Xometry_RandyAltschuler_FAV_SB0369
Uploaded by: Altschuler, Randy
Position: FAV

7951 Cessna Avenue, Gaithersburg, MD 20879 | 240-252-1138

Senate Bill 396/ House Bill 804:
Workgroup to Study Maryland's Emerging Digital Economy
SUPPORT
Senate Finance Committee

February 25th, 2020

Dear Chairwoman Kelley and Committee Members:

I am writing in support of Senate Bill 369/ House Bill 804 (as amended), entitled Workgroup to Study Maryland's Emerging Digital Economy.

As CEO of Xometry, a nationally recognized digital manufacturing company that has grown from 30 to over 300 employees in the past four years, I know first hand how digital technologies are fundamentally changing the world of work and job skills required in manufacturing.

New and emerging technologies are rapidly changing and modernizing the manufacturing landscape. Technologies, including automation and artificial intelligence (AI), are becoming more prevalent and changing the way companies organize to be competitive and grow jobs. At Xometry, we have been able to adopt AI in expanding our customer base.

Manufacturers will need to partner with industry leaders, education stakeholders, and others to explore these recommendations and other new solutions to prepare Maryland's employers and workforce adequately for the future. It is for these reasons and others, why the passage of Senate Bill 369/ House Bill 804 (as amended) is so critical.

Thank you for your consideration.

Sincerely,

Randolph Altschuler

Randy Altschuler
CEO, Xometry

SB 369 Testimony--FINAL djh
Uploaded by: Fidler, Sara
Position: FAV

MICUA Maryland Independent College and University Association

Written Support

Senate Finance Committee

Senate Bill 369: Workgroup to Study Maryland's Emerging Digital Economy

Sara C. Fidler, President
sfidler@micua.org

February 25, 2020

On behalf of Maryland's independent colleges and universities and the 65,600 students we serve, thank you for the opportunity to provide testimony for ***Senate Bill 369: Workgroup to Study Maryland's Emerging Digital Economy.*** If enacted, Senate Bill 369 would create a workgroup to create a framework for Maryland to compete effectively in the "Industry 4.0" (I-4) future. This concept focuses on how emerging technologies will affect the manufacturing industry in the future. The workgroup is charged with examining a wide range of issues—higher education curricula, professional research, public-private partnerships, apprenticeships, State grants, new tax credits, and the State's current statutory and regulatory authority over manufacturing

MICUA appreciates having representation on this workgroup and looks forward to supporting its work. Our member colleges and universities have been at the forefront of developing curricula, preparing the workforce, and bringing to bear nationally acclaimed research for the information-driven economy. It is a source of pride that we are developing the thoughtful, creative, intuitive and responsible leaders needed to take us into the I-4 era. One related example is in our preparation of cybersecurity professionals. Five MICUA member institutions have approved cybersecurity programs at the certificate, bachelor's, master's, or doctoral levels: Capitol Technology University, Hood College, Johns Hopkins University, Mount St. Mary's University, and Stevenson University.

For many years, the demand for highly skilled cybersecurity workers in Maryland was fueled by Maryland's robust defense and intelligence industry, which includes numerous federal agencies, military bases, and defense contractors. More recently, this demand is fueled by the need to guard essential services, such as electric grids, banking systems, hospitals, correctional facilities, private sector business activities, and more. As a result, Maryland is experiencing a severe shortage of highly trained professionals to protect the integrity of data, communications, and intellectual property. The experience of MICUA institutions in addressing these issues will prove to be a valuable asset to the I-4 workgroup proceedings.

MICUA looks forward to participating in this worthy effort and urges a favorable Committee report for Senate Bill 369.

LionBrothers_SusanGanz_FAV_SB0369
Uploaded by: Ganz, Susan J.
Position: FAV

LIONBROTHERS
IDENTITY MATTERS™

Senate Bill 396/ House Bill 804
Workgroup to Study Maryland's Emerging Digital Economy
SUPPORT
Senate Finance Committee
February 25th, 2020

Dear Chairwoman Kelley and Committee Members:

It comes with great respect that I write this letter of support for Senate Bill 369/ House Bill 804 (as amended), entitled Workgroup to Study Maryland's Emerging Digital Economy. As Chief Executive Officer of Lion Brothers Co. Inc., our Company and its members are seeking means on bridging the connections of qualified workers with manufacturing employers throughout the state.

New and emerging technologies are rapidly changing and modernizing the manufacturing landscape. While such technologies, including automation and artificial intelligence (AI), are becoming more prevalent, recent evidence is telling a different story that is proving to be consequential to current and future workers in today's modern manufacturing industries. Computers and the internet of things enabled a digitalization of work that made highly educated workers more productive and made less-educated workers easier to replace with machinery. According to a report published by MIT, entitled ***The Work of the Future: Shaping Technology and Institution***s, "outsourcing U.S. production work to China caused, blue-collar manufacturing employment to decline – falling by 1/3 between 1999 and 2010 rapidly." In Maryland, the manufacturing industry has witnessed a severe shortage of skilled workers. Last year, in one month, there were over 5,000 job openings in manufacturing listed by the Maryland Department of Labor's Maryland Workforce Exchange.

Displaced workers, an aging labor force, shortage of new workers in traditional non-college occupations, and disparities in earnings and career paths for minorities are other adverse examples related to these industrial shifts. These facts may help explain why a substantial majority believe that emerging technologies will magnify inequality and make high-paying jobs harder to find.

Investing and innovating to provide workers with new skills is an urgent and indispensable response to the labor market challenges due to emerging technological changes and advancements.

Manufacturers will need to partner with industry leaders, education stakeholders, and others to explore these recommendations and other new solutions to prepare Maryland's employers and workforce adequately for the future. It is for these reasons why the passage of Senate Bill 369/ House Bill 804 (as amended) is so critical.

