



2018 STEM IN THE PARK BY THE NUMBERS

TOTAL PARTICIPANTS
5,680

HANDS-ON ACTIVITIES
152

EVENT VOLUNTEERS
850

SPONSORS
(CORPORATE, BGSU, IN-KIND)
25

WHAT IS STEM IN THE PARK?

STEM in the Park was created to enrich participants in the STEM (science, technology, engineering and mathematics) fields through hands-on, STEM-infused activities. STEM in the Park is coordinated and implemented by the Northwest Ohio Center for Excellence in STEM Education (NWO) at Bowling Green State University (BGSU). With a mission to advance STEM education for people of all ages, NWO annually presents this event free of charge to thousands of participants from Ohio and beyond.

The goals of STEM in the Park are to improve participants' knowledge and interest in the STEM disciplines and STEM careers as well as to increase awareness of STEM related organizations and events in our community.

These goals are met by featuring more than 150 interactive STEM experiences facilitated by volunteers from higher education institutions, preK-12 educational agencies, community non-profit

organizations and local businesses, all who share the common goal of advancing STEM education.

STEM in the Park unites area families, teachers, university faculty and students, local businesses and community resource providers to engage in a free program of inquiry-based STEM activities and STEM career exploration through a local university experience, in hopes of inspiring a new generation to interact with the STEM disciplines. Additionally, STEM in the Park seeks to contribute to STEM education by providing opportunities for children and adults to explore the many aspects and application of STEM in their daily lives while infusing a love of inquiry-based learning.

The ninth annual STEM in the Park event was held on the campus of Bowling Green State University on September 29, 2018. The attendance once again increased and was the largest to date with over 5,680 attendees/exhibitors/staff/volunteers participating. The past year's event also grew in terms of many new sponsors and exhibitors facilitating multiple hands-on STEM activities, including the creation of new partnerships with Friends of



Science, Technology, Engineering, and Mathematics



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“This is a very well-organized event. Thank you for making it free! We love all the interactive activities. The possibilities for current and future learning are expanded by this event. The list of activity stations is a great idea. We will support Tony Packos in appreciation for their food donation at this event. It is a big event with more to do than can be accomplished, but that is what keeps people coming back.”

STEM IN THE PARK ACTIVITY HIGHLIGHT

Building Brilliant BrushBots

Maumee City Schools STEAM TEAM was new to STEM in the Park this year and assisted visitors to their station in creating a BrushBot! By using the head of a toothbrush, small motor, battery and double-sided sticky tape, participants were able to build their own Brushbot to take home. This tiny ‘bot’ only took a few minutes to create and will continue to glide across smooth surfaces for hours. Participants were also able to add ‘personality’ to their bots if they wished, like googly eyes and curly tails.

WHAT DO PEOPLE DO AT STEM IN THE PARK?

For the 2018 event, STEM in the Park featured 152 interactive STEM stations that were facilitated by exhibitors from local businesses, non-profit organizations, pre-K-12 community organizations, and institutions of higher education. All activity stations included hands-on STEM activities and games, and provided participants with opportunities to observe and interact with several kinds of artifacts, animals, animal coverings, earth materials and different forms of technology. Many of the activity stations include make and take activities that resulted in materials that participants could take home, and included ice cream, butterfly larvae necklaces, personalized concrete stones, a baggie of slime, and many more. Many stations also provided take home STEM activities to extend learning at home. Activity cards can also be accessed online at www.bgsu.edu/nwo/programs/stem-in-the-park/activity-cards.html.



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Wood County Regional Airport and the BGSU Flight Center to add ‘The Flight Zone’ to the event housed at the Wood County Regional Airport.

One of the many strengths of this program is the spirit of community that evolves during its planning and implementation. The many volunteers and exhibitors that provide inquiry-based learning STEM activities to engage children and their families contributes to the remarkable success of STEM in the Park. As well, many exhibitors state that participation in STEM in the Park is a worthwhile experience and is beneficial for their organization. There are ample opportunities to volunteer at STEM in the Park, and NWO also relies heavily on the undergraduate/graduate

students at BGSU, as well as community members and volunteers from corporations and businesses with the shared vision of advancing STEM education.

