



CENTER FOR EVALUATION & EDUCATIONAL EFFECTIVENESS

# An Examination of the Challenges to Freshman Timely Degree Progress

Principal Investigators

Erika Baldwin, Ph.D., CEEE Project Director & Ed Leadership Faculty

Avery Olson, Ph.D., CEEE Associate Director & Ed Leadership Faculty

# About us

Avery Olson

Evaluation

Student Affairs  
Practitioner

Higher Education  
Researcher

Quantitative &  
Qualitative Research  
Methods

Erika Baldwin

Evaluation

Middle & High School  
Math Teacher

Institutional  
Researcher

Quantitative  
Research Methods

# Overview

- Interest in the Faculty Led Research Project
  - CSULB Challenges with Time to Degree
  - Comparing CSULB Graduation Rates and GI 2025
  - Opportunity of 4.5- and 5-year Graduates
- Our HVDI Project
  - Overview of Project & Design
  - Project Outcomes
  - Survival Analysis & Results
- Timeline & Next Steps
- Discussion and Q&A

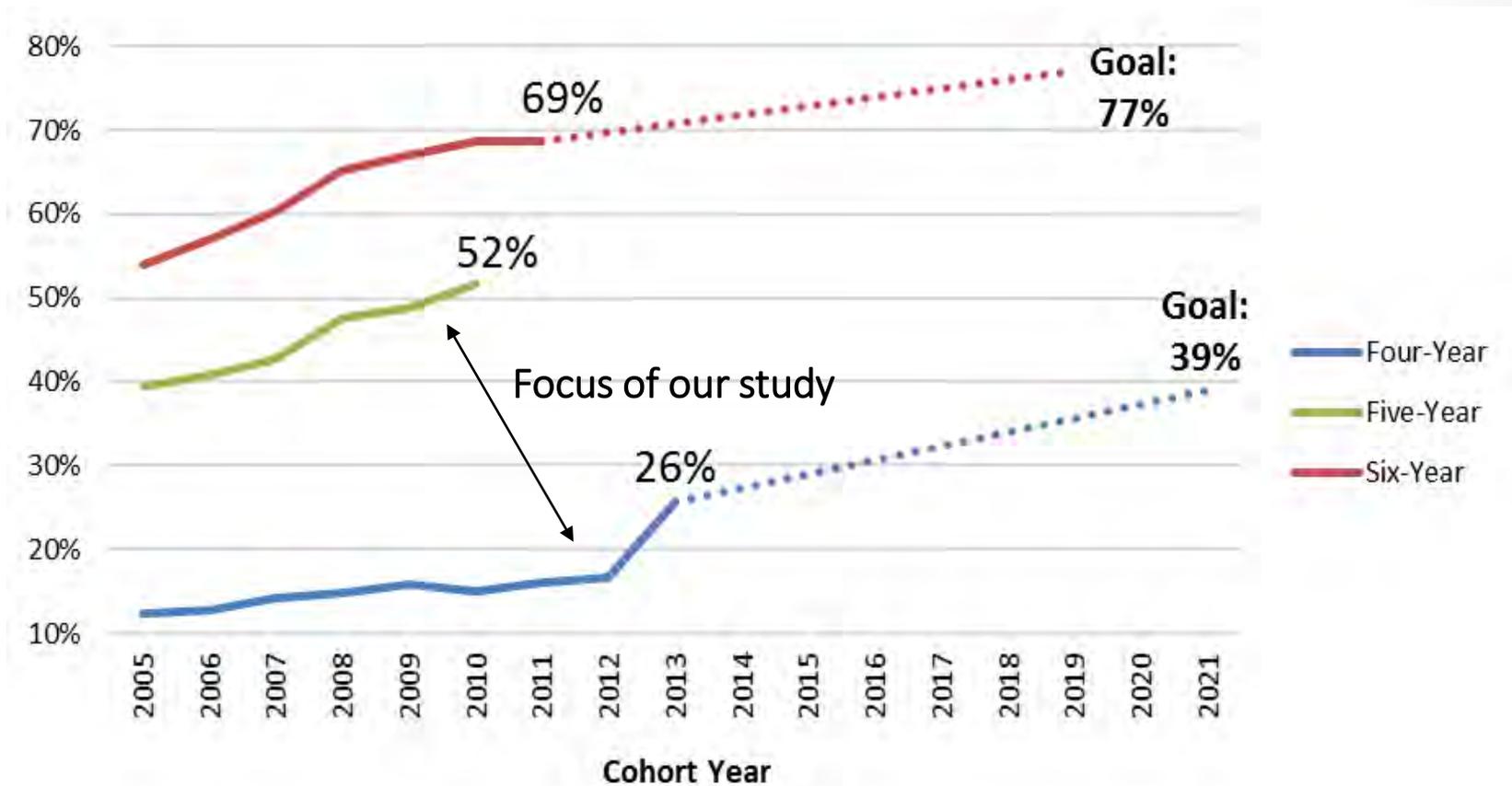
# Faculty Led Research Projects

- December 2016: Call to examine challenges to students' timely progress to graduation
- Studies that will result in a better understanding of the challenges preventing students' timely progress to graduation at CSULB
  - **Why do FT, FTF find it difficult to graduate in four years?**
- Projects that would not only investigate this issue – but also would **result in recommendations that can lead to implementation of specific strategies.**

# CSULB Challenges with Time to Degree

- For the fall 2007-2012 cohorts, CSULB's 4-year grad rates remained static at the 14-17% range.
- Yet, 5- and 6-year grad rates have increased steadily over time in the same timeframe.
- Shorter time-to-degree translates into lower education-related costs.
- Improving 4-year grad rates also leads to graduates entering the workforce at faster rates and increasing total earnings over their lifetimes.

# Comparing CSULB Grad Rates & GI 2025 Goals



# Opportunity to Meet GI 2025 Goals

## Fall 2014 Cohort Degree Planner



On track to graduate  
within 4 years  
(spring/summer  
2018)

+



On track to graduate  
within 4.5 years  
(fall 2018)

= 46%

GI 2025  
Goal: 39%

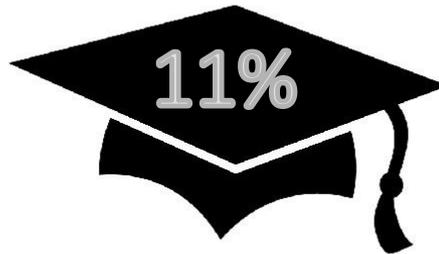
# Opportunity to Meet GI 2025 Goals

## Fall 2014 Cohort Degree Planner



On track to graduate  
within 4 years  
(spring/summer  
2018)

+



Half of the students  
on track to graduate  
within 4.5 years

= 34%

GI 2025  
Goal: 39%

**Purpose:** to closely examine FTFTF 4.5-5 year CSULB graduates to determine when they fall off of the 4-year trajectory & how we can intervene.

Research Question	Approach
1. At what point do 5-year graduates fall off the 4-year graduation trajectory? What are the causes of change?	Survival Analysis
2. What characteristics predict departure from graduating within 4-years?	Survival Analysis
3. When are these students at greatest risk of not succeeding?	Survival Analysis
4. Does the profile of risk differ across subgroups?	Survival Analysis
5. What are the 4.5 - 5 year graduates' goals & expectations, as well as perceptions of obstacles & challenges?	Survey Focus Groups
6. How can CSULB facilitate more timely graduation for this population?	Survey Focus Groups

# Mixed Methods Design

## Survival Analysis

- Phase 1: Data on cohorts with graduation rates
- Phase 2: Data on more recent cohorts

## Student Survey

- Examine student perceptions & expectations of graduation
- Examine institutional challenges
- Responses will be matched with survival analysis results

## Focus Groups

- 3-4 focus groups to examine students' goals, perceptions, and challenges
- Participants will be selected from survey respondents

# Project Outcomes

A **survey** that collects actionable data about student success and institutional challenges.

A **predictive model** to “fit” current student data to predict students who might fall off their 4-year plan and identify students who may be able to graduate in 4 years.

**Inform** improvements around advisement, student services, programming, and interventions.

Develop better **policies** for timely graduation and equitable education.

Improve **outcomes** and provide for our students.



