**Public Outreach**

* 1. **Central Ohio STEM Expo – Region 3**

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| **1. Date** | February 29, 2020 (7th Annual / Typically held the Saturday of E-Week) |  |
| **2. Region** | Region 3 |  |
| **3. Project Contact** |  |
| Name | Jordan Gort, P.E.Patrick Karnes, P.E. |
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| **4. Project Category** | Public Outreach |
| **5. Project Description** | Central Ohio STEM Expo - Companies and interested partners in the central Ohio area were solicited to develop and present STEM- related activities during the expo to students in kindergarten through eighth grade. Participating organizations (activity sponsors) have included representatives from the tech industry, engineering consulting firms, professional societies, manufacturers, educational programs, and university departments. ASCE coordinated the exhibits by companies the day of the event. Primary goal was to expose students to the STEM related fields and hopefully spark an interest in the fields. Event was free to attend for students and parents. |
| **6. The Process**(What you did, When and How) | First task was securing the space for the event. We have hosted past events at a variety of venues and have found that school gyms are the preferred event space due to the large open space, accessibility and parking. We have also hosted at a variety of high schools and locations throughout the Columbus area to appeal to different communities. We have had success hosting at Worthington School District in the past and decided on Worthington Kilbourne High School for the 2020 event. We typically try to have the venue secured three to four months prior to the expo. Next, we reach out to potential activity exhibitors and determine if they are interested in hosting an activity at the Expo. This is typically done about three months prior to the expo. We gauge interest in our first round of emails, and follow-up closer to the event to finalize activity type, space requirements needed and fine-tuned details for each Exhibitor. Many organizations have enjoyed volunteering and have returned year after year, allowing us to have an established pool of potential exhibitors to reach out to each year. Engineering consulting firms may see this as a public relations opportunity, and are encouraged to bring marketing backdrops (which often feature exciting engineering projects). For-profit educational programs like to use the event as a marketing opportunity. Other organizations may be fulfilling an educational outreach requirement.We also solicit monetary donations from corporate sponsors to keep the event free for the students. We developed sponsorship tiers and set goals for the amount of money we need to offset costs. The Expo Cost is primarily based on venue costs, supplies, and goody bags for the kids. This is also started about three months prior to the expo. Costs for this year’s Expo were primarily offset by Facebook’s STEM Outreach Sponsorship, with enough funds to carry forward and help with a base fund for future events. Alternatively, past years have been partially funded by various grants that we have applied for such as the ASCE State Public Affairs Grant for the 1st and 2nd Expo, and the “Dream Big” Grant for the 4th Expo. Next we reach out to potential student attendees. This is done through various forms of advertisement. In recent years, we have found that running a Facebook advertisement and Event has been a successful way of getting the word out to a variety of parents in the area. We also distribute a flyer to school principals across Columbus which is then (hopefully) distributed by the school. We encourage the principals to pass along the information to the science and math teachers, who can then distribute the information to parents. We update our list of school principals on an annual basis to ensure that we are sending information to the appropriate contacts. Finally, we distribute a flyer to past attendees who have registered with an email address. Flyer distribution is typically done about two months prior to the expo. Facebook advertising starts two months before the event, and continues up until a few weeks out from the event, or until our registration numbers reach a certain threshold for the space limit, whichever comes first.For attendee registration, we have developed a registration form through the Google Forms platform. This automates the registration process. Registration is not necessary, but helps us track numbers and plan for goodie bags.In the last two months it is primarily coordinating activity exhibitors, attendees, and volunteers. Event space setup and goodie bag preparation is the night before the expo.Our expo is typically 9 AM to 1 PM on Saturday, with Exhibitor set-up and tear down occurring approximately and hour before and after the event. |
| **7. Those in Charge** (Committee, Task Committee, Etc.) | There is a committee chair which is typically someone who has been involved previously. We have also established a co-chair position so that when the chair is ready to move on there is someone with institutional knowledge ready to jump in and assist. Individual tasks are then divided among the team based on expertise and availability. Committee has historically been 7 to 10 members. The committee is mostly comprised of ASCE Younger Members, with participation from some Central Ohio Section board members or past presidents. |
| **8. Time Frame**(When Started, When Completed) | Begin planning in October and expo is the last Saturday of February (during E-week). |
