



MISSOURI HOUSE OF REPRESENTATIVES
WITNESS APPEARANCE FORM

BILL NUMBER: HB 320		DATE: 3/2/2021
COMMITTEE: Elementary and Secondary Education		
TESTIFYING: <input checked="" type="checkbox"/> IN SUPPORT OF <input type="checkbox"/> IN OPPOSITION TO <input type="checkbox"/> FOR INFORMATIONAL PURPOSES		
WITNESS NAME		
INDIVIDUAL:		
WITNESS NAME: ARNIE C. AC "HONEST-ABE" DIENOFF-STATE PUBLIC ADVO		PHONE NUMBER:
BUSINESS/ORGANIZATION NAME:		TITLE:
ADDRESS:		
CITY:		STATE: ZIP:
EMAIL: arniedienoff@yahoo.com	ATTENDANCE: Written	SUBMIT DATE: 3/1/2021 11:18 PM
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I am in Support of this Issue. I would think that All of Missouri School Districts already have these Course in their Course Study.



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WITNESS NAME		
REGISTERED LOBBYIST:		
WITNESS NAME: BILL GAMBLE		PHONE NUMBER: 573-634-4876
REPRESENTING: GREATER ST. LOUIS INCORPORATED		TITLE:
ADDRESS: ONE METROPOLITAN SQUARE		
CITY: ST. LOUIS		STATE: MO
		ZIP: 63102
EMAIL:	ATTENDANCE:	SUBMIT DATE: 3/2/2021 12:00 AM
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WITNESS NAME			
REGISTERED LOBBYIST:			
WITNESS NAME: DAVID JACKSON		PHONE NUMBER: 314-406-2933	
REPRESENTING: CODE.ORG		TITLE:	
ADDRESS: P.O. BOX 1865			
CITY: JEFFERSON CITY		STATE: MO	ZIP: 65102
EMAIL:	ATTENDANCE:	SUBMIT DATE: 3/2/2021 12:00 AM	
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WITNESS NAME		
REGISTERED LOBBYIST:		
WITNESS NAME: KATE CASAS		PHONE NUMBER:
REPRESENTING: EXCELLENCE IN EDUCATION		TITLE:
ADDRESS: 117 MADISON STREET		
CITY: JEFFERSON CITY		STATE: MO
		ZIP: 65101
EMAIL:	ATTENDANCE:	SUBMIT DATE: 3/2/2021 12:00 AM
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WITNESS NAME			
REGISTERED LOBBYIST:			
WITNESS NAME: ROSS LIEN		PHONE NUMBER: 701-202-8214	
REPRESENTING: MISSOURI CHAMBER OF COMMERCE AND INDUSTRY		TITLE:	
ADDRESS: 428 EAST CAPITOL AVENUE			
CITY: JEFFERSON CITY		STATE: MO	ZIP: 65101
EMAIL:	ATTENDANCE:	SUBMIT DATE: 3/2/2021 12:00 AM	

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WITNESS NAME		
REGISTERED LOBBYIST:		
WITNESS NAME: SUSAN HENDERSON MOORE		PHONE NUMBER: 573-268-6924
REPRESENTING: KANSAS CITY TECH COUNCIL		TITLE:
ADDRESS: 221 BOLIVAR STREET		
CITY: JEFFERSON CITY		STATE: MO
		ZIP: 65101
EMAIL:	ATTENDANCE:	SUBMIT DATE: 3/2/2021 12:00 AM
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WITNESS NAME			
REGISTERED LOBBYIST:			
WITNESS NAME: TOM DEMPSEY		PHONE NUMBER: 636-288-7461	
REPRESENTING: AMAZON SERVICES		TITLE:	
ADDRESS: 3103 BUCKSKIN PATH			
CITY: ST. CHARLES		STATE: MO	ZIP: 63301
EMAIL:	ATTENDANCE:	SUBMIT DATE: 3/2/2021 12:00 AM	