I write in support of this Senate Bill 369/ House Bill 804 (as amended) and respectfully request this committee to issue a **favorable** report.

Thank you for your consideration.

Sincerely,

Susan J. Ganz

CEO

300 Red Brook Blvd., Suite 410, Owings Mills, MD 21117 ■ www.lionbrothers.com
Phone: 410-363-1000 ■ Toll Free: 800-365-6543

MDChamber_Griffin_Fav_SB369
Uploaded by: Griffin, Andrew
Position: FAV

MARYLAND
Chamber of Commerce

LEGISLATIVE POSITION:
Favorable
Senate Bill 369
Workgroup to Study Maryland's Emerging Digital Economy
Senate Finance Committee

Tuesday, February 25, 2020

Dear Chairwoman Kelley and Members of the Committee:

Founded in 1968, the Maryland Chamber of Commerce is the leading voice for business in Maryland. We are a statewide coalition of more than 4,500 members and federated partners, and we work to develop and promote strong public policy that ensures sustained economic growth for Maryland businesses, employees and families. Part of our work includes developing a workforce and talent pipeline that ensures Maryland's continued economic expansion.

Senate Bill 369 would establish a workgroup to Study Maryland's emerging digital economy. The workgroup will be tasked with examining existing academic research, data, statistics and industrial case studies and making recommendations to the General Assembly that manufacturing organizations may use to develop their workforce to meet the skill demands of the future.

The Maryland Chamber of Commerce supports the goals and initiatives outlined in SB 369, and we are actively participating in many of the areas specified by the legislation. Through the Maryland Chamber Foundation, we are engaged in initiatives including business education on workforce best practices, talent pipeline support, workforce development needs and establishing partnerships between businesses and schools to support underserved communities in career-focused education, licensure, CTE, apprenticeships and more[1]. We look forward to sharing what we've learned in each of these areas with the workgroup, and to working together to remove barriers and increase access to quality workforce development and talent pipeline opportunities for manufacturers.

For these reasons, the Maryland Chamber of Commerce respectfully request a **favorable report** on SB 369.

[1] https://mdchamber.org/foundation/workforce-development/

MDMEP_MichaelKellener_FAV_SB0369
Uploaded by: Kellener, Michael
Position: FAV

Senate Bill 396/ House Bill 804 (as amended):
Workgroup to Study Maryland's Emerging Digital Economy
SUPPORT
Senate Finance Committee

February 25th, 2020

Dear Chairwoman Kelley and Committee Members:

It comes with great respect that I write this letter of support for Senate Bill 369/ House Bill 804 (as amended), entitled Workgroup to Study Maryland's Emerging Digital Economy. As Executive Director of the **Maryland Manufacturing Extension Partnership (MD MEP**), our **Organization** works to identify means on bridging the connections of qualified workers with manufacturing employers throughout the state.

New and emerging technologies are rapidly changing and modernizing the manufacturing landscape. While such technologies, including automation and artificial intelligence (AI), are becoming more prevalent, recent evidence is telling a different story that is proving to be consequential to current and future workers in today's modern manufacturing industries. Computers and the internet of things enabled a digitalization of work that made highly educated workers more productive and made less-educated workers easier to replace with machinery. According to a report published by MIT, entitled ***The Work of the Future: Shaping Technology and Institution***s, "outsourcing U.S. production work to China caused, blue-collar manufacturing employment to decline – falling by 1/3 between 1999 and 2010 rapidly." In Maryland, the manufacturing industry has witnessed a severe shortage of skilled workers. Last year, in one month, there were over 5,000 job openings in manufacturing listed by the Maryland Department of Labor's Maryland Workforce Exchange.

Displaced workers, an aging labor force, shortage of new workers in traditional non-college occupations, and disparities in earnings and career paths for minorities are other adverse examples related to these industrial shifts. These facts may help explain why a substantial majority believe that emerging technologies will magnify inequality and make high-paying jobs harder to find.

Investing and innovating to provide workers with new skills is an urgent and indispensable response to the labor market challenges due to emerging technological changes and advancements. Manufacturers will need to partner with industry leaders, education stakeholders, and others to explore these recommendations and other new solutions to prepare Maryland's employers and workforce adequately for the future. It is for these reasons why the passage of Senate Bill 369/ House Bill 804 (as amended) is so critical.

I write in support of this Senate Bill 369/ House Bill 804 (as amended) and respectfully request this committee to issue a **favorable** report.

Thank you for your consideration.

Sincerely,

Michael Kelleher, Executive Director

Maryland MEP, Inc.
8894 Stanford Blvd. Suite 304, Columbia, MD 21045
410-505-4142

Semforex_SaundraLamb_FAV_SB0369
Uploaded by: Lamb, Saundra
Position: FAV

SEMFOREX INCORPORATED

Innovative Design in Ballistic Apparel

Senate Bill 396/ House Bill 804 (as amended):
Workgroup to Study Maryland's Emerging Digital Economy
SUPPORT
Senate Finance Committee

February 25th, 2020

Dear Chairwoman Kelley and Committee Members:

It is with great respect that I write this letter of support for Senate Bill 369/ House Bill 804 (as amended), entitled Workgroup to Study Maryland's Emerging Digital Economy. As President of Semforex, Inc. I speak for our company as we join in seeking a means of connecting qualified workers with manufacturing employers throughout the state.

New and emerging technologies are rapidly changing and modernizing the manufacturing landscape. While such technologies, including automation and artificial intelligence (AI), are becoming more prevalent, recent evidence is telling a different story about how well we are positioned to respond to this significant shift in the workplace. Computers and the internet have enabled a digitalization of work that made highly educated workers more productive and made less-educated workers easier to replace with machinery. According to a report published by MIT, entitled *The Work of the Future: Shaping Technology and Institutions*, "outsourcing U.S. production work to China caused, blue-collar manufacturing employment to decline – falling by 1/3 between 1999 and 2010 rapidly." In Maryland, the manufacturing industry has witnessed a severe shortage of skilled workers. Last year, in one month, there were over 5,000 job openings in manufacturing listed by the Maryland Department of Labor's Maryland Workforce Exchange.

