Phase 1 Institutional PAIR Cohort Projects and Members – Spring 2022

The *EQUITABLE STUDENT PATHWAYS* Project

Data Agency, Action, and Insight: Redesigning Student Pathways to Ensure Equity
University of Texas System Lumina Foundation Grant

Project Overview

The UT System's *Equitable Student Pathways* Project is using the power of data to design new pathways that will help more students—especially historically excluded and minoritized populations in Texas—apply, matriculate, persist, progress and complete quality degrees at UT System institutions.

Funded by Lumina Foundation, the initiative supports three interdependent projects focused on:

- Redesigning curricular pathways with a focus on innovative courses and credentials;
- Making equity-centered data, research, practice, and policy the default across UT System; and
- Utilizing research and data analytics through visualizations and dashboards to resolve equity gaps for successful degree-completion and entry into the workforce.

The institutional PAIR cohorts are working to re-envision curricular structures and disciplinary boundaries through rigorous data analysis, using Participatory Action Institutional Research, an iterative change model that identifies units of analysis and performance and efficiency metrics across the student life cycle of matriculation, progression, completion, cost/debt, and post-collegiate outcomes.

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UT Arlington

Project
Improve the pass rates in several high-enrollment, introductory courses to ensure students achieve success and remain on the path to timely degree-completion. The project will focus on identifying targeted and timely supports and curricular designs needed to close equity gaps and improve student success outcomes for specified populations and in specified courses and majors, especially high-enrollment STEM programs. UTA has a Student Success Task Force underway, which is examining equity gaps and beginning to identify approaches and interventions to address them. This project's focus on curricular innovation will advance the work, all of which is aligned with UTA's strategic plan, Bold Solutions/Global Impact, which prioritizes student access and success.

Target Student Population/Equity Gap(s)
Data show equity gaps in retention and graduation for African American and Hispanic students, as well as gaps for Male and conditionally admitted students, too. The project will focus on students from these populations enrolled in gateway courses named below, who are majoring in Computer Science, Biology, Mechanical Engineering, Nursing and Accounting.

Data/Unit(s) of Analysis
Quantitative data including enrollment in intro courses, grades and drops disaggregated across student populations, as well as qualitative data generated by the UTA Student Success Task Force, conversations with faculty and staff, and the APLU Powered by Publics project. Metrics include retention rates, DFW and drop rates, with a focus on key student populations: conditionally admitted, Males, Pell-eligible, and African American, Hispanic and for some aspects of project, White students.

Curricular Components
Gateway courses with enrollments totaling more than 2,200 students/semester, and with high drop and DFW rates, including *Intro to Computers and Programming, Chemistry for Engineers, General Chemistry, Human Anatomy and Physiology*, and *Principles of Accounting*.

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UT Austin

Project
Reduce barriers to student success in two types of undergraduate gateway course: Strategic First-Year Courses (SFCs); and undergraduate courses with the highest DFW rates. The project extends UT Austin's data-driven expansion and enhancement of targeted support services for students *outside* the curriculum *to the curriculum itself,* and seeks to uncover and resolve barriers to timely graduation for those students still experiencing difficulties. It aligns with UT Austin's longstanding aim to champion students' success for all Longhorns at all stages of their college journey.

Target Student Population/Equity Gap(s)
The data- and targeted student-support-driven increase in graduation rates at UT Austin has been successful yet there are still some student populations (historically excluded, minoritized, first-generation) who seem to be more vulnerable to barriers in gateway courses preventing them from timely graduation. Four-year graduation rates for historically excluded and minoritized students have remained below the university's overall 4-year grad rates (72/2% in 2020).

Data/Unit(s) of Analysis
Data and metrics will include disaggregated DFW and 4-year graduation rates. A UT Austin-developed data infrastructure that merges SIS and the Canvas LMS will play a central role in identifying near-term innovations in accessible instructional design, equitable teaching practices, and academic advising.

Curricular Component
The selected SFC and high DFW-rate courses represent major milestones for most undergraduates and improving learning and success rates in those will have a positive downstream impact on students' later coursework and likelihood for timely graduation.

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UT Dallas

Project
Using data to reform math education and success on a large scale, and with unprecedented communication, coordination and data-sharing across units and disciplines, in recognition of the university's 53 undergraduate degree programs that require math in the first term. More than 13,000 currently enrolled undergraduates who are in STEM degree programs require math as a foundation course. Data analysis reveals a significant relationship between grades earned in the first math course taken at UT Dallas and multiple outcomes, including re-enrollment, course success, and completion. Focus will be on placement and progress through the curriculum beginning with math, and developing a framework for addressing unintended negative course and completion outcomes, as well as advising, enrollment and curricular issues with gateway courses that should extend to multiple disciplines. The project aligns with work that has been underway at UTD for many years, yet with a bolder approach to use data to make change at scale for large numbers of students.

