

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

October 16, 2009

Hosted by:

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

FINAL REPORT

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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 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade girls the opportunity to explore science, engineering and technology, through the guidance of professional role models in these fields. This year, GESTEM collaborated with the STEMpalooza event where 689 middle school girls came for the hands-on GESTEM workshops and then attended the STEMpalooza event to view hundreds of 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 2009 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.<sup>1</sup>
- 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.

In connection with the objectives above, the GESTEM event was successful. Confirmed registrations totaled **689** students, filling nearly all available spaces for attendees. GESTEM connected **29** public schools with **15** workshop presenters, **150** volunteer guides, and **18** committee participants all focusing on informing and inspiring girls to explore STEM options.

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<sup>1</sup> The GESTEM Conference is open primarily to 6<sup>th</sup> and 7<sup>th</sup> graders. Eight grade students have attended this conference as well, however the numbers for the 8<sup>th</sup> grade attendees are much lower.

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The 2009 keynote speaker for GESTEM was Camsie Matis, a Fellow at the National Science Foundation in the Directorate for Computer & Information Science & Engineering. Ms. Matis taught science and math in inner city schools in California and New York and was very effective in connecting with the girls discussing her experiences growing up without texting and Facebook. She concluded her speech with a challenge to the girls to go out and develop the next new technology.

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

Merrick

Northrop Grumman

Tim and Libby Brown

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 Camsie Matis, the Keynote Speaker.

Thanks to the STEMapalooza committee, exhibitors, and sponsors for their significant role in the 2009 GESTEM event.

Thanks also to the Colorado Convention Center and the Denver Center of Performing Arts, Centerplate Catering and Elite Expo for providing the GESTEM Conference with a venue, food and audio and visual equipment.

Congratulations to SWE-Rocky Mountain, Region i for their feature of the GESTEM Conference in SWE National Magazine as a key Region activity.

## ***Major Findings***

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

- 92% of students were either in 6<sup>th</sup> or 7<sup>th</sup> grade
- 63% 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
- 52% of students agreed that they were confident they would enjoy a career in science, engineering or technology
- 49% of students said they learned what high school classes they should take at the GESTEM event in order to have the option to enter the fields of science, engineering and/or technology
- 59% of students said being at the GESTEM conference made them want to take more science, technology, math and engineering classes in high school
- 49% of students said being at GESTEM inspired them to have a job in science, engineering or technology
- 84% of students said they would come back to this event next year

## ***Background and Methodology***

The 2009 GESTEM event was the 7<sup>th</sup> 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 689 middle school girls selected one of 9 different hands-on GESTEM workshops and then attended the STEMpalooza event to view hundreds of booths showcasing engineering, science, and technology for both boys and girls. GESTEM girls were assigned to volunteers/industry guides in groups no larger than 7 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 programming LEGO Mindstorm Robots as well as building solar cars, 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

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parts where the girls take apart computers, learn about the components, and identify a missing part. Wildlife tracking and analyzing land capacity and designing effective animal crossings for new road construction were topics for other workshops. Additional details on the workshops and participants is provided below.

STEMapalooza was a two-day event that featured over 100 exhibitors from around Colorado that support STEM programs and employ many individuals in STEM careers. It was filled with exciting hands-on activities including a planetarium, a very realistic birthing demonstration, 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, Camsie Matis, encouraged the girls with a presentation called “Why Create a MYSPACE page, When You Can Create the Next MYSPACE?” Ms. Matis is originally from Colorado and is currently serving as an Albert Einstein Distinguished Educator Fellow. In her presentation to the girls she discussed the changes in technology from twenty years ago, to what technology is being used today. She challenged the girls to imagine life without laptops and PCs, GPS, and most importantly, cell phones. Ms. Matis also pointed out to the girls that large companies such as Google, Xerox, and Hewlett Packard, all have women in leadership roles as CEO, CFO, and Vice President. She encouraged the girls to see themselves in those leadership roles in the next ten or twenty years, and she even suggested they use their technology to invite their friends that could not attend the workshops to also seek a career in STEM.

Student and adult surveys were administered by the GESTEM committee and Junior Achievement - Rocky Mountain Inc. 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.