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## Phase I: Survival Analysis Examining Previous Cohorts (2009-2011)

# Phase I: Cohorts 2009-2011

Cohort Year	Cohort Size	4-Year Graduates	4.5-Year Graduates	5-Year Graduates
Fall 2009	3,551	571	374	792
Fall 2010	3,988	599	478	977
Fall 2011	3,987	642	465	916
<hr/>				
	11,526	1,812	1,317	2,685
<hr/>				

# Cohorts 2009-2011

## Graduation Rate

	Campus	<=4 Years <i>N</i> = 1,812	4.5 Years <i>N</i> = 1,317	5 Years <i>N</i> = 2,685
<b>Gender</b>				
Female	59.6%	68.2%	64.5%	62.0%
Male	40.4%	31.8%	35.5%	38.0%
<b>Race/Ethnicity</b>				
Black/African American	4.4%	2.9%	3.8%	4.0%
Asian American	23.6%	21.7%	26.7%	25.2%
Hispanic/Latino	39.7%	29.8%	32.1%	41.3%
Native American/Alaska Native	0.2%	0.1%	0.2%	0.2%
Native Hawaiian/Pacific Islander	0.3%	0.2%	0.1%	0.3%
White	20.5%	30.2%	25.3%	20.2%
<b>Pell</b>				
Pell Eligible at Entry	46.6%	33.2%	38.1%	49.1%
<b>First-Generation</b>				
First-Gen to Attend	48.3%	34.8%	41.2%	49.4%

# Cohorts 2009-2011

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# Cohorts 2009-2011

## Graduation Rate

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<b>Needs Additional Prep at Entry</b>				
English	40.3%	41.9%	41.6%	39.6%
Math	28.4%	14.4%	22.1%	27.0%
<b>Long Beach Promise</b>				
No	82.6%	89.1%	85.1%	83.2%
Yes	17.4%	10.9%	14.9%	16.8%

Education research tends to examine whether an outcome occurs or group differences

Research Question	Outcome
Did a student drop out of high school?	Yes or No
Did a student graduate?	Yes or No
Did a school counselor leave the profession?	Yes or No

Survival Analysis examines whether and when outcome occurs

Research Question	Outcome
Did a student drop out of high school?	Yes or No; <b>When?</b>
Did a student graduate?	Yes or No; <b>When?</b>
Did a school counselor leave the profession?	Yes or No; <b>When?</b>

Time to an event

# Survival Analysis Studies

Time until a machine breaks down

Time until an individual finds a job

Time until a student no longer needs a service or program

Time it takes to pay off mortgage

Time until CSULB graduation

# Why use Survival Analysis when examining graduation rates?

- Time to an event
- Ability to use time-varying and time-invariant predictors
- Takes into consideration that not everyone experiences the event during the timespan (censoring)
  - Either they don't experience the event (*don't ever graduate*)
  - Or they leave the study (*leave CSULB*)
  - Or the study didn't last long enough for it to occur (*still currently enrolled*)

# Today's presentation

1

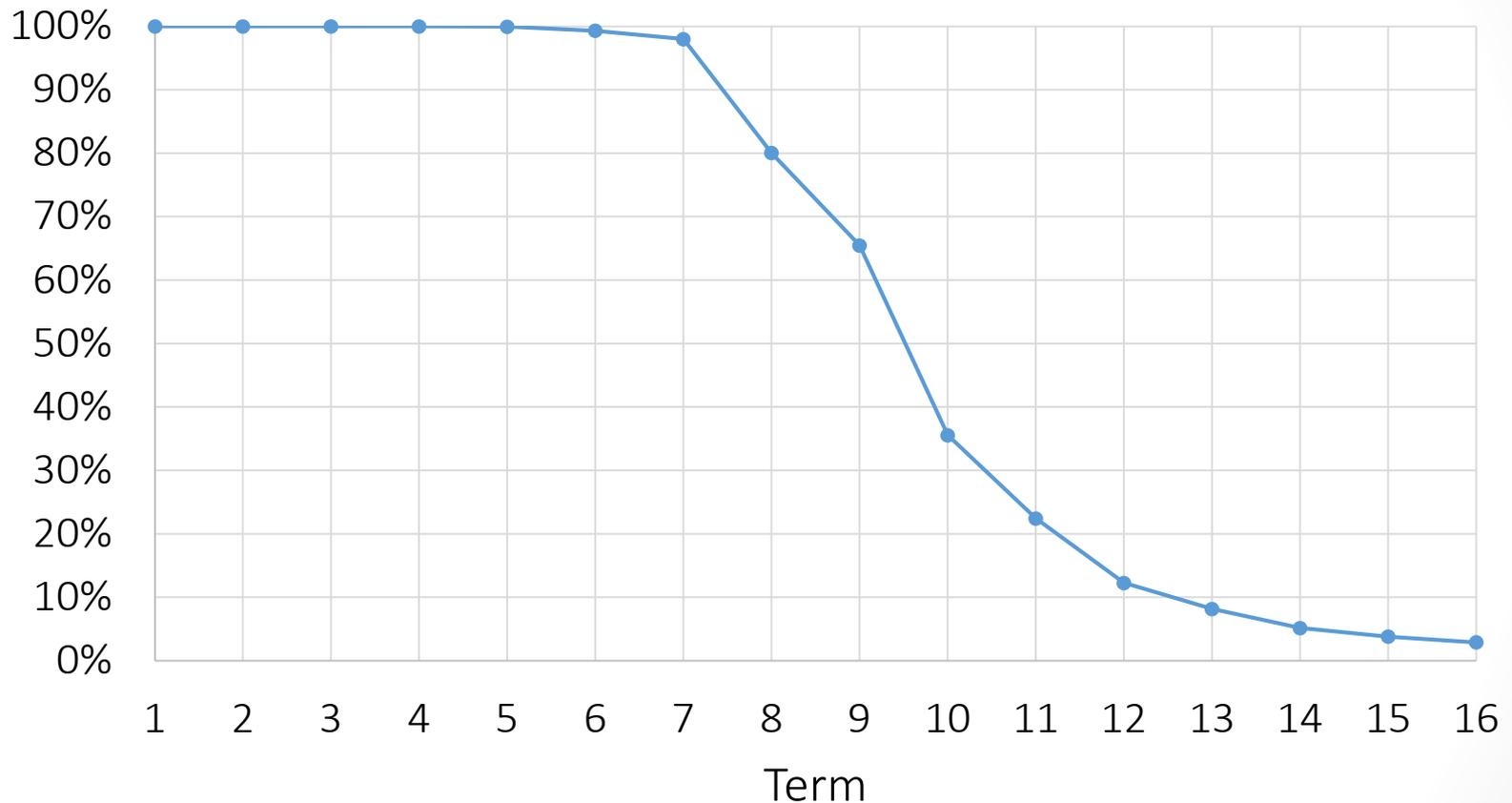
- Cohorts 2009-2010
- All students from entry to spring 2017

2

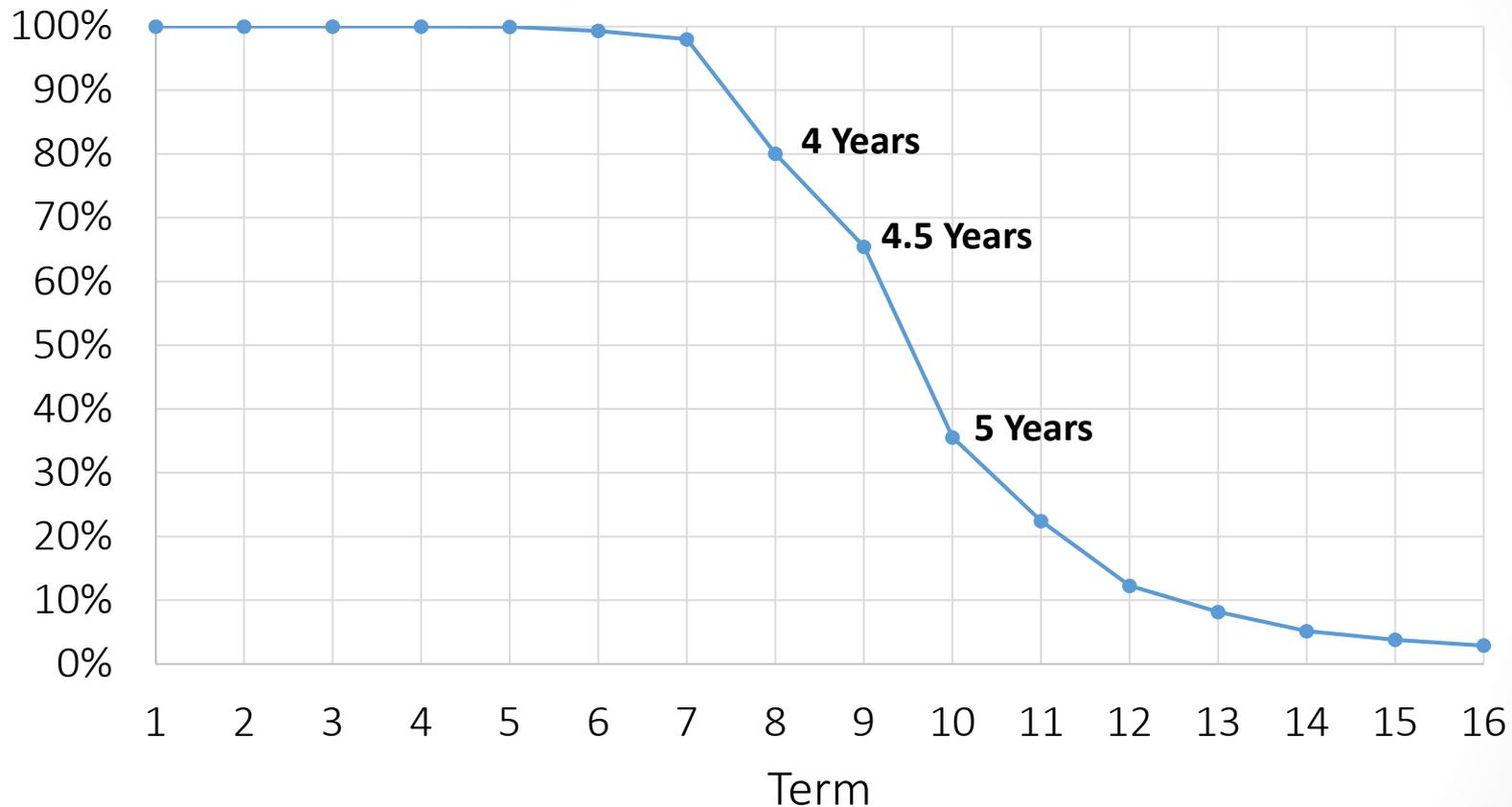
- Cohorts 2009-2010
- Just those who graduated within 4-5 years