Target Student Population/Equity Gap(s)
Recent analysis of DFW rates show that underrepresented minority students consistently drop, fail, or withdraw from the three most common math courses at higher rates than non-underrepresented students. Targeted student populations will also include those from lower-resourced high schools and community colleges, as well as first-generation, who have experienced more COVID-generated learning loss.

Data/Unit(s) of Analysis
Data and analysis related to the characteristics of students who enroll in math courses their first semester, and who perform poorly, drop, fail or withdraw, and who do not persist or graduate in 8 semesters. Additional data and metrics include grades in first-term math, sequential courses, re-enrollment and placement score data, persistence and graduation rates, disaggregated by a variety of pre-matriculation characteristics and demographic variables.

Curricular Component
Placement and progress through the curriculum beginning with math, with a special focus on the engineering and science curricula that depend on math success.

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THE UNIVERSITY OF TEXAS AT EL PASO

UT El Paso

Project
Improving time-to-degree and SCH-to-degree for students in Kinesiology and Biological Sciences with a focus on addressing the program complexity of these degrees. Both these degree programs are popular and enroll large numbers of students. The review of student success data in these majors reveals that students take longer to complete these programs, especially students who are first-generation and low-income/Pell-eligible. The project will identify causes and barriers, and solutions to address them, and is tightly aligned with UTEP's Title V Grant for preventing stop-outs and improving Hispanic student completion.

Target Student Population/Equity Gap(s)
UTEP is a majority-Hispanic serving institution, with more than 80% Hispanic and 94% from underserved minority populations. However, first-generation and low-income/Pell-eligible students take longer to complete and are more likely to stop out if their degree pathway is interrupted during their first or second years. The project seeks to reduce gaps in completion for UTEP's lowest income quartile and first-generation students.

Data/Unit(s) of Analysis
Four main data sources and metrics have been and will continue to be used: time-to-degree and SCH-to-degree; graduation issues and complaints requiring resolution by Provost's Office; degree flowcharts identifying course sequencing requirements; and the tools of the Curricular Analytics/ Curriculum Complexity process being used as part of UTEP's Title V Grant.

Curricular Component
Two highly popular degree programs with large enrollments, Kinesiology in the College of Health Sciences, and Biological Sciences in the College of Science.

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UT Permian Basin

Project
Close equity gaps in retention and graduation with non-traditional populations in high-demand fields for the Permian Basin region, addressing the paucity of male teachers and female engineers prevalent in the area as teacher shortages grow and oil and gas development expands to world markets and new technology. Addressing these gaps will entail using data to identify and resolve problems at the curricular level in ways UTPB has not done before. The project is aligned with two pillars of UTPB's strategic plan, Student Success and Serving the Region.

Target Student Population/Equity Gap(s)
Targeted student populations include males in Teacher Education (especially African-American and Hispanic males), and females in Engineering, with a focus on closing retention and graduation rate gaps but with a view also towards improving new enrollments for targeted students in these degree programs.

Data/Unit(s) of Analysis
Standard metrics and data around year-to-year retention and graduation rates for full-time undergraduates reveal gaps in participation and completion for males in Education and females in Engineering. UTPB has struggled with access to, and utilization of disaggregated data, issues the project will address. More attention will be paid to DFW rates and pass rates for the Texas Educator Standard exam.

Curricular Component
The project will address 4 tracks in the Child and Family Studies program, 13 tracks in the Education program, and all degree tracks in the College of Engineering (Chemical, Electrical, Mechanical, Nuclear, and Petroleum), with a robust review of curricular pathways and identification of roadblock classes that need to be addressed. Focus areas will cover a range of analysis and interventions, among them: identifying high DFW courses, curricular redesign that embeds more experiential learning opportunities (internships, externships, co-op experiences, and teacher residencies), supplemental instruction needed in various courses and degree tracks, and improving pass rates for minority students on the Texas Examination of Educator Standards.

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UT Rio Grande Valley

Project
Improve outcomes for first-year students, which were already down pre-pandemic and have taken an even greater hit since COVID arrived (e.g., first-year retention was down almost 8%, pass rates in core courses down significantly). The project is grounded in the operating principle that improving student outcomes requires preparing faculty to better understand their first-year students and needs, as well to design and deliver core courses from an equity-minded, asset-based pedagogical lens. This project will work to scale the number of participants and impact of a promising UTRGV faculty development program focused on faculty teaching first-year, Core Curriculum courses, by integrating data more intentionally to facilitate curricular and pedagogical changes, and at the level of individual faculty. The goal is for faculty to drill down in their own courses to understand which students are doing well, which are not, and what patterns can help inform faculty decisions about course design and pedagogy.

