Mitigating Early Student Loss Through Internal and External Collaborations

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THE RESEARCH INSTITUTE
DALLAS COLLEGE

TAIR 2025 Conference

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DALLAS COLLEGE PROFILE

Academic Year 2023-2024

Fall 2023, Spring 2024, Summer 2024

103,253	28,283	127,865
Credit Students	Continuing Education Students	Total Unduplicated Students

Total removes 3,671 students who enrolled in CR and CE courses and are counted twice

77%	28%	59%
Part-Time Students	Adult Learners	Women

29,941 HIGH SCHOOL STUDENTS: PTECH, ECHS and DUAL CREDIT

17,233 TRANSFER-IN /TRANSIENT STUDENTS

4,978 STUDENTS WITH PROMISE SCHOLARSHIPS

7,902	151
Associate Degrees Awarded	Bachelor's Degrees Awarded

New!

7,432 Workforce Credentials Awarded

Credential counts as of Sept 19,2024

GENERATIONS-CREDIT STUDENTS

72%	21%	6%	1%	.15%
74,841	21,339	5,851	1,072	150
Gen Z/Zoomers	Gen Y/Millenials	Gen X	Baby Boomers	Mature/Silent

DEMOGRAPHICS-CREDIT STUDENTS

46%	20%	16%	9%	5%	2%	1%	.34%	.02%
47,423	20,641	16,769	9,471	5,015	2,025	1,540	347	22
Hispanic	Black/African American	White	Asian	Unknown/Not Reported	International	Multiple Races	Native American/ Alaskan	Native Hawaiian/ Pacific Islander

At Dallas College, our programs are organized into seven Schools of Instruction, each offering diverse programs, including both credit and non-credit programs.

| School of BUSINESS, HOSPITALITY AND GLOBAL TRADE | School of CREATIVE ARTS, ENTERTAINMENT AND DESIGN | School of EDUCATION | School of ENGINEERING, TECHNOLOGY, MATHEMATICS AND SCIENCES | School of HEALTH SCIENCES | School of LAW AND PUBLIC SERVICE | School of MANUFACTURING AND INDUSTRIAL TECHNOLOGY |

RECRUIT FROM OUR TOP ENROLLED PROGRAMS AND MORE

BUSINESS
Brookhaven
Cedar Valley
Eastfield
El Centro
Mountain View
North Lake
Richland

TEACHING
Brookhaven
Cedar Valley
Eastfield
El Centro
Mountain View
North Lake
Richland

COMPUTER SCIENCE
Brookhaven
Cedar Valley
Eastfield
El Centro
Mountain View
North Lake
Richland

EARLY CHILDHOOD EDUCATION
(BACHELOR'S PROGRAM)
Brookhaven
Eastfield

NURSING
Brookhaven
El Centro
Mountain View
North Lake

Map of Dallas College campuses and centers:
COPPELL — Coppell Center
BROOKHAVEN
RICHLAND — Garland Center
NORTH LAKE — Culinary, Pastry and Hospitality Center
DFW AIRPORT
RICHARDSON
GARLAND
DALLAS
White Rock Lake
EASTFIELD
IRVING
EL CENTRO — West Dallas Center, Downtown Health Sciences Center, Downtown Design Center, South Dallas Training Center
Irving Center
PLEASANT GROVE — Pleasant Grove Center
MESQUITE
MOUNTAIN VIEW — Bill J. Priest Center
GRAND PRAIRIE
Mountain Creek Lake
OAK CLIFF
Lancaster Workforce Development Center
BALCH SPRINGS
Workforce Center at Redbird
DUNCANVILLE
Joe Pool Lake
CEDAR VALLEY
Cedar Hill Center
CEDAR HILL
LANCASTER

7 MAIN DALLAS COLLEGE CAMPUSES

18 ISD/Charter Partners

43 P-TECH Partners

150 Dual Credit Partnerships

140 Homeschool Partners

20 EARLY COLLEGE HIGH SCHOOL PARTNERS

4 On-Campus High Schools

The Research Institute at Dallas College

Mission

- **Produce** actionable research that informs and supports the postsecondary education needs of the Dallas College community
- **Inform** student-centered decision-making, internally and externally
- **Identify** student barriers to postsecondary success and strive for equitable opportunities and outcomes for all students
- **Collaborate** across the education-to-workforce pipeline to help Dallas College positively impact the Metroplex and to help North Texas reach state attainment goals

Our Team

Executive Director
Data Science Analysts
Economic Analyst
Survey Research Analyst
Data Visualization Specialist
Technical Writer

Research Agenda Highlights

Impact of Dallas College Dual Credit
(8-Year Longitudinal Outcomes of DFW High School Grads)
Return on Investment & Economic Mobility (with Harvard SDP)
Alumni Survey Pilot (with Strada)
Impact of Student Debt; Debt-to-Earnings
Student Melt & Retention Modeling (with RAND)
Adult Learners
Golden Data Set
Hispanic Student Profile Analysis
Data Literacy Across the Institution
Intergenerational Mobility

Key Partnerships

Division of Student Success
Strategic Research & Analytics
Labor Market Intelligence Center

Texas Schools Project
The University of Texas at Dallas
State of Texas Education Research Center

