

Incorporating an Academic Coaching Role to Regional Recruiters Employed in a Co-enrollment Program in Engineering

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- Lead academic and outreach initiatives for TAMU College of Engineering's statewide two-year partnership program for transitioning general engineering students to Texas A&M University's Engineering majors.
- Facilitate smooth transitioning of co-enrolled students from two year partners to 4 year Texas A&M University College of Engineering through coordination of institutions departments - Regularly evaluate the impact that co-enrollment with 2yr partners, curriculum/academic pathways, and non-traditional coursework have on the recruitment and retention of a diverse student population.
- Membership – American Society of Engineering Education (ASEE); National Institute for the Study of Transfer Students (NISTS); League for Innovation Community Colleges; American Management Association (AMA); Texas Association for College Admission Counseling (TACAC) - Presentation - Bassett, E., De Sousa, D., "Stay Local, Save Money: An Innovative Engineering Education Pathway", NISTS Conference, Portland OR. 1/2023; Onate, P., Bassett, E., De Sousa, D., Innovation Conference, "Texas A&M – Dallas College: A New Way to an Engineering Degree" (3/2023); Cedor, T., Bassett, E., Onate, P. TRACS Summit, "Promoting Social Capital and Environmental Citizenship: Partnership between A&M, Dallas College, and Chevron." Bassett, E., De Sousa, D., TACAC Conference "Alternative Pathways to Engineering Majors" (9/2022).

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Dr. Cindy Lawley is the Assistant Vice Chancellor for Engineering Academic and Outreach Programs and is responsible for the PK-12 Engineering Education Outreach Program, the Engineering Academies Program, the Professional and Continuing Education Program, the System-wide Engineering Academic Program, TEES Regional Divisions, and the Conference and Events Division for Texas A&M Engineering. She has a Ph.D. in Higher Education Administration from Purdue University, a M.A. in Education from the University of Alabama, and a B.S. in Computer Information Systems from Mississippi University for Women. She has over 30 years of experience in project management, with over 25 years in Higher Education. Dr. Lawley does research in engineering education, PK-12, professional and continuing education, and workforce development. Over the last 30 years, Dr. Lawley has worked extensively with industry and academia in creating a talent pipeline, upskilling, and reskilling workers, as well as providing pathways for underserved populations to obtain degrees in engineering. Dr. Lawley is currently PI on five (\$21 M total) workforce development projects with the Department of Defense to create a talent pipeline for the defense industry to identify specific local workforce shortfalls and skills gaps. Dr. Lawley was recently selected by the Texas A&M Board of Regents as a Regents Fellow, one of the highest honors bestowed on an individual within the Texas A&M University System.

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Abstract

The Texas A&M Engineering Academy program is the first engineering transition program of its kind in the United States. Unlike traditional transfer programs, students admitted into an Academy are admitted to Texas A&M and begin earning Texas A&M transcribed credit from semester one. Students enroll in math, science and core curriculum courses through the partner college and enroll in Texas A&M engineering courses taught by Texas A&M faculty face-to-face on the partner college campus. Students spend one to two years co-enrolled at the community college before transitioning full time to Texas A&M University in College Station to finish their bachelor's degree. Academy students save on average \$4,100 per semester on tuition fees compared to students that are full time at Texas A&M University. The Academies have three goals:

1. Access: Expand accessibility to an Aggie engineering degree by partnering with community colleges.
2. Affordability: Increase affordability of an Aggie engineering degree by maximizing student services to make education more equitable.
3. Completion: Integrating student success programs to increase completion rates.

In the Fall of 2019, the Engineering Academy program integrated academic coaching duties, similar to advising but also incorporating retention to the regional staff where previously their main focus was student recruitment. This paper will describe: 1) year to year growth since this implementation; 2) student success since 2019; and 3) lessons learned. There are Academies at Blinn College-Brenham, Tarrant County College in Fort Worth, South Texas College in McAllen, Tyler Junior College in Tyler plus the Chevron Academies with Austin Community College, Alamo College, Dallas College and Houston Community College, and the ConocoPhillips/Concho Engineering Academy at Midland College, with a new academy starting in February 2024 at Collin College in Allen, TX. This education partnership model leverages the significant role of community colleges in educating the next generation of engineers.