The 2018 STEM in the Park event was presented by BGSU, BP, Lubrizol, PPG Industries and Verizon with community support from First Solar, Carolina Biological, Perrysburg Rotary Club, SSOE, Thayer, The Anderson’s, Toyota, and Walmart. General Sponsors included Biggby Coffee, Bostdorff’s Greenhouse, Cooper Tires, Costco, Environmental Water, Glass City Federal Credit Union, NAMSA, and Tony Packo’s. The Flight Zone sponsors were Wood County Regional Airport, Bowling Green Flight Center, Eastern Aviation Fuels, Inc., and AR Marketing.



“First time coming and absolutely loved it! Right up my kids’ alley! Great way to get them out of the house and stimulate their minds! Plan on being back next year!”



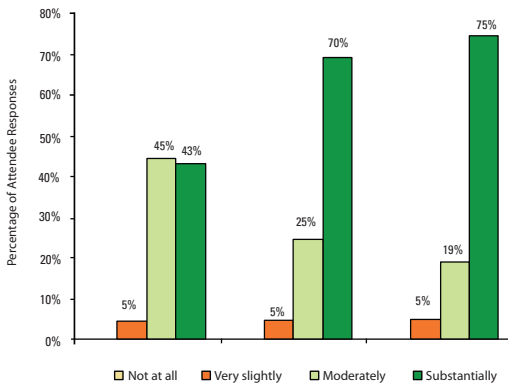
STEM IN THE PARK ACTIVITY HIGHLIGHT

Fluffy Slime

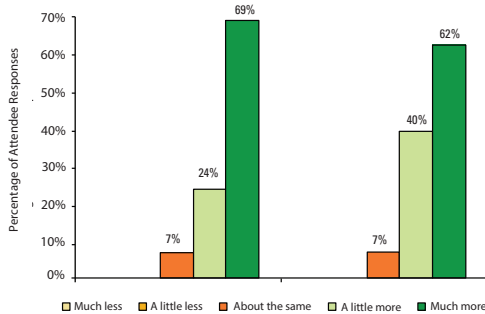
WHAT IS THE IMPACT OF STEM IN THE PARK?

The findings from the 2018 STEM in the Park evaluative survey demonstrate that STEM in the Park successfully reached its goals of increasing participants’ awareness of STEM related organizations and events in their community, and improving participants’ knowledge about and interest in STEM and STEM careers. See graphs below:

STEM in the Park Impact on Attendees STEM Knowledge and Awareness



STEM in the Park Impact on Children's Interest in STEM and STEM Careers



“This is a great event and each year is better than the last!”



SOCIAL CAUSES

In 2015, NWO began connecting the event to a social cause through a partnership with Food For Thought (FFT), a local non-profit organization that collects food and household items and distributes them to families in need in northwest Ohio. September is ‘Hunger Action Month’ and event participants were encouraged to bring food and household items to donate to the mobile pantry which FFT brought to the event.

2018 offered the opportunity to partner with the First United Methodist Church Food Pantry of Bowling Green Ohio who participated in the Food Science Zone at the event. STEM in the Park staff will continue to connect the event to a social cause, and is grateful for the opportunity to do so.

Overall, I think this is a great event to get younger children interested and involved with STEM. I have volunteered at this event as a BGSU student and brought my nephew to the event and it always draws in such a large crowd. He enjoyed himself and the stations we visited, especially the stations involving robots! We also both really enjoyed having this combined with the air show; however, it was a lot to try to see during the time of the event.”

