

## AGENDA ITEM SUMMARY

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Missouri Math Pathways Initiative  
Coordinating Board for Higher Education  
September 14, 2017

### DESCRIPTION

HB 1042 requires institutions in Missouri “to replicate best practices in remedial education.” One best practice is the alignment of “gateway” courses such as College Algebra or English Composition with a student’s intended program of study. Beginning in October 2014, the Missouri Department of Higher Education has worked closely with the Missouri Mathematics Pathways Taskforce (MMPT) to explore options to increase student success in gateway mathematics courses. As a result, the Taskforce has developed mathematics pathways and co-requisite mathematical models of education for those students who require remedial education or extra assistance to successfully complete their gateway mathematics course. This agenda item reports on the MMPT’s work and the status of the initiative.

### Background

In September 2014, Missouri was chosen as one of six states to participate in a Mathematics Pathways Initiative, with the intent to increase student success in mathematics gateway courses – which best align with the students’ programs of study – and ultimately increase degree completion. Beginning in October 2014, the MDHE and the MMPT, under the guidance of HB 1042 and in partnership with Complete College America and the Charles A. Dana Center, have worked to develop plans and release recommendations to achieve the goals of the Mathematics Pathways Initiative. This work includes the formation of the MMPT, holding two statewide Missouri Mathematics Summits, publishing the Missouri Mathematics Pathways Reports, the development of alternative mathematics pathways, and hosting regional math symposia around the state of Missouri.

In March of 2017, after over a year of deliberation and debate, the faculty members who comprise the MMPT finalized the student learning outcomes (SLOs) for three Mathematics pathways. The first, *Statistical Reasoning*, is recommended for students whose college and career paths require knowledge of the fundamentals of the collection, analysis, and interpretation of data. The second, *Pre-Calculus*, is intended for students in the STEM fields or career trajectories requiring a high level of algebraic reasoning or Calculus. The third pathway, *Mathematical Reasoning and Modeling*, is designed for students whose field of study and future career choices do not require in-depth statistical or algebraic reasoning or calculus. At least two of these pathways will be offered at every public two- and four-year institution beginning in the fall of 2017, with the exception of Truman State University and the State Technical College of Missouri.

Additionally, the MMPT has drafted a fourth pathway, *Elementary Education*, for students pursuing a career in an education-related field. Currently, discussions around this pathway have been placed on hold until the MDHE and the MMPT can get input and gain insight from school boards, deans of education and education faculty, and the Missouri Department of Elementary and Secondary Education (DESE).

### Current Status

To facilitate the full implementation of the alternative pathways in 2017, MDHE and the MMPT are hosting regional meetings around the state of Missouri. The purpose of these meetings is to offer information about and guidance on the implementation of the Missouri Mathematics Pathways Initiative. The organizers of each regional meeting have invited department chairs, counselors and advisors at the secondary and postsecondary levels, faculty, and the general public to participate in the meetings. The MDHE has created a website for the regional symposia, has publicized the meetings through direct communication with various campus groups, and is assisting the host institutions with registering attendees. The complete schedule is listed below:

- Kansas City, September 8 – Metropolitan Community College, Penn Valley Campus

- Springfield, September 22 – Ozarks Technical College, Richwood Valley Campus
- Central Missouri, September 29 – Moberly Area Community College
- Cape Girardeau, October 9 – Southeast Missouri State University
- St. Louis, October 13 – St. Louis Community College, Wildwood Campus

Additionally, in order to measure success and implementation of the initiative, MDHE and the MMPT have partnered with the Community College Research Center and the Charles A. Dana Center to collect data from institutions in order to measure the successful implementation, and to collect baseline data measurements from which to measure the effect, of the initiative. This will allow MDHE to evaluate the efficacy of the Missouri Mathematics Pathways Initiative and the co-requisite model of education.

### **Next Steps**

In order to solidify support from the institutions around the implementation of the Math Pathways, the MDHE have sent out MOUs to each Chief Academic Officer to review and sign. The MOUs commit the institution to adopting at least two mathematics pathways that meet general education requirements and transfer seamlessly to other public institutions, as well as provide appropriate supports to underprepared students. Additionally, the MDHE is in the process of collecting data on which Math Pathways each institution is planning on implementing this fall, along with the corresponding course names and numbers. This list will be provided once all the data are collected.

Further, the MDHE have identified areas on which the MMPT must focus for this most recent academic year to facilitate seamless implementation. The first is to identify what supports faculty and institutions need – professional and/or curriculum development – in order to facilitate Math Pathways implementation. Second, identify ways in which the MMPT can work more closely with the Corequisite-at-Scale Task Force to ensure that students are not only being placed in the correct gateway math course but are also receiving additional supports if needed. Third, outline ways in which the MMPT and MDHE can work with DESE and with educator preparation programs to complete the Education pathway. Finally, the MDHE and MMPT are developing a communication and engagement plan to ensure all relevant parties have accurate information concerning the Math Pathways initiatives and its implementation.

### **Conclusion**

As public two- and four-year institutions prepare for the implementation of the Math Pathways initiative, after many years of planning and discussion, there is still much work left to be done to ensure successful and smooth implementation. This work includes the Regional Math Pathways Symposia, data collections, and focus areas for the MMPT meetings.

### **STATUTORY REFERENCES**

Section 173.005.2(6), RSMo – Statutory requirements regarding CBHE’s responsibility to identify best practices in remediation and provide oversight of the replication of these best practices by public institutions.

### **RECOMMENDED ACTION**

This is an information item only.

### **ATTACHEMENTS**

None