184 students completed in full a two-page survey. Similar to the 2008 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.

25 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 6<sup>th</sup> and 7<sup>th</sup> grade who are interested in math, science, engineering and technology to participate in the GESTEM conference, which is free for all participants. A small percentage of 8<sup>th</sup> grade students also attended.

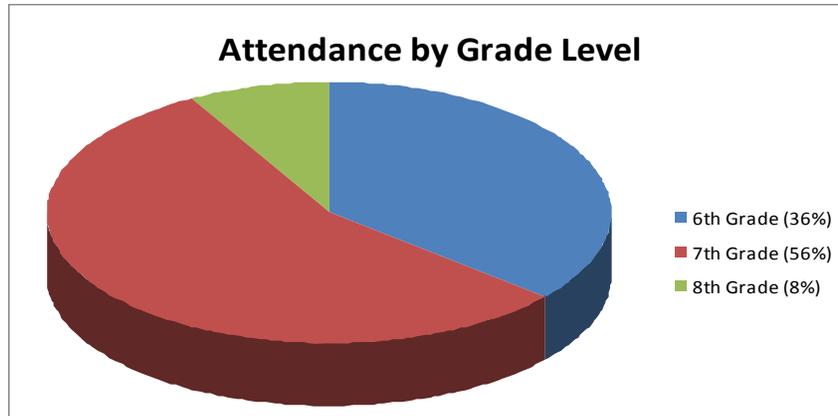


Exhibit 1

There is a specific focus on 6<sup>th</sup> and 7<sup>th</sup> 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 2009 conference attracted girls from 29 different schools.

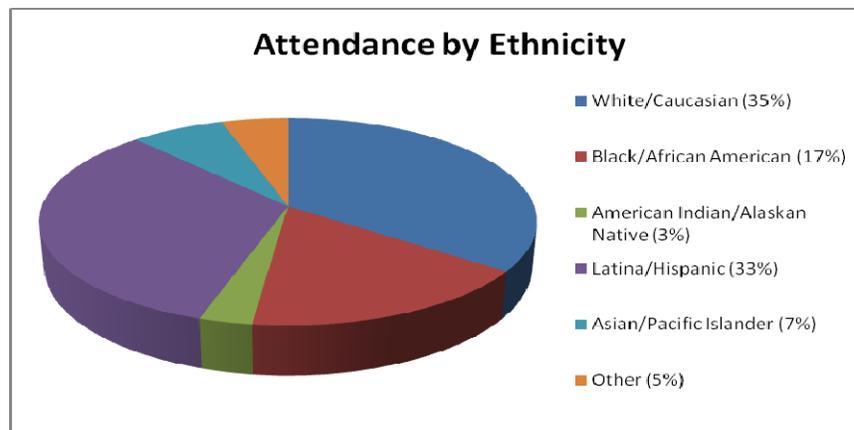


Exhibit 2

Student participants varied in race and ethnicity (See Exhibit 2). This year, 65% of the student attendees were from minority/non-white backgrounds, up from 53% in 2008. Nearly 50% of the minority attendees were from Latina/Hispanic backgrounds.

## *Outcomes*

The major objectives of GESTEM were to:

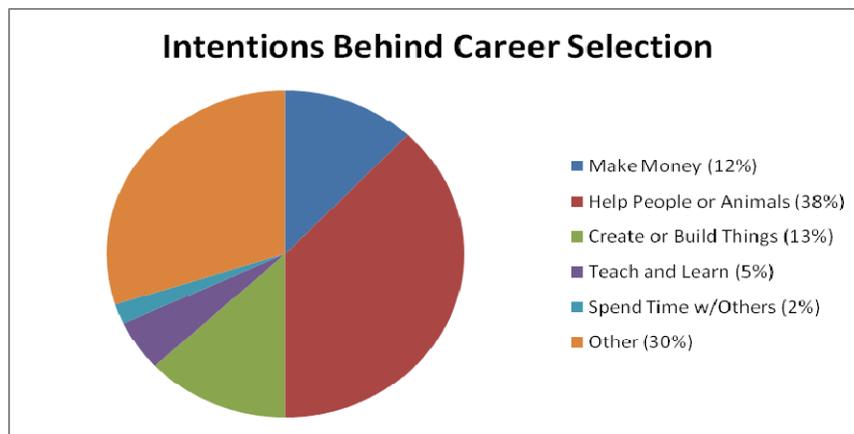
- Introduce female 6<sup>th</sup> and 7<sup>th</sup> grade students to real world aspects of math, science, engineering and technology and to the many diverse fields available
- Help students see a clear connection between the skills that science, technology, engineering and math (STEM) classes offer 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, 63% of students either agreed that after attending this event, they saw a clear connection between the skills that these classes offered in science, technology, math and engineering, and real-life careers. This is comparable to the 65% of students at the 2008 conference. More than half of the students (59%) 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, however 49% 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 higher than last year's (44.5.9%), and 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 STEMapalooza exhibits allowed further opportunity for discussion of classes and careers.

