

# Educational Engagement Activity Report

Please complete and submit this form each time you host an educational engagement event.  
(Return within 2 weeks of the event end date)

School/Organization name: Tarleton State University

Date(s) of event: 12/14/2017

Location of event: Bill R. Johnson CTE Center, 1033 McCart Ave, Crowley TX, 76036

## Instructions for participant count

*Education/Direct Interactions: A count of participants in instructional, hands-on activities where participants engage in learning a STEM topic by actively participating in an activity. This includes instructor-led facilitation around an activity regardless of media (e.g. DLN, face-to-face, downlink.etc.). Example: Students learn about Newton's Laws through building and flying a rocket. **This type of interaction will count towards your requirement for the project.***

*Education/Indirect Interactions: A count of participants engaged in learning a STEM topic through instructor-led facilitation or presentation. Example: Students learn about Newton's Laws through a PowerPoint presentation.*

*Outreach/Direct Interaction: A count of participants who do not necessarily learn a STEM topic, but are able to get a hands-on look at STEM hardware. For example, team does a presentation to students about their Student Launch project, brings their rocket and components to the event, and flies a rocket at the end of the presentation.*

*Outreach/Indirect Interaction: A count of participants that interact with the team. For example: The team sets up a display at the local museum during Science Night. Students come by and talk to the team about their project.*

Grade level and number of participants: (If you are able to break down the participants into grade levels: PreK-4, 5-9, 10-12, and 12+, this will be helpful.)

Participant's Grade Level	Education		Outreach	
	Direct Interactions	Indirect Interactions	Direct Interactions	Indirect Interactions
K-4				
5-9				
10-12			200	
12+				
Educators (5-9)				
Educators (other)				

Are the participants with a special group/organization (i.e. Girl Scouts, 4-H, school)?  Y  N

If yes, what group/organization?

The Bill R. Johnson CTE Center provides unique career and technology education opportunities for high school students. Students have the opportunity to enroll in engineering and computer programming courses and work with electronic hardware such as microcontrollers and servos to control robotics.

### **Briefly describe your activities with this group:**

Launch vehicle hardware from previous NASA USLI competitions were brought to the school for students to handle. Two booster sections, an avionics bay, a mid-section, and a nose cone were show-cased. The rover for the current NASA USLI was demonstrated and the payload concept for the competition was explained. The physics, engineering, and programming concepts for the NASA USLI competition were discussed while the current launch vehicle and payload task requirements were displayed on a projector. The team also played some rocket launch videos from previous NASA USLI competitions.

The team discussed the design life-cycle and how design concepts are developed within a team environment. The original design concepts were displayed and a discussion took place on why the team came to the conclusion of the current payload design. The team discussed the tools utilized to develop design concepts such as CAD software, laser engravers, CNC routers, and 3D-printers. The team also discussed using the RockSim simulation software to model the launch vehicle.

### **Did you conduct an evaluation? If so, what were the results?**

An evaluation form link was emailed to the Crowley ISD faculty to forward to the high school student that participated in the educational outreach. As one 40 minute class period is allotted for the engagement activity the team does as much as they can.

The results were very positive as the students learned more about the programs available within the state university system.

### **Describe the comprehensive feedback received.**

Questions:

1. Were you previously aware of the NASA USLI competition?
2. Were you previously aware of Tarleton State University participating in design-engineering competitions?
3. Have you read the internship requirements for an engineering or programming company?
4. Do you think that participating in a design-engineering competition would make you more competitive in a job interview?
5. In what way was the Tarleton State University presentation informative?

Feedback:

Most of the students were not previously aware of the competition but were aware of competitions such as the robot wars.

Most of the students were not aware of TSU's participation in these competitions.

Some students had looked into internship opportunities at NASA.

It does not seem like the high school students have considered much in regards to job interviews at this point.

The TSU presentation made the students more aware of different opportunities available within the university systems.