THECB

DALLAS INDEPENDENT SCHOOL DISTRICT

RAND CORPORATION

TEXAS WORKFORCE COMMISSION

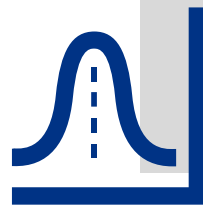cael

DXTERA INSTITUTE

Lightcast

Presentation Outline
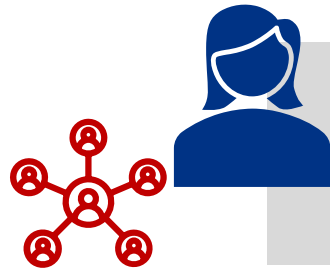
Characteristics of early student loss at Dallas College

Collaborating with RAND & Graduation Alliance – understanding factors leading to withdrawal/reengaging with leavers
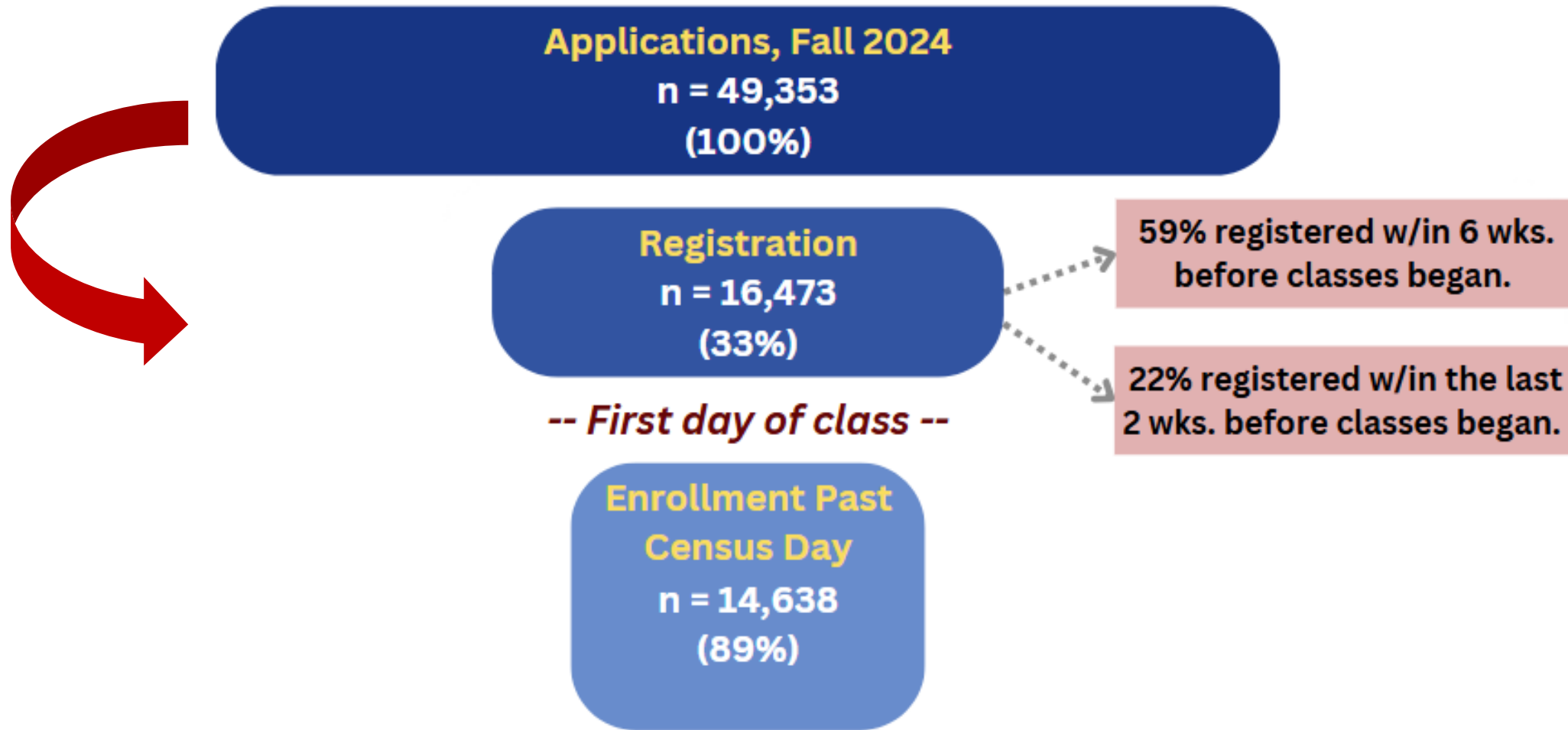
RI predictive modeling to address challenge – tracking students from application to enrollment
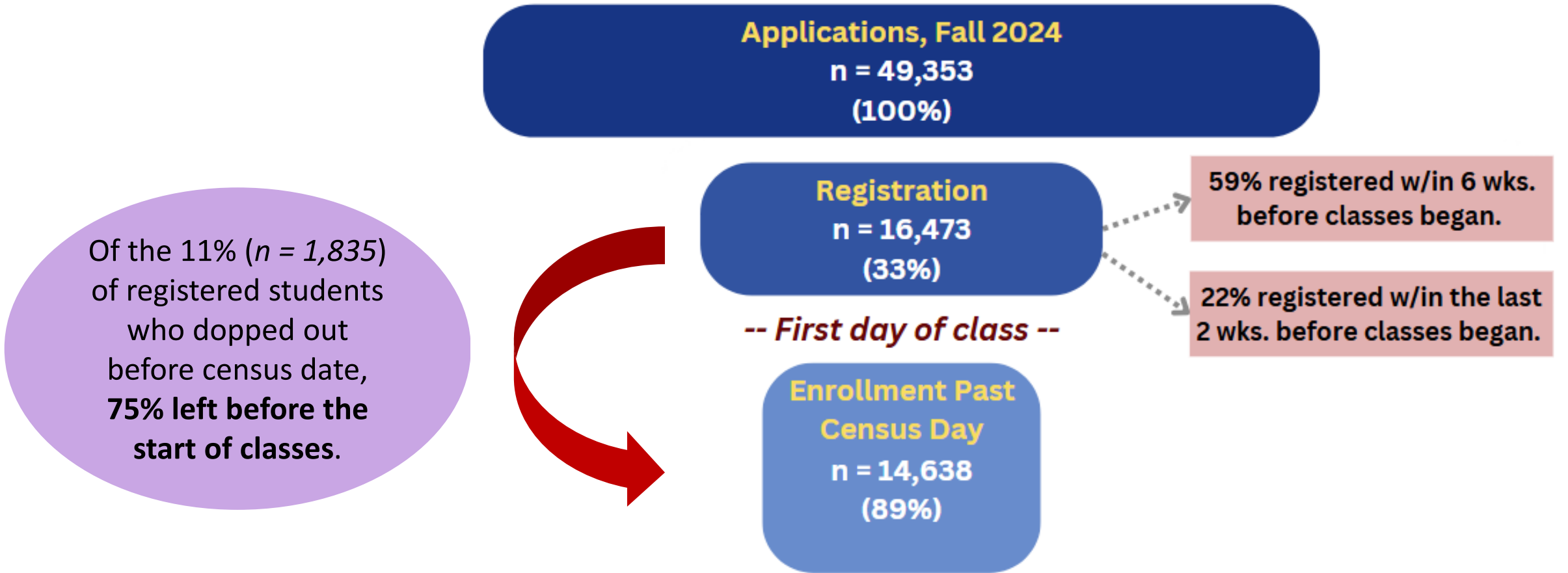
Discussion/Q&A – application of research