When inspiring students to pursue STEM related careers, 49% of student participants agreed that being at the conference did inspire them to pursue a career in science, technology or engineering. This is up from last year's 42.5%, which again may be a reflection of increased STEM marketing as well as the new format for the GESTEM event.

When asked if a career in science, engineering, or technology would be enjoyable, 52% of students responding believed they would enjoy a career in science, engineering or technology. Intentions behind career selections of the attendees showed 38% of girls selecting careers that help people or animals, and 30% having other reasons, not stated. Interestingly, only 13% 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, 50% 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. Additional results are as shown in Exhibit 3.



*Exhibit 3*

Results from the survey showed that 84% of students would like to attend this event again. It appears that a strong majority of the students enjoyed their experience. This shows that GESTEM participants continue to enjoy the conference.

### *Perceptions, Attitudes and Opinions:*

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 50% of students were encouraged by the conference and the workshops, and were inspired to become more involved in STEM related studies and fields. Considered to be one of the leading factors that deter girls from taking STEM courses in school is their insecurity of being the only female in the class. 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 large a deterrent as some have previously thought. More than half the participants,

56%, said they would take a class even if they were the only girl in the class. Another 31% 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 6% stating that they would not take the class at all (see Exhibit 4).

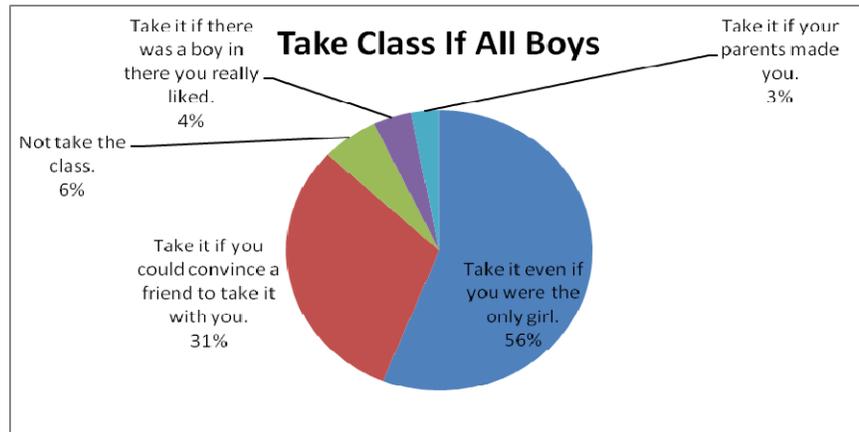
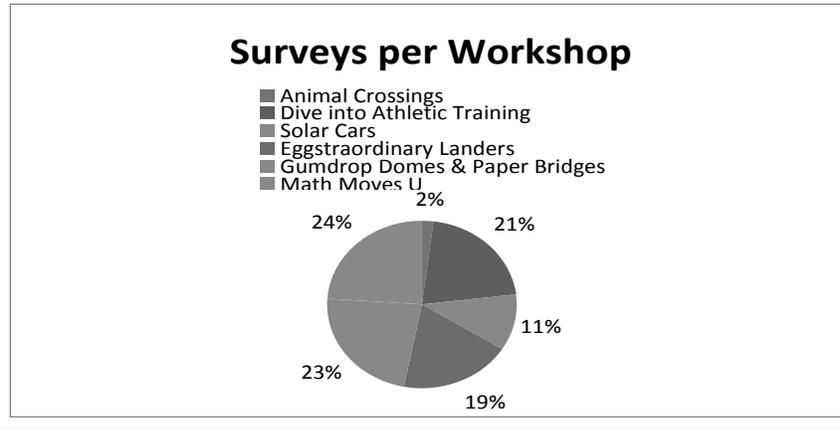


