



Girls Exploring Science, Technology, Engineering & Math (GESTEM) Event

October 4, 2010

Hosted by:

The Society of Women Engineers (SWE) Rocky Mountain Section
Lockheed Martin
Junior Achievement - Rocky Mountain Inc.
CaridianBCT
URS

FINAL REPORT - *DRAFT*

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Executive Summary

Between portrayals in the media and pressure from their peers, today's girls are inundated with unrealistic views and expectations of what women should be. The result is a misguided focus on ideals and goals that have very little to do with educational and professional development. Additionally, we continue to find that as female students transition from primary to secondary education, the level of interest in math and science decreases significantly due to the cultural/societal attitudes, peer pressure, and lack of exposure and support in the science, technology, engineering and math (STEM) fields.

The Girls Exploring Science, Technology, Engineering and Math (GESTEM) conference continues to challenge these issues by providing 6th and 7th grade girls the opportunity to explore science, engineering and technology, through the guidance of professional role models in these fields. This year, GESTEM continued to collaborate with the STEMapalooza event where 765 middle school girls came for the hands-on GESTEM workshops and then attended the STEMapalooza event to view booths showcasing engineering, science, and technology for both boys and girls. In addition, the girls attended a luncheon celebration with a motivational keynote speaker targeted to the girls' interests and grade level.

The GESTEM 2010 Event's objectives were to:

- Introduce female students to real world aspects of math, science, engineering and technology and to the many diverse fields available.
- Help students see a clear connection between the skills that science, technology, engineering and math (STEM) classes offer and real life careers.
- Provide female middle school students, their parents, teachers and counselors a chance to interact with engineering and technical professionals to see how science, engineering, technology and mathematics can be fulfilling and fun.
- Introduce networking and mentoring basics to female middle school students.
- Introduce students, parents, teachers and counselors to local organizations within the science, engineering and technology community and available resources.
- Provide an opportunity for local corporations, their employees and the community to come together and support students to succeed in math and science.
- Motivate students to take STEM classes in high school.
- Inspire students to pursue STEM careers.

In connection with the objectives above, the GESTEM event was successful. Confirmed registrations totaled **765** students, filling all available spaces for attendees. A waiting list was generated because of the overwhelming interest for the event and limited spots. GESTEM connected **28** public schools with **40** workshop presenters, **200** volunteer guides, and **16** committee participants all focusing on informing and inspiring girls to explore STEM options.

The 2010 keynote speaker for GESTEM was Anita Bertisen, a mining engineer from URS Corporation. Ms. Bertisen has a passion for travel and her work on mining

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operations around the globe has allowed her pursue that passion. Her presentation talked about the many places she has visited and the impact her projects had on the lives of the locals. She concluded her speech by challenging the girls to go out and pursue their passions, passions that can be realized with careers in engineering and science.

GESTEM continues to focus on providing a collaborative event that allows students, educators, parents and professionals to learn and share information that not only promotes women in the technical fields, but provides guidance and opportunities for girls to pursue education and careers in the STEM fields.



Sponsorship Recognition

The Society of Women Engineers and GESTEM would like to thank the following sponsors for their continued support of the GESTEM Conference:

Lockheed Martin

Caridian BCT

Junior Achievement

URS

Xcel Energy

Ball Aerospace & Technologies Corp.

Holme Roberts & Owen

Scanlon Szynskie Group

GESTEM would also like to thank the many volunteers who helped to make this conference a success as well as make a difference in the lives of middle school girls.

Thanks to Anita Bertisen, the Keynote Speaker.

Thanks to the STEMapalooza committee, exhibitors, and sponsors for their significant role in the 2010 GESTEM event.

Thanks also to the Colorado Convention Center, the Denver Center of Performing Arts, and Epicurean Catering for providing the GESTEM Conference with a venue and food.

Congratulations to SWE-Rocky Mountain, Region I for their feature of GESTEM in the SWE National Magazine 2010-2011 Yearbook as a key Region activity.

Major Findings

The following are highlights of the major findings collected from the student surveys.

- 71% students said after attending this event, they have a clear connection between the skills that these classes offered in science, technology, math and engineering, and real-life careers
- 49% of students agreed that they were confident they would enjoy a career in science, engineering or technology
- 47% of students said after attending the GESTEM event they learned what high school classes they should take in order to have the option to enter the fields of science, engineering and/or technology
- 60% of students said being at the GESTEM conference made them want to take more science, technology, math and engineering classes in high school
- 56% of students said being at GESTEM inspired them to have a job in science, engineering or technology
- 87% of students said they would come back to this event next year

Background and Methodology

The 2010 GESTEM event was the 8th annual one-day event formerly known as GESET (Girls Exploring Science, Engineering & Technology). The format for the conference included GESTEM collaboration with the STEMpalooza event at the Colorado Convention Center where 765 middle school girls selected one of 13 different hands-on GESTEM workshops and then attended the STEMpalooza event to view booths showcasing engineering, science, technology and math for both boys and girls. GESTEM girls were assigned to volunteers/industry guides in groups no larger than 8 to be escorted and mentored for the duration. The event concluded with a keynote speaker at the Denver Center for Performing Arts where the girls were treated to lunch and an opportunity to discuss their day with their schoolmates, teachers, and chaperones. Goody-bags with STEM information, snacks, bookmarks, pens, and other gadgets were provided to each participant.

