

August 28, 2022

Dr. James Winebrake  
Provost and Vice Chancellor for Academic Affairs  
UNC System Campus: UNC Wilmington  
Wilmington, North Carolina 28403

Subject: UNC System Math Pathways Core Elements of Participation Update

Dear Dr. James Winebrake:

Providing equitable support and appropriate monitoring that empowers all mathematical learners is foundational to a student's academic success in higher education. In the University of North Carolina (UNC) System, we have prioritized and worked diligently to address this urgent need through the collaborative work of the UNC System Math Pathways Taskforce.

This letter serves as both an update and a renewal to the agreement previously made between the university's chief academic officer, the university's math department chair and math faculty, and the UNC System Office. In signing the updated document, the university agrees to engage, support, and commit to UNC System Math Pathways core elements of participation. New to the document are additional implementation areas for consideration that align with newly identified system-wide goals and reflecting objectives identified in the UNC System's Strategic Plan. No changes have been made to the Core Elements of Participation. The new areas for consideration are all under the Institutional-Selective Elements of Participation. There have been modifications to some of the previously existing options and two entirely new categories have been created, with associated objectives. While considering your institution's areas of commitment, please feel free to modify your institution's previously selected elements, in addition to selecting any desired areas from the newly identified areas (Math Pathways for African-American Collegiate Transformation-MPAACT and Access and Affordability)

Representing your institution, you are affirming a continuing commitment to the following core elements of participation, which are in line with the UNC System Math Pathways Task Force recommendations submitted to the UNC System Office, Academic Affairs on August 1, 2019.

*Universities should aim to engage in the following **Core Elements of Participation**:*

#### **GATEWAY MATH COURSES**

- Encourage all students to complete their gateway math course within their first thirty hours of enrollment. A purposefully planned schedule may also be utilized if

the gateway course falls outside of the first thirty hours.

#### **FACULTY AND STAFF DEVELOPMENT**

- Implement professional learning opportunities that support advisors enrolling students in the right mathematics course at the right time for a student's program of study.
- Facilitate and support faculty development for mathematics pathways efforts at your institution.

#### **DESIGN OF MATH PATHWAYS**

- Define and implement a set of Math Pathways by establishing a default or recommended math course or sequence of math courses for at least two institutionally-defined degree clusters. (Ideally, there might be three-to-six-degree clusters across the institution.)

#### **TRANSFERABILITY**

- Engage in System-wide and cross-disciplinary discussions to support transfer and applicability of mathematics courses that ensure math credits seamlessly transfer and apply as degree supporting mathematics credits to appropriate programs of study.

#### **CAMPUS LIAISONS**

- Identify an institutional liaison within the provost's office who will (1) participate in regular check-ins with the UNC System Office Math Pathways Leadership Team; (2) collaborate with the campus-based math pathways team.

#### **TIMELINE**

- Reporting elements involved in this agreement will occur annually beginning Spring 2020. As noted below in UNC System Office Responsibilities, this initial implementation period will continue for at least three years, after which the UNC System Office will assess and revise the core elements of participation.

#### **COMMUNICATION**

- Determine campus-specific methods of communicating, including catalogs, advising handbooks, or orientation information, etc.

#### **RESOURCES**

- Institutions will provide appropriate and adequate resources to support faculty and staff to engage in the core elements. (When resources designated for Math Pathways are obtained by the UNC System Office, they will be shared with

institutions.)

Recognizing institutional autonomy, universities are encouraged to expand their participation beyond the CORE elements noted above. These “**institutional-selective**” **elements** represent additional areas universities might pursue for their Math Pathways initiative. Institutions may choose to supplement the Core Elements of Participation with the below options. We are cordially asking you to identify your priorities so that we may cultivate a higher level of acknowledgement of your activities and successes.

*Universities may determine level of engagement in **Institutional-selective elements**:*

#### **PLACEMENT AND ADVISING:**

- Focus on adjustment of placement standards to meet the goals of the recommendations.
- Use collaborative advising technologies accessible by both advisors and students to allow advisors to record summaries of advising appointments and include math course selection recommendations and other pertinent information to improve recordkeeping.
- Collaborate and align effective placement practices (e.g., consider use of multiple measures, advising tools and resources) to support student enrollment in initial math course.

#### **CURRICULUM AND PEDAGOGY**

- Examine and refine student learning outcomes, mathematics course content, and sequencing of courses to align with the institution’s groups of disciplinary majors (i.e., degree clusters)/programs of study.
- Faculty review and communicate mathematics requirements across UNC System universities and NCCCS institutions and at the regional level recommend a math course or sequence of courses aligned to unique programs of study.
- Identify a team of individuals to critically examine student learning outcomes, mathematics course content, and sequencing of courses in close collaboration with programs and stakeholders across institutions.
- Leverage, coordinate, and expand existing efforts across system institutions to identify and address unique barriers to success for African American men in required math courses.
  - Examine societal influences and impacts on success for African American men in math courses.
  - Commit additional resources and create a new plan of action to support the

success rates of African American men in gateway and entry level mathematics courses.

