



Believe in Ohio Program Review

*Ohio Department of Higher Education
Ohio Board of Regents*

Spring 2012 thru Fall 2016

Presented November 15, 2016



Agenda topics to be discussed:

1. What the program is all about - what we teach students.
2. Genesis of program - historical perspective and funding.
3. Overview of program accomplishments to date.
4. Review of significant program elements.
5. Future directions. Requests for continued support

Overarching points we will make about Believe in Ohio:

1. The accomplishments from what began as a “vision” far exceeds our expectations.
2. The program has continuously evolved – both programmatically & cost effectively.
3. The program is highly acclaimed by teachers, students, parents, partners, staff.
4. We believe there is nothing on par with it anywhere else in the country.
5. The program has great potential to grow – if properly funded.

What the program is all about...

Believe in Ohio is comprehensive, free program 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 Assembly.

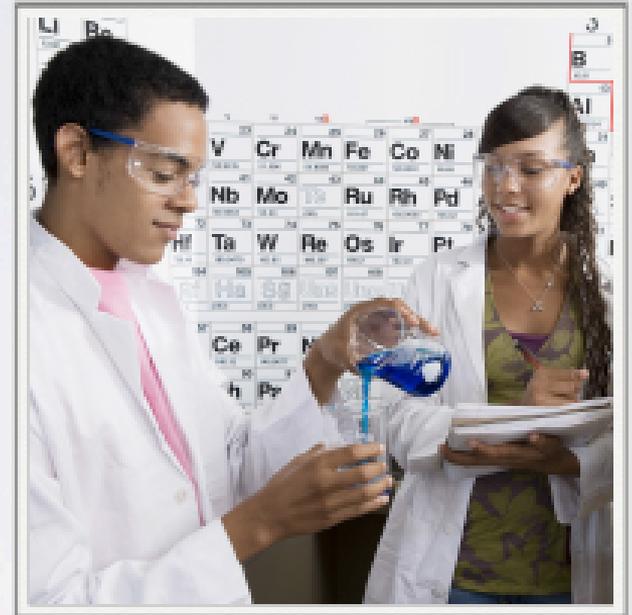
**In summary: STEM + Entrepreneurial Mindset
= Innovation = Jobs = Prosperity for Ohioans**

Believe in Ohio has three principal objectives:

1. Help students understand the challenge & opportunity of the future and how to prepare for it through STEM Forums and online courses about Ohio's Innovation Economy.
2. Help students understand the importance of a STEM education and an entrepreneurial mindset through engagement with entrepreneurial STEM experts and mentors, and developing STEM Commercialization and Business Plans.
3. Inspire students to pursue their educations and careers in Ohio by teaching them about Ohio's robust R&D and entrepreneurial ecosystem, and by awarding scholarships to Ohio's colleges and universities.

What Believe in Ohio teaches students:

1. Commit yourself to being a life-long learner.
2. Come to terms with the reality that technology is literally changing everything.
3. Understand and embrace STEM learning so that you can play a role in the future transformation of your world.
4. Learn to think and act entrepreneurially about everything...be a continual force for improvement in whatever you choose to do.
5. Learn about the Innovation Economy of Ohio and become part of Ohio's next generation of innovators and entrepreneurs.



Threshold Question for You?

Will you be a benchwarmer or competitor?



Benchwarmer:
Watching the action

Or



Competitor:
Creating the action

Genesis of the program....

Historical perspective....

Funding perspective....



The Believe in Ohio program brings together three Ohio initiatives:

1. Ohio has invested billions of dollars in the Third Frontier to create Ohio's Innovation Economy, which few of Ohio's students know anything about.
2. The Department of Education has invested tens of millions of dollars in developing experiential learning and STEM education programs, teacher evaluation systems, and technical reading and writing standards.
3. The Department of Higher Ed has emphasized Innovation, Commercialization & Inclusive Competitiveness, addressed "brain drain", and developed College Credit Plus for students to earn college credit in high school.

