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More than 2,000 Students and Teachers Attend Believe in Ohio STEM Forums

**Students inspired to become innovators and job creators in Ohio's Innovation Economy
Program encourages students to continue their educations and pursue their careers in Ohio**

Columbus and Cleveland (December 21, 2016) ... More than 2,000 high school and middle school students and teachers from 93 schools in 36 Ohio counties attended one of Believe in Ohio's Fall 2016 STEM Commercialization and Entrepreneurship Forums held on thirteen college and university campuses across Ohio. Attending students participated in an extraordinary program that opened their eyes to their future and encouraged them to become the innovators and entrepreneurs who will create the new products, services, jobs and prosperity of the future.

At the Forums, students heard a number of entrepreneurial STEM innovators associated with each college or university discuss how their innovations will help create the future. After interacting with the speakers, the students, assisted by college student mentors, were tasked to work in teams to develop a new product, service or problem solving innovation idea that they later pitched "Shark Tank style" to their peers. In total across the state, fifty of Ohio's leading STEM innovators shared their visions of the future with students at the Forums.

"Students who attended the STEM Forums learned that by developing a working knowledge of STEM (Science, Technology, Engineering, Math), coupled with the development of an entrepreneurial mindset, they can become one of the innovators Ohio will need in the future", stated Mr. Michael Woytek, Co-Director of the Believe in Ohio program. "Through its many programs, Believe in Ohio helps students develop the creative and critical thinking and problem solving skills they will need to be successful in the future", continued Woytek.

The Believe in Ohio program also helps address Ohio's brain drain problem by teaching students about Ohio's robust research and development and entrepreneurial ecosystem and providing Ohio's colleges and universities with an opportunity to recruit Ohio students to attend their institutions.

"While the State of Ohio through its Third Frontier Program and the University System of Ohio has done much to create Ohio's increasingly robust Innovation Economy, more needs to be done to make Ohio's high school students and parents aware of the benefit of remaining in Ohio to continue their educations and build their careers," stated Mr. John Klipfell, Co-Director of the Believe in Ohio program. "The Believe in Ohio program helps accomplish that goal."

"The retention of students in Ohio also represents an important challenge for Ohio's colleges and universities if they are to maintain their financial viability and the quality of their programs. This is especially true in light of the high school graduation statistics published last week that point out that the number of students graduating from Ohio public and private high schools has decreased by 8% since they peaked in 2011, and will decrease an additional 8% by the 2022-2023 school year', continued Klipfell.

(Note, last week the Western Interstate Commission for Higher Education, with support from the College Board and the ACT testing service, released its updated projections of high school graduates in its report titled *“Knocking at the College Door”*. On page 91¹, which reports on the State of Ohio, it reports, that, from its peak in 2011-2012 when 137,000 students graduated from Ohio high schools, the number of Ohio high school graduates decreased to 123,000 last school year, and is projected to further decrease to only 116,000 in the 2022-2023 school year.)

At the STEM Forum held at Wright State University on December 8, 2016, Mr. Hugh Bolton, Commercialization Director for Wright State and one of the speakers at the Wright State STEM Forum, commented, “As a function of my position, I have reviewed commercialization programs at universities across the country, and have also reviewed the Believe in Ohio program in depth. In my opinion, the Believe in Ohio program is one of the best programs of its kind I have seen and provides an excellent opportunity for students to explore interests in entrepreneurial activities early in their academic programs.”

The Believe in Ohio program was collaboratively developed by The Ohio Academy of Science and Entrepreneurial Engagement Ohio with the support of the Ohio Department of Higher Education and the 130th Ohio General. Special thanks to the Burton D. Morgan Foundation of Hudson, Ohio whose funding support helped make possible the Fall 2016 STEM Forums that were held in Northeast Ohio.

To find out more about the Believe in Ohio program, visit www.BelieveinOhio.org or call 614-914-5095.