The GESTEM workshops consisted of some returning favorites such as building and testing Eggstraordinary Landers as well as gumdrop domes and paper bridges, and using a model centrifuge to separate blood and learn about components within the blood. In addition, one workshop focused on computer pieces and parts where the girls take apart computers, learn about the components, and identify a missing part. Another workshop looked at wildlife tracking, including analyzing land capacity and designing effective

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animal crossings for new road construction. Additional details on the workshops and participants is provided below and in Appendix C.

STEMapalooza was a two-day event that featured over 75 exhibitors from around Colorado that support STEM programs and employ many individuals in STEM careers. The Colorado Convention Center exhibit hall was filled with exciting hands-on activities including a planetarium, chemistry experiments, rocket launching, rocks and mineral activities, animal and reptile activities, and more.

Lunch was provided in a sit-down casual atmosphere where the girls could share their excitement and engage in the keynote presentation. The speaker, Anita Bertisen, encouraged the girls with a presentation called “Around-the-World Ticket to Adventure” Ms. Bertisen graduated from the Colorado School of Mines and is currently serving as a mining engineer for URS Corporation. In her presentation to the girls, she talked about her many adventures abroad working in the mining industry. She talked about how her projects impacted the lives of locals. Ms. Bertisen pointed out how the careers of scientists and engineers help people and the environment. She encouraged the girls to pursue their passions, realizing that STEM careers can help them fully realize some of those passions.

Student and adult surveys were administered by the GESTEM committee and Junior Achievement - Rocky Mountain Inc through Survey Monkey. The surveys were targeted to accomplish the following:

- Evaluate the effectiveness of meeting the goals and objectives set forth by the GESTEM committee.
- Uncover the orientations and attitudes of the students and adult supporters to better understand how to adapt STEM content and curriculum to make a deeper, more profound impact on the students.

45 students completed in full the on-line survey. Similar to the 2009 survey, elements from the previous years were used to keep some data aligned for continuous comparisons from year to year. In an effort to solicit new information, some questions were modified, and new questions were incorporated.

80 adult supporters (workshop presenters, industry volunteers, guides, teachers or chaperones) completed the adult survey, which will be used more as testimonial and lessons learned.

Survey Findings

Participation Profile

The Society of Women Engineers (SWE) invited female students in 6th and 7th grade who are interested in math, science, engineering and technology to participate in the GESTEM conference, which is free for all participants.

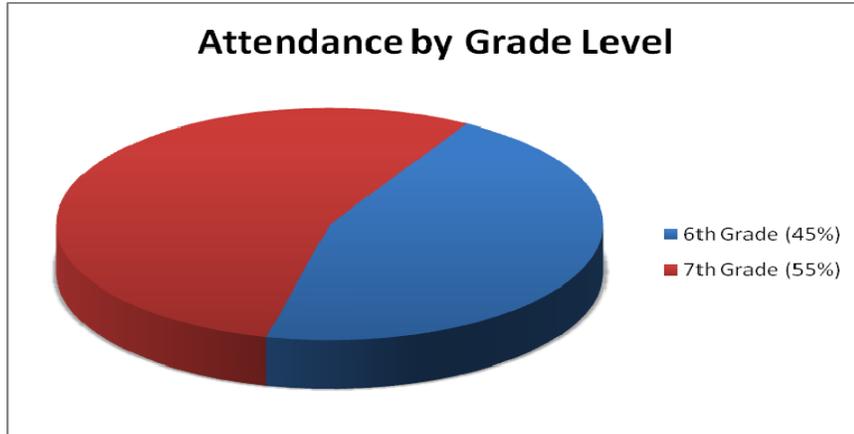


Exhibit 1

There is a specific focus on 6th and 7th grade girls where the girls are still open to the idea of exploring possible career fields in math and science. GESTEM hopes to encourage students to keep their career options open by taking math, science, engineering and technology courses in high school. The GESTEM 2010 conference attracted girls from 28 different schools.

