

**Interested Party Testimony
Senate Finance Committee
Am. Substitute HB 166-Biennial Operating Budget 2020-2021**

**Grady Burrows, Director of Health IT Talent, BioEnterprise
May 29, 2019**

Chairman Dolan, Vice Chair Burke, Ranking Member Sykes, and members of the Senate Finance Committee – Thank you for the opportunity to provide testimony on HB166 in support of our request for \$500,000 per year for the STEM Educator Professional Development Collaborative. It will provide professional development and strategic training for teachers in the STEM fields that is tailored to each region of the state and community in which teachers teach – all inside an incubator setting that enables teachers to test instruction before bringing it into their classrooms and provides a full year of support following the training. Through a unique collaboration with the PAST Foundation, we will reach across the state to provide this much-needed professional development for teachers to ensure students obtain effective STEM education that engages, inspires and ultimately, helps develop the next generation of STEM workers, entrepreneurs and leaders.

My name is Grady Burrows and I serve as the Director of Health IT Talent for BioEnterprise.

BioEnterprise works directly with businesses in the STEM fields primarily around health innovation, including health IT. We have helped 320 companies grow and succeed, providing hands-on services that range from writing business plans, recruiting talent, providing workforce training, conducting market research and pitching to venture capitalists. We play an integral role in finding the talent needed to grow businesses in Ohio and in building a diverse STEM pipeline that meets the needs of high-tech employers.

We have seen a dearth of teachers in STEM and computer science, in particular. Even though an increase in statewide demand for STEM professionals is projected to grow over the next five years, including a 12% increase for software developers alone – courses in coding and broad computing concepts that include algorithms, data, programming and software engineering are not being offered to most Ohio students.¹ As a result, the supply of diverse, skilled, local, entry-level workers is lagging, which has created a gap of unfilled in-demand jobs. We know that businesses assess the availability of a diverse and qualified local workforce when deciding to stay in an area, expand or relocate. Recognizing this growing gap in the talent pipeline, BioEnterprise launched the Health IT Community Classroom which is providing high school students, who otherwise do not have access, with courses in computer coding and giving them the necessary skills and knowledge to make them better equipped to succeed in continuing their education after high school.

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Within Northeast Ohio, Team NEO, the regional business and economic development organization found 65% of in-demand jobs by 2020 will require education or training beyond high school, yet only 54% of current Northeast Ohioans could qualify for those jobs. Of the 3,592 schools in Ohio, only 141 of them offered an AP Computer Science course in 2017-2018.¹ Also, too many youth are losing interest in STEM, which we think has a direct correlation to STEM teacher professional development. Of the one million high school freshmen who declared an interest in STEM education, 57 percent lost that interest by the time they graduated and began looking toward college or full-time work, according to a recent study.² Moreover, universities in Ohio did not graduate a single new teacher prepared to teach computer science in 2016.

We are losing the next generation and destroying our state's ability to remain a national leader in innovation if we do not invest in STEM education, starting with our teachers. Ohio is the birthplace of aviation, the first automobile self-starter, countless health innovations and a one-of-a-kind Ohio Cyber Range that doesn't exist in any other state in the country. This innovation will not continue unless we foster it.

Our focus is on training teachers because far too many teachers lack the confidence to teach STEM and do not know how to weave STEM into their instructional methods. If we don't start with the teachers, we will not have the students or workforce talent needed to fill STEM jobs now and in the future. Schools are struggling to provide access to STEM courses with a severe shortage of effective STEM educators and more than half of public school districts throughout Ohio and across the country report difficulties recruiting and retaining knowledgeable STEM teachers. Having a vibrant workforce pipeline with a pool of diverse and qualified talent in STEM is among the top factors the businesses we work with every day consider in staying in, expanding or relocating in Ohio. Our state is far behind the curve when it comes to building or sustaining a pipeline of qualified STEM and IT workers.

