Rogers State University STEM Survey

The purposes of this survey are to discern the historical perspective of the Oklahoma higher education system's involvement in science, technology, engineering and mathematics (STEM) specific education of the youth in our communities through targeted STEM events and to numerically tabulate its impact

Please complete this survey and be as descriptive as possible to assure the accuracy of the data. The expected audience of this report is legislators and other community, city, and state leaders. Thank you for taking the time and effort to complete this survey and for assisting with compilation of the first Oklahoma higher education STEM report.

1. What considerations does your institution take when selecting the target audience for your STEM events? Select the best answer
   a. our events are limited to a certain number of applicants from across the state
   b. our events are typically open to anyone that registers
   c. our events are invitation only, usually determined by what school they attend
   d. our events are invitation only and limited to a certain number of participants
   e. **other (please explain)**
      i. **Both a. and b. – some events are targeted towards a specific audience, and other events are open to the public.**

2. What age group does your institution typically have at the STEM events? Select all that apply.
   a. **elementary students**
   b. **middle school students**
   c. **high school students**
   d. teachers/Faculty

3. What is the average number of STEM events per year? **4**

4. What is the average number of STEM participants per year? **300**

5. Approximately how much of an event is hands-on versus a lecture-based environment? **98%**

6. How is the event marketed? Select all that apply.
   a. **teachers from local schools**
   b. **social media**
   c. **local news**
   d. **community groups**
   e. **institution's website**
   f. professional STEM association
   g. **other (please explain)**
      i. **faculty and staff**

7. What is the average annual approximate cost of STEM events? **$0**
   (Include in-kind cost separately)
   Aerogames and similar events are primarily funded by Google and others.

8. How are these events funded? Select all that apply.
   a. **institution's funds**
   b. **In-kind services**
   c. **private donations or funders**
   d. government grants
   e. other (please explain)

9. What activities take place during these events? Select all that apply.
   a. **robotics**
   b. **aerospace technology**
   c. engineering with Legos
   d. science presentation competitions
   e. **bioscience**
   f. **tech and/or coding**
   g. **field trips**
   h. **list all others if applicable:**
      i. **Aerogames**

10. If prizes are awarded, what types of prizes are given to participants? Select all that apply
    a. cash prize
    b. plaques
    c. **medals**
    d. ribbons
    e. no prize
    f. other (please explain)
       i. **Trophies for the science fairs, medals for the AeroGames**

11. How does your institution encourage participants to continue their STEM learning after they participate in your STEM programs? Select all that apply.
    a. **help participants apply for school STEM programs**
    b. **tell participants how to apply for STEM jobs**
    c. **promote future STEM events and camps**
    d. **organize future STEM events and camps**
    e. promote STEM societies and clubs
    f. use badging and other learning measurement tools to enable students to see their progress in achieving STEM mastery
    g. nothing
    h. other (please explain)

12. What limits the number of participants who can attend these events? Select all that apply.
    a. **the number of facualty willing to volunteer**
    b. **the number of participants interested**
    c. **the budget**
    d. **limited capacity for field trips or indoor activities**
    e. we want more one-on-one time with participants
    f. other (please explain)
13. How does your institution realize the impact the STEM events are making? Select all that apply,
    a. surveys
    b. **exit interviews with participants**
    c. a group reflection at the end of the event
    d. **list all others not listed above:**
        i. **Discussions with facilitators**

14. Please take the time and share a story with us about a moment you felt you made an impact on a student's life at a STEM event. Be as descriptve as possible. 100-300 (Please include the date of the event, name of the event, the subject matter they were inspired by, and so on)

    During the AeroGames (Fall 2015) while competing in STEM competitions, our Department Head for Science and Mathematics heard many students making statements such as: "Science is sooooo much fun!"; "I want to be just like Tracy Drain" (JPL Flight Systems Engineer); "I didn't used to like math, but now I love math since it helps me to do the fun stuff – SCIENCE!"

15. What do you think should be done to improve our state's STEM initiatives? 100-300 words.

    The STEM initiative needs to be started in the Elementary schools. It is at this level that one can engage students without them having a previous prejudice against the math and sciences. If their math skills are poor by the time they reach middle/jr.

high school, they already "hate" the math and sciences and are not able to get caught up to the level they need without intervention. In addition, elementary school teachers need to have help in presenting the math and science information to their students. RSU's Science and Mathematics administrator has actually heard elementary teachers make the statement: "I know that you hate math and I don't blame you." But, unfortunately we HAVE to do math now." This sets an incredibly negative bias towards math in the minds of young children.