Displaced workers, an aging labor force, shortage of new workers in traditional non-college occupations, and disparities in earnings and career paths for minorities are other adverse examples related to these industrial shifts. These facts may help explain why a substantial majority believe that emerging technologies will magnify inequality and make high-paying jobs harder to reach by significant segments of our communities.

Investing and innovating to provide Maryland citizens with new skills is an urgent and indispensable response to the labor market challenges presented by emerging technological changes and advancements.

Manufacturers will need to partner with industry leaders, education stakeholders, and others to explore these recommendations and other new solutions to prepare Maryland's employers and workforce adequately for the future. This plan must not only prepare those who customarily have a path to career and skill preparation for the future but must plug in citizens who customarily do not. It is for these reasons why the passage of Senate Bill 369/ House Bill 804 (as amended) is imperative.

I write in support of this Senate Bill 369/ House Bill 804 (as amended) and respectfully request this committee to issue a favorable report.

Thank you for your consideration.

Respectfully,

Saundra L. Lamb, Esq.
President & C.O.O.

1100 Wicomico Street Suite 552 Baltimore, MD 21230 | Tel: (410) 878-1380 | (833) SEM-FOREX • (833) 736-3669
4600 Powder Mill Road, Suite 450-R, Beltsville MD 20705 | Tel: (240) 391-8145 | Fax: (888) 731-3146 | www. semforex.com

PRSGuitars_JamieMann_FAV_SB0369

Uploaded by: Mann, Jamie

Position: FAV

Senate Bill 396/ House Bill 804 (as amended):
Workgroup to Study Maryland's Emerging Digital Economy

SUPPORT
Senate Finance Committee

February 24th, 2020

Dear Chairwoman Kelley and Committee Members:

It comes with great respect that I write this letter of support for Senate Bill 369/ House Bill 804 (as amended), entitled Workgroup to Study Maryland's Emerging Digital Economy. At PRS Guitars, our company is working hard to bridge the connections of qualified workers with quality jobs.

In Stevensville, we manufacture high quality, high end guitars and amplifiers. Our wide range of operations include an intricate balance of technology, craftmanship and labor.

In 2016, our global gross revenues were $42 Million. We are tracking this year to exceed gross revenues of $75 Million. Since the end of 2016, we have created 143 new jobs, more than 90% of those in Stevensville, Maryland. To net 143 new positions, we have actually hired 362 people over this same time period. During the same period, we have also added a robotic spray operation, multiple CNC machines, an automated pick up winding machine, and automated HVAC controls to better control our temperature and humidity. The demand for our product still outpaces our ability to produce.

Our strategy over the next 5 years includes an aggressive push towards robotics. More robotic spraying, robotic sanding and robotic buffing are all in our plans. In most cases, a full-time employee will be working with each robot. So, the move to robotics will not eliminate jobs, but rather it will eliminate the highly repetitive jobs and create higher paying, more technical jobs. Our greatest struggle with retention is holding on to folks who are in repetitive jobs with a long learning curve.

Our strategy with robotics is to eliminate bottlenecks and deliver more consistent, higher quality product. Our guitar manufacturing operation includes roughly 60 different operations. By adding robots to the highly repetitive, labor intensive activities that are currently restraining our overall growth, we will be able to grow the overall output at a higher rate, which will lead to more jobs overall throughout the business.

The second major challenge that we are currently facing involves cashflow. As we grow, we require more inventory, our accounts receivables increase and our need to invest capital to support our information systems, our infrastructure and our manufacturing processes increases significantly. Our debt load continues to increase as we navigate our growth opportunities, increasing our exposure should demand fade at some point in the future.

We greatly appreciate your interest in understanding the challenges we are facing as a manufacturer in Maryland.

I write in support of this Senate Bill 369/ House Bill 804 (as amended) and respectfully request this committee to issue a **favorable** report.

Thank you for your consideration.
Sincerely,

Jamie Mann
President
PRS Guitars

380 Log Canoe Circle, Stevensville, MD 21666 • 410-643-9970 • Fax 410-643-9980
A Division of Paul Reed Smith Guitars, Limited Partnership

MBDAAMC_NScottPhillips_FAV_SB0369
Uploaded by: Phillips, N. Scott
Position: FAV

Senate Bill 396/ House Bill 804 (as amended):
Workgroup to Study Maryland's Emerging Digital Economy
SUPPORT
Senate Finance Committee

Dear Chairwoman Kelley and Committee Members:

The Mid-Atlantic Region Minority Business Development Agency Advanced Manufacturing Center – Baltimore is a federally funded program operated by the City of Baltimore. We partner with organizations like the Regional Manufacturing Institute of Maryland to deliver services to a diverse population of manufacturers. We are one of four centers, nationwide, funded by the Minority Business Development Agency (MBDA), which is a federal agency within the U.S. Department of Commerce. We promote the minority manufacturing community's growth and global competitiveness, better equipping minority manufacturers to create and retain jobs, impact local economies, and compete successfully in domestic and global marketplaces.

We assist our clients and the minority manufacturing community by providing consulting services, contract and financing opportunities, bonding services, building business-to-business alliances, global/ teaming/joint venture opportunities, and executive training.

It comes with great respect that I write this letter of support for Senate Bill 369/ House Bill 804 (as amended) , entitled Workgroup to Study Maryland's Emerging Digital Economy. As the Director of the Center I know our clients are seeking means on bridging the connections of qualified workers with manufacturing employers throughout the state.

