



## **High School STEM Innovation and Ohio College Scholarship and Retention Program STEM + Development of an Entrepreneurial Mindset = Innovation = Jobs**

*Written Testimony of John M. Klipfell, Michael E. Woytek and Anna M. Tobler to the Ohio Senate Higher Education Committee, Senator Stephanie Kunze, Chair, Senator Theresa Gavarone, Vice Chair, and Senator Sandra Williams, Ranking Member - May 15, 2019*

Request for your support to fully fund Appropriation Item 235597, High School STEM Innovation and Ohio College Scholarship and Retention Program in Ohio's 2020-2021 Budget \$7,433,000 (\$3,530,000 in FY 2020 and \$3,903,000 in FY 2021). Sub .H.B. 166

Chairwoman Kunze, Vice Chair Gavarone, Ranking Member Williams, members of the Senate Higher Education Committee. Thank you for allowing us to offer testimony requesting you to fully fund Appropriation Item 235597 High School STEM Innovation and Ohio College Scholarship and Retention Program in Ohio's 2020-2021 Budget for \$7,433,000 (\$3,530,000 in FY 2020 and \$3,903,000 in FY 2021). Sub. H.B. 166

Popularly known as the *Believe in Ohio* Program, this \$7.4 million appropriation is designed to create a "Culture of Innovation" in Ohio's high schools and an innovation pathway between Ohio's high schools and Ohio's colleges and universities as originally recommended by the Ohio Board of Regents.

It does this by re-establishing the *Believe in Ohio* Program as the foundation for a "High School STEM, Innovation, Scholarship and Retention Program" designed to reach into every one of Ohio's 99 House and 33 Senate Districts. (Note: Two-thirds of the \$7.4 million requested is for scholarship awards for Ohio students.)

We respectfully request your support to increase this appropriation from the House passed \$1 million in FY20 and FY21, to a fully funded \$3.530 million in FY20 and \$3.903 million in FY21.

My name is John Klipfell. I am Executive Director of Entrepreneurial Engagement Ohio (EEO), which is an educational and entrepreneurship not-for-profit based in Cleveland. I am here with Mike Woytek, Executive Director of the Ohio Academy of Science (Academy), which is a membership based, volunteer-driven, not-for-profit, based in Columbus, whose mission to foster curiosity, discovery, and innovation and problem-solving skills in Ohio. Mike and I are the Co-Directors of the *Believe in Ohio* program.

With more than 1,400 members and a network of thousands of supporters and volunteers, the Academy is the only organization in Ohio with the experience, infrastructure and ability to make *Believe in Ohio* a reality.

Also, with us today is Anna Tobler, an OSU senior engineering student from Blanchester, Clinton County. Ms. Tobler was the beneficiary of a *Believe in Ohio* scholarship in 2016. She will share with you her inspiring story.

Not able to be with us today is Dr. Julian Earls, who was called to Washington this week where he serves on a federal Homeland Security advisory committee. Dr. Earls was formerly the Director of NASA Glenn Research Center, is currently a special advisor to the President of Cleveland State University, and is also the President of Entrepreneurial Engagement Ohio.

*For more than a decade, there has been a need in Ohio for a program like Believe in Ohio.*

In 2007, Dr. Karen Holbrook, President of the Ohio State University, and Dr. Earls were asked by the Governor to co-chair *the Science and Mathematics Education Policy Advisory Council (SAMEPAC)* for the State of Ohio. SAMEPAC developed findings and made policy recommendations for improvements in mathematics and science education in Ohio, which as too often happens, were largely placed on the shelf and not implemented.

In 2012, the Ohio Board of Regents led a Commercialization Task Force about *Advancing Ohio's Innovation Economy*, which included recommendations to create an innovation pathway between the K-12 education system and the University System of Ohio. At that time, EEO and Academy collaboratively came together to develop the *Believe in Ohio* program to implement a number of Task Force recommendations. In 2013, the General Assembly appropriated \$5 million to develop the program, which was successfully implemented during 2014-2016 and included over 300 teachers at 150 high schools in 50+ Ohio counties, and more than 10,000 students. However, in 2016-2017, funding for the program was not renewed due to budget shortfalls.