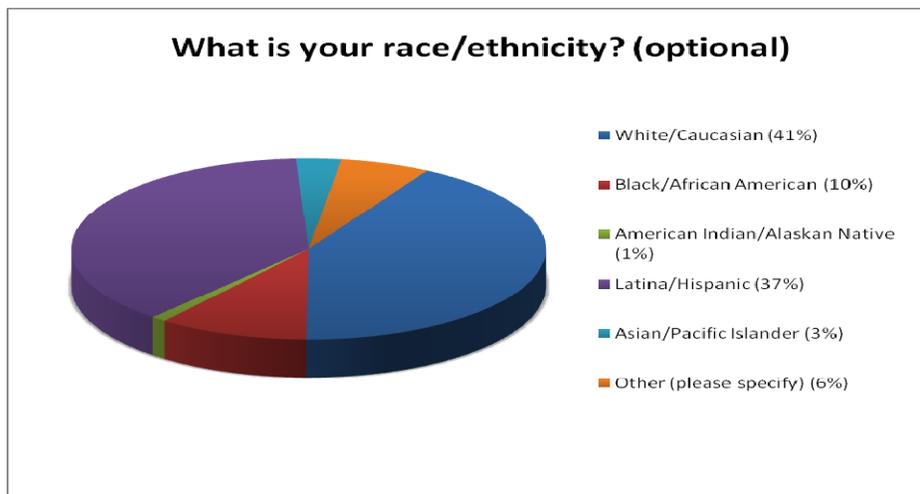


Exhibit 2

Student participants varied in race and ethnicity (See Exhibit 2). This year, 59% of the student attendees were from minority/non-white backgrounds, down from 65% in 2009.

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Nearly 63% of the minority attendees were from Latina/Hispanic backgrounds. 56% of the student participants have no family member that works in a STEM field.

Outcomes

The major objectives of GESTEM were to:

- Introduce 6th and 7th grade female students to real world aspects of math, science, engineering and technology and to the many diverse fields available
- Help students see a clear connection between the skills that science, technology, engineering and math (STEM) classes offer and real life careers
- Provide female middle school students, their parents, teachers and counselors a chance to interact with engineering and technical professionals to see how science, engineering and technology can be fulfilling and fun
- Introduce networking and mentoring basics to female middle school students
- Introduce students, parents, teachers and counselors to local organizations within the science, engineering and technology community and available resources
- Provide an opportunity for local corporations, their employees and the community to come together and support students to succeed in math and science
- Motivate students to take STEM classes in high school
- Inspire students to pursue STEM careers.

Of the participants surveyed, 71% of students agreed that after attending this event, they saw a clear connection between the skills that classes offered in science, technology, math and engineering, and real-life careers. This is up from the 2009 conference with only 63% of the students agreeing. More than half of the students (60%) agreed that attending the conference made them want to take more STEM classes.

Students continue to recognize the connection between the skills STEM classes offer and potential careers. 47% of participants agreed that they learned which classes to take in high school in order to have the option to enter the STEM fields. This result is comparable to last year's (49%), but higher than previous years which may be contributed to the increased marketing of STEM education in schools, as well as educators making a stronger effort to help students learn how to be successful in these careers. The additional exposure to the GESTEM guides and the STEMpalooza exhibits allowed further opportunity for discussion of classes and careers.

When inspiring students to pursue STEM related careers, 56% of student participants agreed that being at the conference did inspire them to pursue a career in science,

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technology or engineering. This is up from last year's 49%, which again may be a reflection of increased STEM marketing as well as the new format for the GESTEM event. To help inspire the girls and show the value of networking, the girls are paired with guides from a variety of STEM fields. 22% of the girls found their guide knowledge about STEM, 47% found them fun, interesting and cool, and 29% ranged from boring, to nice to kinda weird and everything in between. Only 2% found them a source of inspiration/motivation to pursue STEM careers.



When asked if a career in science, engineering, or technology would be enjoyable, 49% of students who responded believed they would enjoy a career in science, engineering or technology. Intentions behind career selections of the attendees showed 35% of girls selecting careers that help people or animals, and 38% having other reasons revolving around passions such as music or math. Interestingly, only 11% would select a career based on creating and building things. One possible reason for these outcomes may be based on GESTEM presentations and workshops which had a stronger focus on the benefits that math, science, and engineering played in helping people or animals. This year, 75% of the workshops had hands on components that focused on helping people and animals. The STEMpalooza exhibits also had many activities focused on people and animals. Exhibit 3 shows the breakdown of career selection.