Only 33% of Dallas College applicants register for classes.

Applications, Fall 2024
n = 49,353
(100%)

Registration
n = 16,473
(33%)

59% registered w/in 6 wks. before classes began.

22% registered w/in the last 2 wks. before classes began.

-- First day of class --

Enrollment Past Census Day
n = 14,638
(89%)

Nearly 90% of Dallas College's registered students persist past census day.

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(100%)

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Enrollment Past Census Day
n = 14,638
(89%)

Of the 11% (*n = 1,835*) of registered students who dopped out before census date, **75% left before the start of classes**.

Mitigating Student Loss

- **Collecting student voices** to inform strategies
  - Continue exploring barriers to student enrollment past census date and systematize data collection (multi-phase)

- **Quantitative modeling/SIS data analysis** to identify registration requirements students do not meet and likelihood of enrollment

- **Implementing continuous feedback from students** to improve programs and services
  - Incorporating "lost" student feedback to improve New Student Orientation and First-Year Experience (QEP)

Working with External Research and Student Reengagement Partners

- Leveraging student retention research expertise of RAND Corporation to holistically examine factors for pre-census student loss

- Collaborating with enrollment optimization firm to expand withdrawal inquiry with larger population of pre-census students & connect them to College support staff

Coordinate research & assist with protocol design, data collection, & reporting

Research Institute

RAND Corporation

Graduation Alliance

Lead/conduct research & disseminate findings

Directly communicate with & survey students
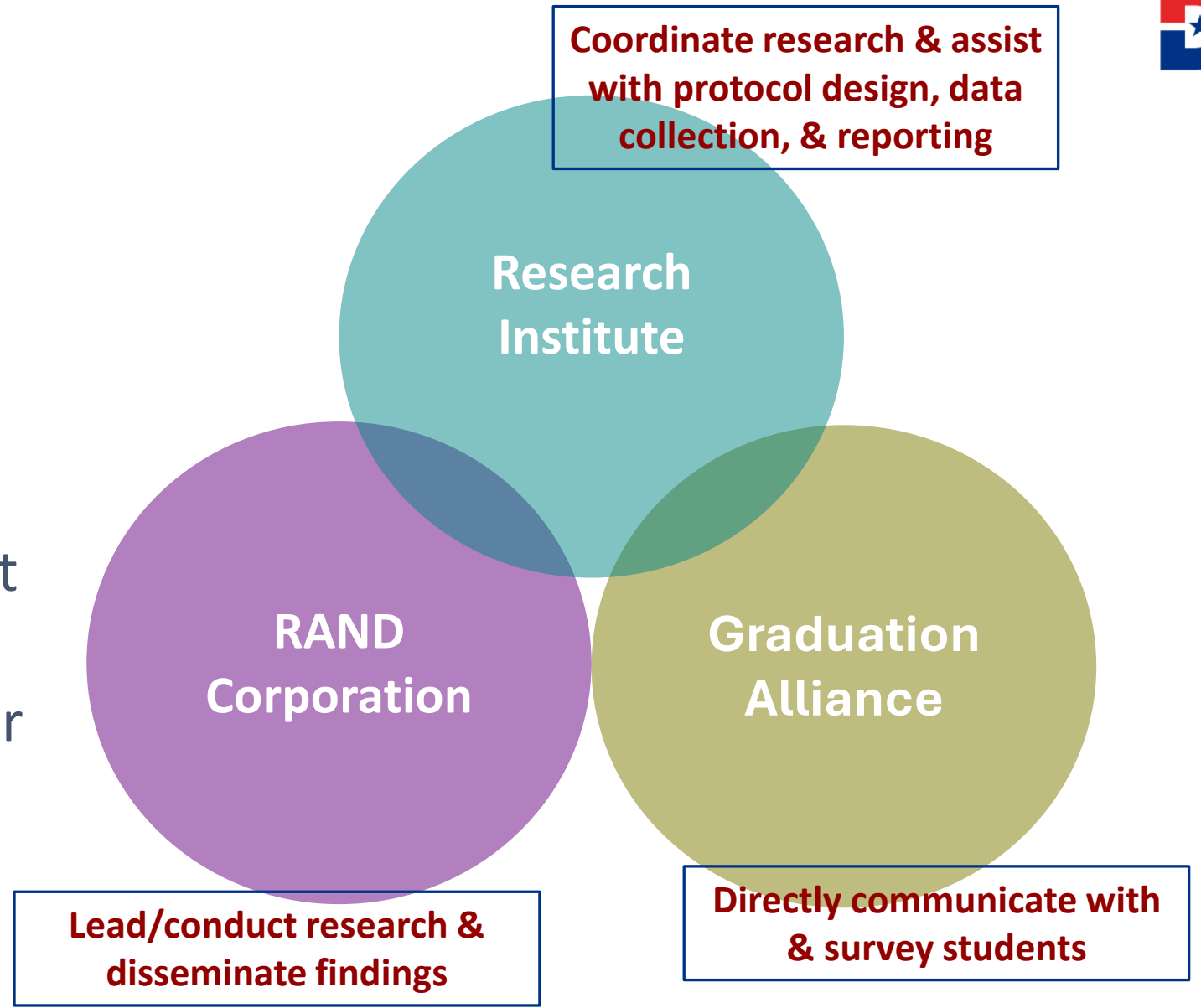
Mixed Methods Student Loss Study & Reengagement Campaign Provide Insights on Student Withdrawal Before Census Date

Identify **individual/personal** and **institutional/structural** barriers during registration and enrollment

Investigate **details of specific barriers** faced by pre-census students

Re-invite students to Dallas College and connect them to appropriate staff

RAND & RI

RI & Graduation Alliance

Graduation Alliance & RI

Student Interviews Faculty/Staff/Leadership Focus Groups

Branching Inquiry Survey
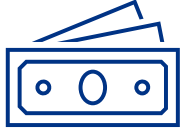
Outreach Campaign (Phone, Email, Text)

Barriers Driving Student Loss – RAND Study

- **Financial Aid** process not completed

- **Program of study** not selected in application --> Financial Aid not approved

- **Transactional** interactions with success coaches

- Unawareness of the **educational value** of Dallas College

- **Basic needs** of incoming students not identified

- **Information technology systems** not integrated across College divisions

Student Loss Survey – Fall '24 & Spring '25

THE RESEARCH INSTITUTE DALLAS COLLEGE

Pre-Census Student Survey, Fall 2024

In Fall 2024, the Research Institute collaborated with Graduation Alliance to administer a survey that identified the main factors or barriers in relation to finanical aid status, academic advising, and basic needs that lead students, who applied and registered for the Fall '24 semester, to withdraw before the September 9th census date. This dashboard shows the responses of the 224 students who completed or partially completed the survey. Many of the questions can be disaggrgated by reasons for withdrawal as indicated by the participants and by their intent to reenroll. Questions about the report and survey can be directed to S.Jamilah@DallasCollege.edu.

Data set last updated: Jan. 22, 2025

Why did students leave? (All that apply selected)

- Family obligations/family-work balance 24.5%
- Health-related issues 8.2%
- Lack of reliable access to transportation
- Cost of attendance/inability to pay 29.6%
- Personal financial insecurity 19.4%
- Enrolled in another college 16.3%
- Unsure if Dallas College is right for me
- Program of study is not a good fit
- Work schedule 30.6%

Legend:
- Challenges with instructors/professors
- Cost of attendance/inability to pay
- Enrolled in another college
- Family obligations/family-work balance
- Health-related issues
- Lack of childcare
- Lack of English fluency/language barrier
- Lack of reliable access to transportation
- Personal financial insecurity
- Program of study is not a good fit
- Unsure if Dallas College is right for me
- Work schedule

Will they return?