BioEnterprise is teaming up with the PAST Foundation, based in Columbus and already engaged in training educators across the state. We also collaborate with 21 community partners including philanthropic and corporate sponsors, hospital systems, institutions of higher education, and local school districts that formed the Northeast Ohio Health IT Talent Collaborative to enable instruction from coding professionals from IBM Watson Health and Tech Core using a curriculum provided by Hyland Software:

-Next Page-

¹ Code.org; "Support K-12 Computer Science Education in Ohio"

² myCollegeOptions and STEMconnector, Where Are the STEM Students?, USA, 2013

• Baldwin Wallace University	• Cuyahoga County Community College	• North Olmsted City Schools
• BioEnterprise	• Hyland	• North Royalton City Schools
• Case Western Reserve University	• IBM Watson	• OnShift
• Cleveland Foundation	• John Carroll University	• Pandata
• Cleveland Metropolitan School District	• Kent State University	• PartsSource
• Cleveland State University	• Lorain County Community College	• The Ohio State University
• CoverMyMeds	• MetroHealth	• University Hospitals

Thank you for your consideration. We hope to have garnered your support of the STEM Educator Professional Development Collaborative to provide proven effective professional development and strategic training for teachers in the STEM fields, tailored to each region of the state and community in which teachers teach and using an incubator setting that enables teachers to test instruction before going into classrooms. It also provides a full year of support following the training, which is unheard of in teacher training programs. Through a unique collaboration with the PAST Foundation and STEM businesses, we will reach across the state to provide this much-needed professional development.

I am happy to answer any questions.

Grady Burrows
 Director, Health IT Talent
 BioEnterprise

May 16, 2019

The Honorable Matt Dolan
Ohio Senate, Room 127
1 Capitol Square
Columbus, OH 43215

The Honorable Vernon Sykes
Ohio Senate, Room 51
1 Capitol Square
Columbus, OH 43215

Dear Chairman Dolan and Ranking Member Sykes,

As supporters and members of the Northeast Ohio Health IT Collaborative, we are reaching out in support of an amendment that has been offered to H.B. 166, the state operating budget, for \$500,000 in each fiscal year for the STEM Educator Professional Development Collaborative managed by BioEnterprise and the PAST Foundation. This project will give students access to courses and training that provide an agile mindset, necessary skills, and knowledge that equip them to succeed in continuing their education after high school and compete for in-demand STEM and IT-related jobs, while also providing professional development and strategic training for teachers in STEM fields that is tailored to each region of the state – all inside an incubator setting that enables teachers to test instruction before bringing it into their classrooms.

This program will invest in the scale-up of a pilot program for STEM professional development for PreK-12 educators. In order to build the STEM pipeline of talented workers, entrepreneurs and inventors, we need our teachers to be able to teach STEM with confidence and in a meaningful way that includes problem-solving based on real-life challenges facing industry and most of all, is engaging for students. A significant number of teachers do not feel confident and even anxious about STEM, are ill-prepared and lack an understanding of how to include STEM principles in various courses in their classrooms. The STEM Educator Professional Development Collaborative works to address this challenge.

The focus of this project is on training teachers in the top five in-demand STEM jobs that are experiencing gaps in the workforce throughout Ohio to address some major challenges inhibiting students from reaching their full potential. PAST works hand in glove with industry to help educators design curriculum, internship programs, and mentoring opportunities that have given over 244,000 students in 19 years the ability to develop skills necessary for a successful career in a high-demand STEM field. Meanwhile BioEnterprise has spent a dozen years working with over 300 entrepreneurs and companies primarily in health innovation but touching all of the STEM fields from the inside out, helping them form business plans, find talent, develop skills, pitch to venture capitalists and build the pipeline of STEM workers through the Health IT Community Classroom. With PAST's expertise in training teachers and educating students across the state and BioEnterprise's expertise in working with companies needing to hire STEM-savvy employees and providing skill development programs, the STEM Educator Professional Development Collaborative can meet a state need with a uniquely effective approach.

As local community and industry partners of BioEnterprise, we can attest to the need for an available, diverse, and qualified STEM workforce. Within Northeast Ohio, Team NEO, the regional business and economic development organization found 65% of in-demand jobs by 2020 will require education or training beyond high school, yet only 54% of current Northeast Ohioans

could qualify for those jobs. Also, too many youth are losing interest in STEM. Of the one million high school freshmen who declared an interest in STEM education, 57 percent lost that interest by the time they graduated and began looking toward college or full-time work, according to a recent study. Moreover, universities in Ohio did not graduate a single new teacher prepared to teach computer science in 2016.