Presenting Sponsor and Activity Station Provider, *BP* hosted the popular and messy station, Fluffy Slime! Visitors to this station witnessed the chemical reaction that takes place between shaving cream, glue, and saline solution to make fluffy slime! During this process, participants learned about polymers and non-Newtonian fluids – which are fluids that ignore Sir Isaac Newton’s Law of Viscosity. Participants were able to take their Slime home in a plastic baggie to continue to enjoy.

WHAT ARE PEOPLE SAYING ABOUT STEM IN THE PARK?

The results of an evaluative survey of participants indicated most participants believed STEM in the Park activities were highly engaging and positively impactful on children’s interest in STEM.

“We love coming to STEM in the Park every year! You can’t beat an educational, free event that you also get to leave with goodies and children fed! I thought this year the stations were laid out much nicer and the flow of traffic was better. I have nothing but positive things to say about this event. Thanks BGSU for hosting something so fun and educational in our community!”

In addition, our exhibitors gave STEM in the Park high remarks within the survey and saw first-hand how engaged participants were in activities.

“Creating new activities each year forces us to analyze what we are doing in a scientific way. These processes and products are beneficial to us both at STEM in the Park and throughout the year as enhancement to our programs.”

“Making the community interested and excited about science and technology is important. I have fun and often have something new to share with students after the event. I think the students who volunteer from our university learn a lot and gain a new appreciation for science and their discipline.”

“STEM in the Park has great attendance, so it provides excellent educational opportunities for us to engage with the community.”

“STEM in the Park is always a wonderful learning experience for our student demonstrators and we are also able to do outreach into the community.”

“It’s my favorite! The organizers of this event are passionate about STEM education and that shines through in every aspect of this event!”

“I loved this! It was a great experience for my son. I loved watching him engage in the stations. It is just hard to hit everything in one day. My son was worn out.”

“It is an absolutely amazing event that highlights STEM in our area!”

“We have attended for several years and think that it is amazing! You have so many activities for children of all ages. The kids learn by being hands on. I loved seeing the planes this year!”



STEM IN THE PARK ACTIVITY HIGHLIGHT

Butterfly Necklaces

This activity station, facilitated by the *BGSU School of Teaching and Learning Adolescent and Young Adult Program*, continues to be a top favorite activity among attendees who complete the evaluation survey. Children visiting this station built a caterpillar habitat in a small container, which they wore around their neck for the rest of the event. Children were given instructions for taking care of their caterpillar at home as it formed a chrysalis. Weeks after the event, hundreds of butterflies emerged from their chrysalises in hundreds of homes and released in the environment in northwest Ohio and southeast Michigan!



STEM IN THE PARK ACTIVITY HIGHLIGHT

Mighty Microgreens: Plant, Grow, Harvest, Eat, & Learn

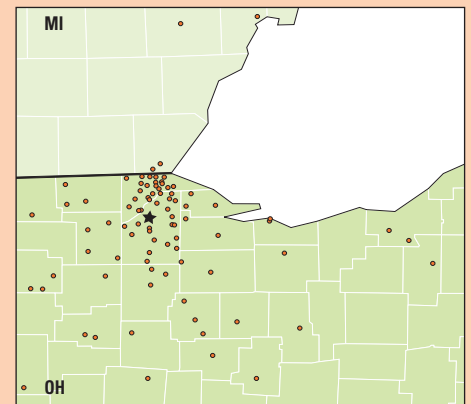
Maumee Greens was new to STEM in the Park this year and assisted visitors with planting, harvesting, and tasting delicious and nutritious microgreens. Participants learned basic life concepts including the traits and needs of living things, life cycles, and growth patterns. They were also able to experience healthy eating first-hand and hear how to grow foods locally and organically. Each family received their own take-home microgreen garden.

“My 2 sons and I went on a bus with the elementary school that I teach at. We enjoyed it so much that I asked permission to stay longer and not return on the bus. My husband drove from Toledo to pick us up when it ended.”

WHERE ARE THE FAMILIES COMING FROM?

As in years past, word about STEM in the Park reached an increase of participants who came from 130 different cities and towns across three states.