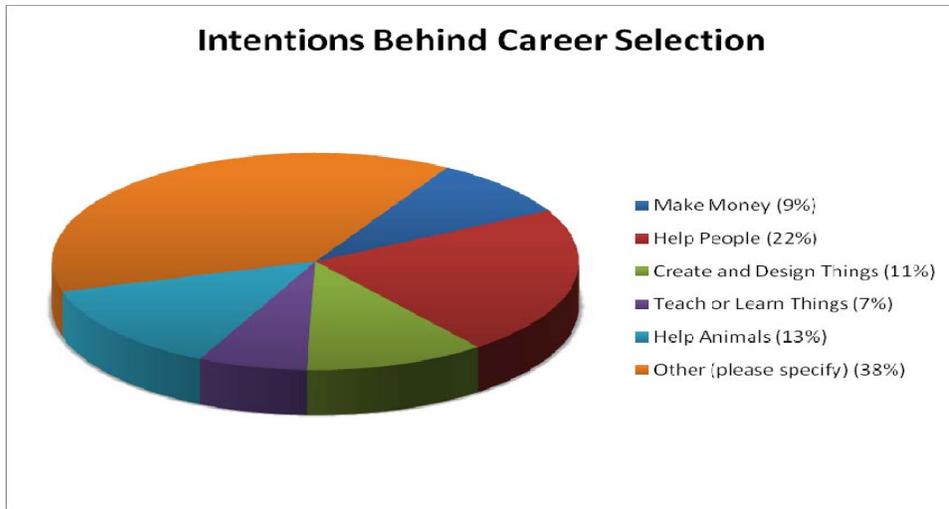


Exhibit 3

Results from the survey showed that 87% of students would like to attend this event again, showing a strong majority of the students enjoyed their experience. This shows that GESTEM participants continue to find enjoyment and benefit from the conference.

Perceptions, Attitudes and Opinions:

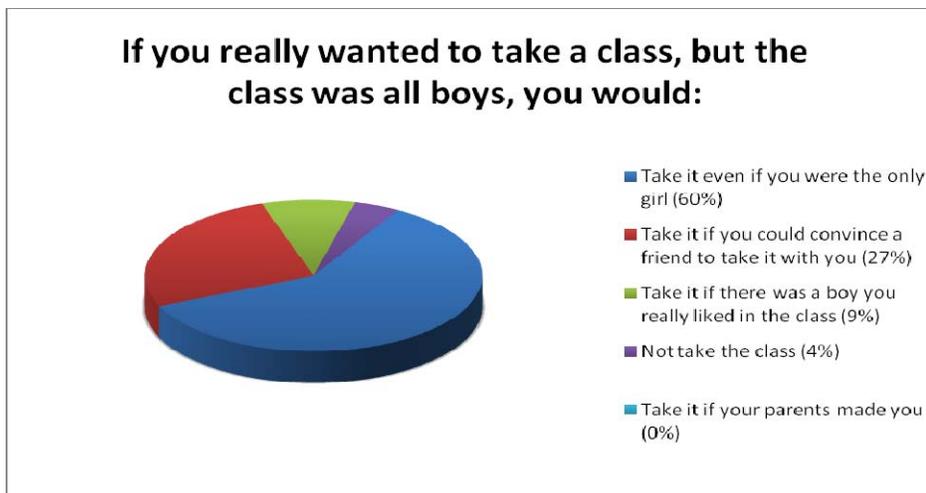


Exhibit 4

Past GESTEM surveys suggested that girls have various perceptions, attitudes and opinions regarding math, science, engineering and technology. While some of these attitudes have historically been negative, the past several years have shown an increase in the positive attitudes that girls have regarding STEM related fields. On the average, more than 55% of students were encouraged by the conference and the workshops, and were inspired to become more involved in STEM related studies and fields. Insecurity of being the only female in the class is considered to be one of the leading factors that deter girls from taking STEM courses in school. The results from last year's and this year's survey are very similar in demonstrating that being in a classroom with all boys is not as

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large a deterrent as some have previously thought. More than half the participants, 60%, said they would take a class even if they were the only girl in the class. Another 27% said that they would take the class if they could convince a friend to take it with them. Ultimately, the majority of the girls would take the class even if they were the only girl with 4% stating that they would not take the class at all (Exhibit 4).

Workshops



Middle schools interested in attending the conference are invited to do so during a set registration period. Once the teacher registers for their school, they can start enrolling students. Participating schools are limited to 50 students. GESTEM participants have the opportunity to take one 50-minute workshop, and during the other two hours, participate in a tour of STEMapalooza. This year, there were thirteen workshops offered in 3 separate time slots. The workshop size was limited to 32 participants. This provided students with the opportunity to select an open time slot to participate in a workshop that aligned with their interest.

The most well popular workshops were “Eggstraordinary Landers”, “Gumdrop Domes and Paper Bridges”, and “Separating Blood to Save Lives”, with “Weather in Bottle” and “Electronics Lab” not far behind. A detailed description of all the workshops can be found in Appendix A. 64% of the girls surveyed where able to attend one of the two workshops they requested. Schools and girls that arrived late had to be switched around from their original requests to accommodate the schedule and workshop room size.