Exhibit 4

## Workshops

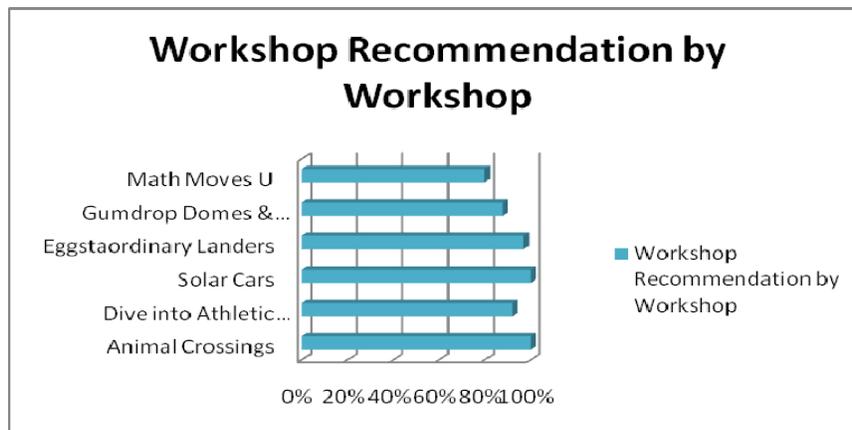
Middle schools interested in attending the conference are invited to do so during a set registration period. Once the teacher registers for their school, they can start enrolling students. Participating schools are limited to 50 students. GESTEM participants have the opportunity to take one 55-minute workshop, and during the other two hours, participate in a tour of STEMapalooza, as well as participate in the offered mini sessions during the conference. This year, there were nine workshops offered, with each workshop offered 3 different times. The workshop size was limited to 28 participants. This provided students with the opportunity to select an open time slot to participate in a workshop that aligned with their interest.

Surveys were presented for six of the nine workshops. Animal Crossings workshop had the least number of surveys, with only 2%, where "Gumdrop Domes and Paper Bridges", "Math Moves U", "Dive into Athletic Training", and "Eggstraordinary Landers" had an average of 22% of surveys completed. "Solar Cars" had an 11% survey completion rate. Workshops that received no survey data included: "Computer Pieces and Parts", "Lego Robots", and "Separating Blood to Save Lives". Exhibit 5 shows the results.



*Exhibit 5*

When asked which workshops they would recommend to their friends, student survey results were as follows (Exhibit 6).



*Exhibit 6*

On the average, 90% of students would recommend these workshops to a friend.

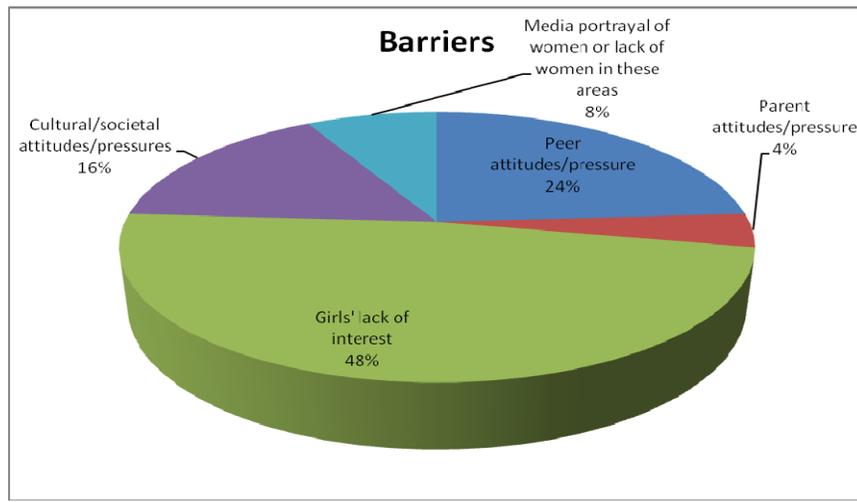
### *Adult Perceptions of GESTEM*

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. 100% of the GESTEM supporters rated the overall event good or better, with 92% of GESTEM supporters stating that they would recommend participating in GESTEM to a friend or colleague. The remaining 8% all attended one workshop that was not received well. Of the surveys completed, 72% were able to develop a stronger network of professionals in science, technology, and engineering