| **9. Success Factors**(The Parts that Worked Really Well) | Online registration prior to the event has been a huge help to gauge attendance, although it is not required for students to pre-register. We also do day-of signups to gather contact information for future events. School gyms have proven the best venue and typically are pretty easy to coordinate with. Having enough space for the activities to occur is a key to successful expos. Having a large open space is helpful as large groups often congregate around the activities. Also, allowing a maximum number of activity exhibitors is important to not overcrowd the space.We ask attendees to indicate how they have heard about the Expo during pre-registration and have found that Social Media advisement has been the top response in the past two years. The second highest is past attendees who are returning. Advertisement through the schools works well when the school participates. We can usually tell which schools support the expo by the number of registrants from that school (school name is a required field). We recognize our corporate sponsors on the Event flyer that is shared to students and on the Facebook page. We also have developed a webpage which is part of the Section’s website that includes event information and corporate sponsors. Finally, we print a banner each year to display corporate sponsor logos, along with the STEM Expo information. |
| **10. Setback Factors**(The Parts that did Not Work Well) | When hosting at smaller event spaces, we have had too many activities that led to overcrowding and some negative feedback from participants. Even in larger gyms, the space can become too crowded if the number of Activity Exhibitors is too high and not enough open floor space is dedicated to students observing activities.Make sure there is ample parking. If you have 500 students, expect better than 250 cars which need to park. Typically, high school gyms have this, but maybe not elementary school gyms or other spaces. Parking was an issue during our 4th Expo when we hosted at COSI.Presentation type activities. One year we had a presentation come that was roughly 30 minutes. The students were coming in and out during the presentation which made it difficult for the presenter. Additionally, the kids were used to activities that they could go to the table and touch and interact versus a presentation where they were asked to sit and listen which was not an easy switch in style for the students. |
| **11. Creativity**(This is something off the wall that we did) | While not ‘off the wall,’ we have typically included a special presentation or tour as part of the event. This past year, we paid for a gentleman who is referred to as “Bugman” as a specialty activity. He brings several live insects and bugs, some of which he lets kids tough, hold or eat! (Only cooked bugs that are safe for consumption are offered for this). He was one of the most popular Exhibitors and had a constant crowd of people around his booth. Our first two years the location was near the Ohio States Center for Automotive Research, and we were able to have the OSU students lead a tour through the facility. Presentations, separate from the main exhibit hall, have been given by a local meteorologist and entomologist. In 2017, the STEM Expo was held at the Center of Science and Industry (COSI) and discount tickets to ASCE’s Dream Big movie were made available for participants. |
| **12. Administration**(What was most Important?) | Coordination with activity exhibitors. This is a big task to get them all prepared to present and coordinate setup and teardown. Start this coordination early because there will always be things that come up. We have typically developed an information packet for activity sponsors so they are fully informed on areas such as parking, setup, number of expected students, etc. We also send a spreadsheet to solicit information such as desired activity space, number of tables required, and whether or not an electric outlet is needed to make sure Exhibitors are fully accommodated at the Expo. |
| **13. Follow-Up**(What was most important?) | We generally follow-up with an email to registered attendees to solicit feedback regarding the event. We also make observations as a planning committee and regroup following the event to discuss improvements that could be made for future events. |
| **14. Recommendations**(What you should ALWAYS do with this project?) | Include a committee in the decision-making process and to share the workload. If it is just one person doing all the coordination and development of the expo, it can become a fulltime job in the last week leading up to the expo. Also, make sure the venue is secured and coordinate with activity exhibitors sooner than later. |
| **15. Cautions**(What you should NEVER do with this project?) | Charge for attendance. It adds a hurdle to students and adds another layer of coordination that is not necessary. It would also likely impact attendance. Look at the expo as a service to the community, not a fundraiser. |
| **16. The Outcome** | Very positive. It has grown annually to now more than 500 students from under 200 students when the Expo first began. |
| **17. Ongoing Activity**(Would you do it again?) | Yes |
| **18. Speaker Contact Information** (person from your Region who would be willing to speak about the Best Practice) |  |
| Name | Jordan Gort, P.E. |
| Address | 425 W Nationwide Blvd., Suite 100Columbus, OH 43215 |
| Phone Number | 614-835-0460 |
| Email | Jordan.gort@strand.com |
| **19. Additional Comments** | * Photos
* Request for Activity Exhibitors Flyer
* Event Flyer
* List of Activities and Exhibits
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**2020 CENTRAL OHIO STEM EXPO**