When asked if they would recommend the workshop to their friends, 69% of the students surveyed said they would (Exhibit 5).



Adult Perceptions of GESTEM

The overall perception from the adult surveys was that the GESTEM conference is a positive experience for students, and provides opportunities for students to learn more about STEM careers. 60% of the GESTEM supporters rated the overall event good or better, with 79% of GESTEM supporters stating that they would recommend participating in GESTEM to a friend or colleague. The overall rating for the event declined from past years because of the chaotic nature of STEMapalooza. It was difficult for guides keep the group together and still see exhibits. The quantity of people at STEMapalooza made the experience overwhelming and counterproductive to GESTEMs main goal of encouraging girls in STEM interests

Of the surveys completed, 46% of the volunteers were able to develop a stronger network of professionals in science, technology, and engineering fields thorough their participation in this event. This is the similar to the neutral response received in 2008 and is down from 2009 were a focus was taken to encourage professional development by allowing additional time for volunteers to network before and during the event as well as providing voluntary contact information.

Overall, ratings for the event were very good. A majority of the supporters were agreeable about the pre-event processes, which included the conference notification, registration and check in. Compared to the 2009 conference, there were more workshops, but the schedule continued to allow time for access to the STEMapalooza exhibits. Many of the supporters requested two workshops and less time at STEMapalooza. The STEMapalooza event consisted of 75 booths and displays. Of the surveys, 65% thought the STEMapalooza booths/displays were good or great when you could see them, but found it crowded and chaotic as the day continued.

Survey participants were asked to comment on the greatest barriers to GESTEM participants choosing to take science, math and/or technology classes. The responses

varied however, the top reasons selected were: Peer attitudes/pressure (26%), Girls lack of interest (25%), and cultural/societal attitudes/pressures (21%). See Exhibit 6. Last year, girls' lack of interest, peer attitudes and pressures followed by the cultural and societal attitudes were the top three reasons. The top three barriers continue to remain the same through the years, with the order shifting from year to year

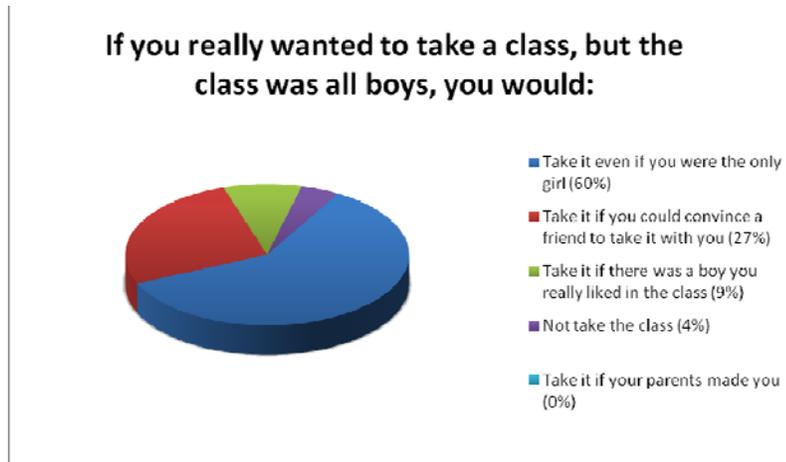


Exhibit 6

Overall, of the adult surveys, nearly 94% would recommend a career in math or science to a girl after attending the GESTEM event.

Recommendations



Student Recommendations

In an effort to continue assisting girls in exploring STEM related fields, GESTEM continues to focus on improving all aspects of the conference. This includes asking student attendees for their recommendations for improving the conference. The survey asked participants what they would do to make the event better for next year's participants. The following suggestions were made by the student attendees:

- More options for workshops
- Opportunity to attend more than one workshop
- Option to stay with their school groups
- More supplies and handouts

- Improved lunches at an earlier time

Many of these suggestions, such as more workshops and more hands-on activities focused on the fewer number of workshops that were available for attendees. The 2008 GESET conference offered 50 workshops for the students to select from. The 2009 conference offered only 9 workshops, with each workshop holding 3 sessions (27 total workshops). For 2010 more workshops were offered, 13 total, in the same three session arrangement. However, only one session was offered for workshops and the remaining time was spent at the STEMapalooza Event. Students requested more workshops, as some of them were unable to attend the workshop they originally requested. The STEMapalooza exhibit offered a variety of booths as well as hands-on activities including a planetarium, chemistry experiments, rocket launching, rocks and minerals activities, and many other activities. Many of the students recommendations pertained directly to STEMapalooza, such as better organization, more space, more access to hands on booths. Some even recommended allowing the GESTEM girls to have exclusive access to STEMapalooza, which was open to the public during the GESTEM event. Collaboration with STEMapalooza in the past has enabled GESTEM to continue because of significant cost savings, but future events will return to offering more workshops with opportunities to attend more than one. GESTEM will focus on offering a variety of workshops with more opportunities to attend for future events.