Background Introduction

A first-in-the-nation co-enrollment engineering transition program beginning in 2015, the Engineering Academies allow students to begin their college journey closer to home at a participating community college, where they take science, mathematics, and core courses in addition to engineering courses taught by embedded Texas A&M faculty. Since the students are enrolled at both the participating community college and at Texas A&M University from day one this program offers a *transition* to the university rather than the traditional transfer style of progression. After their first year or two, students transition to College Station to finish their engineering education in a specific expertise area at Texas A&M.

The academies began with two critical goals: meet the increasing need for engineers in Texas and make a top-tier engineering education accessible for non-traditional students. Since the first academies were established at Blinn College-Brenham and Houston Community College, the program has expanded across the state, encompassing nine academies that have provided an engineering pathway for over 2,900 students to date. Even before they set foot in Aggieland, Engineering Academy participants are treated like any other College of Engineering student. Applicants must meet the same STEM requirements in the competitive enrollment process, and they develop the same close-knit Aggie connections by attending their engineering classes as a cohort.

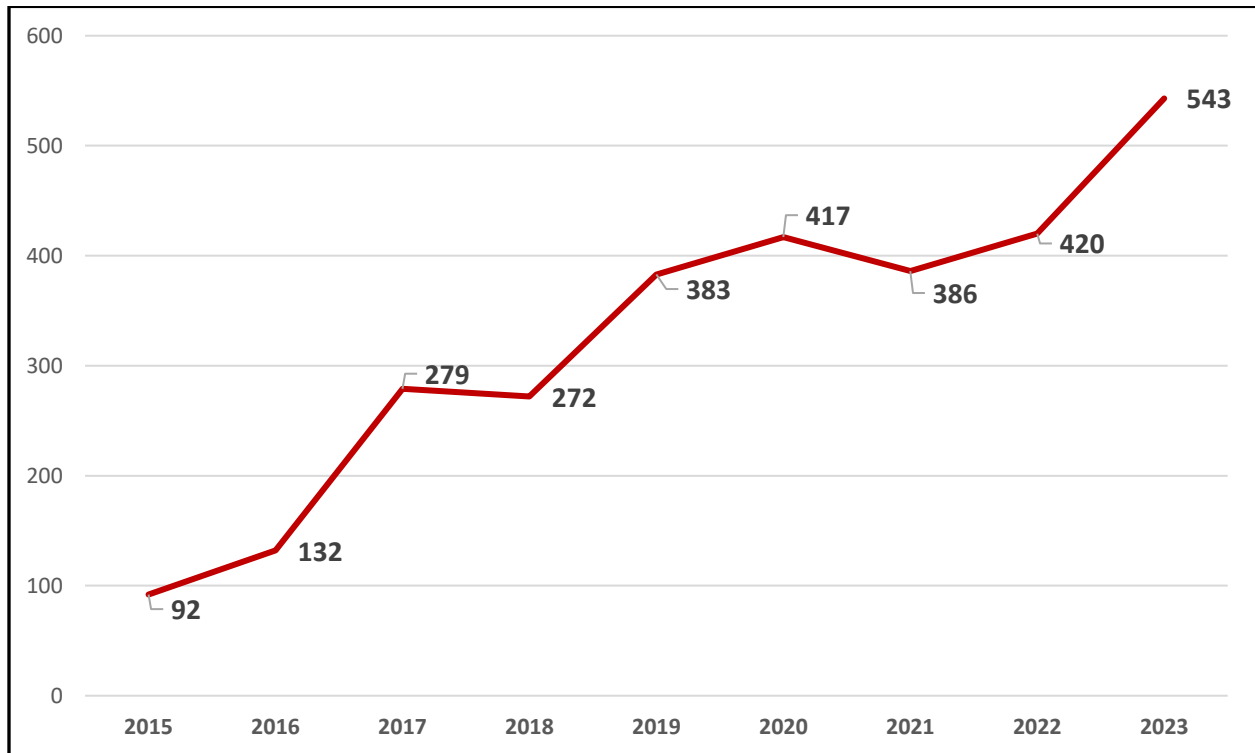
The existing Engineering Academies span across the entirety of Texas and attracting students from every corner of the state, with a new academy slated to start at Collin College in February 2024, with enrollment opening for the Fall 2024 semester.