	% of Total Respondents
Yes	53.8%
Unsure	28.5%
No	17.7%

Reason for Withdrawal
(All) ▼

- Cost of attendance, work commitments, and family-work balance **greatest factors for withdrawal**

- **46%** of students **will not return** or are **unsure of return**

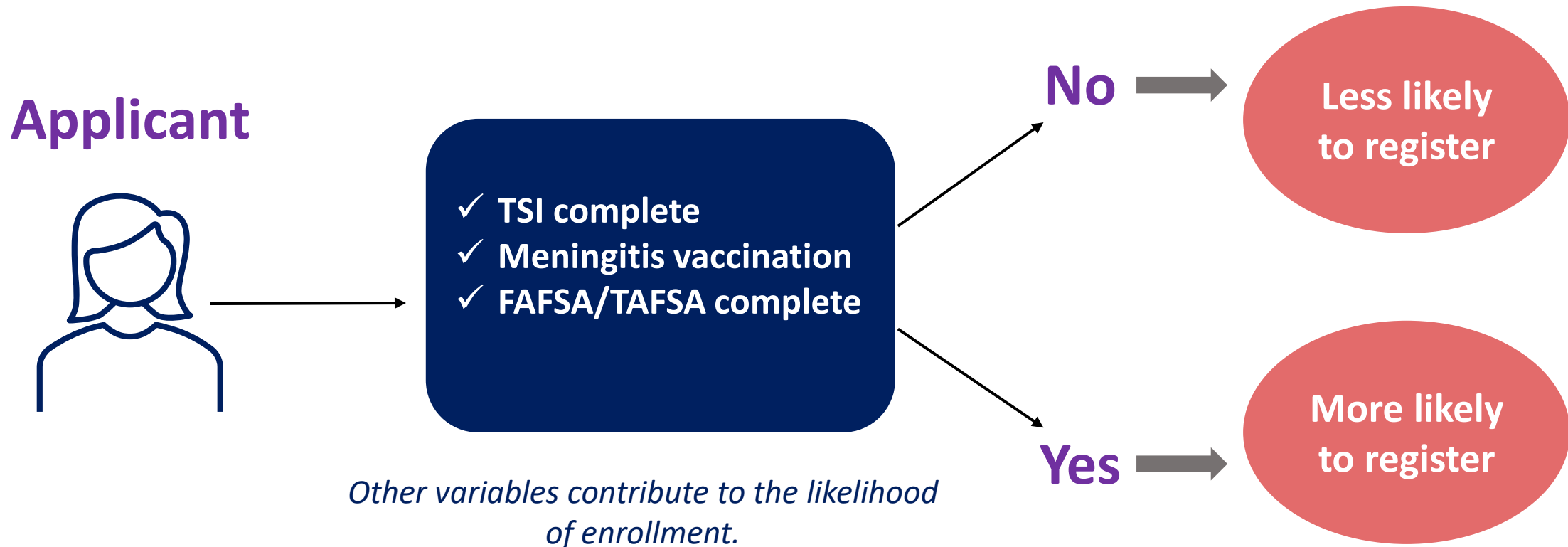- Those **who selected POS or discussed POS with success coach** more likely to reenroll

Informing Enrollment & Admissions Strategy Through Predictive Model

Applicants most likely to register and stay enrolled are targeted.

- Probability scores for each prospective student uploaded into Salesforce to inform Admissions team and support units

Applicant

- ✓ **TSI complete**
- ✓ **Meningitis vaccination**
- ✓ **FAFSA/TAFSA complete**

Other variables contribute to the likelihood of enrollment.

No → Less likely to register

Yes → More likely to register

Admission Model Predicts Applicant's Likelihood of Enrollment

- **Reducing enrollment barriers** through targeted outreach to students who are not registration-ready and/or to those who are near registration-ready

- Provide **valuable insights to the admission office** to identify potential students likely to enroll at Dallas College. This will allow us to **provide tailored support and targeted communication**, enhancing the overall student experience from the start.

- Assist success coaches **identify and support students with high enrollment probabilities**, enabling them to prioritize their workload and support students more efficiently.

Admission Model Overview

Data Structure

- ApplyTX and ApplyOnline applications from internal database
- About 290K applications from 2021, 2022, 2023 and 2024 calendar years
- About 180K applications for FTIC students (Excluding Dual Credit)

📄 Training Data

| FALL Model (2025FA model) | SPRING Model (Current model) |

| 2021FA | 2022FA | 2023FA | 2024FA | 2022SP | 2023SP | 2024SP |

Original Data + **Calculated Fields** → **Enrolled** *after Census Day*

Predictors

Target
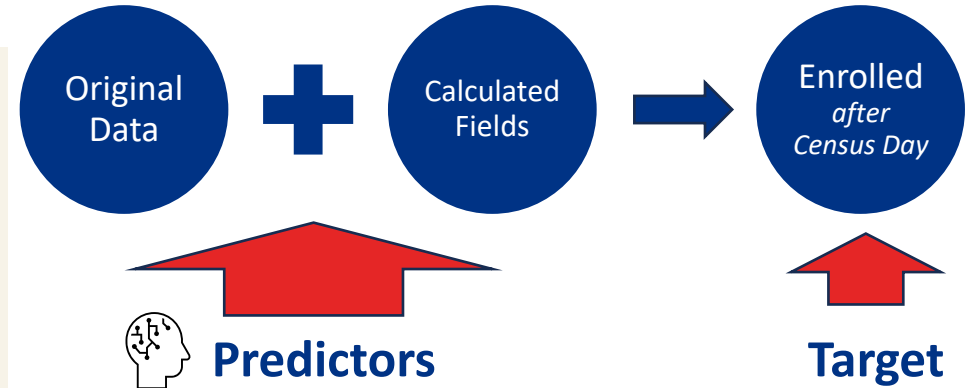
- TSI Score for MATH, READING and WRITING
- TSI Exemption
- Meningitis Met
- Promise
- Registration/Transcript Restrictions
- # of Days from Application to Full Term Starts
- Prior Dual Credit/SCH/CE/Financial Aid
- HS info
- Academic Program
- First Generation
- Location (County)
- Total number of submitted applications

