

to support the participation of teachers across Colorado and Wyoming, summer courses are offered in a hybrid format, allowing both face-to-face and video conferencing delivery. Students use synchronous and asynchronous course management software in the hybrid courses and the online courses offered during the school year.

Generate a body of research and evaluation that documents effective practices in developing master teachers and teacher-leaders

Virtual Master's Degree Program (MP)

The goal of the Master's Program is to develop a highly qualified, culturally competent, pedagogically effective cadre of mathematics teachers who are equipped to improve student achievement in mathematics. The Math TLC is creating a rigorous master's program that includes courses at UNC and W. The program will be sustained beyond the life of the grant through the establishment of an affiliation agreement. We are committed to ongoing development and research of the delivery methods for the program, including a determination of optimal online software platform, online teaching strategies for mathematics, and model course characteristics for the master's program, with a basis in current research.

The MP is offered to secondary mathematics teachers who have taught at least two years. It is a 2-year, 30-credit program consists of online and face-to-face courses. Of the 30 credits, 18 are mathematics courses and 12 are mathematics education courses. Mathematics education courses are paired with their mathematics counterparts so that teachers integrate their knowledge of mathematics content and pedagogy. For example, Modern Geometry, taught during the summer, is followed by Teaching Geometry during the school year.

leadership team, and monitoring and reporting is related to goals and questions.

Research Goal 1. Advance professional development of mathematical understanding and practices among Math TLC university teacher-educators.

Question 1.1. *Teacher Cognition*
What mathematical understanding and teaching practices do you have at the start and end of the project?

Question 1.2. *Instructional Practices*
What mathematical practices are addressed in Math TLC courses?

Question 1.3. *Student Achievement*
What is the relationship between teaching practices, contexts, and student achievement?

Question 1.4. *Instructional Practices*
How do changes in mathematics instruction affect K-12 student achievement and participation?

Research Goal 2. Advance professional development by researching, through a development model. The program facilitates the development of