Growth and Sustainability

The Engineering Academies, from inception, was designed to increase the access for non-traditional, underserved students across the state of Texas. To accomplish the task of growth and sustainability there needed to be an outreach area established within the organization, these recruiters would specifically target regions in the vicinity of the established academies, beginning with the first two academies, Blinn Brenham and Houston Community College. Gradually adding up to 5 recruiters to cover Texas and specific community college surrounding areas over the next 7 years. During this timeframe the Engineering Academies grew in student volume and in locations as word spread organically throughout the state of Texas. Beginning

with only 92 students starting at two locations to 543 students starting as of Fall 2023's cohort, at 9 locations.

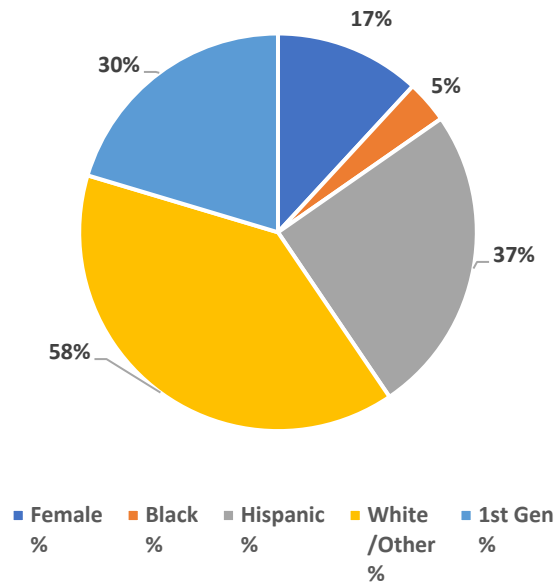


Demographics, Graduation, and Retention

The demographics for the Engineering Academies have been consistently the same or higher than the full university admitted engineering students. Most specifically the underserved population has consistently been higher. This is directly related to the recruiting outreach targeting the non-traditional students and bringing the “start local – save money – graduate an engineer” message to the students that didn’t previously believe they had the chance to be engineers.

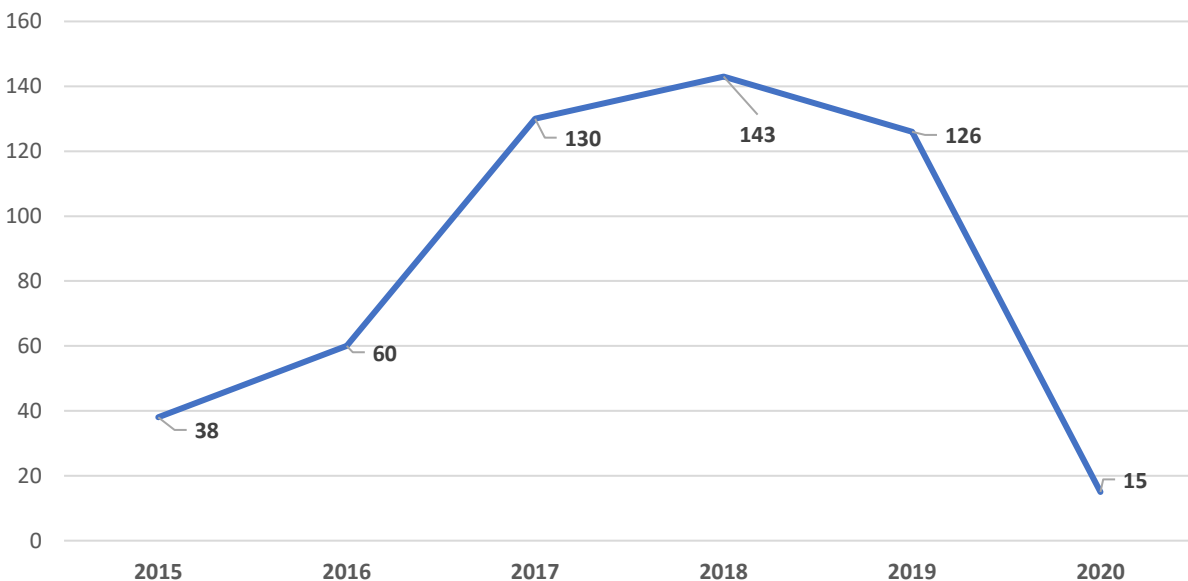
The chart below reflects the total demographic from 2015-2023 as an average throughout the first 8 years of the academies.