New and emerging technologies are rapidly changing and modernizing the manufacturing landscape. While such technologies, including automation and artificial intelligence (AI), are becoming more prevalent, recent evidence is telling a different story that is proving to be consequential to current and future workers in today's modern manufacturing industries. Computers and the internet of things enabled a digitalization of work that made highly educated workers more productive and made less-educated workers easier to replace with machinery.

We are seeing the effects of this fourth industrial revolution on our clients. We need to ensure the legislature is looking closely at the impact of these technologies on our local economies, our small and minority businesses, our employment readiness and our state's competitiveness as the industry develops.

Mayor's Office of Minority and Women Owned Business
City Hall Room 344
100 North Holliday Street
Baltimore, MD 21202
www.BaltimoreMBDA.com

Empowering a study group to understand these implications and provide advice and counsel to the legislature is a step in the right direction. I write in support of this Senate Bill 369/ House Bill 804 (as amended) and respectfully request this committee to issue a favorable report.

Thank you for your consideration.

Sincerely,

N. Scott Phillips

Respectfully Submitted
N. Scott Phillips
Director

Fraunhofer_AdamPorter_FAV_SB0369'
Uploaded by: Porter, Adam
Position: FAV

Fraunhofer USA

Center for Experimental Software Engineering

5700 Rivertech Court, Suite 210
Riverdale, Maryland 20737-1250
Phone: (301) 314-6070
Fax: (301) 314-6077

Senate Bill 396/ House Bill 804 (as amended):
Workgroup to Study Maryland's Emerging Digital Economy
SUPPORT
Senate Finance Committee

February 25th, 2020

Dear Chairwoman Kelley and Committee Members:

It is with great respect that I write this letter of support for Senate Bill 369/ House Bill 804 (as amended), entitled Workgroup to Study Maryland's Emerging Digital Economy. I currently serve as Professor of Computer Science at the University of Maryland, and as the Executive Director of the Fraunhofer USA Center for Experimental Software Engineering (CESE), located in Riverdale, MD. A US 501 (c) 3 not-for-profit corporation, Fraunhofer USA exists to support and advance technological innovation in critical business areas, such as manufacturing. From this vantage point, I have come to see that over the long term, technology advancement is the surest road to more and better jobs for our State's citizens. This requires however, that we also prepare and development qualified workers for the advanced manufacturing employers throughout the state.

More specifically, new and emerging technologies are rapidly changing the manufacturing landscape. While such technologies, including automation and artificial intelligence (AI), are beginning to capture headlines, recent evidence tells a more complex story. While information technology has enabled a digitalization of work that made highly educated workers more productive, it has also made less-educated workers easier to replace with machinery. According to a report published by MIT, entitled ***The Work of the Future: Shaping Technology and Institution***s, "outsourcing U.S. production work to China caused, blue-collar manufacturing employment to decline – falling by 1/3 between 1999 and 2010 rapidly." In Maryland, the manufacturing industry has witnessed a severe shortage of skilled workers. Last year, in one month, there were over 5,000 job openings in manufacturing listed by the Maryland Department of Labor's Maryland Workforce Exchange.

Displaced workers, an aging labor force, a shortage of new workers in traditional non-college occupations, and disparities in earnings and career paths for minorities are other adverse consequences of these industrial shifts. These facts may help explain why a substantial majority of young people believe that emerging technologies will magnify inequality and make high-paying jobs harder to find.

Investing and innovating to provide workers with new skills is an urgent and indispensable response to the labor market challenges due to emerging technological changes and advancements.

Yet this will not happen on its own. Manufacturers will need to partner with industry leaders, education stakeholders, and others to explore these recommendations and other new solutions to prepare Maryland's employers and workforce adequately for the future. It is for these reasons why the passage of Senate Bill 369/ House Bill 804 (as amended) is so critical.

As the Executive Director of a non-profit applied research organization devoted to digital transformation of systems within government, academia and industry, I see this situation growing more critical each day. I therefore respectfully submit this letter in support of Senate Bill 369/ House Bill 804 (as amended), and respectfully request this committee to issue a **favorable** report.

Thank you for your consideration.

Sincerely,

Dr. Adam Porter, Executive and Scientific Director
Fraunhofer USA Center for Experimental Software Engineering

Direct Dimensions_MichaelRaphael_FAV_SB0369
Uploaded by: Raphael, Michael
Position: FAV

Senate Bill 396/ House Bill 804 (as amended)

Workgroup to Study Maryland's Emerging Digital Economy

LETTER OF SUPPORT

Senate Finance Committee

February 25th, 2020

Dear Chairwoman Kelley and Committee Members:

I am writing in support of Senate Bill 369/ House Bill 804 (as amended), entitled *Workgroup to Study Maryland's Emerging Digital Economy.*

As Founder and CEO of Direct Dimensions, Inc., a 25-year old, 25-person, nationally recognized leader in 3D digital imaging for manufacturing, I know full well how digital technologies are fundamentally changing the nature of work and the technology-based job skills required throughout manufacturing.

New and emerging technologies are rapidly changing and modernizing the manufacturing landscape. Advanced technologies such as what we do, which is industrial 3D scanning for dimensional measurement and reverse engineering, is critical to the use of other advanced manufacturing technologies such as additive manufacturing, robotic automation, flying drones, and even artificial intelligence (AI). These *Industry 4.0* movements are fast becoming more prevalent and clearly changing the way companies think and organize to remain competitive and to grow jobs.

At Direct Dimensions, we have been able to adopt with these emerging technologies for over 25 years to help key manufacturing industries here in Maryland such as like aerospace, defense, medical, consumer products, and much more. We have specifically served many Maryland manufactures including Northrop Grumman, Lockheed Martin, Middle River Aircraft Systems, W.L. Gore, Eaton, Hardwire, Holmatro, Cobham, the Applied Physics Laboratory, the US Navy at Pax River, the US Army at APG, and many more large and small Maryland manufacturers. We are asked to provide these services to these manufacturers in part because they find it challenging to keep up with this technology and to find skilled workers in this field. These employers need workers with 3D digital skills for many aspects of todays work environment.