Students also wanted the option to stay with their school, most likely to be in the company of friends and known peers to share the experience. One of the goals of GESTEM is to teach the girls the basics of networking. By diversifying the groups and grouping students from different schools, girls experience basic networking and meeting new people.

In addition, some students offered recommendations for future workshops, including a forensic science option and more veterinary/medical options. The students offered a lot of great suggestions that will definitely be taken into consideration for future events.

Adult Recommendations

Of the recommendations offered by the adults participating in the GESTEM event, the top three were:

- Offer more workshops
- Improve the organization and speed of the check in process at lunch
- Have smaller groups in the booth/displays at one time (STEMapaalooza was overcrowded)

The 2009 conference offered a much smaller selection of workshops, with each workshop holding 3 sessions, and so 2010 offered more workshops in the same 3 session layout. Instead of variety, the request was for the opportunity to attend more than one workshop, which was consistent with the recommendations of the students. The reason for only one

workshop was to give the girls plenty of time at STEMapalooza. However, many volunteers as well as students found this event no longer worthwhile. It was overcrowded and hard for girls to participate in booth activities. Based on the feedback from both students and volunteers, the GESTEM planning committee will return GESTEM to its original format pre-STEMapalooza with three workshops and no STEMapalooza attendance.

Adult attendees noted the importance of having an organized and quick check in process both at the beginning of the day and for lunch. For schools/chaperones with a high number of student attendees, and especially large schools that arrive late, managing the check in process can be challenging, but this year the registration volunteers were able to accommodate. However, checking the girls back in at lunch did not go well and was chaotic and long. It was suggested that the check-in process be the reverse of the morning, with students gathering around signs for their school. The GESTEM planning committee will look at reorganizing and possibly changing this aspect of the conference.

Conclusions

It is the ongoing mission of GESTEM to introduce middle school girls to science, math, technology and engineering fields. With the goal of increasing the number of women in STEM careers by introducing females to these careers at an early age, it is critical that these early learning opportunities are well developed and structured for all students who attend. The GESTEM conference provides opportunities and resources for life-long learning of STEM, not only for the students, but for the student advocates, such as parents, educators, and STEM professionals. GESTEM continues to focus on creating a collaborative event that allows students, educators, parents and professionals to learn and share information that not only promotes females in the technical fields, but provides guidance and opportunities for young females to pursue education and careers in the STEM fields. This conference will continue to focus on improving the events for future attendees.

Appendix A: Workshop Descriptions

2010 GIRLS EXPLORING SCIENCE, TECHNOLOGY, ENGINEERING and MATHEMATICS

Eggstraordinary Landers fall Mark Bigler and Team Lockheed Martin	Design a system to protect an egg from a 10 foot fall
Satellite Systems Cindy Sarmiento's Team Lockheed Martin	How do we "see" Mars, locate new places on earth and talk to each other by cell phone?
Exobiology: Primitive Life Forms Barbara Sande, Lockheed Martin Steven Sande, Raven Solutions Consulting	What are they? Learn about them and create one
Separating Blood to Save Lives Beth Ebmeier and Team CaridianBCT	Operate a centrifuge to separate "blood" into its components and learn how they are used
Computer Pieces and Parts component Angie Blackwell Junior Achievement	Take apart a computer and find the missing
Math Moves U using Terri Matthews and Team Raytheon	Play "Jeopardy" to explore the unexpected fields using math
Electronics Lab control Fred Gluck Science from CU	Build live circuits to dim lights, beep buzzers and sound with light
Dive Into Athletic Training Darryl Miller and Students Denver Public Schools	Learn about injury prevention, treatment, and rehabilitation; practice protective taping & bracing
Energy Efficiency compact Marcus Giron National Renewable Energy Laboratory	Experience the difference between incandescent, fluorescent and LED lightbulbs

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Animal Crossings wildlife Jessica Myklebust and Team Felsburg holt & Ullevig	Explore solutions to the harm roads can have on and their habitat
Gumdrop Bridges Tandy Dilworth and Team Xcel Energy	Build a gumdrop bridge; test the load it will carry
Water Resources water Christi Young Bureau of Reclamation	Play “Water Trivia” to learn about the world’s supply, the water cycle and various water projects
Weather in a Bottle Sarah Tessororf and Team NCAR	Experiment with making an actual cloud

Appendix B: Student Survey

GESTEM 2010 Student Survey

[Exit this survey](#)

	100%
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Dear Student,

Thank you so much for attending the 2010 GESTEM Event. In order to improve this event for next year's participants, we need to hear about your experience. We value your input and appreciate all the comments you make. Please answer all questions (except those marked "optional") below. Those of you who choose to include your name and e-mail address will be entered in a drawing for a special prize. Thank you again for your participation!!!