fields through their participation in this event. This is up from a neutral response in 2008 and was a focus in 2009 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. There were a few supporters (approximately 20%) who felt that the workshops were too short, and were too few. The allotted time for the workshops in 2009 was 55-minutes compared to workshops ranging from 45-70 minutes in 2008. Compared to the 2008 conference, there were fewer workshops, but there was access to the STEMapalooza exhibits. The STEMapalooza event consisted of 100 booths and displays. Of the surveys, 60% thought the STEMapalooza booths/displays were good or great.

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: Girls lack of interest (48%), peer attitudes/pressure (24%), cultural/societal attitudes/pressures (16%). Last year, cultural and societal attitudes, peer attitudes and pressures followed by the girls' lack of interest were the top three reasons. (Exhibit 7)



*Exhibit 7*

Overall, of the adult surveys, 76% 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
- More hands/on activities and games
- Option to stay with their school groups
- More supplies and handouts
- More information to aid in advance preparation

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 9 workshops, with each workshop holding 3 sessions (27 total workshops). Students requested more variety and options for workshops, as they only had the opportunity to attend just one, with the remaining time spent at the STEMapalooza Event. The STEMapalooza Event offered a variety of booths as well as hands-on activities including a planetarium, birthing demonstration, chemistry experiments, rocket launching, rocks and minerals activities, and many other activities. GESTEM offered fewer workshops due to collaborating with the STEMapalooza Event. However, the collaboration with STEMapalooza enabled GESTEM to continue because of significant cost savings. GESTEM will consider including more workshops for students to select next year.

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.

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The recommendation for more information to aid in advance preparation suggests that students found the workshops and activities challenging. During the 2008 conference, student attendees found some of the material presented to be either “too difficult” or “boring”. A recommendation from the 2008 conference was to review the workshop curriculum before it was presented at the event to alleviate some of these issues. Efforts in this area will be continued in order to provide future students with the opportunity to be more prepared for the workshops.

### *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
- Have smaller groups in the booth/displays at one time (STEMapaalooza was crowded)

The 2008 conference offered a larger selection and variety of workshops for the attendees to participate in. The 2009 conference offered 9 workshops, with each workshop holding 3 sessions. This comment was consistent with the recommendations of the students. Due to the fewer workshops offered, many sessions had a cap on the number of participants in a workshop. This may have impacted student interest, as well as their ability to visibly see, hear and focus on the workshop lecture and activity. A future action would be to increase the number of workshops, thereby decreasing the number of students per workshop.

Adult attendees noted the importance of having an organized and quick check in process. 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. With the 2009 conference format, many late arrivals required last minute changes to workshops, but ultimately were placed in a later workshop with less time spent at STEMapaalooza. In very few cases, it cut into the time spent for the students experience in the workshops. Future planning will need to address these issues by adjusting the schedule, placing larger schools in later workshops only, or other methods.

It is also noted that the survey distribution was not as thorough as in years past and additional focus needs to be given to the workshop presenters to ensure that surveys are distributed, completed, and filled out so the planning committee can adequately analyze and address conference pros and cons.