Believe in Ohio Implements Recommendations from the June 2012 OBOR Commercialization Task Force Report “Advancing Ohio’s Innovation Economy”:

- “The next generation of technology innovation will come from today’s students who should be exposed to an entrepreneurial curriculum, provided with real life experiences and supported in promoting their intellectual ideas” *(Page 6)*
- Ohio should “promote” business plan competitions with meaningful preparation awards and follow-up benefits.” *(Page 44)*
- Ohio should “offer competitive full and partial tuition ‘Entrepreneurship Scholarships’ for promising students who plan to study and engage in entrepreneurship, akin to athletic scholarships.” *(Page 44)*

Historical perspective:

1. June 2012 – Commercialization Task Force report issued – Believe in Ohio develops its program to implement K-12 task force recommendation.
2. January 2013 – Believe in Ohio formally proposed its program to OBOR.
3. June 2013 - \$5 million for Believe in Ohio approved in 2014-2015 biennial budget.
4. Delayed Controlling Board approval caused 2013-2014 school year to be largely missed. (\$427,000 expended during 2013-2014 in prep for 2014-2015 launch.)
5. 2014-2015 school year – initial rollout of program. (\$2,537,641 expended)

Historical perspective:

6. 2015-2016 school year –second full year of program is a period of great growth (\$1,875,000 expended under “no-cost contract extension”.)
7. HB 501 for \$3 million for 2016-2017 school year introduced in March 2016 with ten bipartisan sponsors, however House adjourned before legislation was acted upon.
8. Additional “no cost contract extension” granted to continue program until December 31, 2016 with remaining \$152,000 funding.
9. House/Senate sponsors plan to introduce \$489,000 in bridge funding in lame duck session for January - June 2016
10. \$3 million in annual funding for each of next two years of 2017-2018 biennial budget is requested to continue and grow the program.



**Overview of program
accomplishments to date....**

What teachers are saying about Believe in Ohio



ANDREA HARPEN
*Science Teacher at
Blanchester HS*

“I think that the Believe in Ohio program is a fantastic program. I think that it is dead on. ... I feel that this program more that anything else I’ve done has really benefited my students and really gets at the core of what we are targeting for as we are trying to improve science education. ... I think it is so much better than testing, testing, testing.”

Believe in Ohio Accomplishments During Its First Two Years (2014-2015 and 2015-2016):

- More than 4,000 students, teachers and guests attended one of 15 STEM Forums held around the state. *(In 2016, there will be 13 Forums.)*
- More than 70 leading Ohio STEM researchers & practitioners spoke & were videoed at the prior two year's Forums. *(In 2016, 50 more will speak.)*
- More than 300 teachers from more than 150 schools, including more than 10,000 students, participated in STEM Commercialization and STEM Business Plan competitions at their schools.
- More than \$1.5 million in cash awards and scholarships to Ohio colleges & universities and more than \$300,000 in teacher support grants were awarded.

What teachers are saying about Believe in Ohio



ANDY BRUENING
*Science Teacher at
Strongsville HS*

“This is it. This is the solution to standardized tests. This is what we need to have more of. This is experiential learning. This is kids finding their own way in Ohio. This is going to help Ohio. I became a science educator to help the Ohio science community and I think that this is the best thing I have seen in my ten years of teaching.”

Believe in Ohio Accomplishments Supporting Ohio's Underserved

While not excluding any Ohio student from participation, Believe in Ohio is especially focused on Ohio's underserved urban and rural school districts:

- Based on the ODOE's report card on "Preparing students for Future Success, only 7% of Ohio high schools received an "A" or "B", while 56% received a "D" or "F".
- In 2015-2016, more than 1,000 urban students and more than 4,500 rural students (out of nearly 10,000 total students) did Believe in Ohio STEM plans.
- While much more work needs to be done, significant urban programs were developed in Cleveland and Toledo

What teachers are saying about Believe in Ohio



CATHERINE TATE

*Teacher - MC² STEM High
School Cleveland Metropolitan
School District*

“It was a huge opportunity for my students, both in terms of the product that they had to create and in terms of the potential scholarships and opportunities that they get as a result of participating. A technical writing piece of the caliber that they had to provide is phenomenal!”