*No Demographic info in the model

Model Development Cycle
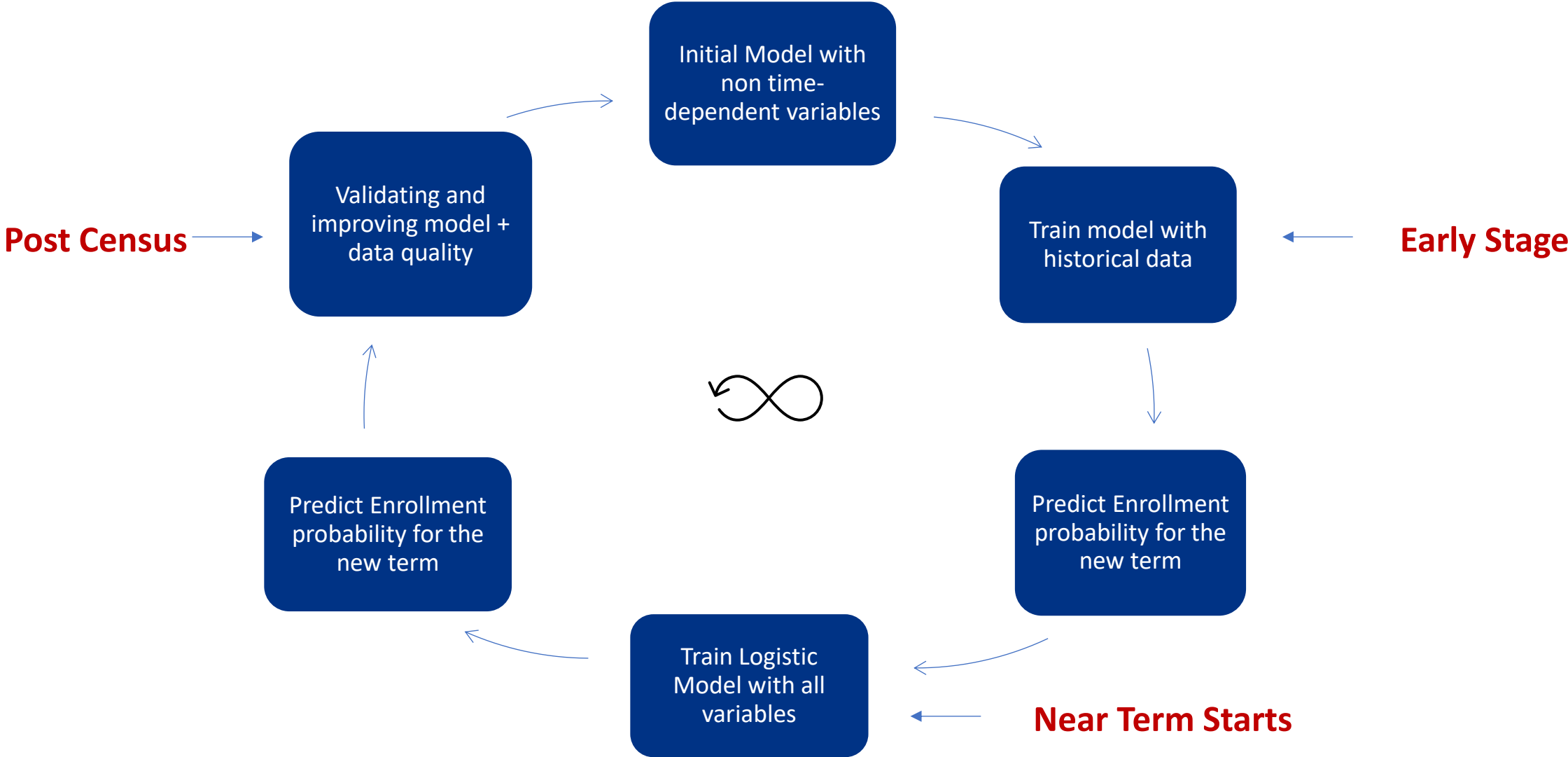
Random Forest Approach