¹ Western Interstate Commission for Higher Education (with support from ACT and the CollegeBoard), *Knocking at the College Door – Projections of High School Graduates, December 2016*, 146 pages, page 91 for information about the State of Ohio. www.wiche.edu/knocking



About the Believe in Ohio program:

Believe in Ohio is a comprehensive, free program developed by The Ohio Academy of Science and Entrepreneurial Engagement Ohio with the support of the Ohio Department of Higher Education and the 130th Ohio General Assembly that helps high school and middle school students prepare for the future. The program helps prepare students to become “competitors” in Ohio's innovation economy and to be part of Ohio's next generation of innovators who will create the new product services and jobs of the future through the application of science, technology, engineering, and mathematics. (STEM + Entrepreneurship = Innovation = Jobs = Prosperity)

The Believe in Ohio program has three principal objectives:

1. Help students understand the challenge and opportunity the future presents for them and how to prepare for it through STEM forums, virtual field trips and online courses into Ohio's Innovation Economy.
2. Help students understand the importance of a STEM education and an entrepreneurial mindset to become competitors in Ohio's Innovation Economy through engagement with STEM & entrepreneurial experts and mentors, and participation in STEM Commercialization & Business Plan competitions.
3. Inspire students to “Believe in Ohio” and pursue their education and careers in Ohio by introducing them to Ohio's robust R&D and entrepreneurial ecosystem that offers great opportunities to create the future.

Since the Believe in Ohio program began in 2014:

- More than 6,000 students, teachers & guests attended one of 28 STEM Forums held throughout the state.
- More than 120 leading Ohio STEM researchers & practitioners spoke at STEM Forums held during 2014, 2015 and 2016 about their visions of the future, with their presentations videoed for those not able to attend.
- More than 300 teachers from more than 150 schools, including more than 10,000 students, participated in Believe in Ohio's STEM Commercialization Plan and STEM Business Plan competitions at their schools.
- More than \$1.5 million in cash awards and scholarships to Ohio colleges and universities and more than \$300,000 in teacher support grants were awarded.

For more information, visit the website at www.BelieveInOhio.org or call Believe in Ohio at 614-914-5095.

About The Ohio Academy of Science:

Since 1891, The Ohio Academy of Science has been promoting science and science education in Ohio as a membership based, volunteer-driven, not-for-profit organization. In addition to its pre-college student programs (Believe in Ohio, State Science Day, and Invention Convention), the Academy conducts an annual meeting which brings together scientists and students from all disciplines across the state and publishes an international, multidisciplinary, scientific journal. www.ohiosci.org

About Entrepreneurial Engagement Ohio:

Entrepreneurial Engagement Ohio (EEO) is a 501(c)(3) Nonprofit Corporation formed for the educational and charitable purpose of promoting student and community awareness as to the challenges and opportunities the changing regional, national and global economies present for the future. It provides educational instruction, curriculum, mentoring and other information that help develop the entrepreneurial, economic, business, and scientific literacy of students and the community that will be needed for the 21st Century. www.EEOhio.org



List of speakers and their topics at Believe in Ohio's Fall 2016 STEM Forums:

The Ohio State University, October 25, 2016:

- Dr. David W. McComb spoke about developments in the field of Electron Microscopy and Analysis
- Dr. Yael Vodovotz spoke about the *"Development of functional foods for health promotion"*
- Dr. Melissa Bailey spoke about developments in the field of optometry titled *"Vision of the Future"*
- Dr. Gregory Bixler spoke about developments in humanitarian engineering

The University of Toledo, October 27, 2016:

- Mr. Joseph Strobbe discussed how entrepreneurship impacted his life journey and lessons learned
- Mr. Jason Owens shared his entrepreneurship experiences as an open-source inventor of new energy
- Students also took a tour of many of the research labs within the College of Engineering

Youngstown State University, November 1, 2016:

- Dr. Wim F. A. Steelant spoke about the *"The Importance of Medicinal Plants: Ancient Entrepreneurship"*
- Dr. Brett Conner spoke about the *"3D Printing of Multi-Functional Structures"*
- Dr. Bonita Sharif spoke about *"Eye Tracking in Software Engineering Research and Practice"*
- Mr. Michael Garvey spoke about *"Ideas to consider when using the STEM Commercialization Plan"*

Hiram College, November 3, 2016:

- Dr. Brad Goodner spoke about *"The Power of Microbial Genomics"*
- Dr. Louis Oliphant spoke about *"How Computers Will Take Over the World (And You Can Too)"*
- Dr. James Kercher spoke about *"From Single Molecule to Atmospheric Chain Reactions, How & Why We Study Them"*
- Ms. Jennifer Hogue spoke about *"Forensics: A Day in the Life of a Forensic Toxicologist"*

