A nationwide push to encourage students into disciplines of science, technology, engineering and math (STEM) hopes to provide qualified people for technical and teaching roles in our nation’s research and industry facilities. Engaging students with exposure to these fields in elementary school could motivate them to be proficient in math and sciences, encourage college-readiness, and inspire them to practice such expertise in our modern economy with a fulfilling STEM career.

Naperville, IL, School District 203 recognized the national effort and assigned Meadow Glens Elementary School to conduct a STEM-focused event. The School-Family-Community Partnership (SFCP), a parent-teacher organization, was tasked to achieve this in the fall of 2014.

The group’s first idea was to model it on the school’s successful International Night, an event that relies on the school parents to demonstrate aspects of their cultural heritage. Another idea for STEM Night was based on larger STEM expositions nearby, notably one held each February at the Illinois Institute of Technology (IIT) Wheaton campus and another at Northern Illinois University (NIU) in DeKalb. Each of these remarkable events for children provide a day-long showcase of numerous disciplines, mainly relying on professional organizations and student groups to demonstrate STEM topics.

Our group decided to style our event as an open-house exposition, and several parents within SFCP quickly volunteered their companies—the best of both worlds!

An important step for planning this type of STEM Night was to assemble exhibitors. An invitation along with a response form were prepared that SFCP parents could use to recruit any company, friend, or colleague. Next, our organization contacted those parents who offered their professional affiliation along with any parents readily known to have careers in engineering or science to identify contacts. Then, the IIT STEM event coordinator generously provided contacts from nearby organizations that exhibit at their event to add to our growing list. This was further expanded by writing to nearby technological or scientific organizations and businesses including city and county departments, the public library’s technology lab, a high school robotics team, and an environmental outreach organization. A GoogleSheet helped track correspondence, and we quickly realized an abundance of local STEM businesses and organizations.

Core Planning Team
A core planning team of parents assembled to imagine how our school could accommodate this event and understand what tasks would be needed to arrange it. The team had to determine many details including table layout, formatting program booklets, and coordinating a large number of volunteers. The planning team also determined various forms of publicity would be important at different junctures of the school year to promote the event among school families, including an art contest for the program logo that was organized by the art, music, and gym teachers. The team also planned a “hospitality room” with donated items solicited from local restaurants and parents, to show appreciation for the volunteers and exhibitors who offered their time to make this event possible.

Our event was constrained to two hours on a weekday evening so that existing custodial staff could support the event logistics. But emulating the exciting celebration at IIT, a marquee presentation was planned as a highlight of our first event.

As the first-ever STEM event took shape, excitement grew among staff with each announcement of plans. Many teachers volunteered to work the sign-in tables, monitor hallways, and host the hospitality room. Custodians helped obtain additional tables from other district schools. Excitement among teachers spread to excitement among students.

Our 2015 STEM Discovery Night was a tremendous success, thanks to the 28 companies who offered their time to make this event possible.

PHOTOS: LEFT: Robert Humphreys introduces flight concepts to young minds. TOP RIGHT: Local astronomers brought lessons indoors since cloudy weather persisted.
and several of our teachers that all provided such enlivening exhibits. We were also honored to obtain the enthusiastic support of our U.S. Representative Bill Foster (11th District of Illinois), who is the only physicist in Congress and has personal experience with vital research projects and studies at nearby Fermilab.

The evening kicked off with an introduction by the school’s principal, followed by a raffle of items contributed by generous companies, an inspiring address by Congressman Foster, and a captivating display of cryogenics by Fermilab’s “Mr. Freeze.”

A total of 450 people attended our first STEM Discovery Night, of which 240 were children and 210 were adults. The event was advertised only within our school’s communication channels, because our space was limited and might only accommodate the families that attend Meadow Glens Elementary. Nonetheless, word of our event had spread and families from nearby schools and neighboring communities were gladly welcomed.

**Valuable Lessons Learned**

After the event, an exit survey found resounding support and few complaints. The most frequent complaint from parents was not having enough time to see all the exhibits. The planning team concluded that a future event should eliminate the raffle and presentations to maximize viewing of the exhibits during the allotted time. The late spring date was problematic for some children already committed to outdoor activities. The team also felt it should be held earlier in the spring, but not so early that snow might cancel the event. A mid-March date, Pi Day 3.14.16, was a perfect date both chronologically and allegorically for the second STEM Discovery Night!

A core team assembled again in the fall of 2015 to prepare for the Pi Day STEM night. Planning was understandably smoother. The date was determined at the start of the school year, and this additional time allowed us to expand the list of organizations and companies invited. Parents and teachers would be asked early for their assistance, since over 40 volunteer slots were identified—from baking goods, to arranging tables, assisting exhibitors, greeting at sign-in tables, and cleaning up.

For this year’s event, TBP was a significant factor in expanding our contact list. We emailed Tau Beta Pi Headquarters for ideas to help grow our event, and Director of Alumni Affairs Tricia Gomulinski graciously offered assistance by emailing many individuals with Chicago-area connections. This quickly supplied a terrific array of unique and committed companies that no one in our parent-teacher organization could have imagined.

A new aspect of STEM night was adding time at the beginning for children with special social, emotional, physical, or learning needs. The school administration added this time so a quieter environment would be available for these children and their families. This turned out to be special moments for those children as well for us.

After many hours of planning, our 2016 STEM Discovery Night at Meadow Glens Elementary was also a great success. For two-and-a-half hours in the hallways and gymnasiums, the 40 exhibits amazed and motivated both children and adults. These hands-on and engaging demonstrations were provided by over 30 of the regions’ premier science and technology companies and organizations as well as many inspired teachers and parents from our school community. Our parent-teacher organization is extremely grateful to these professionals and to the 50 parents and teachers who helped. This year, 200 families attended of which 250 were adults and 270 were children, representing more than half of our school’s enrollment.

Our STEM nights were successful not only because they inspired the children, but also because they engaged school parents and created partnerships in the community. The event was a way for parents to give their time uniquely to the school and to express to their children the importance of a STEM education. By engaging more parents in school activities, the school community grows to further benefit our children. Both the school and district recognize that the exhibitors’ participation that night was but one example of partnerships from within the surrounding community that gives our students unique learning experiences at their school.

Tau Beta Pi provided a valuable school-community partnership for our event, and we are grateful for the support of Headquarters and local active members. Tricia’s emails to area Tau Bates linked us to the Boeing Corporation (Leo L. Enstrom, Jr, Iowa Alpha ’87), Experimental Aircraft Association 461 (Robert L. Humphreys, P.E., Pennsylvania Iota ’68), and Morey Corporation (Alan J. Mindlin, Missouri Gamma ’80). We are also grateful to the Chicago Alumni Chapter, with assistance from Jeffrey G. Heng and President Josh Larson. We look forward to continuing relationships with TBP and these organizations to make next year’s event even more fulfilling for our students and continue to raise the awareness and interest in STEM.