Application to Enrollment PROB (minsplit is 10000)
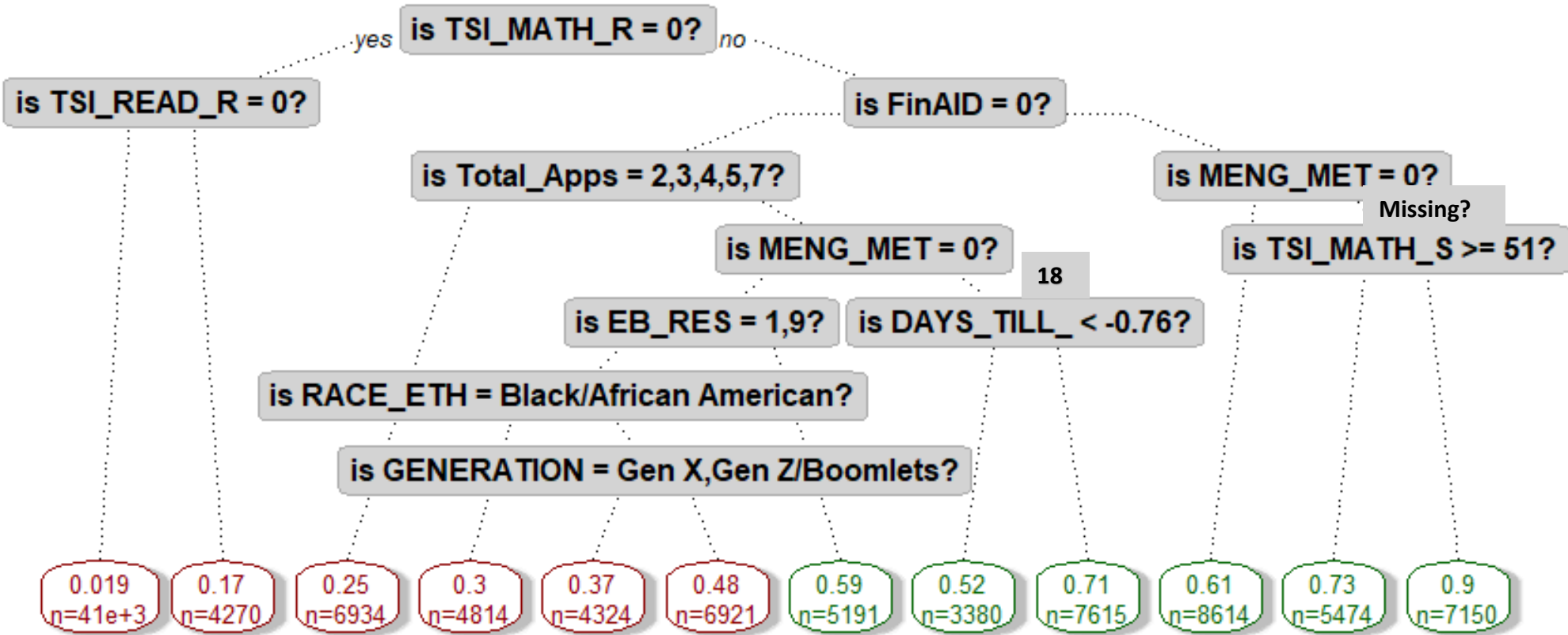
Logistic Regression Approach

Percentage Model Contribution

Variable	Contribution
DAYS_FA_TO_START_TERM_STD	7.36
TSI_MATH_EXEMPTION	6.62
MISSING_FIRST_GEN (no Financial Aid)	5.76
