

**Concept Proposal from the Ohio Department of Higher Education****Ohio Bridging Mathematics Success****To the Leona M. and Harry B. Helmsley Charitable Trust****October 30, 2105****Background**

Beginning in 2013, Ohio launched the [Ohio Mathematics Initiative](#) (OMI). This process was borne out of the recognition that success in mathematics is critical to degree completion, but our existing mathematics pathways were likely creating inadvertent challenges to student success. The other major driver that emerged was the implementation of [Uniform Statewide Standards for Remediation-Free Status](#), which established a clear standard for which students must be placed into credit-bearing coursework; a number of institutions were challenged because the established standards were below what they had traditionally required for success in mathematics in STEM-based fields. In response to these challenges, the Ohio Department of Higher Education (ODHE – formerly the Ohio Board of Regents), convened the [Ohio Mathematics Summit](#) for mathematics faculty to discuss the issues.

One of the outcomes of the Summit was the recommendation that a steering committee of mathematics faculty be formed to study national trends, current initiatives and available statewide and national data and subsequently to make recommendations for future mathematics curricula in Ohio. This [OMI committee](#) was empaneled and charged with developing expectations and processes that result in each campus offering pathways in mathematics that yield (a) increased success for students in the study of mathematics, (b) a higher percentage of students completing degree programs, and (c) effective transferability of credits for students moving from one institution to another. The OMI committee did a significant amount of work resulting in the release of [Rethinking Postsecondary Mathematics: Final Report of the Ohio Mathematics Steering Committee](#) in 2014.

The Rethinking Postsecondary Mathematics report was released widely throughout the field and was followed up with meetings with the Chairs of the Mathematics departments of Ohio's public colleges and universities. The OMI committee's report<sup>1</sup> made ten recommendations across five major areas. Among these recommendations, and relevant to the proposed project, were the following:

- Recommendation 1.1: Improve student success in entry-level courses by aligning mathematics to academic programs of study and by improving instructional delivery mechanisms
- Recommendation 1.2: Develop, implement and evaluate co-requisite strategies to support underprepared students

Subcommittees of mathematics faculty have continued to meet and have made significant progress towards Recommendation 1.1 by developing outcome standards in three mathematics pathways - STEM, Statistics, and Quantitative Reasoning – that have been approved for guaranteed statewide

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<sup>1</sup> Rethinking Postsecondary Mathematics: Final Report of the Ohio Mathematics Steering Committee, March 2014. Page 12.

transferability. Establishment of these learning outcomes is the first step; providing time and opportunities for faculty to redesign their courses to align to these outcomes is the second.

More recently and concurrent to all of the work of the Ohio Mathematics Initiative, Ohio has been working with Complete College America (CCA) to explore ways to improve developmental education outcomes by expanding corequisite strategies in mathematics and English. In October 2015, ODHE was selected by CCA to receive technical assistance for implementation of corequisite developmental education. Some Ohio institutions have started investigating or piloting corequisite developmental models in small scale ways.

Another important factor in the implementation of performance funding, developed at the behest of Governor Kasich; presidents of Ohio's public colleges and universities developed a system of performance-based funding that shifts 100% of funding for undergraduate programs to some form of measurable outcome. As a result, Ohio's public colleges and universities are focused on promoting student success. This shift in funding approach, combined with the work of the Ohio Mathematics Initiative, create the conditions for readiness to deepen the engagement of strategies designed to leverage success in mathematics to degree success.

### **Proposed Project – *Ohio Mathematics Bridges to Success***

The proposed project – *Ohio Mathematics Bridges to Success* – builds on the work to date of the Ohio Mathematics Initiative and is designed to provide the support and resources to help faculty, advisors and institutions address Recommendations 1.1 and 1.2 of the OMI committee's report. Ohio Mathematics Bridges to Success (OMBS) will have three distinct phases all focused on providing supports that will enable more effective implementation of the redesigned mathematics pathways in STEM, Statistics and Quantitative Reasoning by bridging these courses with effective corequisite developmental education strategies AND into degree pathways. Faculty engaged in the Ohio Mathematics Initiative have all indicated that professional development for faculty is necessary for implementation to assisting with best practices for developing, implementing, and teaching pathway courses.

The three proposed phases of Ohio Mathematics Bridges to Success include:

- Education, Dissemination and Engagement
- Pilot Phase
- Implementation Phase

#### *Education, Dissemination and Engagement Phase*

- Goal:
  - Inform faculty, advisors and institutional leadership statewide of the importance of building mathematics pathways that bridge to student success; and
  - provide opportunities for cross-discipline engagement of faculty to explore how their institution could implement those curricular bridges.
- Activities:

- Develop an issue brief that compiles research into mathematics corequisites in Ohio and nationally to be disseminated to all Ohio colleges and universities.
  - Conduct two convenings on linking corequisite models, gateway mathematics courses and degree pathways; one in Northern Ohio and one in Southern Ohio. All institutions would be eligible to attend, but would be required to register with teams of faculty from mathematics, developmental education and academic programs as well as advisors and administrators.
  - Conduct webinars with experts on bridging mathematics with corequisites and bridging mathematics with programs of study.
  - Announce an RFP process at these convenings for piloting mathematics corequisites that link to degree pathways.
- Expected Outcomes:
    - Disseminate information about redesigned mathematics pathways beyond mathematics faculty. And
    - Providing tools for integrating developmental solutions in the mathematics pathways and to ensure linkage to appropriate degree pathways.
    - 94%, or 34 out of 36 of Ohio's public community colleges and universities will be represented at one of the convenings for OMBS.
    - 75%, or 27 out of 36 of Ohio's public institutions will submit a response to the RFP.
    - Structured RFP process that will require active engagement that links faculty from mathematics, developmental education, and selected discipline to explore implementation of corequisite approaches to mathematics with academic programs. There will be a request for an emphasis on bridging STEM pathways into degrees requiring calculus even if student enter underprepared for success in those courses.

### Pilot Phase

- Goal:
  - Pilot the development of bridges that align corequisite developmental strategies with redesigned entry-level mathematics courses and academic programs of study at 6 to 8 community colleges and universities in Ohio. Campuses would also develop plan for institution-wide implementation.
- Activities:
  - All campuses that sent a team to one of the convenings would be invited to respond to an RFP for a planning and piloting process. Only public community colleges or universities are eligible to apply for the pilot grant.
  - Six to eight (6-8) institutions will be awarded grants asked to identify high-value mathematics courses and degree pathways to pilot corequisite models. Funding would support a faculty-driven planning process to develop curriculum and identify implementation needs in three to five (3-5) degree pathways as a pilot. Funds support incidental costs, shifting faculty course loads, and release time.
  - Degree pathways would be selected based on analysis of student outcomes in current developmental programs and subsequent success in academic programs. Preference will be given to programs demonstrating need to improve outcomes.
  - Engagement of pilots as a learning cohort.

- Identify consultants and technical assistance for the pilot and implementation planning.
- Expected Outcomes:
  - Purposeful learning from pilot sites that will be captured to inform state policy as well as to share promising practices.
  - Each grantee institution will have completed development of at least one set of bridges between corequisite coursework, mathematics gateway course, and a degree pathway by January 2017 and in all identified pilot pathways by September 2017.
  - Once students are enrolled, institutions will track student success in the corequisite coursework and into degree pathways.
  - Campuses will expand planning beyond the pilot and engage larger numbers of faculty to develop a plan for institution-wide implementation that bridges corequisites and mathematics pathways in STEM, Statistics, and Quantitative Reasoning for ALL degree pathways.

### Implementation Phase

- Goal:
  - Scale implementation that bridge corequisite courses, mathematics gateway courses, and degree pathways in every degree program at two to four of the institutions that participated in the pilot process.
- Activities:
  - Support full-scale implementation at selected sites from an RFP process that is embedded as a deliverable of the pilot phase.
- Expected Outcomes
  - Capture and disseminate promising practices in building bridges to and from mathematics pathways.
  - Identification of policy levers that might be addressed to assist with system-wide implementation.

The Ohio Department of Higher Education seeks initial funding for the first two phases of this initiative and then to work closely with Helmsley Foundation staff for funding the implementation phase. Both the RFP for the pilot and implementation phase need to be developed as initial work products.

### Timeline

- Ohio Controlling Board process to receive authorization to expend funding – January 2016
- Begin research for guidance document on bridging mathematics pathways – January 2016
- Identify consultants for OMBS – January 2016
- Convene planning committee with ODHE, OACC, and IUC – February 2016
- Plan content of convenings and webinars – February 2016
- Identify meeting venues and schedule dates – February 2016
- Invite campuses to attend convenings – March 2016

- Conduct convenings – April 2016
- Conduct webinars – April/May 2016
- RFP responses due – May 2016
- Review conducted and winners notified – June 2016
- Pilot phase begins and campuses begin planning – August 2016
- First convening of pilot sites – September 2016
- Ongoing technical assistance begins and lasts until Implementation RFP submitted – September 2016
- Pilot sites have completed at least one pathway – December 2016
- Pilots will attempt “soft launch” of pathways – January 2017
- Pilot sites have completed identified pathways – April 2017
- Pilots submit Implementation RFP – April 2017
- Implementation sites selected – June 2017
- All pilots have enrolled students in identified pathways – September 2017
- Implementation sites have developed plan for scalable implementation – April 2017
- Scalable implementation begins – September 2018

**Budget –**

**January 1, 2016 to April 15, 2017**

Personnel	Sr. ODHE staff for project oversight and direction	\$25,000
Travel	Travel to pilot sites and meetings	\$10,000
Supplies/Materials	Printing reports	\$1, 500
Training/Meeting	2 convenings for broad engagement of the field @ \$25,000 each 3 Webinars @ \$2000 each 3 convenings of pilot sites @ \$1,500 each	\$60,500
Subcontracts	Consultant to draft bridging best practice report @ \$8,000 Consultants for webinars and convenings @ 12,000 Consultants for ongoing technical assistance @ \$3000 per site Part-time contract project manager @ \$45,000 Planning subgrants 8 @ \$20,000 each	\$249,000
<b>Total Proposed Budget</b>		<b>\$346,000</b>