Manufacturers will need to partner with industry leaders, education stakeholders, and others to explore new solutions to prepare Maryland's employers and workforce adequately for the future. It is for these reasons and others, why the passage of Senate Bill 369/ House Bill 804 (as amended) is so critical.

Thank you for your consideration.

Michael Raphael
Founder and President

Direct Dimensions, Inc.

410-998-0880 ph
410-998-0887 fax

10310 S. Dolfield Road
Owings Mills, MD 21117

mraphael@dirdim.com
www.directdimensions.com

MACC_Sadusky_FAV_SB0369
Uploaded by: Sadusky, Dr. Bernard
Position: FAV

Senate Finance Committee

TESTIMONY

Submitted by Dr. Bernard J. Sadusky, Executive Director
bsadusky@mdacc.org

February 25, 2020

SB 369 / HB 804 – Workgroup to Study Maryland's Emerging Digital Economy

POSITION: Support

The Maryland Association of Community Colleges representing Maryland's 16 community colleges supports SB 369 which creates a Workgroup to Study Emerging Digital Economy and we appreciate the opportunity to designate a participant to serve on the Workgroup.

For Maryland citizens to successfully compete in the global technology marketplace, they must have the education and training to do so. The interaction and exchange of information among the Workgroup participants will provide valuable insight to the skills and training required by the manufacturing industry as well as other evolving industries. An informational partnership between business, State government, and our State's institutions of higher education will benefit all participants.

As the primary providers of workforce training in Maryland, we welcome the information and recommendations to be offered by this Workgroup. The Workgroup's findings and recommendations will assist our institutions in the development of new programs and course offerings to provide Maryland's workforce with the skills and training required to fulfill the needs of Maryland's manufacturers and businesses.

We share a common goal to create and encourage a successful Maryland business community which affords our citizens the opportunity to participate in this success through high wage employment. Our State's community colleges recognize the rapid evolution of technology and we are prepared to provide our citizens with the education and training required to meet the expectations of Maryland's manufacturing and other industry employers.

ChesapeakeSpecialtyProducts_KenSanchez_FAV_SB0369
Uploaded by: Sanchez, Ken
Position: FAV

Chesapeake
SPECIALTY PRODUCTS, INC.
(410) 388-5055 www.chesprod.com
5055 North Point Blvd. Baltimore, MD 21219
Email - info@chesprod.com

Regarding Senate Bill 396/ House Bill 804:
The Workgroup to Study Maryland's Emerging Digital Economy

SUPPORT
Senate Finance Committee

February 20th, 2020

Dear Chairwoman Kelley and Committee Members:

Thank you for understanding the challenges of manufacturing in Maryland and investigating ways to help. I am writing in support of Senate Bill 369/ House Bill 804 (as amended), entitled Workgroup to Study Maryland's Emerging Digital Economy.

Chesapeake Specialty Products, Inc. (CSP) is a global award winning export company located in Sparrrows Point, MD. As President, I can tell you that we are constantly struggling with how digital technologies have changed and continue changing the way we do business. More importantly for our community, the skills needed by our employees have changed and it is increasing difficult to find people with the skills we need to compete globally .

Started in 1989, after buying part of a struggling Bethlehem Steel, we have provided innovative, cost effective, environmentally sound products which exceed the expectations of our customers. We continue to identify and respond to changing customer needs, improve existing products, and develop new products that enhance the productivity of our customers and quality of the environment. Our team and product line are designed to help our customers meet strict environmental and occupational safety requirements. These products, when used in industrial applications, increase productivity, reduce the amount of waste generated, and improve the quality of the products produced by our customers.

New and emerging technologies are rapidly changing and modernizing the manufacturing landscape. We are struggling to keep up with the newer technologies needed to compete internationally, including automation and artificial intelligence (AI). At CSP, we are starting to adopt AI and automation so that we can continue expanding our customer base.

Manufacturers will need to partner with industry leaders, education stakeholders, and others to explore these recommendations and other new solutions to prepare Maryland's employers and workforce adequately for the future. It is for these reasons and others, why the passage of Senate Bill 369/ House Bill 804 (as amended) is so critical to us and our community.

Thank you for your consideration.

Ken Sanchez,

President

WEST_FAV_SB369
Uploaded by: Senator West, Senator West
Position: FAV

CHRIS WEST
Legislative District 42
Baltimore County

Judicial Proceedings Committee

Vice Chair, Baltimore County
Senate Delegation

THE SENATE OF MARYLAND
ANNAPOLIS, MARYLAND 21401

Annapolis Office
James Senate Office Building
11 Bladen Street, Room 303
Annapolis, Maryland 21401
410-841-3648 · 301-858-3648
800-492-7122 *Ext.* 3648
Chris.West@senate.state.md.us

District Office
1134 York Road, Suite 200
Lutherville -Timonium, MD 21093
410-823-7087

February 25, 2020

Senate Finance Committee
The Honorable Delores G. Kelley
3 East Miller Senate Building
Annapolis, Maryland 21401-1991

RE: SB 369 – Workgroup to Study Maryland's Emerging Digital Economy

Dear Chairman Kelley and Members of the Committee:

The world now stands on the cusp of a technological revolution. The manufacturing sector is going to move on from the 20th Century model of long production lines and heavy machinery. The 21st Century is going to be the century of artificial intelligence, robotics, 3-D printing, cyber-physical systems, cloud computing, real-time data and as-yet uninvented digital technologies that will undoubtedly transform economic growth and human potential.