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WITNESS NAME		
BUSINESS/ORGANIZATION:		
WITNESS NAME: BETH KANIA-GOSCHE		PHONE NUMBER: 573-341-4120
BUSINESS/ORGANIZATION NAME: MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY		TITLE:
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CITY: ROLLA	STATE: MO	ZIP: 65401
EMAIL: bkaniagosche@mst.edu	ATTENDANCE: Written	SUBMIT DATE: 2/26/2021 3:05 PM

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The National Council of Teachers of Mathematics has issued a statement in regard to using computer science courses as math credit. The full text of the statement can be found here, and I encourage the committee to read this carefully: <https://www.nctm.org/Standards-and-Positions/Position-Statements/Computer-Science-and-Mathematics-Education/> This position indicates that any courses used for math credit need to be taught by certified math teachers. Computer science is a separate certificate in Missouri, and that certificate only consists of passing a two hour test written by a national testing company with no Missouri stakeholder input. There is no guarantee of the content knowledge of the teacher (because no coursework is required) or the quality of the course based on the current regulations. Mathematics courses are a gateway to STEM careers, including computer science. While the intent of this bill is to increase participation in computer science, this effectively reduces the number of mathematics courses that students will take which will have negative impacts on the number of students able to succeed in STEM fields. While the content of high quality computer science courses such as those offered by Project Lead the Way or TSA are excellent options for electives or other types of credit, this content should not replace required mathematics classes that are necessary for college preparation. Students already struggle to succeed in calculus, a gateway course for all STEM majors, even computer science, and reducing the likelihood that students will take an advanced math course is short sighted.



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WITNESS NAME			
BUSINESS/ORGANIZATION:			
WITNESS NAME: DIXIE WILLIAMS		PHONE NUMBER: 314-516-6941	
BUSINESS/ORGANIZATION NAME: UNIVERSITY OF MISSOURI - ST. LOUIS		TITLE: INTERIM ASSOCIATE VICE CHANCELLOR FOR STRATEGIC EN	
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CITY: SAINT LOUIS		STATE: MO	ZIP: 63121
EMAIL: dixiewilliams@umsl.edu	ATTENDANCE: Written	SUBMIT DATE: 3/1/2021 11:55 AM	
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Mr. Chair and Members of the House Education Committee: Thank you for the opportunity to add reflections from UMSL on HB 320. Like our colleagues from across the UM system, we acknowledge the positive impact that exposure to computer programming skills may have on career paths and workforce development, but have grave concerns about the far reaching consequences that allowing a computer science course to replace a course in the currently required four years of math preparation will have on student success in STEM majors and on time to degree in all majors. In response to the proposed elimination of a year of secondary math preparation on university student success, Dr. Andrew Kersten, Dean of the College of Arts and Sciences at UMSL reflected that “the state’s current mathematics requirements for high school students are vitally important as they form the foundation of quantitative knowledge and reasoning not only for majors in computer science and cybersecurity but also for majors in data science, economics, chemistry, biology and physics.” To supplement the testimony from STEM experts shared by our UM system colleagues I would like to add concerns from a social scientist such as Dr. Anne Winkler, Department Chair of Economics at UMSL who asserts that “a strong mathematics foundation is crucial to successful completion of an economics degree. Indeed, completion of College Algebra is the minimal prerequisite to take our first principles course for the degree. I will add that the Department of Economics also oversees the BS in Actuarial Science, another degree program that requires a strong mathematics foundation. The bill undercuts these degree programs, both which are producing graduates who are moving into very high-paying jobs in the St. Louis region.” A student who has not completed the College Algebra sequence prior to matriculation or is not prepared to successfully complete it in their first semester of university enrollment cannot complete most degrees with introductory coursework requiring a mathematics prerequisite in a 4 year time frame. This matter of impact on time to degree completion is a broader concern for students in all majors when considering decreasing the required math preparation at the secondary school level. Complete College America (CCA), a national non-profit established in 2009 as part of a movement to restore the promise of higher education as the most powerful way to advance social mobility, identifies that the failure to successfully complete a gateway, college-level math course in the first year of enrollment at a post-secondary institution negatively impacts momentum and the likelihood of degree completion. Their research reiterates the assertions of our system colleagues that high school math preparation does continue to be a key indicator of first year college student success and eventual degree completion. There are real and treacherous economic impacts of extending time to graduation, especially for students from low SES families. CCA calculates that the opportunity costs in lost wages and benefits for extending time to graduation by just one year approach \$150,000

