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Media Contact:
Desmend Jetton
(702) 813-2820
djetton@istcoalition.org

HIGH SCHOOL PROJECTS AIM TO CHANGE INDUSTRY LANDSCAPE

More Than 1,400 High School Students Developed Concepts for New Products Through Annual Illinois Science & Technology Institute Program

April 26, 2018 – (CHICAGO, IL) – Solar-powered irrigation in Bangladesh, a chatbot to aid communication between deaf and hearing people, and a backpack that wirelessly charges a cell phone — all products developed by Illinois high school students for the Illinois Science and Technology Institute STEM Challenge on Apr. 26 at Motorola Mobility in the Merchandise Mart.

This year, the program paired 16 of the state's most innovative companies — Caterpillar, AbbVie and State Farm, to name a few — with 27 high schools, where more than 1,400 students tackled an authentic, real-world business problem facing the company.

Over the course of a semester, students innovated alongside mentors from each of these companies and came up with new ideas, products, prototypes and designs.

For instance, Lisle-based electronics maker Molex challenged students at Oak Park and River Forest High School to imagine a world without cords and chargers. Students developed ideas ranging from wireless charging tables to a backpack with designated wireless charging pockets.

Meanwhile, at Downers Grove North High School, nine ComEd mentors guided nearly 75 students as they developed renewable energy ideas. Their ideas included harnessing energy from a bicycle to charge a portable battery, a solar-powered school bus, and purifying water with solar energy.

And for State Farm, students from Normal Community High School, Normal Community West High School and Bloomington High School are developing ideas for products like anti-lock picking alarms, home-security smart speaker applications and mechanisms to block carbon monoxide build-up.

“These are transformative experiences for a young person,” said Mark Harris, president and CEO of the Illinois Science and Technology Institute. “In many cases, this is a student’s first exposure to the workplace, much less the concepts of entrepreneurship and innovation. Our

goal is to help build Illinois' STEM talent pipeline by opening up the walls of the classroom and making these industry connections to cultivate the next wave of problem solvers and innovators."

Thanks to AbbVie, one of these ideas has become reality.

In 2016, a team at North Chicago High School proposed building a school-based health clinic to address low vaccination rates. The prior year, about 200 students had been prohibited from coming to school because they hadn't gotten their state-mandated vaccines by the mid-October deadline. Last summer, 110 AbbVie volunteers worked alongside the students to turn that idea into a reality, and the clinic opened in October 2017.

“AbbVie’s philanthropic efforts have always included a focus on improving access to education, including in our own backyard,” said Melissa Walsh, vice president of AbbVie Foundation. “For our employees, working with students to fuel their passion for science and innovative thinking is an incredibly rewarding way to give back to our community. The students of North Chicago inspire us on so many levels, and it’s a privilege to help them shine through our STEM challenge mentorship program.”

What: The 5th annual STEM Challenge Student Showcase
When: Thurs., April 26, 8:15 a.m.-1 p.m.
Where: Motorola Mobility in the Merchandise Mart
What to Expect: One team from each of the 27 high schools will present their proposed solutions to a pressing company problem. Students, mentors and ISTI staff will be available for broadcast and print interviews.

2017-2018 Challenges and Partnerships

AbbVie: Approximately half of patients with chronic conditions have difficulty taking their medication as directed, either never filling the prescription, taking the medication in a non-prescribed manner, or stopping dosage prematurely. AbbVie challenged its students to design medication non-adherence solutions. *North Chicago Community High School*

Baxter: Students were encouraged to tackle the question of community through Baxter’s three challenge statements: Innovate the way Third World countries receive Baxter products or train clinicians. Redesign a Baxter product to make it more accessible for home use. Create a campaign that engages a chosen community with prevention or treatment of kidney disease. *Muchin College Prep, Instituto of Health Sciences Career Academy, Mundelein High School, Lindblom Math and Science Academy*

Caterpillar: Caterpillar challenged its school to design the construction site of the future. The students were encouraged to tackle the problem in one of three ways: designing a model job

site that incorporates futuristic technology, creating a tracking device that attaches to existing machinery, or developing a mobile tracking app. *Solorio Academy High School*

Dynegy: The energy sector uses planned power outages to gather data to better serve the public. Often, this data is analyzed inefficiently, delaying its impact. Dynegy asked its school to create an app, tool or system to better synthesize the data collected during planned outages. *East St. Louis Senior High School*

ISU, ComEd, and Trajectory: The energy challenge, hosted by Illinois State University and carried out by ComEd and Trajectory Energy Partners, asked students to design the Community of the Future, utilizing smart grids, renewable energy, and new innovative methods to create savings and sustainability. *Williamsfield High School, Downers Grove North High School*

Horizon Pharma: Orphan drugs, or medication for diseases with a small patient population, often don't get the attention or innovation they need. Horizon Pharma challenged its school to develop a medication carrier for one of these orphan drugs to help patients who suffer from Urea Cycle Disorders (UCD). *Highland Park High School, Perspectives Math and Science Academy*

The Lenovo Foundation: The Lenovo Foundation challenged its four schools to redesign the smartphone. The students could either start from scratch, create an app or design a Moto Mod. *Von Steuben Metropolitan High School, Gwendolyn Brooks College Preparatory Academy*

Microsoft: The popularity of chatbots, computer programs designed to simulate human conversations, has grown exponentially over the past decade. Microsoft challenged its students to design a chatbot to aid their community. *Lake View High School, Foreman High School, Corliss High School*

Molex: Molex challenged OPRF students to either innovate existing technology by creating cordless alternatives, or design a connected community space for high school or college students by utilizing smart technology. *Oak Park and River Forest High School*

Motorola Solutions Foundation: The abundance of smartphone technology has allowed ordinary citizens to become first responders during emergencies. The Motorola Solutions Foundation asked students to research and develop new apps or tools that could be used to save lives in emergency and disaster situations. *Chicago Tech Academy High School*

Northrop Grumman: Students designed sensors for R/C vehicles (mock spacecrafts) to explore the makeup of planets on a course designed by Northrop Grumman employees. *Lake Zurich High School, Palatine High School, Wheeling High School*

State Farm: State Farm challenged the students from its various schools to identify a problem in their community and address it through one of State Farm's three focus areas: home, auto,

and finance. *Bloomington High School, Normal Community High School, Normal West Community High School*

Takeda: The students were asked to identify and solve a problem that a patient may encounter in one of three Takeda therapeutic areas: oncology, gastroenterology (GI), and the central nervous system (CNS). *Evanston Township High School, Prospect High School, Oak Park and River Forest High School, ITW David Speer Academy*

Uptake: Student Union, a platform developed by Uptake, connects low-income and first-generation college students with data to guide them through the college application process. Uptake challenged ETHS students to identify what factors contribute to and help to predict student success. *Evanston Township High School*

About the Illinois Science and Technology Institute:
The Illinois Science & Technology Institute (ISTI) is a STEM-focused nonprofit that provides programs and partnerships to connect companies with classrooms. ISTI supports schools and companies who want to impact the next generation of innovators. We are a bridge between the classroom and real world that facilitates collaboration between students and industry mentors. For more information, visit www.istcoalition.org/education-programs/ and follow us on twitter @istcoalition.

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