### STUDENT SUPPORT PROGRAMS

- Identify promising practices of student support programs relevant to math pathways. Develop methods to regularly evaluate, assess, and disseminate these efforts, making changes iteratively based on what is learned.
- Examine current mathematics support systems for students and explore interventions that have proven successful at other UNC System institutions.
- Measure the effectiveness of student support initiatives on an ongoing basis.
- Minimize course repeat rates and improve perceptions of the relevance and utility of mathematics in achieving personal and professional goals.

### TRANSFER AND K-12 PARTNERSHIPS

- Identify three to five primary feeder schools (i.e., high schools, early colleges, and community colleges) from which a large number of the university's students matriculate.
- Establish and/or strengthen grade 9-14 partnerships with community colleges and high schools.

### COMMUNICATION

- Develop open lines of communication between the mathematics department and other departments about intended outcomes of required math courses, and institutions will revise and develop new courses as needed.
- Identify "ambassadors" who will share curricular and pedagogical initiatives and dialogue with faculty, graduate students and staff within and across institutions to help brainstorm ways to define and ensure students success in math pathways courses.
- Identify a faculty representative to attend regularly scheduled conference calls/web conferences focusing on curriculum, pedagogy and faculty engagement.
- Identify a campus team responsible for identifying, constructing and communicating progress towards Math Pathways implementation to campus stakeholders and UNC System partners.
- Create and update an institutional Math Pathways website documenting progress toward implementation.

### DATA AND ASSESSMENT

- Identify metrics/data evaluation measures as appropriate for unique campus missions and student populations.
- Review disaggregated data (e.g., race and gender, Pell eligible, transfer, first generation) on an ongoing basis with deeper analysis into issues impacting African American men and other groups in math courses.

### **DESIGN MATH PATHWAYS WITH THE FOLLOWING 3-YEAR IMPLEMENTATION GOALS**

- Having at least 75% of entering students earn credit in their first mathematics course in their degree pathway within one year.
- Of the total count of students with grades, student passing rates in gateway mathematics courses are either a) above 80% or b) improve by 10% over an institution's 2018 Summary baseline data, within 3 years of implementation.

### **MATH PATHWAYS FOR AFRICAN-AMERICAN COLLEGIATE TRANSFORMATION (MPAACT):**

- Implement interventions in gateway and entry level mathematics courses that support higher degree-completion and graduation rates for African-American men.
- Utilize interventions in gateway and entry-level mathematics courses that support higher persistence rates for African-American men.
- Conduct a self-study to identify campus factors that uniquely impact success rates for African-American men in gateway and entry-level mathematics courses.
- Provide data, cooperation and support to UNC System-level MPAACT initiatives.

### **ACCESS AND AFFORDABILITY:**

- Reduce mathematics textbook costs for students.
  - Revise and simplify policies for instructors (individuals and groups) to adopt Open Educational Resources (OER) for mathematics and statistics courses.
  - Form committees and identify individual representatives who will coordinate with the University Librarians Advisory Council (ULAC) in their efforts to reduce textbook costs across the system.
- Conduct a self-study of the impact of OER use at scale and for sub populations.

### **The UNC System Office goals and responsibilities:**

- Provide continued leadership and communication to determine successes and revisions of Core Elements of Participation on a continuing basis.



- Convene state-wide mathematics faculty, advising staff, and other stakeholders at least once per academic year.
- Collect, document, and communicate successes between and among individual institutions to represent a coordinated system-wide effort.
- Utilize the UNC System Assessment Council to facilitate system-wide measures.
- Direct technical assistance support for transfer and applicability issues.
- Maintain the UNC System Online course catalog to students and advisors how math pathways credit transfers to each university within the UNC System.
- Provide broad professional learning opportunities to role-specific institutional stakeholders, including math faculty, advisors, mid-level administrators and institutional researchers.

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Dr. James Winebrake  
Provost and Vice Chancellor for Academic Affairs  
Chief Academic Officer

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Dr. David English  
UNC System Interim Senior Vice  
President for Academic Affairs and Chief  
Academic Officer

Michelle Soler  
UNC System Assistant Vice President  
Undergraduate Programs

Beth Bumgardner  
NCSSM-Morganton  
UNC System Math Pathways Task  
Force Co-Chair

Johannes Hattingh  
Chair, Department of Mathematics and  
Statistics

Tracey Howell  
Appalachian State University  
UNC System Math Pathways Task  
Force Co-Chair

Tamar Avineri  
NCSSM-Durham  
UNC System Math Pathways Task Force Co-  
Chair

Thomas C. Redd  
NC A&T State University  
UNC System Math Pathways Task Force  
Co-Chair