Maryland needs to be at the cutting edge of what is being called Industry 4.0. Our state needs to be prepared to lead the nation and even the world in a marriage of production and operations with smart digital technology, leading to a boost in productivity and growth.

This bill calls for the formation of a workgroup to study Maryland's emerging digital economy. The original goal of the bill was quite aspirational and precipitated a very high fiscal note because the State Department of Commerce felt that it would need to engage a number of consultants to assist with the study. Yesterday, advocates for this study sat down with a representative of the Department of Commerce and agreed to submit an amendment that would significantly narrow the scope of the study and turn the study into a single year study. An amendment accomplishing this is currently being prepared and will be submitted to this Committee for its consideration shortly. It should eliminate nearly the entire fiscal note.

As amended, the topics to be covered by the study will be limited to the subsections of the bill numbered 5, 6, 7, 13, 14 and 15 on pages 4 and 5 of the bill. Thus the workgroup will be charged with examining the significant report of the Massachusetts Institute of Technology entitled "The Work of the Future: Shaping Technology and Institutions", examining existing financial resources available to manufacturers seeking to invest in Industry 4.0 technology, making recommendations to facilitate the State's robust entry into this developing industry sector, examining new and viable tax credits and programs for Maryland manufacturers to be more competitive and marketable in the new digital economy, and examining potential statutory and regulatory reforms.

The workgroup will be charged with reporting its initial findings and recommendations on or before June 30, 2021. In fairness, it is likely that the report will urge a continuation of the workgroup through the remainder of the year and into 2022, covering the portions of this bill that will be amended. Thereafter should the proponents of this bill secure all or partial funding required to hire a consultant that will be critical to perform the additional work, the workgroup shall submit their final report to the General Assembly on or before June 30th 2022.

Even in the currently-contemplated abridged form, the study proposed by this bill is critical to position Maryland to be a national, even international, leader in the newly developing Industry 4.0.

I hope the Committee will issue a favorable report on this bill.

RAMPMD_DaveWheatley_FAV_SB0369
Uploaded by: Wheatley, Dave
Position: FAV

Regional Additive Manufacturing Partnership of Maryland • 2021 Pulaski Highway, Suite D, Havre de Grace, MD 21078 • www.rampmd.org

February 21, 2020

Senator Chris West
303 James Senate Office Building
11 Bladen Street
Annapolis, MD 21401

Dear Senator West:

We are writing to wholeheartedly support Senate Bill 369 to establish a workgroup to study Maryland's Emerging Digital Economy. Maryland needs to holistically examine the impacts and opportunities that Industry 4.0 – the anticipated technological revolution that will transform sectors such as manufacturing, 3D printing, and artificial intelligence – will bring to Maryland's economy and citizenry. We are facing a transformation of many traditional industries that will add jobs to the economy we have not yet considered, and will eliminate jobs that many Marylanders rely upon. This workgroup will bring clarity and a holistic set of recommendations for government, industry, and academia to act upon. This workgroup will also have the opportunity to view the potential overlap and points of collaboration between sectors in implementing Industry 4.0.

When Maryland leaders authored SB889/HB1060 in 2014 to establish the Regional Additive Manufacturing Partnership of Maryland (RAMP MD), they envisioned Maryland as the nation's center of excellence for additive manufacturing, and RAMP MD as the catalyst for industry growth. RAMP MD's work is to build a network of resources for the additive manufacturing industry and put those tools in the hands of Maryland's businesses.

Advanced manufacturing represents a significant opportunity for the state of Maryland to be at the leading edge of a "disruptive" technology that is reshaping how we live, work, and play. With the integration of new tools of digital revolution, additive manufacturing (also called 3D printing) will continue to expand and contribute to Maryland's economy. Thank you for sponsoring this legislation as RAMP MD will greatly benefit from its enactment.

Sincerely,

Dave Wheatley
Chairman of the Board
RAMP MD

Rick Decker
Executive Director
RAMP MD

RAMPMD_RickDecker_FAV_SB0369
Uploaded by: Wheatley, Dave
Position: FAV

Regional Additive Manufacturing Partnership of Maryland • 2021 Pulaski Highway, Suite D, Havre de Grace, MD 21078 • www.rampmd.org

February 21, 2020

Senator Katie Fry-Hester
304 James Senate Office Building
11 Bladen Street
Annapolis, MD 21401

Dear Senator Fry-Hester:

We are writing to wholeheartedly support Senate Bill 369 to establish a workgroup to study Maryland's Emerging Digital Economy. Maryland needs to holistically examine the impacts and opportunities that Industry 4.0 – the anticipated technological revolution that will transform sectors such as manufacturing, 3D printing, and artificial intelligence – will bring to Maryland's economy and citizenry. We are facing a transformation of many traditional industries that will add jobs to the economy we have not yet considered, and will eliminate jobs that many Marylanders rely upon. This workgroup will bring clarity and a holistic set of recommendations for government, industry, and academia to act upon. This workgroup will also have the opportunity to view the potential overlap and points of collaboration between sectors in implementing Industry 4.0.

When Maryland leaders authored SB889/HB1060 in 2014 to establish the Regional Additive Manufacturing Partnership of Maryland (RAMP MD), they envisioned Maryland as the nation's center of excellence for additive manufacturing, and RAMP MD as the catalyst for industry growth. RAMP MD's work is to build a network of resources for the additive manufacturing industry and put those tools in the hands of Maryland's businesses.

Advanced manufacturing represents a significant opportunity for the state of Maryland to be at the leading edge of a "disruptive" technology that is reshaping how we live, work, and play. With the integration of new tools of digital revolution, additive manufacturing (also called 3D printing) will continue to expand and contribute to Maryland's economy. Thank you for sponsoring this legislation as RAMP MD will greatly benefit from its enactment.