Bowling Green State University Hatch Jr. Competition (Fall 2016)



Caitlin Yanney & Destinee Therian

Shark-Detecting Buoy

First Prize Winner



Natassja Gresham & Brittany McDuffie

Organic, Nontarnish, Handmade Jewelry

Second Prize Winner (Tie)



Brandon Smith & Malcolm Richardson

Diablo Canyon Water Solution

Second Prize Winner (Tie)

BGSU®

**THE
HATCH** Jr.

Believe in Ohio Provides Extensive Resources to Help Teachers Help Students Develop their STEM Plans:

1. STEM Plan Instructional Booklets
2. Ohio Roadmap to Future Jobs & Prosperity
3. STEM Commercialization Plan and Business Plan templates and sample plans
4. Student Instructions for Determining the Commercial Feasibility of their Plan and Developing the Plan Itself

Believe in Ohio Provides Extensive Resources to Help Teachers Help Students Develop their STEM Plans:

5. Student Instructions for Writing & Formatting Their Plans
6. Instructions for Preparing a Three Year Financial Projection and STEM Plan Research Sites
7. Patent and Intellectual Property Instructional Information
8. Instructional ideas for teachers to teach about critical thinking and creative skills, analytical and problem solving skills, communications and collaboration skills, research and technical writing skills

Believe in Ohio Offers Teachers & Students A Large Portfolio of Support Resources:

- Believe in Ohio program also offers six regional *“Introduction to the Innovation Economy of Ohio”* courses that teachers can use as a resource, each of which includes 140-160+ videos.
- *“Introduction to the Innovation Economy of Ohio”* course also provides much of the content of an University of Akron *College Credit Plus* course, and is also part of an upcoming *Career Tech* college credit course.

Six Regional “Introduction to the Innovation Economy of Ohio” Online Courses for 2015-2016 and 2016-2017

Central Ohio Innovates Content Track A Content Track B Content Track C Content Track D Content Track E "Ohio Means Jobs" Career Planning

Introduction to the Innovation Economy of Ohio - Central Ohio Edition
"Believe in Ohio's Free Online Course for the Students, Teachers & Citizens of Ohio"

What is this course about? Why is it important?

The purpose of the Believe in Ohio program and this free online course is to introduce the students, teachers and citizens of Ohio to Ohio's "Innovation Economy", to inspire Ohio's students to pursue their STEM educations and careers in Ohio, and to encourage today's students to become the future innovators and entrepreneurs Ohio needs to help develop the new products and services and jobs of the future.

The State of Ohio offers great promise for students who want to build a prosperous future for themselves by developing an entrepreneurial mindset, working hard, and applying what they are learning to develop the new products and services and jobs of the future. If you are a student in Ohio and you do not know about our State's Innovation Economy, you need to take this course to help prepare you for the future.

What does this course include? How does it work?

This course includes nearly 100 videos and video lectures grouped into different content tracks that you can view either as part of a structured online course for high school or college course credit, or simply based on your interests. This course can be viewed in multiple ways:

- 1) Through your web browser on this site (www.cominnovates.com)
- 2) On iTunes University where it can be viewed from an iPhone, iPad or personal computer
- 3) On iLearn Ohio's web-based interface with videos fed via YouTube. In addition, on the iLearn platform individual student progress and grades can be tracked and assessment quizzes are hosted and stored.

Explore The Course By Choosing A Content Track Below:

- Track A - Understanding the challenges and opportunity of the future
- Track B - In their own words, stories of entrepreneurs from students to serial entrepreneurs
- Track C - Understanding the entrepreneurial ecosystem of Central Ohio's Innovation Economy
- Track D - Understanding the many entrepreneurial STEM research, development and commercialization initiatives in Ohio
- Track E - Other innovation and entrepreneurship of interest to Ohio's future innovators and entrepreneurs
- "Ohio Means Jobs" - Ohio's Career Planning and Job Hunting Website

Regional courses:

- Central Ohio
- Northeast Ohio
- Northwest Ohio
- Southeast Ohio
- Southwest Ohio
- Dayton/West Central Ohio

Course is viewable on:

- Believe in Ohio website
- iTunes University
- State's iLearn Platform

Features:

- Each video has assessment quiz
- Use individually or part of course
- Key component of College Credit Plus programs in 2016-2017
- 194 unique videos



**Review of significant program
elements....**

Regional STEM Commercialization and Entrepreneurship Forums Held Throughout Ohio

- **4,000+** high school students, teachers & guests attended one of 15 Believe in Ohio STEM Forums in Ohio during 2014 and 2015.
- **STEM Forums were held all across the state** at Hudson HS, Westerville North HS, Miami Valley Career Technical Center, OU, UC, U of Akron, LCCC, OSU-OARDC, Wright State, UT, and Cleveland State.
- **More than 100 leading Ohio STEM researchers & practitioners** spoke at the 2014 and 2015 Forums about their visions of the future, with presentations videoed for those who were not able to attend.