MENG_Exempt	5.31
TSI_MATH_FAIL	5.21
TSI_MATH_SCORE	5.04
Spring APPLICATION	4.74
SAME_YR_HS_GRAD	4.21
MENG_Met	4.03
TSI_READ_PASS	3.74
TSI_MATH_PASS	3.62
DAYS_TILL_START_TERM	3.59

Variable Importance
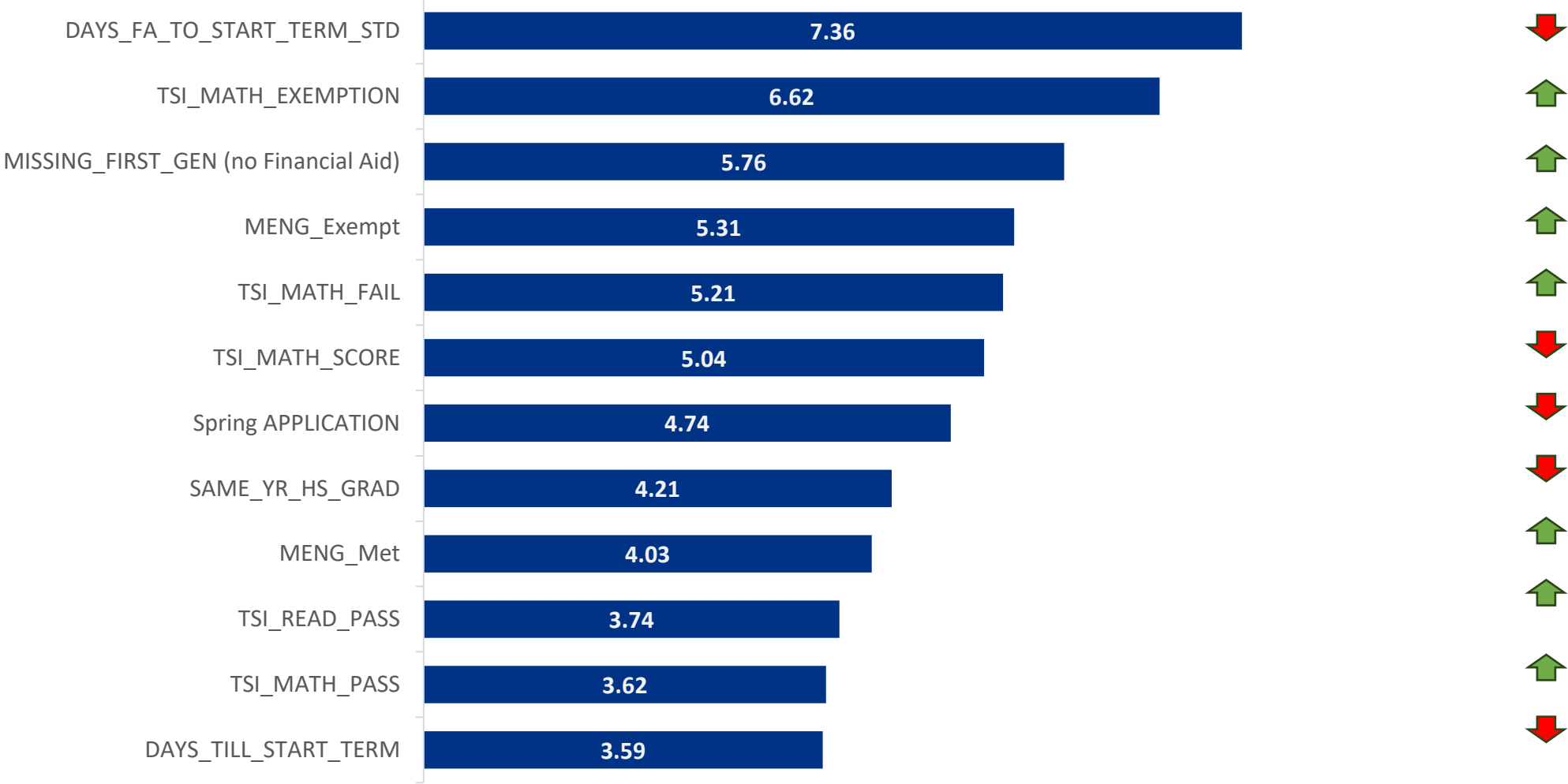
Pre-Census Full Model Evaluation