**SATURDAY, FEBRUARY 29, 2020**

**9 AM TO 1 PM**

**WORTHINGTON KILBOURNE**

**HIGH SCHOOL**

**1499 HARD ROAD**

**COLUMBUS, OHIO 43235**

The Central Ohio Section of the American Society of Civil Engineers (ASCE) is pleased to announce the 7th Annual Central Ohio STEM Expo which will be held on Saturday, February 29, 2020 from 9 AM to 1 PM (setup will be from 7 AM to 9 AM Saturday morning). The STEM Expo will be held at Worthington Kilbourne High School in the Auxiliary Gym. The goal of the STEM Expo is to expose students in Kindergarten through 8th grade to the world of Science, Technology, Engineering, and Math (STEM) through fun and interactive activities.

We are seeking local STEM professionals, educators, and organizations to serve as activity sponsors or exhibitors. Becoming an Activity Exhibitor is easy and a great way to get involved in this educational outreach event. Activity Exhibitor responsibilities include:

* Developing a fun, interactive STEM related activity;
* Obtaining funding through your employer for the activity materials, if necessary; and,
* Facilitating the activity at the STEM Expo event (typically 2 to 3 people needed).

Examples of activities from last year are attached. An information packet will be emailed to all activity exhibitors prior to the event.

Contact STEM-expo@centralohioasce.com to RSVP as an activity sponsor, exhibitor or submit questions.

WORTHINGTON KILBOURNE HIGH SCHOOL

FEBRUARY 29, 2020

9 AM—1 PM

**ACTIVITIES & EXHIBITS**

The Smart Energy Experience American Electric Power

Electromagnetics Lab ASCE, Central Ohio Section

Sling Psychrometer ASHRAE

Straw Water Pressure Drop ASHRAE

FIRST Tech Challenge Youth Robotic Demonstration The Antidote Robotics

Welcome to Wakanda: Magnetic Levitation Ascension Construction Solutions

K’Nex Bridge Construction…... Association of Bridge Construction & Design

Amazing Bugs! Bugman

Cleaning Up Dirty Water Burgess & Niple, Inc.

Creative Coding Classroom Antics STEAM Camps

Not Your Average Sandbox DLZ, Inc.

Mock-Construction Site Elford, Inc.

Penny Boat Challenge E.L. Robinson Engineering

STEM Build Challenge Facebook and Turner Construction Company

Galloping Gertie and the Bridge Challenge Franklin County Engineer’s Office

Simulating Stormwater Franklin County Soil and Water Conservation District

Ozobots Grow Next Gen (GNG)

Building Edible Cars Honda of America Manufacturing

Permeable Pavement Hull & Associates, Inc.

Math Table and Games Math Plus Academy

Da Vinci Bridge ms consultants

Lego-Build National Association of Women in Construction Education Foundation

Stick Bridge ODOT, District 6

Paper Bridges and Columns OSPE, Franklin County Chapter

AR Sandbox and Water Science Ohio University ASCE Student Chapter

Fun with Wildlife Ohio Wildlife Center

Electricity Powerly

Lego Robot Battle Bot Robot Academy

Visible and Invisible Light Shocking Discoveries

Balloon Hovercrafts Stone Environmental Engineering & Science, Inc.

Make a Terrarium! Women’s Transportation Seminar Columbus Chapter

Gumdrop & Toothpick Bridge WSP