Sincerely,

Dave Wheatley
Chairman of the Board
RAMP MD

Rick Decker
Executive Director
RAMP MD

MDDCAFLCIO_FWA_SB369
Uploaded by: Edwards, Donna
Position: FWA

MARYLAND STATE & D.C. AFL-CIO

AFFILIATED WITH NATIONAL AFL-CIO

7 School Street • Annapolis, Maryland 21401-2096

Balto. (410) 269-1940 • Fax (410) 280-2956

President
Donna S. Edwards

Secretary-Treasurer
Gerald W. Jackson

SB 369 – Workgroup to Study Maryland's Emerging Digital Economy
Senate Finance Committee
February 25, 2020

SUPPORT WITH AMENDMENT

Donna S. Edwards
President
Maryland State and DC AFL-CIO

Madam Chair and members of the Committee, thank you for the opportunity to submit testimony supporting, with amendments, SB 369 – Workgroup to Study Maryland's Emerging Digital Economy. My name is Donna S. Edwards and I am the President of the Maryland State and District of Columbia AFL-CIO. On behalf of the 340,000 union members I offer the following comments.

The future of work – manufacturing being an industry that will be greatly impacted – is an issue that unions are heavily focused on. The increased digitization and automation of industries, as well as the highly specialized skills that future workers will need in the changing work environment, need to be addressed and properly planned for. Unions that work in Transportation, Manufacturing, Education, and Skilled Trades are working on these complex and intertwined challenges to ensure that we have a workforce ready and trained for the future of work.

SB 369 creates a workgroup to study Maryland's emerging digital economy, tasking it to look at all facets, from Higher Education to potential tax credits; from re-evaluating current State training programs to recommendations to industry on how best to prepare for the coming transition to "Manufacturing 4.0". The workgroup must then submit recommendations to the General Assembly on their findings by December of 2021.

The State Federation supports this deep dive into the future of work, but would like offer an amendment to include 4 members from organized labor, to be appointed by the Maryland State and D.C AFL-CIO. A workgroup tackling a subject this broad and deep needs to have representatives from workers in the affected industries, and on-the-ground experts who are already involved in this transition to the emerging digital economy.

We ask for a favorable report on SB 369, amending it to include 4 members appointed by the Maryland State and D.C. AFL-CIO.

MTC_Richard Tabuteau_FWA_SB0369
Uploaded by: Tabuteau, Richard
Position: FWA

MARYLAND TECH COUNCIL

TO: The Honorable Delores G. Kelley, Chair
Members, Senate Finance Committee
The Honorable Chris West
The Honorable Katie Fry Hester

FROM: Richard A. Tabuteau
Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman

DATE: February 25, 2020

RE: **SUPPORT WITH AMENDMENT** – Senate Bill 369 – *Workgroup to Study Maryland's Emerging Digital Economy*

The Maryland Tech Council (MTC) is a collaborative community, actively engaged in building stronger life science and technology companies by supporting the efforts of our individual members who are saving and improving lives through innovation. We support our member companies who are driving innovation through advocacy, education, workforce development, cost savings programs, and connecting entrepreneurial minds. The valuable resources we provide to our members help them reach their full potential making Maryland a global leader in the life sciences and technology industries. On behalf of MTC, we submit this letter of **support with amendment** for Senate Bill 369.

Senate Bill 369 establishes the Workgroup to Study Maryland's Emerging Digital Economy. The workgroup is charged with a wide variety of issues to examine and on which to make recommendations, such as higher education curriculums, related professional research, public-private partnerships, apprenticeships, State grant funding levels, new tax credits, and the State's current statutory and regulatory authority over manufacturing.

Appropriately, the listed members to the Workgroup include the Maryland Manufacturing Advisory Board, the Regional Manufacturing Institute of Maryland, Maryland Manufacturing Extension Partnership, and Regional Additive Manufacturing Partnership of Maryland. Surprisingly, with over 450 life science and technology member companies developing innovative solutions that save, protect, and improve lives, the Maryland Tech Council was excluded from membership on the Workgroup. Maryland is home to over 500 biotech companies and 2,700 life science firms, many of which engage in biomanufacturing, which uses biological systems to construct commercially-relevant biomaterials to add to medicine, industrial applications and the food and beverage industry. Among our information technology companies, many are providing digital services, such as cybersecurity, telecommunications, and cloud-computing, that support the work of manufacturers.

As the primary association specifically representing the life sciences and technology industries, the Maryland Tech Council deserves to be a statutory member of the Workgroup to Study Maryland's Emerging Digital Economy. As such, the Maryland Tech Council urges the Senate Finance Committee to give Senate Bill 369 a favorable report with amendments to include the Council as a member of the Workgroup.

For more information call:
Richard A. Tabuteau
Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman
410-244-7000

SB 369
Uploaded by: Schulz, Kelly
Position: INFO

Date: February 25, 2020
BILL NO.: Senate Bill 369
TITLE: Workgroup to Study Maryland's Emerging Digital Economy
COMMITTEE: Senate Finance

Statement of Information

Senate Bill 369 seeks to establish a new Workgroup to study the impact of the emerging digital economy on the manufacturing industry (often referred to as Industry 4.0). The bill defines the members of the workgroup to include a mix of legislators, several State agencies, academia, industry and organizations such as the Maryland Manufacturing Advisory Board (MMAB), Regional Manufacturing Institute (RMI), Maryland Manufacturing Extension Partnership (MD MEP) and RAMP MD, and directs the Maryland Department of Commerce (Commerce) to staff the workgroup. The final report and recommendations would be due to the General Assembly on or before December 1, 2021, providing approximately 18 months to complete the tasks. There are 15 tasks assigned to this workgroup:

Economic Development-related Tasks:

- Examine existing financial resources available to manufacturers to invest in Industry 4.0 technologies
- Examine new and viable tax credits and programs for manufacturers to be more competitive and marketable in the new digital economy
- Examine the State's current statutory and regulatory authority over manufacturing to examine potential reforms to attract new manufacturing businesses brought by Industry 4.0
- Recommend additional financial support delivery mechanisms, to enable state manufacturers to adopt Industry 4.0 technology and enhance the ability of industry service providers to increase the scope of their industry support.