Term	Grad Rate	Students Enrolled	Experienced event (Graduated)	Censored (No longer enrolled or study ended)
1	0.5	11,526	0	258
2	1	11,268	0	761
3	1.5	10,507	0	257
4	2	10,250	0	345
5	2.5	9,905	5	211
6	3	9,689	63	234
7	3.5	9,392	123	156
8	4	9,113	1,671	142
9	4.5	7,300	1,330	121
10	5	5,849	2,673	138
11	5.5	3,038	1,121	116
12	6	1,801	816	363
13	6.5	622	208	31
14	7	383	141	136
15	7.5	106	28	11
16	8	67	16	51

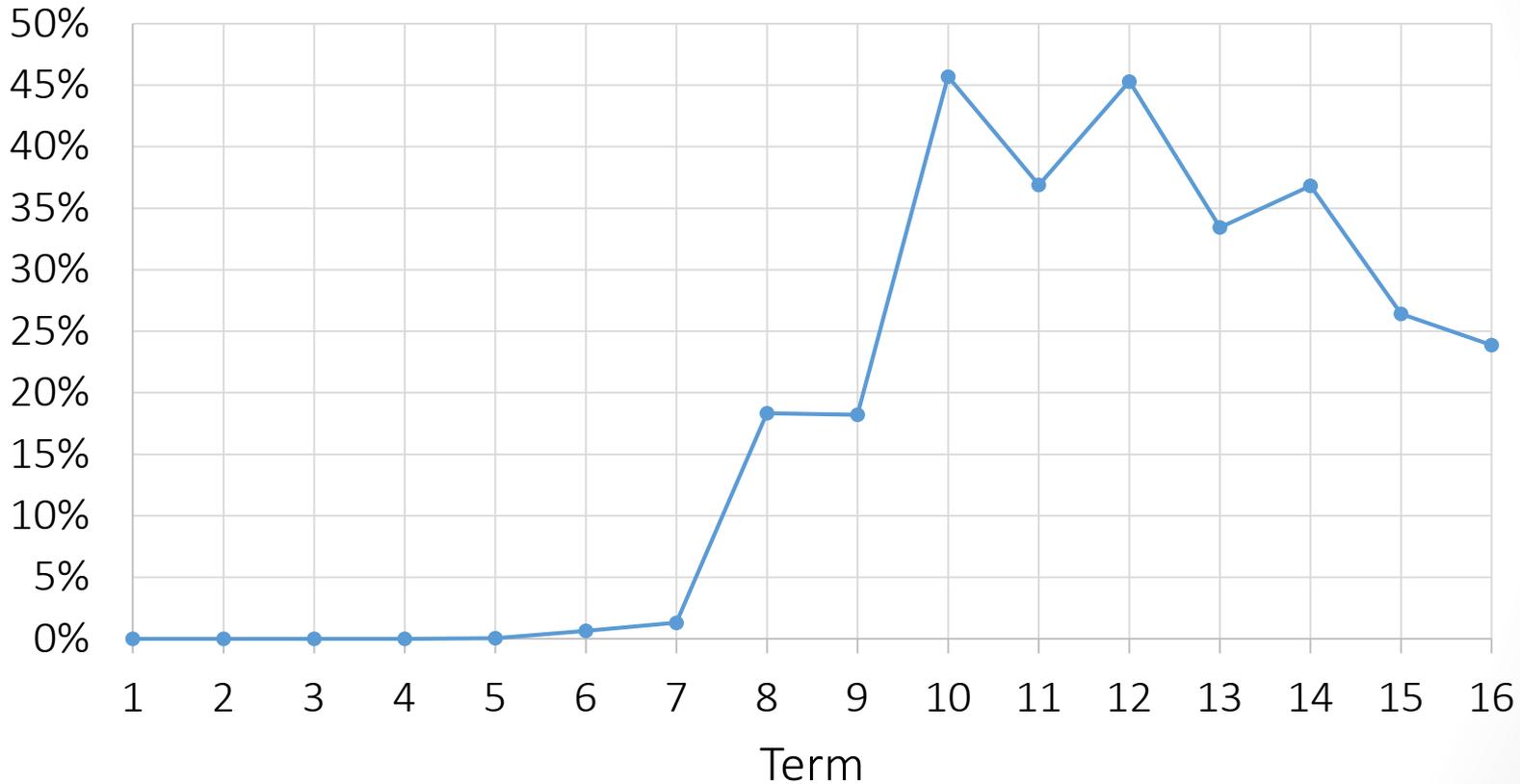
# Survival Function: Of those still enrolled, the % that have not graduated



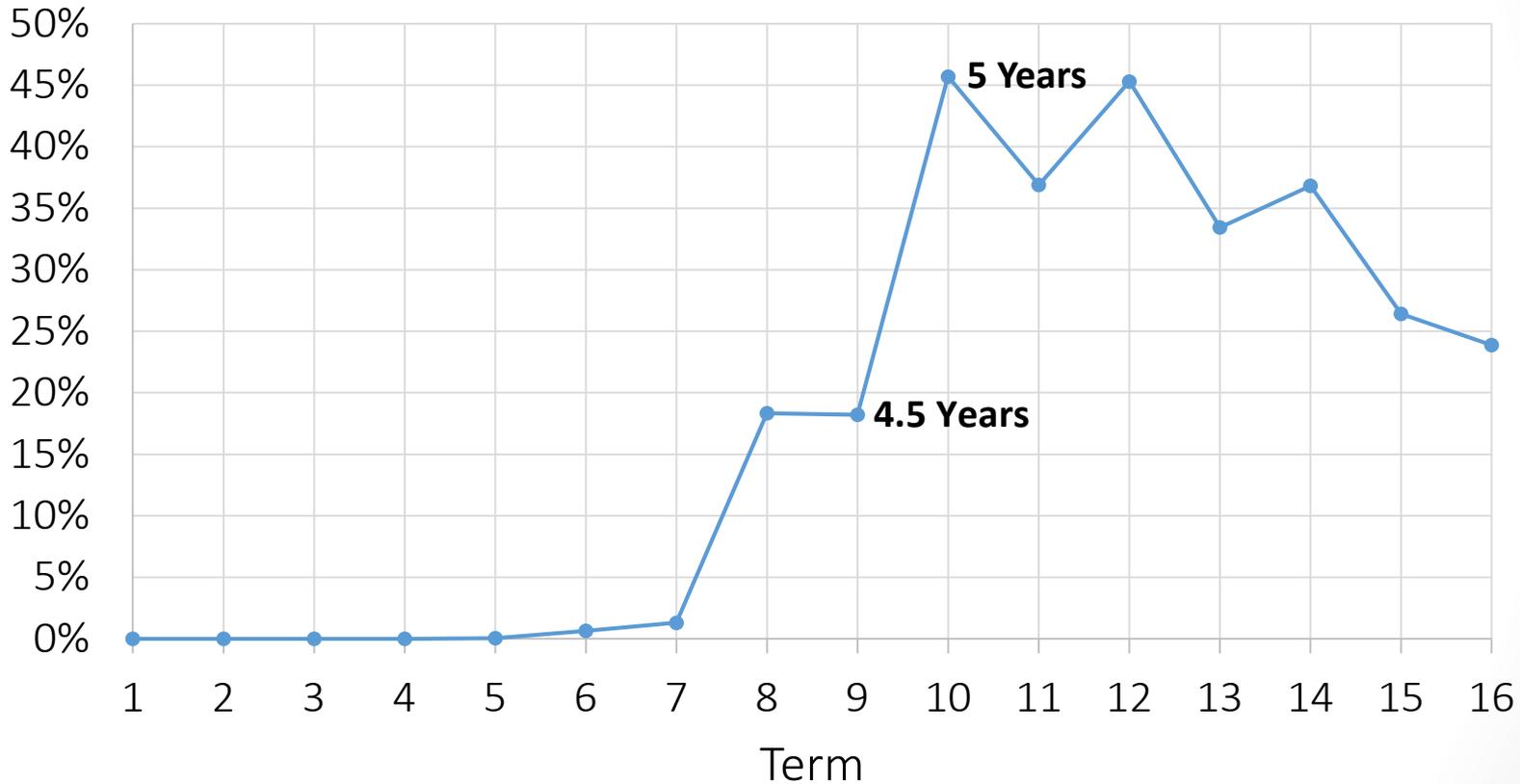
# Survival Function: Of those still enrolled, the % that have not graduated