2015 - 2023 Total Demographics



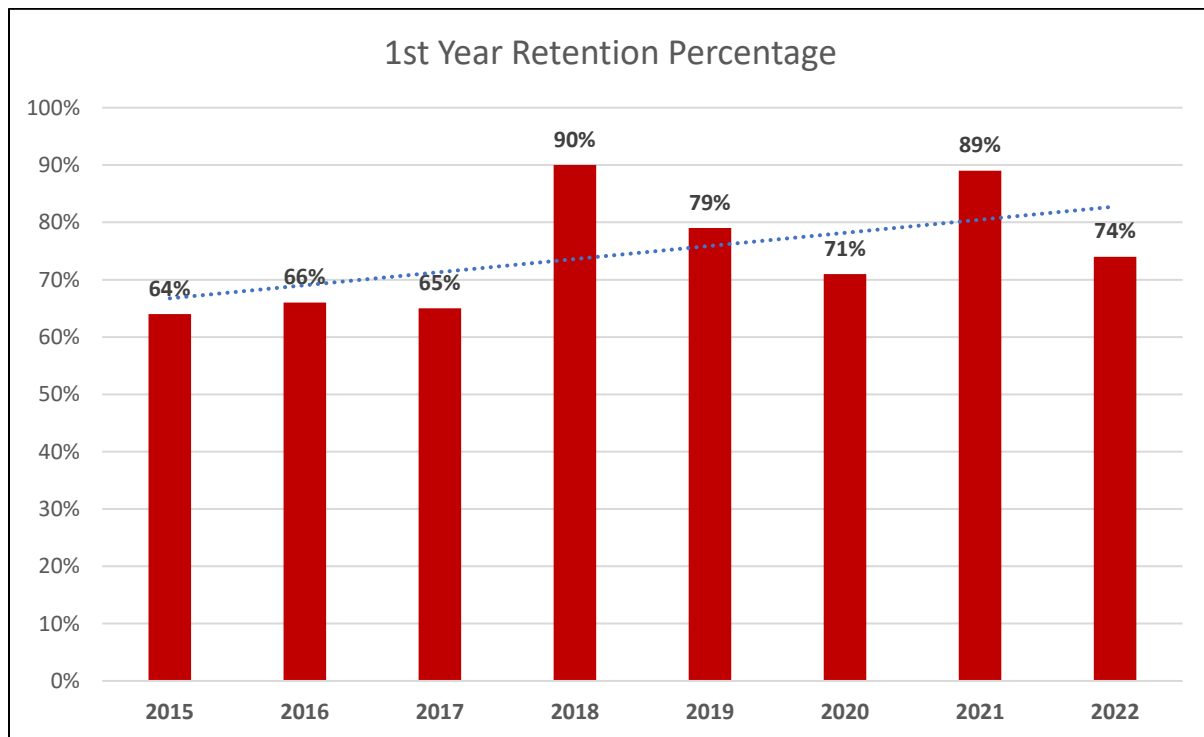
Graduation totals have been progressing as each cohort of students gets to their 4-year or higher level. Total graduates in Engineering majors are over 500 students, and growing each academic year. The 2020 cohort drop reflects those that have graduated as of December 2023.

Graduation Totals by Cohort



Analysis and Lessons Learned

Retention of the student cohorts at remote locations for the Engineering Academies were determined to be lower than the students beginning at Texas A&M University for their first year. Given the demographics of students remaining local to attend their first year of engineering courses and understanding that many of the students were working while attending this first year, it was determined that something was needed to address the retention issues.



Each Engineering Academy location had specific recruiters reaching out to schools and local organizations to grow the student population. The Engineering Academies consisted of 3-5 recruiters but only one lead advisor, who was responsible for advising over 500 students in any given year. In 2019 the recruiters received training to not only recruit for population growth but also to provide coaching and guidance to students at their regional locations. This provided the students with more options to assist with academic, mental, and emotional support right where they lived. With more and more students receiving coaching from recruiters at their regional locations and assistance from the lead advisor, the retention rates and sense of belonging for the students increased. This case study is ongoing as the enrollment continues increasing.