1. Name and e-mail address (optional)

2. What is your race/ethnicity? (optional)

White/Caucasian	Latina/Hispanic
Black/African American	Asian/Pacific Islander
American Indian/Alaskan Native	
Other (please specify)	

3. Which school do you currently attend?

4. Please select your current grade level.

6th	7th	8th
-----	-----	-----

5. Which workshop did you attend?

Eggstraordinary Landers	Math Moves U	Gumdrop Bridges
Satellite Systems	Electronics Lab	Water Resources
Exobiology: Primitive Life Forms	Dive Into Athletic Training	Weather in a Bottle
Separating Blood to Save Lives	Energy Efficiency	
Computer Pieces and Parts	Animal Crossings	

6. On a scale of 1-10, would you recommend this workshop to a friend?

1 - No Way	5 - I don't know	9 - Yes!
2 - No	6 - I guess so	10 - Definitely!
3 - Not Really	7 - Sure	
4 - I don't think so	8 - Yes	

7. Was this one of the workshops you originally selected?

No
Yes. Please explain why you chose this one.

8. If your answer to question 6 was no, please tell us what your top two choices were and why you wanted to be in those workshops.

Eggstraordinary Landers	Dive Into Athletic Training
Satellite Systems	Energy Efficiency
Exobiology: Primitive Life Forms	Animal Crossings
Separating Blood to Save Lives	Gumdrop Bridges
Computer Pieces and Parts	Water Resources
Math Moves U	Weather in a Bottle
Electronics Lab	

Please explain.

For questions 9 thru 13, please select the number that best represents your opinion on the statements.

9. Schools offer classes in science, technology, math, and engineering. After attending this event, I see a clear connection between the skills these classes offer and real-life careers.

1 - Strongly Disagree	3 - Neutral	5 - Strongly Agree
2 - Disagree	4 - Agree	

10. I am confident that I would enjoy a career in science, engineering or technology.

1 - Strongly Disagree	3 - Neutral	5 - Strongly Agree
2 - Disagree	4 - Agree	

11. Today I learned what high school classes I should take in order to have the option to enter the fields of science, engineering, and/or technology.

1 - Strongly Disagree	3 - Neutral	5 - Strongly Agree
2 - Disagree	4 - Agree	

12. Being here today makes me want to take more science, technology, math, and engineering classes in high school.

1 - Strongly Disagree	3 - Neutral	5 - Strongly Agree
2 - Disagree	4 - Agree	

13. Being here today inspires me to have a job in science, engineering, math or technology.

1 - Strongly Disagree	3 - Neutral	5 - Strongly Agree
2 - Disagree	4 - Agree	

14. Did you learn about jobs or opportunities at this event that you had never heard of before?

No
Yes. Please tell us what were they.

15. When you think of scientists, engineers, mathematicians, and/or technology experts, what comes to mind?**16. Which career would you like to pursue as an adult?**

Veterinarian	Nurse	Lawyer
Doctor	Actress	Teacher
Engineer	Fashion Designer	I'm not sure
Other (please specify)		

17. Why do you want to pursue that career? (please select the one that most closely applies)

Make Money	Teach or Learn Things	Lots of Men do this
Help People	Spend Time With People	Help Animals
Create and Design Things	Lots of Women do this	
Other (please specify)		

18. Please select one answer to the following question. If you really wanted to take a class, but the class was all boys, you would:

Not take the class	Take it if you could convince a friend to take it with you
Take it if there was a boy you really liked in the class	
Take it if your parents made you	Take it even if you were the only girl

19. Have you attended this event before?

Yes	No
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20. If you could, would you come back to this event again next year?

Yes	No
-----	----

21. How would you make this event better for next year?

22. On a scale of 1-10, would you recommend this event to your friends?

1 - No way	5 - I don't know	9 - Yes!
2 - No	6 - I guess so	10 - Definitely
3 - Not really	7 - Sure	
4 - I don't think so	8 - Yes	

23. Why would you recommend this event to a friend?

Learned about Science, Technology, Engineering and Math Careers	Booth/Displays (STEMapalooza)
Interesting Workshops	Missed School Day

24. Which of the following best describes the Guide assigned to your group? (please select the most applicable option)

Knowledgeable about Science, Technology, Engineering, and Math Careers	Source of inspiration/motivation to take Science, Technology, Engineering, and Math Careers	Fun/Interesting/Cool
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Other (please specify)

25. Do any of your family members work in Science, Engineering, Math or Technology?

No

Yes. Please tell us what they do.

