In 2005, the American Mathematical Society, acting upon the recommendation of its Committee on the Profession, established the Mathematics Programs that Make a Difference Award. The award, provided by the Mark Green and Kathryn Kert Green Fund for Inclusion and Diversity, highlights programs that are succeeding and could serve as a model for others in addressing the issues of underrepresented groups in mathematics.

The Math Bridge to Doctorate Program at UTA began in 2016 and works with the National Alliance for Doctoral Studies in the Mathematical Sciences to identify potential applicants. The Math Alliance’s Facilitated Graduate Application Program (F-GAP) is designed to provide resources for minority students to gain access to admission in graduate mathematical sciences programs. The Math Alliance can thereby identify students who do not have the appropriate background to be competitive for graduate school and UTA has used these contacts effectively to recruit and prepare many of these students for graduate studies in mathematical sciences. UTA’s Bridge to Doctorate meets all three criteria for the Mathematics Programs That Make a Difference Award: It contributes to an increase of students from historically underrepresented groups that receive advanced mathematical degrees, has documented success, and is a replicable model.

The Bridge Program provides a vibrant and immersive learning environment within a PhD program, where Bridge fellows collaborate not only among themselves but also work side by side with other PhD students. This ensures academic success, learning about an entire doctoral program, and peer support. The Bridge Program is built on two cornerstones: (a) A Bridge-to-Math Doctorate curriculum training program through the BS-MS fast track, which provides a smooth transition from undergraduate to graduate programs through coursework in two-semester Analysis, Linear Algebra, Advanced Linear Algebra, and other graduate courses; (b) A comprehensive system of strong faculty and peer mentoring, aggressive recruitment at annual Gulf States Math Alliance (GSMath) conferences and other GSMath activities, direct involvement of external faculty mentors from other GSMath institutions, with whom the Bridge Program has built trust and strong relationships so that they actively recommend their students to the program. The Bridge fellows are usually supported for one year. Upon completing the program successfully, they transition to a doctoral program.

UTA’s Bridge to Doctorate Program closely collaborates with faculty mentors at various underserved institutions, particularly HBCUs, HSIs, and URM faculty mentors within GSMath. Those mentors function as excellent recruiters for the Bridge Program and recommend their own students. The GSMath has been growing as a regional alliance, from a dozen institutions in 2013 to currently over 40 mathematics departments. The start of the Bridge Program
in 2016 and the annual GSMath conferences since 2017 have been instrumental to this phenomenal growth. The Bridge Program has been sponsoring the annual GSMath conferences since 2017, where a typical attendance is over 200 students and faculty. At those annual conferences the Bridge Program faculty interact with many prospective Bridge fellows. The current data indicates that the Bridge Program is successful in attracting URM students and prepare them for doctoral studies in the mathematical sciences with effective academic preparation and strong mentoring. The Bridge Program works closely with the National Math Alliance through active engagement in the annual Field of Dreams conferences and the FGAP (Facilitated Graduate Applications Process). The Bridge Program also plays a leadership role in the Gulf States Math Alliance. The Bridge Program is now developing collaborative relationships with the NAM (National Association of Mathematicians) and other organizations such as the Mathematical Association of America–Texas section.

UTA's Bridge to Doctorate Program, with its vibrant and immersive learning environment and annual GSMath conferences, has had a significant impact on its alumni’s career choices and trajectories. Alumni comments (from the nomination) include “The program offers more flexible course plan to strengthen my foundation in analysis and linear algebra. With the strong mathematical foundation, I was able to move smoothly through my doctoral program. ... One thing that impressed me is the support of the professors and from other graduate students that advocate for the success of students as they matriculate through the program. ... I believe that UTA, more specifically, the Bridge-to-Math doctorate program truly brought me success and provided me with the skillset necessary as I advance further through my academia career path.”

The AMS commends UTA’s Bridge to Doctorate Program for its success in bringing more persons from historically underrepresented and underserved groups to doctoral studies in mathematical sciences.

Response from University of Texas Arlington (UTA)
The Mathematics Department at University of Texas at Arlington is honored to receive this AMS award. The Bridge Program aims at transforming the participating students into strong candidates for standard PhD programs in the mathematical sciences with graduate assistantships. The targeted students are those with potential, talent, and commitment to achieve a doctoral degree, but not yet ready to succeed in a standard PhD program for reasons such as coming from an underserved institution, where advanced mathematics courses may not be available. The success in the Bridge Program is reflected not only in the high number of students who have matriculated at a PhD program, but also evidenced by students in early cohorts who have successfully completed PhD studies and begun their professional careers. It has strong positive effects on the UTA Mathematics Department itself, by creating a better academic environment for graduate students, for their retention, career preparation, involvement in outreach, and functioning as mentors/peer-mentors. We thank our collaborators, faculty mentors at over 40 institutions, mostly HBCUs and HSIs, in the Gulf States Math Alliance covering Texas, Louisiana, and Mississippi, and colleagues from the National Alliance for Doctoral Studies in the Mathematical Sciences, for their tremendous support.

Credits
Photo is courtesy of UTA College of Science.