The Ohio State University, Ohio Agricultural Research & Development Center, November 8, 2016:

- Dr. Renukaradhya Gourapura spoke about *"Nanotechnology-based vaccines to protect against influenza"*
- Dr. Reed Johnson spoke about *"Solving the problems facing honey bees in the USA"*
- Dr. Katrina Cornish spoke about *"Science-enabled Accelerated Domestic Rubber Production"*
- Dr. Joshua Blakeslee spoke about *"Development of a new herbicide drift detection system"*

Lorain County Community College, November 9, 2016:

- Dr. Harry Kestler spoke about *"How a gene saved a family from elimination by the Plague in Sweden in 1350 and how it may help people infected with HUV today"*
- Dr. Regan Silvestri spoke about *"Tasty High-Tech Whiskey via Analytical Chemistry"*
- Dr. Barbara Wilford spoke about *"Newborn Sensors"*
- Dr. Eun-Woo Chang spoke about *"STEM majors? Why and How?"*

John Carroll University, November 14, 2016:

- Dr. Timothy J. Miller spoke about developments in the field of Biopharmaceuticals
- Mr. Timothy J. Kulbago spoke about developments in field of Medical Imaging
- Mr. Jonathan Fox spoke about developing a virtual app company
- Mr. Eugene Malinskiy spoke about developments in the field of Medical Devices and Research

Kent State University, Kent Campus, November 15, 2016:

- Dr. Robin Selinger spoke about "*Liquid Crystals: Weird Liquid, Cool Products*"
- Dr. Maurico Echeverri spoke about "*Flexible Electronics: Rolling Up the Future of Displays*"
- Mr. Philip Brennan spoke about "*Disruptive Technologies of Tomorrow - Why can Supercritical CO₂ (sCO₂) displace the Steam Cycle*"
- Dr. Robin VandeZande spoke about "*Design Education: Creating Thinkers to Improve the World*"

Cleveland State University, November 22, 2016:

- Dr. John Holcomb spoke about "*Consider a Career Working with Data*"
- Dr. Nigamanth Sridhar spoke about "*Exercise Monitoring Using Wearable Sensors*"
- Dr. Julian M. Earls spoke about "*Entry Descent and Landing on Mars*"
- Ms. Michele Heath spoke about "*Health Information Technology*"

Bowling Green State University, November 29, 2016:

- Dr. Bob Midden spoke about "*Using Science to Turn Poop Into Gold*"
- Dr. Andrew Torelli spoke about "*How to See the Light! Innovative Technology that Turns Your Smartphone Into a Spectrometer*"
- Mr. Kirk Kern spoke about "*How Entrepreneurs use STEM to Hatch ideas*"
- Dr. Gene Poor spoke about "*Making It Real: the Science and Technology of Imitation*"

Kent State, Tuscarawas Campus, December 1, 2016:

- Mr. Paul Dykshoorn spoke about the "*Technology of the Future Passed*"
- Dr. Robin Selinger spoke about "*Liquid Crystals: 'Weird Liquid, Cool Products'*"
- Dr. Sebastian Birceanu spoke about how "*Science Meets History*"
- Dr. Stephen Minnick spoke about "*The physics hiding in your Blu-Ray*"

The University of Cincinnati, December 6, 2016:

- Dr. Kelly Cohen spoke about developments in aerospace engineering & unmanned aerial vehicles.
- Mr. Adam Haucke spoke about "*Wearable Eccrine Sweat Biosensing: Uncovering The Real Challenges That Lie Ahead*"
- Ms. Rebekah Michael spoke about developments and opportunities in the field of Information Technology.
- Dr. Mary Beth Privitera spoke about developments in the fields of human factors and medical devices.

Wright State University, December 8, 2016:

- Mr. Hugh Bolton spoke about "*Commercialization Initiatives You Can Use*"
- Mr. Gavin Doll spoke about "*Don't Just Be a Student - Graduate as an Experienced Entrepreneur*"
- Mr. Charles Nick spoke about "*Stop wasting your time, validate your ideas*"
- Dr. Ryan Helbach spoke about "*The Air Force's Entrepreneurial and Intrapreneurial Vision*"