Target Student Population/Equity Gap(s)
First-year students are the primary focus, as well as other students in core courses, with particular attention needed for students who are not yet college-ready, undecided on a major, and/or have entered the university with no prior college hours. Since the pandemic began, the number of students who fall into one or more of these categories has skyrocketed.

Data/Unit(s) of Analysis
Retention, GPA, credit completion, and pass rate data have been critical in identifying the project's focus areas**,** but these metrics have not yet been disaggregated by gender, race/ethnicity, major, prior college hours, and pass rates to better understand what changes are needed in the curriculum, individual courses, by instructor. UTRGV has developed a pass rate dashboard with three years of data, revealing trends, and enabling the deeper exploration at the heart of the project.

Curricular Component
First-year Core Curriculum courses, with a focus on the faculty who teach them. As the project expands its faculty development program, several design questions will be explored, including whether to adapt workshops for discipline-specific cohorts of faculty.

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UT San Antonio

Project

Reduce time-to-degree for underrepresented minority students (URMs) within sustainable environment majors, and increase the number of female graduates in specific majors where they are underrepresented. UTSA has made significant progress in reducing time-to-degree and increasing degrees awarded but not across all degree programs, and nor for all students. This project seeks to redress this and is aligned with UTSA's *Equity Advocacy Initiative* fostering inclusive learning environments, and the *Enabling Clear Pathways to Degree Completion* task force that is a part of the initiative. It is also aligned with institutional goals to expand transdisciplinary education and research to enhance student employment opportunities after they graduate. Through the project, UTSA will do a deeper dive into data to explore specific barriers to completion, such as student major switching patterns, course sequencing, and inclusive pedagogy.

Target Student Population/Equity Gap(s)

The anticipated student population totals around 1, 171, of which 39% identify as female and 65% as URM, and for which equity gaps in time-to-degree and degrees awarded exist in three majors: Environmental Science, Civil Engineering, and Construction Science and Management.

Data/Unit(s) of Analysis

Time-to-degree for first-time, full-time cohorts, degrees awarded, hours attempted by race/ethnicity and gender, seekUT earnings, and future Workforce data. The review of these data revealed three majors that share a common thread across two colleges and can make a difference in student outcomes, and the deeper dive into data will enable UTSA to identify changes and interventions needed to close gaps.

Curricular Component

Three majors with identified equity gaps and/or low participation for URM and female students: Civil Engineering; Construction Science and Management; and Environmental Science. The project capitalizes on momentum from recent reorganizations in the College of Engineering and Integrated Design and the School of Civil & Environmental Engineering and Construction Management, as well as the placement of the Environmental Science program into a new Department of Integrative Biology. The project will embed more cross-disciplinary curricular and experiential learning opportunities across the three majors with the goal of enhancing student learning and post-secondary success.

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UT Tyler

Project
Decrease the percentage of STEM students earning DFWs in their mathematics courses on their first attempts, beginning with UT Tyler's engineering programs. The math pipeline courses are blocking and delay factors for UT Tyler STEM students, who comprise 38.6% of the undergraduate population, with significant equity gaps across specific sub-populations. Calculus-readiness is an acute challenge, exacerbated by access to quality instruction in rural areas and inconsistent preparation for Tyler's transfer-heavy student population. Six of the top 10 majors at UTT are STEM, and the learning from the initial focus on engineering programs will be transferred to other STEM majors. This project aligns with UTT's mission to serve the educational and public interest of East Texas and beyond, and to raise the university's 6-year graduation rate to 60%. It also supports the university's ongoing efforts to ensure student financial well-being, belonging in the major, timely completion and entry into the workforce, and to make data available to all stakeholders on campus to facilitate these efforts.

Target Student Population/Equity Gap(s)
Examination of disaggregated data for STEM majors reveal retention and completion gaps for Pell-eligible, first-generation, Black, Hispanic, female, transfer and rural students. UTT is becoming increasingly diverse, with 25.5% of undergraduates identifying as Hispanic and 45.5% as non-White in AY21. Engineering students total 10.9% of undergraduates.

Data/Unit(s) of Analysis
Disaggregated data for students in STEM courses from the UT System-UT Tyler Retention Index, and from the UT System-UT Tyler Undergraduate Dashboard, allow analysis from multiple perspectives and characteristics, including historical, trends, majors and courses. The Key Student Completion Indicator is widely available across the UTT community and provides target goals, success thresholds, and yearly progress for undergraduate students.

Curricular Component
UT Tyler STEM majors struggle in their math courses and, for engineering students, three of the top five course where FTIC students receive high DFW rates involve courses in the math pipeline. The project will focus on Chemical engineering, Civil Engineering, Construction Management, Electrical Engineering, and Mechanical Engineering.

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