# Hazard Rate: Chance a student graduates



# Hazard Rate: Chance a student graduates



<b>Time-Invariant</b>	<b>Time-Variant</b>
NURM	Pell eligible (each term)
Age	End of term GPA
Not First-Generation to Attend College	Total number of online courses (each term)
Entry major non-STEM	No non-successful grades (each term)
Entry Declared	Full-time status (each term)
HS GPA	
Number of IB courses in HS	
Number of AP courses in HS	
Transfer Units Earned at Entry	
Not LB Promise	
Female	
No additional English prep needed at entry	
No additional math prep needed at entry	
Never changed major outside college	
Never changed major outside department	
Never changed major	

Time-Invariant	Time-Variant
NURM	<del>Pell eligible (each term)</del>
<del>Age</del>	End of term GPA
Not First-Generation to Attend College	Total number of online courses (each term)
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HS GPA	
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Transfer Units Earned at Entry	
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<del>No additional English prep needed at entry</del>	
No additional math prep needed at entry	
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Never changed major outside department	
<del>Never changed major</del>	
Pell Eligible at Entry	



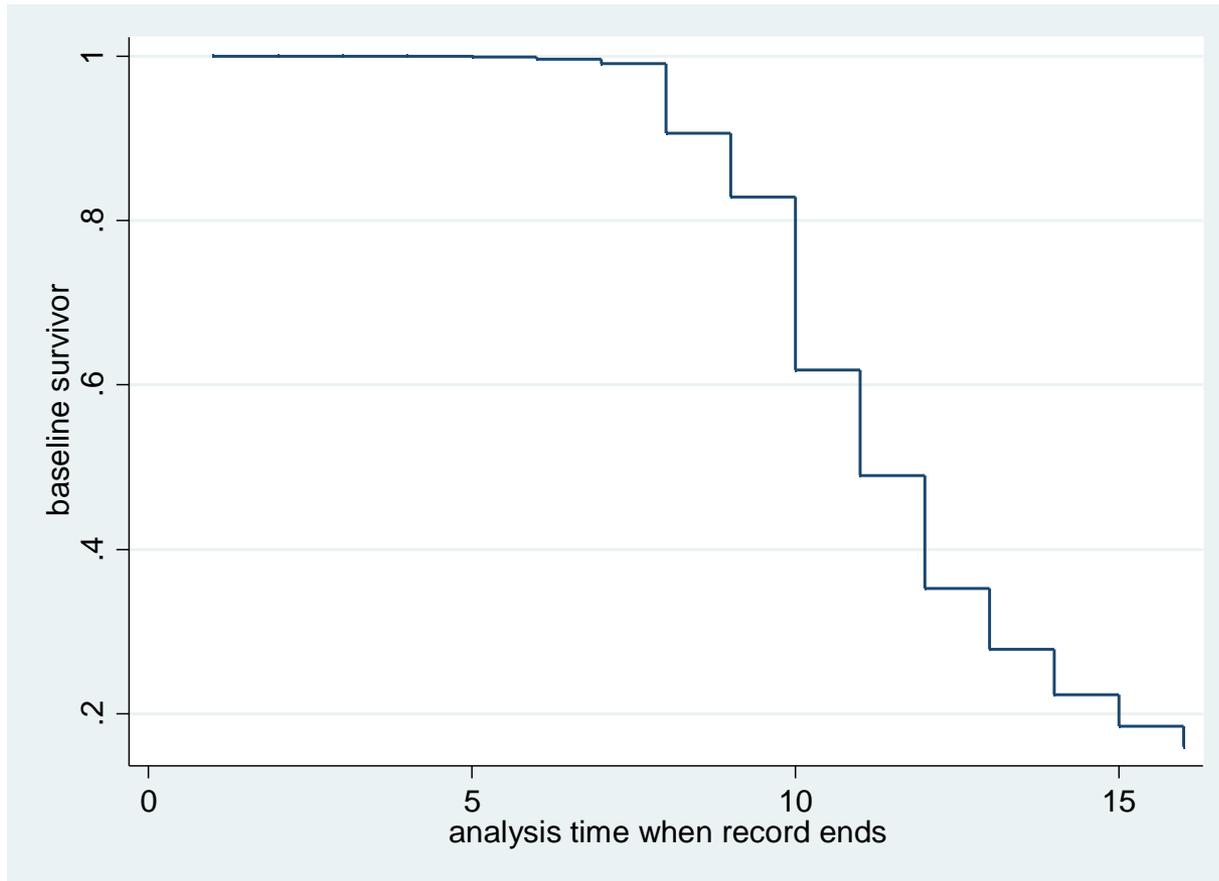
# Increases chance of graduating

Characteristic	By
Not URM	16.7%
Not First-Generation to Attend	11.3%
Entered with Declared Major	9.9%
Not Pell at Entry	10.2%
Transfer Units at Entry	0.2%
Not LB Promise	16.6%
Female	18.6%
Proficient at Math at Entry	16.1%

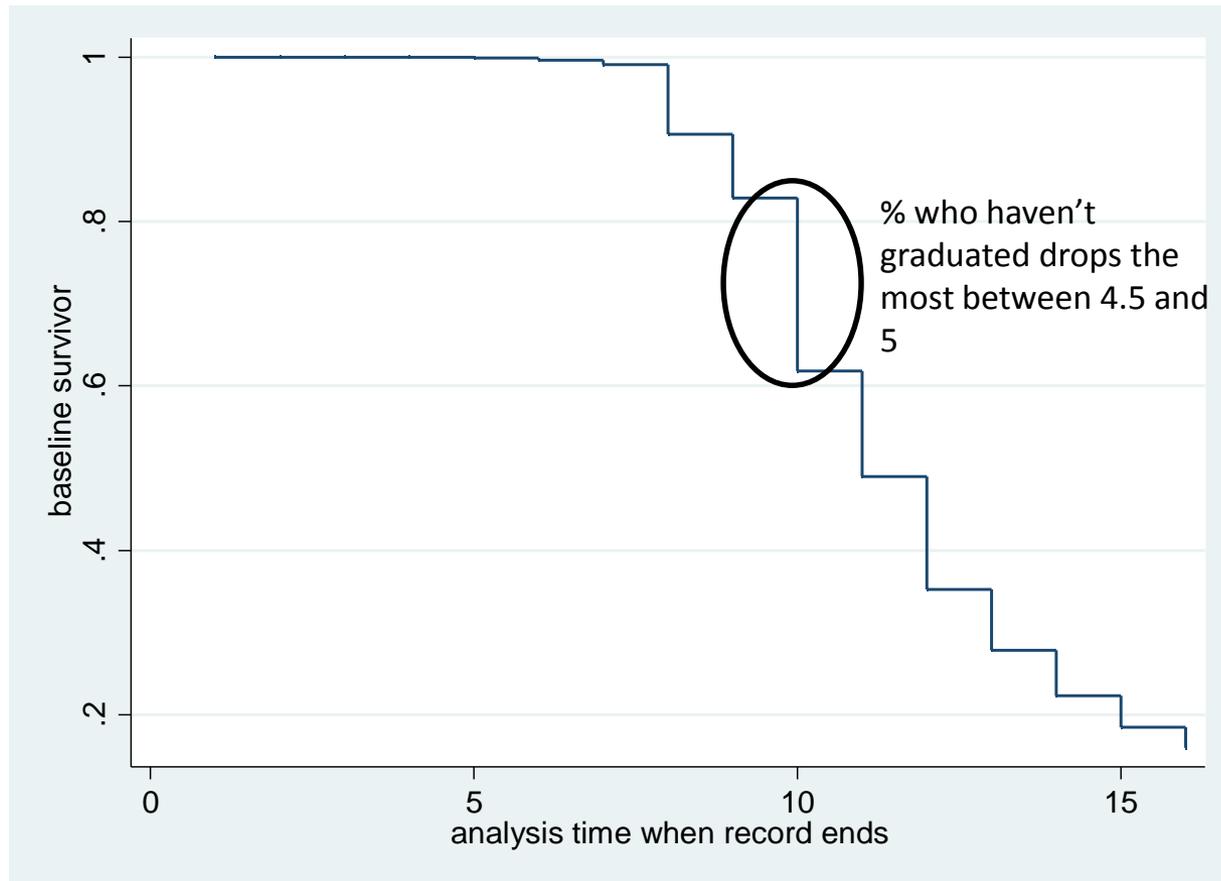
# Increases chance of graduating

Characteristic	By
No Department Major Changes	23.0%
Total Online Classes Per Term	25.1%
<del>Term Units Attempted Per Term</del>	<del>0.4%</del>
All Successful Grades That Term	175.4%
End of Term GPA	51.0%

