank you for the many ways that you help Girlstart go.