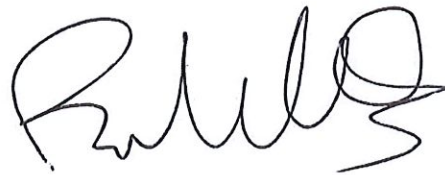
In order for Ohio to remain competitive, globally, our teachers need to be able to prepare the state's emerging workforce as the pace of change driven by new technologies accelerates.

Thank you for your support and consideration.

Sincerely,



Ronn Richard
President and CEO
Cleveland Foundation



Rich Edwards
Director, Software Engineering
CoverMyMeds



Caitlin Nowlin
Technical Outreach Program Manger
Hyland



Matthew M. Pohlman, PhD
Director
Applied Informatics Development
IBM Watson Health



Morgan Collins
Director, Employee Experience
OnShift



Robert Sanchez
Senior Vice President
Chief Human Resources Officer
PartsSource



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Ohio Senate, Room 127
1 Capitol Square
Columbus, OH 43215

The Honorable Vernon Sykes
Ohio Senate, Room 51
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Dear Chairman Dolan and Ranking Member Sykes:

I am reaching out in support of an amendment that has been offered to H.B. 166, the state operating budget, for \$500,000 in each fiscal year for the STEM Educator Professional Development Collaborative managed by BioEnterprise and the PAST Foundation to train teachers in the most effective ways to teach problem-solving STEM education based on real-life industry challenges and educate youth otherwise lacking computer science resources in their schools.

This program will invest in the scale-up of a pilot program for STEM professional development for PreK-12 educators. In order to build the STEM pipeline of talented workers, entrepreneurs and inventors, we need our teachers to be able to teach STEM with confidence and in a meaningful way that includes problem-solving based on real-life challenges facing industry and most of all, is engaging for students. A significant number of teachers do not feel confident and even anxious about STEM, are ill-prepared and lack an understanding of how to include STEM principles in various courses in their classrooms. The STEM Educator Professional Development Collaborative works to address this challenge.

Bounce is Akron's first open innovation hub offering an incubator program, a mentoring program and a software accelerator. As an industry partner of BioEnterprise in serving Northeast Ohio's entrepreneurial and innovation community, we can attest to the need for an available, diverse, and qualified STEM workforce. Within Northeast Ohio, a recent study found 65% of in-demand jobs by 2020 will require education or training beyond high school, yet only 54% of current Northeast Ohioans could qualify for those jobs. Also, too many youth are losing interest in STEM. Of the one million high school freshmen who declared an interest in STEM education, 57 percent lost that interest by the time they graduated and began looking toward college or full-time work, according to another recent study. Moreover, universities in Ohio did not graduate a single new teacher prepared to teach computer science in 2016. In order for Ohio to remain competitive, globally, our teachers need to be able to prepare the state's emerging workforce as the pace of change driven by new technologies accelerates.

Thank you for your support and consideration. Please do not hesitate to reach out to me with questions.

Sincerely,

Michael Haritakis

Michael Haritakis
Biomedical Entrepreneur in Residence
Bounce Innovation Hub
216-577-1716



The Honorable Matt Dolan

Ohio Senate, Room 127
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As an industry partner of PAST Foundation's, we can attest to the skills gap we are facing as an employer in the STEM field. We are committed to interacting with the K-12 education system to help address the gaps in Ohio's workforce pipeline, and we partner with PAST to work to address this challenge. PAST helps us make connections with the emerging workforce in a meaningful way, and we encourage the state to fund this budget amendment request so that other businesses can do so, as well. Our teachers need to be able to prepare the emerging workforce as the pace of change driven by new technologies accelerates.

Thank you for your consideration. Please do not hesitate to reach out to me with questions.

Sincerely,

A handwritten signature in black ink that reads "Jeanne Gogolski".

Jeanne Gogolski
CEO, EducationProjects.org



We Manufacture Innovation

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Thank you for your consideration. Please do not hesitate to reach out to me with questions.

Sincerely,

A handwritten signature in black ink that reads "Chris Kiminas". The signature is written in a cursive, flowing style.

Chris Kiminas
President, EWI Ohio