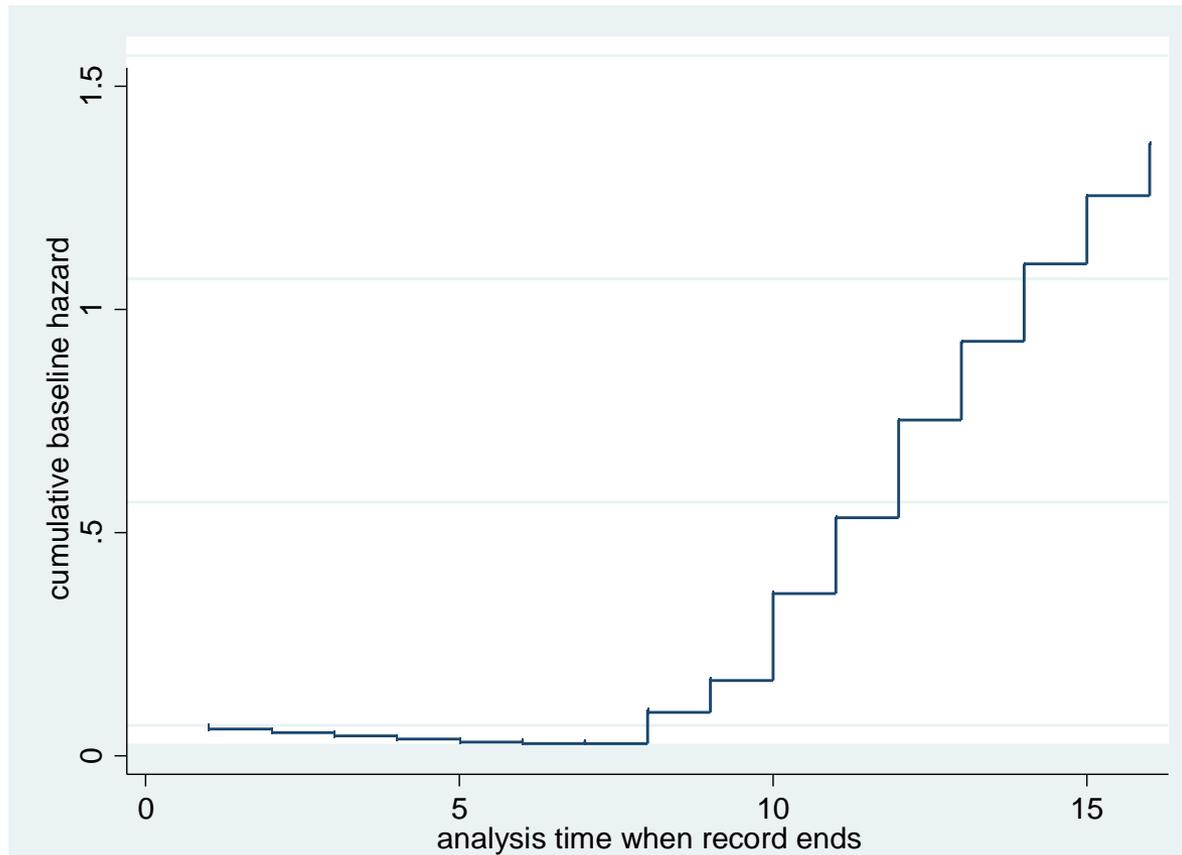
Of those still enrolled, the % of “at-risk” students that have not graduated



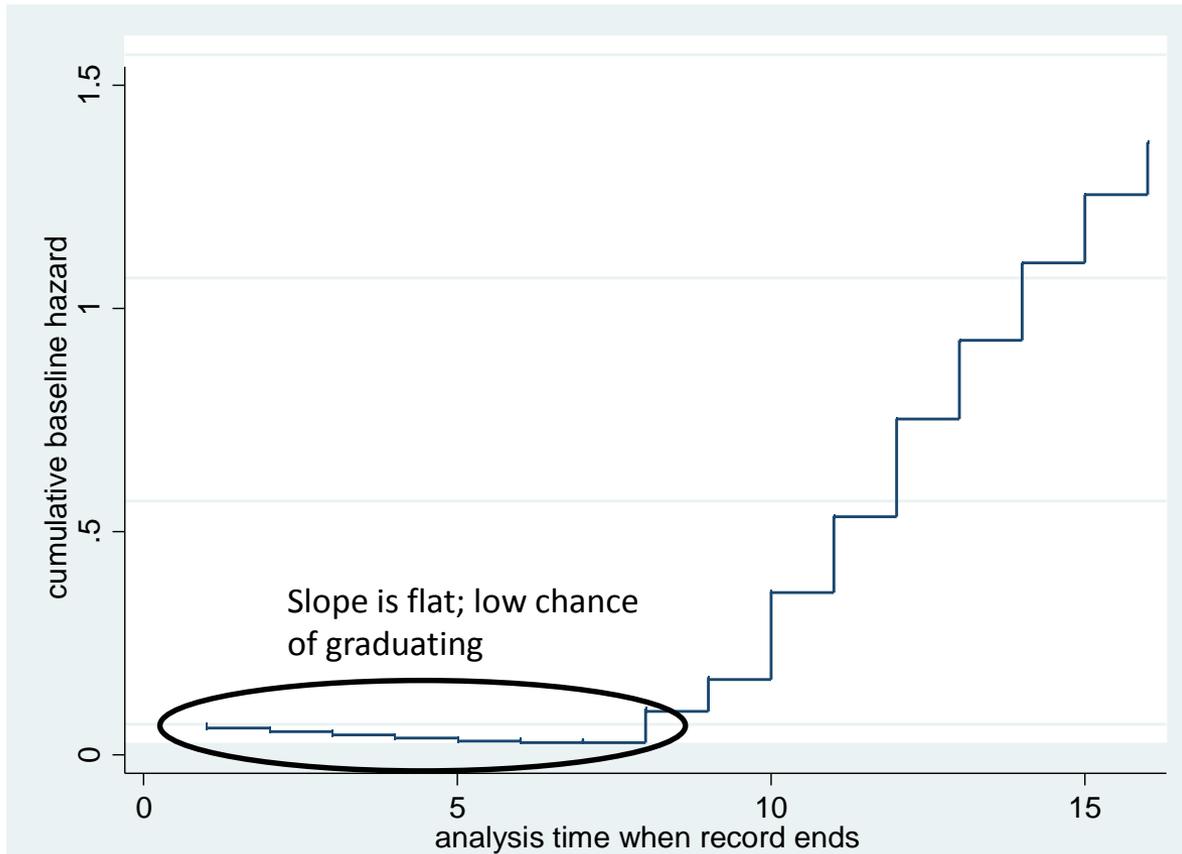
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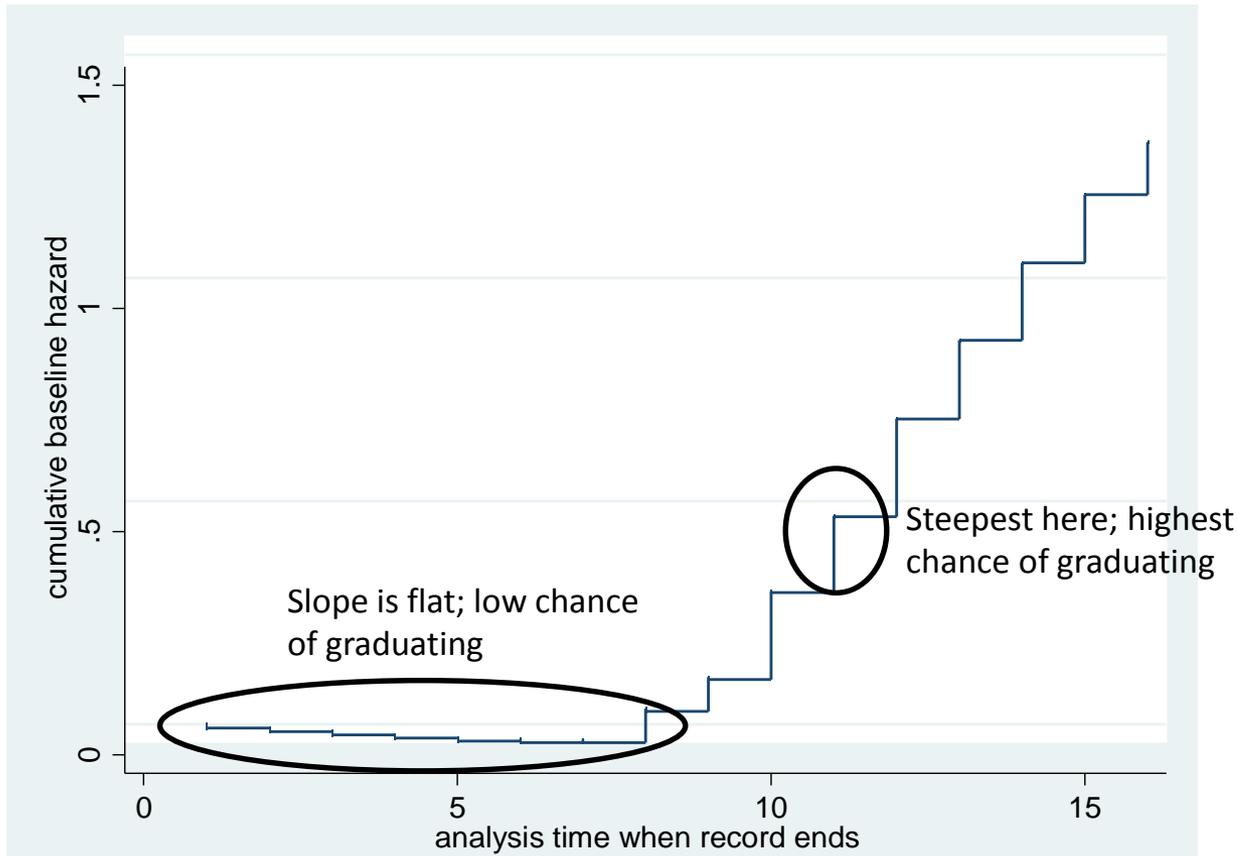
# Chance an “at-risk” student graduates