- Overall Accuracy : 0.8863
- 95% CI : (0.8786, 0.8937)
- Precision : 0.6635
- Recall : 0.7449
- F1 : 0.7019

- **Precision:** *The proportion of correctly predicted positives (enrolled) out of all instances predicted as positive by the model.*
- **Recall:** *The proportion of correctly identified positive instances (enrolled) out of all actual positive instances in the dataset.*

ROC Curve

AUC = 0.884

Model Trained on 10/16/24
Prediction made on 1/13/25 test against
Actual enrollment on 2/10/25 (Post-Census)

2025 SPR	Fact	
Prediction	Not Enrolled	Enrolled
Not Enrolled	5,157	314
Enrolled	465	917
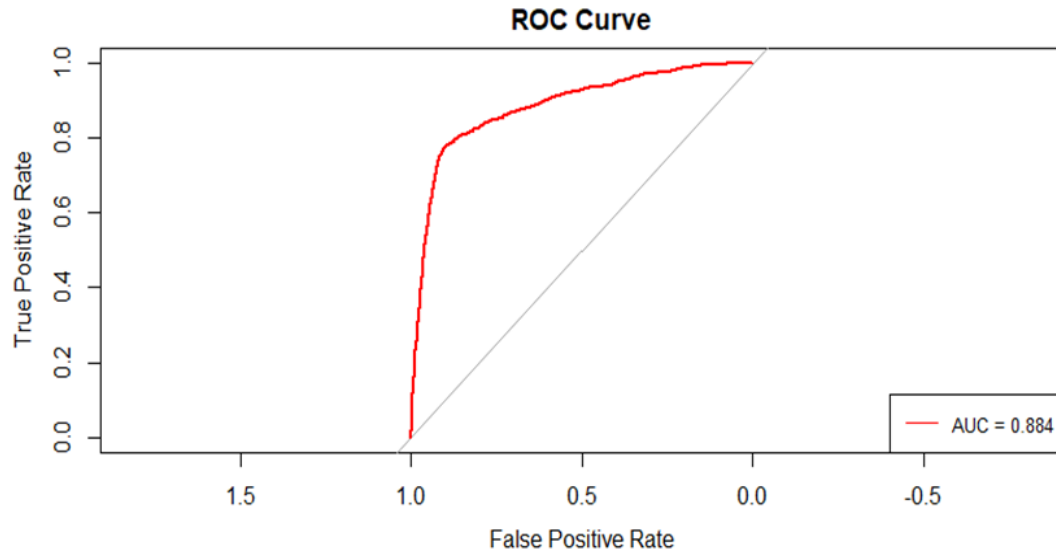
AUC : *value above 0.5 indicates that the model is better than random guessing, with higher values indicating better discrimination ability.*

Our Solution
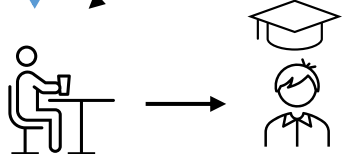
Operationalizing Model via Construct & Predict

Key Takeaways/Discussion

Mitigating Student Loss

- **Collecting student voices** to inform strategies
  - Continue exploring barriers/systematize data collection

- **Quantitative modeling/SIS data analysis** to identify registration requirements students do not meet and likelihood of enrollment

- **Implementing continuous feedback from students** to improve programs and services
  - Incorporating "lost" student feedback to improve New Student Orientation and First-Year Experience (QEP)

"Smart Start" first-year experience QEP slated to improve engagement, academic success, and career/academic planning of FTICs

Redesign New Student Orientation

Create First Year course

Early intervention in English & Math through embedded tutoring

Informed career exploration through milestones

Quality connections to increase sense of belonging

Thank you!

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Q&A

Scan the QR code to complete the session survey.

Texas Association for Institutional Research

Annual Conference: February 25-28, 2025
Omni Hotel in Corpus Christi, TX

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