QEP Title: NINERways: The Path to Math Success

Institution: University of North Carolina at Charlotte

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QEP Executive Summary

The purpose of the Quality Enhancement Plan (QEP), also known as NINERways, at the University of North Carolina at Charlotte (UNC Charlotte) is to improve upon student success in the quantitative reasoning requirement of the institution's general education program. This will be achieved by designing math courses that successfully transition and prepare students for their major and enhance the mathematics classroom learning environment –work also known as *math pathways*. Such efforts should lead to a decrease in annual DFW (students earning D's, F's or withdrawing from courses) rates for all students, a reduction on the variation of DFW rates between sections of the same courses, a reduction of equity gaps in DFW rates between student populations, and an increase in the four-year graduation rate.

This QEP topic was identified through UNC Charlotte's institution-wide planning and evaluation process. In 2014, the institution began its Graduation Initiative which focused on reducing the various barriers undergraduate students encounter that prevent them from being successful and graduating. While the initiative has increased UNC Charlotte's graduation rates to their highest levels in the past 15 years, there is a strong commitment by the University to achieve an even higher rate. The commitment is reflected in the University's 2021-2031 strategic plan, Shaping What's Next, where an area of focus is to increase student equity in on-time graduation by identifying and addressing gaps and barriers to success.

NINERways is built on three pillars: Pillar 1 - Math Pathways Structure and Alignment; Pillar 2 - Course Curricula Coordination; and Pillar 3 – Evidence-based Pedagogies and Classroom Practices. Each of the pillars is based on best practices identified in mathematics education research literature. The first pillar identifies gateway mathematics courses that reflect students' programs of study, are necessary for students to progress to their major, and contain content students need to be successful in other courses. The second pillar uses faculty teaching teams to provide consistency in multi-section courses taught by multiple faculty members. Finally, the third pillar provides professional development for faculty members to identify and implement various evidenced-based pedagogies and classroom practices.

Implementation of NINERways began in Fall 2023 with the rollout of the three math pathways - A2C (Algebra to Calculus), STATways, and QUANTways. In each of the math pathways' math and statistics courses, faculty will utilize common calendars and grading policies for courses and regular meetings of the instructional teams to improve course coordination. In the classroom, faculty will utilize the evidence-based pedagogies and classroom practices identified. Data will be collected during each semester for instructional teams to analyze and use to make decisions on how the changes are impacting student learning.

The implementation of the QEP will be assessed using student success metrics. This process includes (a) collecting and analyzing DFW rates for all gateway mathematics and statistics courses, (b) collecting and analyzing DFW rates for all sections of gateway courses, (c) collecting, disaggregating, and analyzing DFW rates for gateway mathematics and statistics courses by ethnicity/race, enrollment status, and socio-economic status, and (d) analyzing 4-year graduation rates.