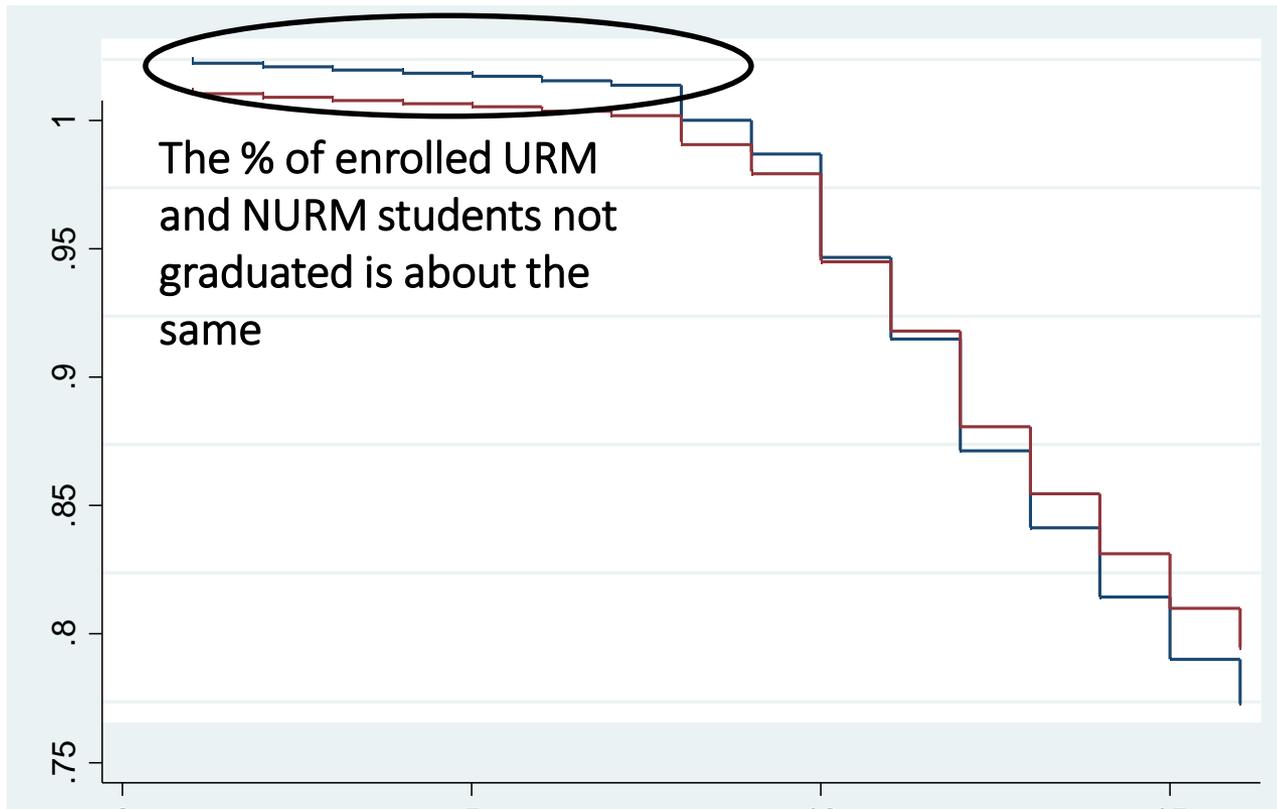
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# Chance an “at-risk” student graduates