over the lifetime of a working adult not to mention the cost of an additional semester or semesters of tuition. UMSL student data shows that students who are calculus ready upon admission are likely to complete a STEM major in a 4 year timeframe while those who still require College Algebra and Pre-Calculus are requiring closer to 5 years on average to complete their degree. Allowing a substitution for the fourth unit of mathematics at the secondary level will have a direct impact on the number of students who are ready to start in Calculus in their first semester at the university. Additionally, a study of 12 years of data for students admitted by exception with 3 math units shows that these students are retained and graduated at significantly lower levels than students admitted with the currently required 4 math units. While we are supportive of expanding exposure to important workforce development skills at the secondary school level we would ask that ways to add this requirement without impacting the existing math preparation threshold be explored to ensure the success of our university students in Missouri.



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WITNESS NAME			
REGISTERED LOBBYIST:			
WITNESS NAME: DUSTIN SCHNIEDERS		PHONE NUMBER: 573-680-1816	
REPRESENTING: UNIVERSITY OF MISSOURI SYSTEM		TITLE:	
ADDRESS: 309 UNIVERSITY HALL			
CITY: COLUMBIA		STATE: MO	ZIP: 65211
EMAIL:	ATTENDANCE:	SUBMIT DATE: 3/2/2021 12:00 AM	
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WITNESS NAME			
BUSINESS/ORGANIZATION:			
WITNESS NAME: JIM SPAIN		PHONE NUMBER: 573-864-8099	
BUSINESS/ORGANIZATION NAME: UNIVERSITY OF MISSOURI - COLUMBIA		TITLE: VICE PROVOST FOR UNDERGRADUATE STUDIES AND PROFESS	
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CITY: COLUMBIA		STATE: MO	ZIP: 65211
EMAIL: spainj@missouri.edu	ATTENDANCE: In-Person	SUBMIT DATE: 3/1/2021 10:42 AM	
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WITNESS NAME		
REGISTERED LOBBYIST:		
WITNESS NAME: JULIA GOLDMAN		PHONE NUMBER: 314-707-6559
REPRESENTING: ASSOCIATED STUDENTS OF THE UNIVERSITY OF MISSOURI		TITLE: DEPUTY LEGISLATIVE DIRECTOR
ADDRESS:		
CITY: COLUMBIA	STATE: MO	ZIP: 65201
EMAIL: claireshipp@mail.missouri.edu	ATTENDANCE: Written	SUBMIT DATE: 3/2/2021 7:19 AM
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March 2nd, 2021 Missouri General Assembly Elementary and Secondary Education Committee 201 W Capitol Ave Jefferson City, MO 65101 RE: HB 320 - Changes provisions relating to computer science courses To Chairman Bayse and Committee Members, I am writing to you on behalf of the Associated Students of the University of Missouri (ASUM), a non-profit advocacy organization that speaks for the 75,000 students across the University of Missouri System. ASUM stands in opposition to House Bill 320 for a variety of reasons. Mandating that institutions allow computer science courses to stand in as an admissions requirement instead of a core mathematics course would leave our students vastly unprepared as they start their collegiate journey. Student success in many degree fields, particularly STEM, could be adversely affected if this bill was implemented. Without the consistent and streamlined preparation provided by our high school math courses, students may receive admission into a program without the proper mathematical skills to keep up with other students who have received such instruction. Leaving students unprepared for their future educational journey could potentially cost students more money throughout college, extend their time in college as they take additional coursework to make up for a lack of foundational mathematical skills, or even potentially deter students from going into STEM, further contributing to the brain drain Missouri is experiencing in the STEM field. Overall, ASUM predicts harmful, unintended consequences that this bill would have on our student body in the coming years. For the reasons listed above, ASUM stands in opposition to House Bill 320. If you have any further questions about the impact this legislation would have on UM System students please reach out to asum@umsystem.edu or (660) 973-2421. Best Regards, Brandon Fenton Legislative Director