Workforce-related Tasks:

- Examine existing research to make recommendations that manufacturing organizations may use to adequately develop their workforce to meet the skill demands of Industry 4.0
- Examine current State higher education curriculum and evaluate if students are fully prepared for technology and processes in future manufacturing
- Evaluate whether current State training programs and resources need to be modified to prevent worker displacement resulting from Industry 4.0
- Examine new strategies and incentives that manufacturers may use to reskill the current workforce
- Examine MIT's research entitled "The Work of the Future: Shaping Technology & Institutions"

- Make recommendations to facilitate the State's robust entry into Industry 4.0 technology to improve the perception of manufacturing careers
- Employ workforce development strategies for manufacturers to attraction certain minority/underserved populations to Industry 4.0 careers
- Recommend various solutions for manufacturers to prepare for the potential workforce gaps resulting from the loss of current workers.
- Make recommendations for industry-academia collaborations to develop curriculum that meets the needs of the industry
- Propose appropriate annual State grant funding to create a statewide training program
- Examine mentorship or apprenticeships programs

Industry 4.0 in an increasing area of interest and discussion both in the private sector and the economic development field, and an important topic facing the manufacturing industry. There is value in the work outlined in this bill to ensure Maryland manufacturers remain competitive in the future. In June 2019, the International Economic Development Council (IEDC) released a report entitled "Industry 4.0 – Supporting Small and Medium-Sized Manufacturers" based on four areas of economic development practice and influence, drawing on a survey of their members and several case studies in order to recommend best practices in economic development. According to this study, "Industry 4.0 is a shorthand term for a group of advanced digital and physical technologies and applications that are rapidly changing manufacturing. Those technologies include additive manufacturing/3D printing; cybersecurity; advanced materials; modeling, simulation, visualization and immersion; artificial intelligence; robotics; big data; the industrial internet of things; and cloud computing."

There are several ongoing initiatives among State agencies that address several of the tasks outlined in this bill:

- **Maryland Manufacturing Advisory Board** – staffed by Commerce, members include 10 manufacturing industry representatives, two labor representatives, two legislators, the Maryland Chamber of Commerce and a higher education representative (currently Morgan State). The Secretary of Commerce is ex-officio.
    - Current priorities of the MMAB include a significant focus on the image of manufacturing (See Workgroup task #7 (i) and (ii)). For example, in 2018 and 2019 MMAB, in partnership with Commerce, MD MEP, and other partner organizations, worked with school systems in Baltimore, Harford and Washington counties and Baltimore City to take teachers on tours of area manufacturers to better understand the industry and workforce skills and explore ways to better incorporate those skills into the classroom. In addition, the Maryland Chamber Foundation created a four-week externship program for educators in partnership with MSDE to give teachers the opportunity to work in a business for several weeks over the summer and then take those lessons learned and incorporate it into the curriculum. MMAB and the Chamber are discussing ways to expand those programs.

- In August 2019 Maryland was accepted into the National **Manufacturing Policy Academy (MPA)**, a program administered through NIST. Funded by NIST MEP and organized by State Science and Technology Institute (SSTI) and the Center for Regional Economic

Competitiveness (CREC), the MPA program is designed to help states build upon existing strategies, leverage available resources, and spur creative new ideas about how to address major challenges or leverage opportunities around the manufacturing sector. This is a one-year program which will conclude in August 2020.

Commerce, in partnership with the Maryland MEP, established a robust team of advisors from the public and private sectors, including the Maryland Department of Labor (Labor), and identified the following areas of focus:

- Goal 1 - Improving alignment between industry needs and State programs/resources - this include better alignment of workforce needs and supporting programs, a review of existing incentive programs and if those programs meet the changing needs of the industry, and recommendations on potential new programs to better support industry investment in Maryland. Action items within this goal address several areas of SB 369 including Workgroup tasks 3, 6, 7, 13 and 15.
- Goal 2 - Position Maryland and its manufacturers to compete for unique growth opportunities. The focus of this goal is on developing specific capabilities in areas of opportunity for manufacturers. The three areas of focus include Offshore Wind, **Industry 4.0** and DOD Supply Base. The specific action items related to Industry 4.0 are currently being researched and developed by the MPA Workgroup.
- Goal 3 - Promote Manufacturing in Maryland, includes six areas of focus of which one is improve the image of manufacturing for future workforce, and exploring opportunities for public-private partnerships (Workgroup task 7).

- Department of Labor Apprenticeship program – Labor has been very successful in growing both the Apprenticeship and Youth Apprenticeship programs in Maryland over the last few years. There is good collaboration among partners and stakeholders, including Commerce and MMAB, to support the establishment of more manufacturing-focused apprenticeships within this program. This addresses Workgroup task 12.

- Other non-state agencies are also doing work in the manufacturing workforce areas, in close collaboration with Labor, Commerce and the MMAB. For example, Junior Achievement (JA), in partnership with Baltimore County Public Schools and Commerce hosts JA Inspire, an annual event at the Timonium Fairground where this year over 8,000 middle school students had the chance to engage with a variety of employers and works with the industry members, including those of MMAB to ensure strong representation from the manufacturing sector.

Commerce is committed to promoting and growing manufacturing in Maryland, as it is a key industry sector and applauds the sponsor for recognizing the importance of Industry 4.0. The fifteen tasks called for in the SB 369 as part of the Workgroup's charge exceed Commerce staff resources and would require the Department to engage a consultant to manage the workload of the proposed Workgroup.