26. We would love to hear any other comments that you may have. Please write them in the space below.

Done

Appendix C: Adult Survey

GESTEM 2010 Volunteer Survey

[Exit this survey](#)

	100%
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Dear GESTEM Supporter,

Thank you for volunteering for today's event! In order to improve this event for next year's participants, we need to hear about your experience. We value and appreciate all of your input. Thank you for taking the time to help us better this event for next year!

1. How would you rate your overall event experience?

1 - Disappointing	3 - Neutral/Good	5 - Great
2 - Not Very Good	4 - Very Good	

Please provide any additional feedback.

2. Which workshop did you attend?

Eggstraordinary Landers	Math Moves U	Gumdrop Bridges
Satellite Systems	Electronics Lab	Water Resources
Exobiology: Primitive Life Forms	Dive Into Athletic Training	Weather in a Bottle
	Energy Efficiency	None
Separating Blood to Save Lives	Animal Crossings	
Computer Pieces and Parts		

3. On a scale of 1-10, would you recommend this workshop to a student/colleague/friend?

1 - No Way!	5 - I don't know	9 - Yes!
2 - No	6 - I guess so	10 - Definitely!
3 - Not really	7 - Sure	N/A
4 - I don't think so	8 - Yes	

Please explain your rating.

4. Were you able to develop a stronger network of professionals in the science, technology, math, and engineering fields through participation in this event?

1 - No Way!	5 - I don't know	9 - Yes!
2 - No	6 - I guess so	10 - Definitely!
3 - Not really	7 - Sure	
4 - I don't think so	8 - Yes	

5. Please rate the following Pre-Event activities:

1 - Strongly Disagree 2 - Disagree 3 - Neutral 4 - Agree 5 - Strongly Agree

a) I knew about the event in plenty of time.

b) Registering for the event was simple

c) Check-in was a fast process

Additional Comments

6. Please rate the following Event activities:

1 - Poor 2 - Below Average 3 - Average 4 - Above Average 5 - Excellent

a) the length of the workshops

b) the content of the workshops

c) the presenter's interaction with the girls

- d) the number of girls in each workshop
- e) the quality of the activities
- f) the helpfulness of the organizers and volunteers
- g) the overall number of girls at the event
- h) the overall number of workshops

Additional Comments:

7. If you were planning this event for next year, what improvements would you make?

8. What have you heard girls say are their greatest barriers to choosing to take science, math, engineering, and/or technology classes?

9. What do you believe is the greatest barrier to girls choosing to take science, math, engineering, and/or technology classes?

Peer attitudes/pressures
Parent attitudes/pressures
Girls' lack of interest
Cultural/societal attitudes/pressures
Media portrayal of women or lack of women in these areas
Other (please specify)

10. What was your position at the event today?

Parent-chaperone	School Counselor-chaperone	Non-presenter, industry volunteer
Teacher-chaperone	Workshop Presenter	
		Guide-volunteer
Other (please specify)		
<input type="text"/>		

11. GESTEM tries to encourage girls to keep their future career options open by taking high school classes in science, math, engineering, and technology. Please rate the importance of the following aspects in regard to helping this event reach this goal.

1 - Extremely Unimportant 2 - Unimportant 3 - Helpful 4 - Important 5 - Extremely Important

- a) Learning about new things
- b) Learning about new career opportunities
- c) Engaging in hands-on activities
- d) Being with friends
- e) Choosing workshops
- f) Learning what high school courses girls should take
- g) Interacting with a network of professionals in the areas of science, technology, engineering, and mathematics

12. Have you attended this event before?

Yes	No
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13. On a scale of 1-10, how likely are you to recommend participating in GESTEM to a friend or colleague?

1 - No Way!	5 - I don't know	9 - Yes!
2 - No	6 - I guess so	10 - Definitely

3 - Not Really

7 - Sure

4 - I don't think so

8 - Yes

Please explain your rating.

14. On a scale of 1-5, after the GESTEM event, how likely are you to recommend a career in science, technology, engineering, and math to a girl?

1 - Extremely Unlikely

3 - Neutral

5 - Extremely Likely

2 - Unlikely

4 - Likely

15. On a scale of 1-5, what did you think of the STEMpalooza booths/displays?

1 - Terrible

3 - Neutral

5 - Great

2 - Poor

4 - Good

How could they be improved?

16. What is your gender?

Female

Male

17. What is your school or company affiliation?

18. If you would like to volunteer next year, please provide us with your contact information:

Name:

Email Address:

Organization:

19. We would love it hear any additional comments that you may have. Please provide those below.

Done