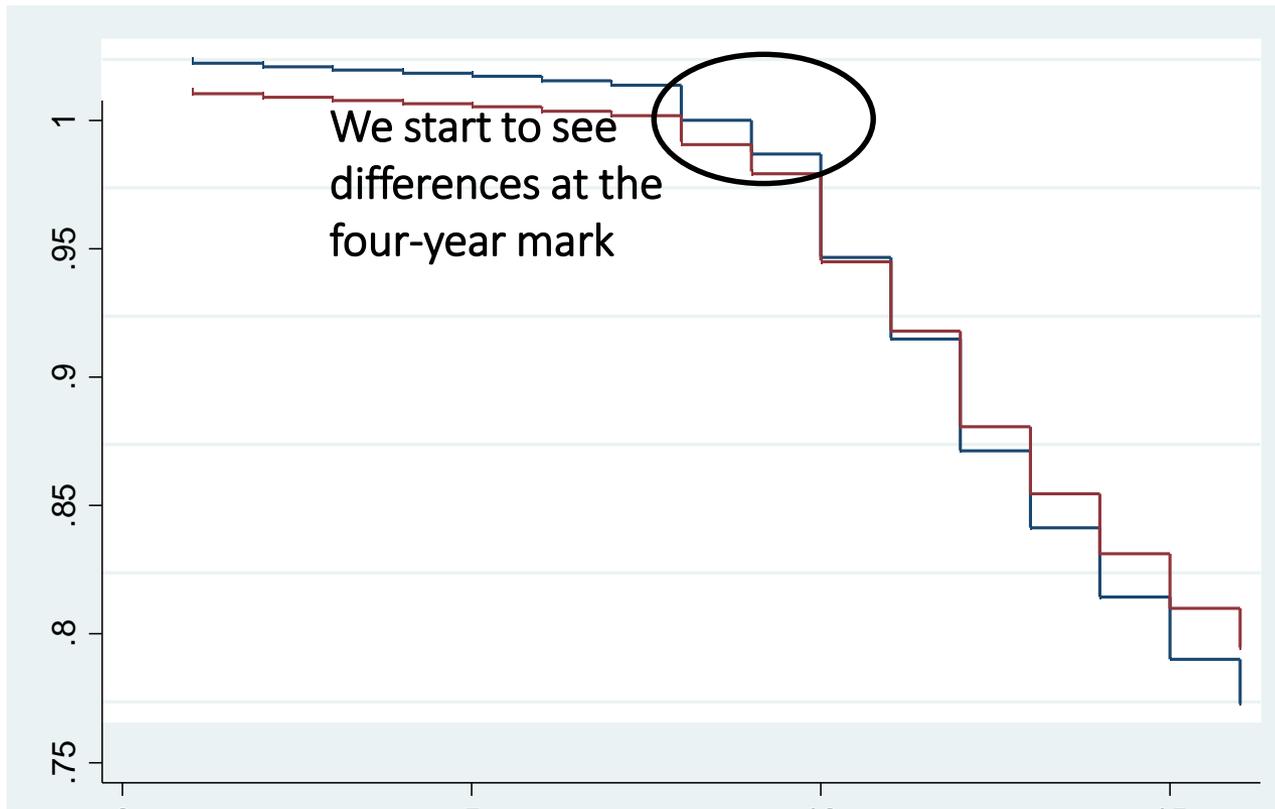


# NURM vs. URM: Of those still enrolled, the % of those who have not graduated



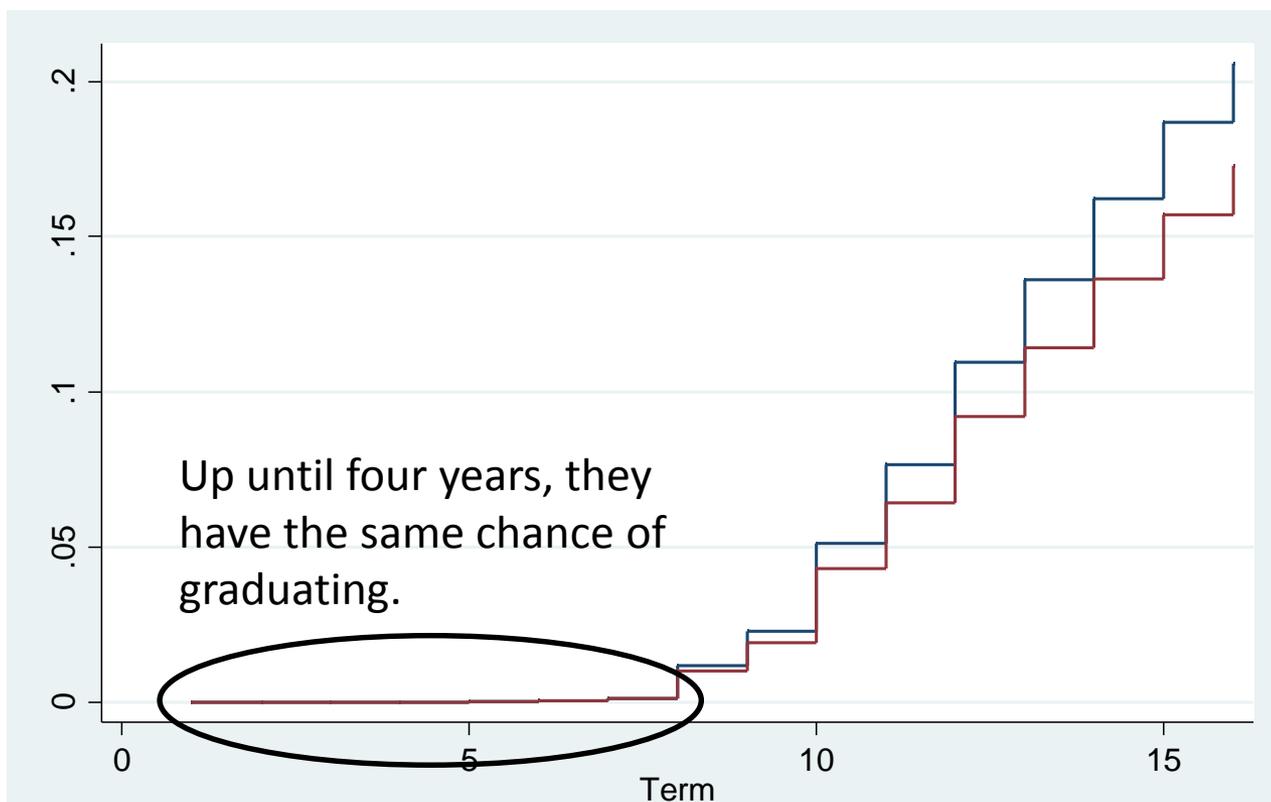
**Blue Line: NURM**  
**Red Line: URM**

# NURM vs. URM: Of those still enrolled, the % of those who have not graduated



**Blue Line: NURM**  
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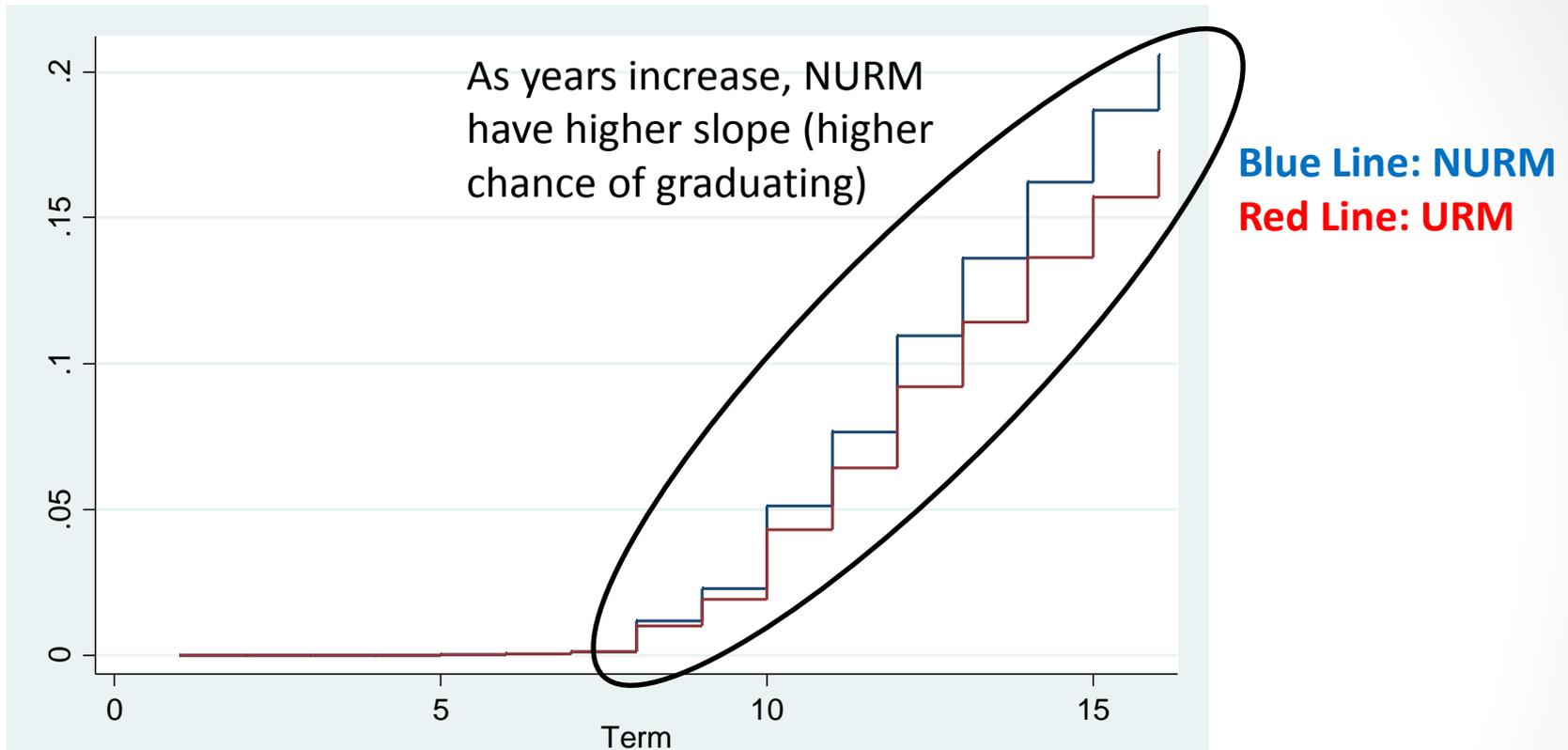
# NURM vs. URM: Chance of graduating



**Blue Line: NURM**

**Red Line: URM**

# NURM vs. URM: Chance of graduating



# Today's presentation

1

- Cohorts 2009-2010
- All students from entry to spring 2017

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- Cohorts 2009-2010
- Just those who graduated within 4-5 years