Since then, the *Believe in Ohio* team has evolved and improved the program, seeking to bring together many of the education silos that currently exist into a focused yet multi-faceted program to retain our best and brightest and highest potential entrepreneurial and innovative students in Ohio. One important element of the program is to award two hundred and thirty-five \$10,000 Innovation scholarships annually, coupled with a support program to encourage our high school students to continue their education and careers in Ohio.

Here are a number of reasons why full funding of this program makes sense for Ohio, now more than ever.

1. Ohio has already invested in this successful program and established infrastructure in previous state budgets, why now move away from that investment?
2. Between 2012 - 2023 the number of Ohio high school graduates will decline by more than 16%, which is creating recruitment problems and financial issues for Ohio colleges and universities.
3. In most parts of Ohio, the population is stagnant or declining. While efforts are being made to "attract" people to Ohio, little is being done to retain our talented young people in our state, before they leave.
4. About 15% of Ohio students go to college out of state, including about one in five who attend four-year colleges. These include many of our most innovative and entrepreneurial students. More needs to be done to address and curb Ohio's brain drain.
5. Most high school students, parents & teachers have little knowledge of why Ohio is a good place for students to create their futures. More needs to be done to promote Ohio to them.
6. While Ohio has (a) programs to help develop & incubate startup companies (*JumpStart, Rev1, CincyTech*), (b) programs to attract/retain existing companies (*JobsOhio, regional programs*), (c) programs to train/retrain workers for unfilled jobs (*Dept of Workforce Development*), programs dedicated to retaining our most innovative students in Ohio do not exist. This program seeks to do that.
7. After the program is established, companies, foundations and individuals throughout Ohio will be encouraged to fund additional \$10,000 scholarships to be awarded to additional students within a district, county, or city as designated by the donor.

Mr. Mike Woytek offers additional thoughts about *Believe in Ohio*.

8. It is well known that in order to meet the demands of the labor market in a time of rapid technological change and industry disruption, today's students need rigorous science and mathematics coursework to

satisfy the needs of an ever-changing marketplace. What if we had a program that showed students why STEM actually matters? So, rather than force rigorous science and math sequences that are usually taught separately, or perhaps without obvious purpose, and risk losing the majority of students to disinterest, let's focus on providing an experiential learning opportunity that not only excites the educational process, but actually develops critical thinking and problem-solving skills and encourages lifelong learning. That program has already been developed and successfully implemented. It's *Believe in Ohio*.

9. *Believe in Ohio* provides a curriculum that allows students to explore their own areas of interest by commercializing solutions or developing products through a STEM research plan or technological design. This allows students to teach themselves by understanding and valuing the necessary resources needed to complete a project, including the proper background and training in the sciences and mathematics.
10. *Believe in Ohio* addresses the question that students always ask, "why do I need to learn this stuff, anyway?" Through self-discovery, *Believe in Ohio* provides students with a sense of purpose and direction for planning post-secondary education and career orientation. It emphasizes the importance of STEM and the need to develop an entrepreneurial mindset to compete in today's Innovation Economy.
11. Other than a small group of mostly private and upper demographic public schools, only a small percent of Ohio's 1,000+ high schools have access to the resources and programs needed to prepare their students to be "competitors" in Ohio's innovation economy.
12. To the extent that other programs do exist, they largely operate in their own silos with little to nothing that brings them together to create an overall big-picture strategy. By implementing the High School STEM, Innovation, Scholarship and Retention Program for each of Ohio's 99 House and 33 Senate Districts, *Believe in Ohio* would be uniquely positioned to provide an inclusive opportunity that can utilize existing STEM programs and partnerships between industry and higher education throughout the state.
13. *"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."* – Teacher Andy Bruening
14. *"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 than 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."* – Teacher Andrea Harpen

Ms. Anna Tobler, an Ohio State senior engineering student, from Blanchester in Clinton County shares with you her inspiring story since she was awarded a *Believe in Ohio* scholarship in 2016.

1. Coming from a poor, rural area the ability of my high school to fully develop and promote a love of science was difficult. *Believe in Ohio* made college a possibility for many of my peers and myself. This scholarship was the deciding factor for me going to The Ohio State University.
2. I engaged in two research projects during this program. In a recent interview with Battelle, this part of my resume peaked their interest and gave me a competitive edge. I just accepted a co-op from them.

**While we thank the House for recognizing the value of our program, we ask the Senate to finish the job by providing the funding actually needed to successfully implement the program.**