Most participants were from northwest Ohio and the nearby towns of Bowling Green, Toledo, and Perrysburg. Some participants also came from the Cleveland, Columbus and Cincinnati areas as well as from several cities and towns in southeast Michigan and Ft. Wayne, Indiana. This map illustrates the locations from which participants traveled to STEM in the Park.

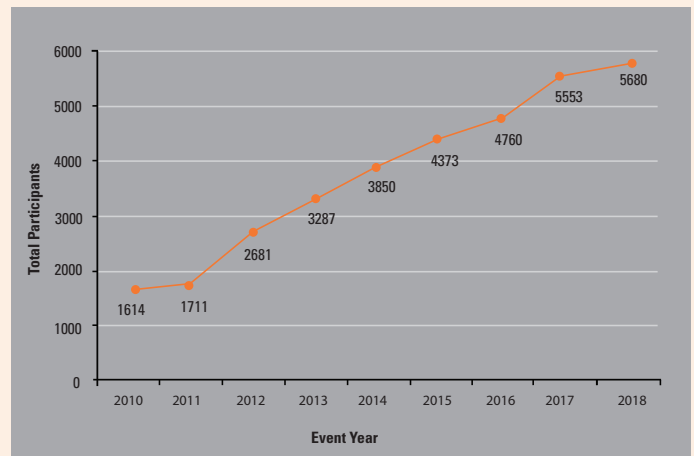


Part of the NWO mission is to stimulate the interest of underrepresented students to the rewarding fields of STEM. For the last five years, transportation grants have been provided to students, and in some cases their families, to attend STEM in the Park. For some families, the lack of transportation is a barrier of attendance. In 2018, students, families and teachers were transported to the event from several schools from Toledo Public, Sandusky City, Otsego, and Lima City school districts, as well as the Perrysburg Heights Community Center.

The staff of STEM in the Park will remain committed to reaching even further in our region to continue to provide this opportunity in the future.

WHO COMES TO STEM IN THE PARK?

Over 5,680 people including volunteers and exhibitors attended STEM in the Park in 2018, which is an increase from the previous year. Overall, the growth in attendance has been remarkable since the event's first year in 2010.





ATTENDEES' TOP 10 FAVORITE ACTIVITY STATIONS AT STEM IN THE PARK 2018

STEM IN THE PARK ACTIVITY HIGHLIGHT

Reptiles are Cool

The BGSU Department of Biological Sciences Herpetology Lab facilitated this station. Attendees who visited had the opportunity to observe and interact with more than two-dozen different species of reptiles, under the guidance and supervision of several BGSU students who volunteer in the herpetology lab. Some of the reptiles at this station included crested geckos, bearded dragons, corn snakes, Kenyan sand boas, and a six-and-a-half-foot long albino boa constrictor!

- **Butterfly Necklaces** (BGSU – School of Teaching & Learning - AYA Science Education)
- **Reptiles are Cool** (BGSU Herpetarium, Department of Biological Sciences)
- **Water World Creatures** (BGSU Marine Lab)
- **Fluffy Slime** (BP)
- **Building Brilliant BrushBots** (Maumee City Schools STEAM Department)
- **Mighty Microgreens: Plant, Grow, Harvest, Eat, & Learn** (Maumee Greens)
- **Small Animal Interaction** (Penta Career Center, Small Animal Care)
- **Soccer Bots / FIRST Robotics Demo / 3D Printers** (Sylvania STEM Center/Sylvan Robotics)
- **START! Advanced Manufacturing & Machining** (Toledo Public Schools – Roy C. Start HS)
- **Hydroponics** (Toledo Public Schools – Aerospace & Natural Science Academy of Toledo)

Activity station descriptions are highlighted throughout the report.



WE WISH TO THANK THE FOLLOWING ORGANIZATIONS FOR THEIR SUPPORT OF THE 2018 STEM IN THE PARK!

Presenting Sponsors



Community Sponsors



General Sponsors