Fall 2016 STEM Forum Locations

- University of Cincinnati
- Wright State University
- The Ohio State University
- University of Toledo
- Bowling Green State University
- Lorain County Community College
- Ohio State University Agricultural Research & Development Center
- Cleveland State University
- Hiram College
- John Carroll University
- Kent State University
- Kent State University Tuscarawas
- Youngstown State University



Student brainstorming session at University of Toledo STEM Forum – October 27, 2016



STEM Forum at OSU-OARDC – November 8, 2016



Student pitching their idea at OSU-OARDC STEM Forum November 8, 2016





Regional and State STEM Plan Competitions

- 731 students earned the right to participate in Believe in Ohio's 2016 regional STEM Plan competitions
- 170 students from 48 high schools in 25 counties participated in Believe in Ohio's 2016 statewide competition and won \$500,000 in scholarships to Ohio universities
- Altogether during 2015 and 2016, more than \$1.8 million in local and state cash awards and scholarships and teacher support grants were awarded.

What parents are saying about Believe in Ohio



LINDA D'IPPOLITO

*Parent of a student at Canfield
High School (Youngstown Area)*

“Once I started reading the literature and understanding the opportunities and the amount of money the state of Ohio is willing to invest in my son... Why wouldn't he turn around and come back and invest in Ohio? He's looking at Ohio schools more closely, and I know he would really like to come back here.”

2015-2016 Local High School & Middle School Awards:

Local competition awards - \$158,000

Local teacher support grants - \$153,000

Total local school awards - \$311,000

What teachers are saying about Believe in Ohio



NANCY MILLER
*Science Teacher at
Canton South HS*

“All of my students benefited. Some of my children who are the lowest excelling in class, excelled in this program. It gives them an opportunity to take what they know and build on it, rather than being chopped down for the things that they don’t know.”

2015-2016 State Competition High School Awards:

- Students from 44 high schools in 24 counties won awards
- 11 students/teams won \$20,000 scholarships
- 12 students/teams won \$10,000 scholarships
- 23 students/teams won \$5,000 scholarships
- 54 students/teams won \$1,000 education awards

**Total State Competition Awards -
\$464,000**

What students are saying about Believe in Ohio



JENNA ZUZOLO

*Student at
Tippecanoe HS*

“The Believe in Ohio program is a great opportunity for students from all types of classes to really invest themselves into trying to solve a problem that deals with them personally in their life. I definitely think I benefited from this. It was an amazing experience and I learned so much.”



- **Future directions**
- **Requests for continued support**

Believe in Ohio Planned Program & Competition Changes for Current 2016-2017 School Year:

- MOU and plan submission deadlines pushed back about six weeks to allow students more time to complete plans.
- Teacher grant program will be discontinued for 2016-2017; plan to reinstate in 2017-2018 on different basis.
- Regional competition eliminated in favor of combined regional/state competition to be held over the summer with both a written plan and a video pitch submission.
- Small school competition grant threshold added, Middle School competition grant awards will be increased.

Total Awards to Students and Teachers:

	2014/2015	2015/2016	2016/2017	2017/2018
Number of STEM Forums	7	8	13	16-20
Local Competition Awards	\$120,000	\$158,000	\$200,000	\$300,000
Teacher Support Grants	\$175,000	\$153,000	\$ ---	\$100,000
State Competition Awards	\$803,000	\$464,000	\$ ---	\$445,000 \$1,000,000
Total to Students/Teachers	\$1,098,000	\$775,000	\$200,000	\$1,845,000

Requests for continued support

- Support \$469,000 bridge funding for 2016/2017
- Support \$3 million in annual funding for 2017/2018 & 2018/2019



**What Believe in Ohio has done is create a
“*A High School & Middle School Educational STEM
Entrepreneurial Ecosystem*” for the State of Ohio.**

We ask for your support to continue to grow the Believe in Ohio program for the benefit of its students and the continued prosperity of our state.