### ***Conclusions***

## Girls Exploring Science, Engineering & Technology Event 2009 Final Report

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**

**GIRLS EXPLORING SCIENCE, ENGINEERING & TECHNOLOGY  
October 16, 2009**

**WORKSHOP DESCRIPTIONS**

**Animal Crossings**

Description: Design effective animal crossing for new road construction.  
Presenter: Kat Duitsman, Laura Hass, Jessica Myklebust,  
Organization: Felsburg, Holt & Ullevig

**Computer Pieces and Parts**

Description: Girls take apart scrapped computers to learn about the hardware components that make a PC work and determine which one is missing.  
Presenter: Angie Blackwell  
Organization: Junior Achievement

**Dive Into Athletic Training**

Description: Students practice evaluating injuries, take turns taping and bracing each other, and learn about injury prevention, treatment and rehabilitation.  
Presenter: Darryl Miller  
Organization: Denver Public Schools / CEC Middle College

**Eggstraordinary Landers**

Description: Students design, build and test a system to protect an egg from a 10 foot fall using simple materials such as cardboard, tape and cotton. Landing craft are tested for egg survival rates.  
Presenter: Mark Bigler  
Organization: Lockheed Martin

**Gumdrop Domes & Paper Bridges**

Description: In this two-part workshop, students build a dome structure using only gumdrops and toothpicks. Part two involves learning about bridges and building one from everyday materials.  
Presenter: Deb Lasich  
Organization: Colorado School of Mines

**Lego Robots**

Description: Girls learn how to modify and program a robot to obey their every command by working with Lego Mindstorm robots. They create a program, download it to the robot and test their work.  
Presenter: Stacey Fornstrom  
Organization: Thomas Jefferson High School-Denver Public Schools

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## **Math Moves U**

Description: Math games and fun activities  
Presenter: Terri Matthews  
Organization: Raytheon

## **Separating Blood to Save Lives**

Description: Students learn about the science of blood separation and have an opportunity to practice with a non-blood solution.  
  
Presenter: Beth Ebmeier  
Organization: CaridianBCT

## **Solar Cars**

Description: Students construct their own electric cars powered by solar cells.  
Presenter: Marcus Giron  
Organization: National Renewable Energy Laboratory

## Appendix B: Student Survey

### 2009 Girls Exploring Science, Technology, Engineering, & Math Event

Dear Student,

Thank you so much for being here today! In order to improve this event for next year's participants we need to hear about your experience in this fall's "Girls Exploring Science, Technology, Engineering & Math" event. We value your input and appreciate all the comments you make. When you are done please turn this into your group leader!!

1. (a) What workshop did you attend?

.....

(b) Would you recommend this workshop to a friend?

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

Please circle the number below that best represents your opinion on the following statements:

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

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

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

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

4. Did you learn about jobs or opportunities at this event that you had never heard of before? If yes, what were they?

.....

5. When you think of scientists, engineers, mathematicians and/or technology experts, what comes to mind?

.....

6. What do you want to do when you grow up? (Please mark an X to indicate your choice)

|              |  |  |          |  |  |                  |  |
|--------------|--|--|----------|--|--|------------------|--|
| Veterinarian |  |  | Engineer |  |  | Fashion Designer |  |
| Doctor       |  |  | Nurse    |  |  | Lawyer           |  |
| I don't know |  |  | Actress  |  |  | Teacher          |  |
| OTHER        |  |  |          |  |  |                  |  |

7. Why do you want to do that? (please select the one that applies the most)

- Make Money
- Help People
- Create and Design things
- Teach or Learn things
- Spend time with people
- Lots of women do this
- Lots of men do this
- Help Animals
- Other

8. 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                      2                      3                      4                      5  
 Strongly Disagree                  Disagree                  Neutral                  Agree                  Strongly Agree

Don't forget the back! 



## Appendix C: Adult Survey

### 2009 Girls Exploring Science, Technology, Engineering, & Math Event

Dear GESTEM Supporter,

**Thank you** so much for being here today! In order to improve this event for next year's participants we need to hear about your experience in this fall's "Girls Exploring Science, Technology, Engineering & Math" event. We value your input and appreciate all the comments you make. When you are done please turn this in along with the student's surveys. Thank you!

Please circle the number below that best represents your opinion on the following statements:

1.(a) **How would you rate the overall event experience?**

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

(b) **What workshop did you attend?**

.....