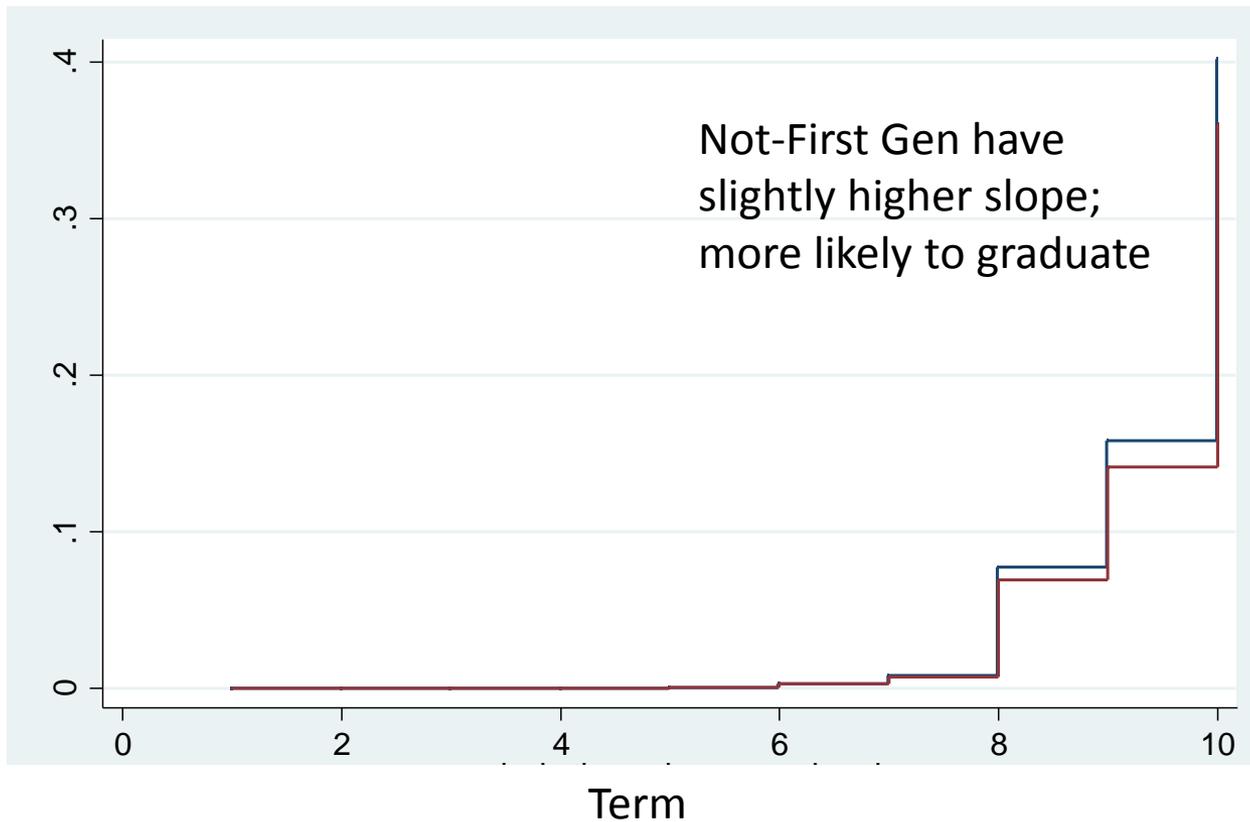
# Increases chance of graduating

Characteristic	By
Not URM	9.0%
Not First-Generation to Attend	8.7%
Entered with Declared Major	8.6%
Not Pell at Entry	13.3%
Transfer Units at Entry	0.2%
Not LB Promise	12.6%
Female	11.0%
Proficient at Math at Entry	9.2%

# Increases chance of graduating

Characteristic	By
No Department Major Changes	15.2%
Total Online Classes Per Term	18.7%
<del>Term Units Attempted Per Term</del>	<del>0.1%</del>
All Successful Grades That Term	37.7%
End of Term GPA	19.7%

# First-Gen vs. Not First-Gen: % Chance of graduating



**Blue Line:**  
**Not First-Gen**

**Red Line:**  
**First Gen**

# Interaction effects

- The previous graphs only show the effect of having one “at risk” characteristic
- We can combine the effect of multiple “at risk” characteristics
  - Pell at entry
  - First-Generation Status
  - URM

# Survival Analysis summary & next steps

- Examine online classes
- Explore interaction effects
- Include other variables
  - Term-to-term data
    - Pell at each term
    - Number of repeated courses
    - Ratio of upper division coursework
    - Time-variant: *when* a student changes major
  - Summer and winter coursework
  - CIRP The Freshman Survey
- Other outcomes



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## Next Steps & Timeline

# Part II: Student Success Survey & Focus Groups

Research Question	Approach
1. At what point do 5-year graduates fall off the 4-year graduation trajectory? What are the causes of change?	Survival Analysis
2. What characteristics predict departure from graduating within 4-years?	Survival Analysis
3. When are these students at greatest risk of not succeeding?	Survival Analysis
4. Does the profile of risk differ across subgroups?	Survival Analysis
5. What are the 4.5 - 5 year graduates' goals & expectations, as well as perceptions of obstacles & challenges?	Survey Focus Groups
6. How can CSULB facilitate more timely graduation for this population?	Survey Focus Groups

# Survey Development Constructs & Themes

Inputs	Constructs & Themes	Practices & Experiences	Outcomes
Background characteristics (e.g., gender, SES, race, ethnicity); <b>Academic preparation*</b>	Sense of Belonging; Interpersonal & Academic Validation; Satisfaction; <b>Student financial difficulty*;</b> Self-Efficacy; Faculty-Student interactions; <b>Social &amp; emotional health*</b>	<b>Student support services*;</b> Navigational actions; Curriculum practices; Co-curricular activities; Remediation practices; <b>Financial aid distribution*;</b> <b>Financial incentives*;</b> <b>Major selection &amp; changes in program of study*;</b> <b>Online course taking</b>	Persistence; Time to degree; Degree Completion; Career goals

# Qualitative Focus Groups

- Sample: FT, FTF in 4.5-5 year range
- Target: total of 3-4 focus groups (approx. 24-32 students)
- Purpose: examine students goals, perceptions, and challenges
  - Feedback on study recommendations (policy & practice)

# 2018-2019 Timeline

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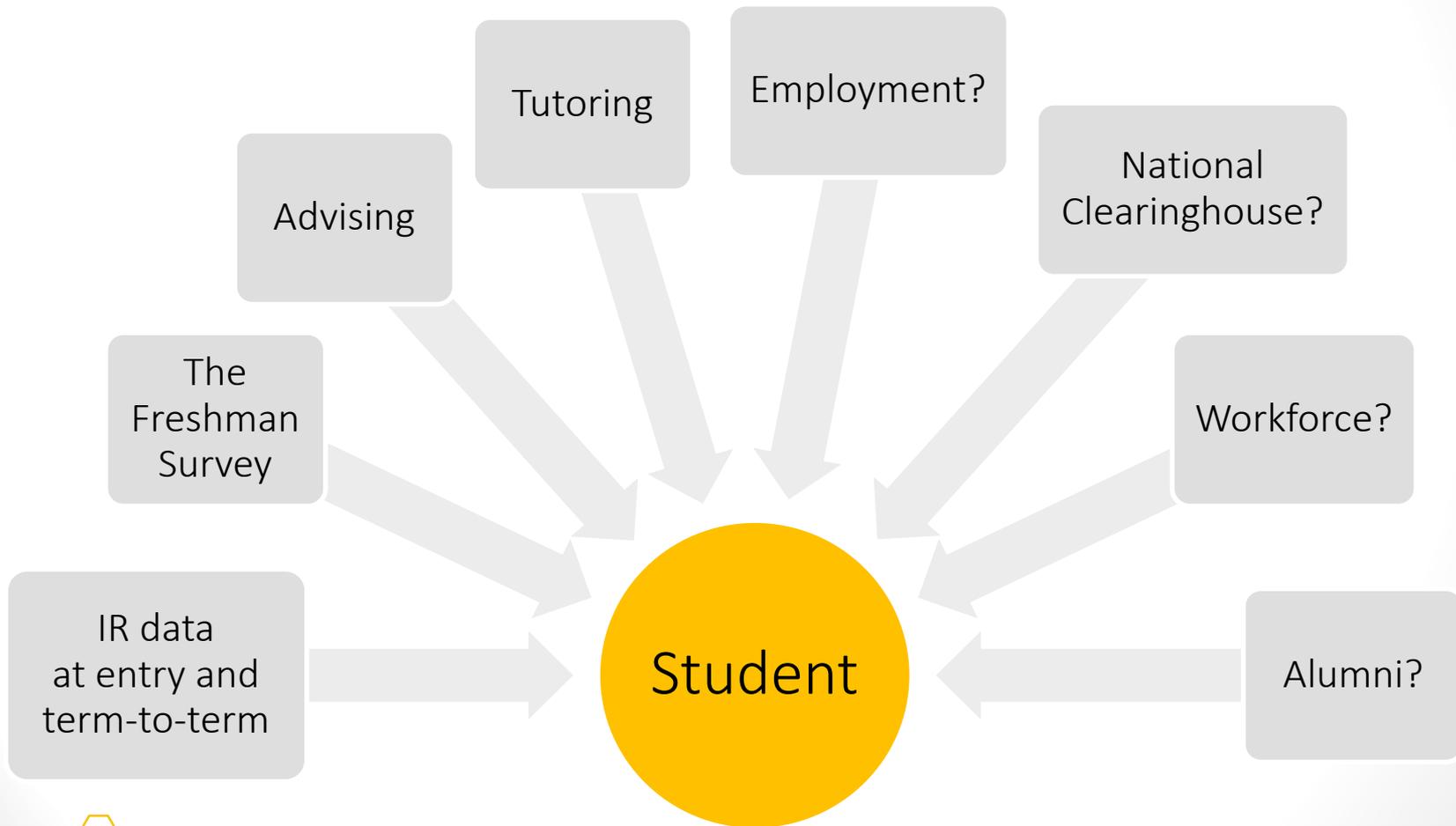
Summer 2018	Final survival analyses (advanced models of previous & recent cohort data)
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Fall 2018	Survey administration & analysis qualitative focus group data collection & analysis
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Spring 2019	Final report encompassing all data sources
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# CSULB Student Data



# Contact Information

Avery Olson | [Avery.Olson@csulb.edu](mailto:Avery.Olson@csulb.edu)

Erika Baldwin | [Erika.Baldwin@csulb.edu](mailto:Erika.Baldwin@csulb.edu)

Center for Evaluation and Educational Effectiveness (CEEE)  
EED-18

Thank you:

*CEEE Graduate Assistants, OIRA, HVDI, Data Fellows, Enrollment Services, IRB*