(c) **Would you recommend this workshop to a student/colleague/friend?**

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

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

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

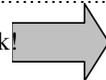
| 3. PRE-EVENT                                 | Strongly Disagree |   | Neutral |   | Strongly Agree |
|--|-------------------|---|---------|---|----------------|
|  | 1                 | 2 | 3       | 4 | 5              |
| a) I knew about the event in plenty of time. | 1                 | 2 | 3       | 4 | 5              |
| b) Registering for the event was simple.     | 1                 | 2 | 3       | 4 | 5              |
| c) Check-in was a fast process.              | 1                 | 2 | 3       | 4 | 5              |
| Additional Comments:                         |                   |   |         |   |                |

| 4. EVENT: How would you rate...                      | <i>(Please circle your choice)</i> |         |               |     |
|--|------------------------------------|---------|---------------|-----|
| a) the length of the workshops?                      | Too Short                          | Good    | Too Long      | N/A |
| b) the content of the workshops?                     | Too Simple                         | Good    | Too Difficult | N/A |
| c) the presenters' interaction with the girls?       | Poor                               | Good    | Outstanding   | N/A |
| d) the number of girls in each workshop?             | Too Many                           | Good    | Too few       | N/A |
| e) quality of activities?                            | Poor                               | Good    | Outstanding   | N/A |
| f) the helpfulness of the organizers and volunteers? | Not Helpful at all                 | Helpful | Very Helpful  | N/A |
| g) the overall number of girls at the event?         | Too Few                            | Good    | Too Many      | N/A |
| h) the overall number of workshops?                  | Too Few                            | Good    | Too Many      | N/A |
| Additional Comments:                                 |                                    |         |               |     |

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

.....

Don't forget the back!



# Girls Exploring Science, Engineering & Technology Event 2009 Final Report

5. What do you hear girls saying are their greatest barriers to choosing to take science, math and/or technology classes?  
 .....

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

- |  |   |
|--|---|
| <input type="checkbox"/> Peer attitudes/pressure   | <input type="checkbox"/> Cultural/societal attitudes/pressures                    |
| <input type="checkbox"/> Parent attitudes/pressure | <input type="checkbox"/> Media portrayal of women or lack of women in these areas |
| <input type="checkbox"/> Girls' lack of interest   | <input type="checkbox"/> Other _____  |

7. What is your position here at the conference?

- |   |   |
|---|---|
| <input type="checkbox"/> parent-chaperone           | <input type="checkbox"/> workshop presenter               |
| <input type="checkbox"/> teacher-chaperone          | <input type="checkbox"/> non-presenter industry volunteer |
| <input type="checkbox"/> school counselor-chaperone | <input type="checkbox"/> guide-volunteer                  |
| <input type="checkbox"/> other _____                |   |

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

|  | Not at All Important |   | Neutral |   | Very Important |
|--|----------------------|---|---------|---|----------------|
| a) Learning about new things   | 1                    | 2 | 3       | 4 | 5              |
| b) Learning about new career opportunities   | 1                    | 2 | 3       | 4 | 5              |
| c) Engaging in hands-on activities   | 1                    | 2 | 3       | 4 | 5              |
| d) Being with friends  | 1                    | 2 | 3       | 4 | 5              |
| e) Choosing workshops  | 1                    | 2 | 3       | 4 | 5              |
| f) Learning what high school courses girls should take   | 1                    | 2 | 3       | 4 | 5              |
| g) Interacting with a network of professionals in the areas of science, technology, engineering and mathematics. | 1                    | 2 | 3       | 4 | 5              |

9. Have you attended this event before?     Yes         No

10. How likely would you be to recommend participating in GSTEM to a friend or colleague?

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

11. After the GSTEM event, would you recommend a career in math or science to a girl?

- |                    |          |         |        |                  |
|--------------------|----------|---------|--------|------------------|
| Extremely Unlikely | Unlikely | Neutral | Likely | Extremely Likely |
| 1                  | 2        | 3       | 4      | 5                |

12. What do you think of the STEMpalooza booths/displays?

- |          |      |         |      |       |
|----------|------|---------|------|-------|
| 1        | 2    | 3       | 4    | 5     |
| Terrible | Poor | Neutral | Good | Great |

13. What is your gender?         Female         Male

14. What school or company are you affiliated with? (Optional) \_\_\_\_\_

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

|                |               |
|----------------|---------------|
| Name:          | Organization: |
| Email Address: |               |