Creating a First-Year On-Track Index for College Students

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UIC STUDENT AFFAIRS

Today's Presentation

- Some background on On-Track

- Creating the On-Track Index for college graduation

- What about graduating in 4 years?

- Predictors of being On- and Off-Track

- Who recovers and who goes off-track?: Some preliminary findings

Freshman On-Track

- Developed by researchers at the UChicago Consortium on School Research.
- Purpose: "The Freshman On-Track indicator provides a clear metric for predicting high school graduation in Chicago and targeting students for intervention. Schools can set goals around this metric and monitor them on an ongoing basis."
- By the end of the freshman year, students are on track if they have:
  - Earned five or more credits
  - Failed no more than one semester of a core course (English, math, science, social studies)
- The indicator is 80% accurate at the individual level.
- Over the past 20 years, CPS has used the metric as a tool to help them dramatically increase the graduation rates.

On-Track and HS Graduation Rates Rose in Parallel with Each Other
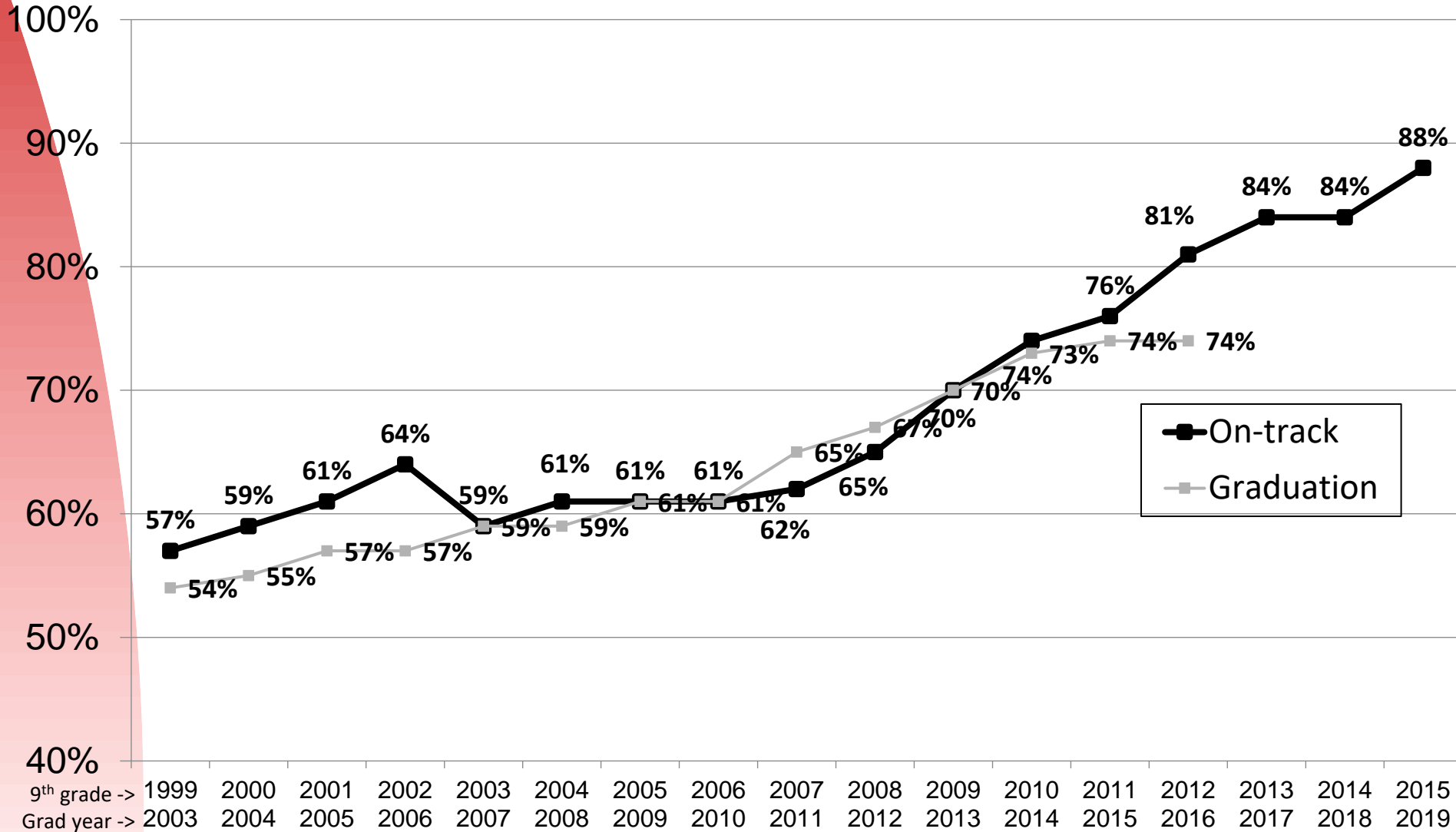
From: Freshman OnTrack: The Chicago Approach (Nagaoka, Moeller & Howard)

Can we create an On-Track index for college graduation?

Why Is This Important?

- We often look at retention as a key milestone for graduation.

- At UIC (as well as many other universities), half of students who ultimately don't graduate are not retained to the second year.

- We need sound metrics earlier than retention. This provides clear targets for prevention (and intervention) efforts.

- *UIC Context: 2014 cohort 6-year grad rate = 63.5%
  - Race/ethnicity gap: Asian 72.5% vs. Black 54.2%

High School Versus College: Some Considerations

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- High school students can graduate with less than a 2.0 GPA.
- CPS students can graduate from a different CPS high school and "count" towards graduation.
- College is substantially more expensive than high school.
- High school is mandatory.
- High schools have more of a common curriculum.
- High schools are more structured and class sizes are generally smaller.

Sources of Data

- Typical Institutional Data (2008-2019 cohorts)
  - Admissions* (e.g., student demographic information, high school GPA)
  - Academic performance (e.g., grades, graduation)
  - College experiences (e.g., orientation, campus housing)
- Additional UIC Data
  - Noncognitive Assets (2014, 2018 cohorts)
  - Basic Needs Referral (2019 cohort)
  - Financial Concerns (2019 cohort)

*Some of the demographic information is problematic, e.g., gender

Using the 2009-2011 Cohorts, We've Examined a Range of Variables…

- Institutional Credits
  - Hours attempted
  - Hours Passed
  - Credits attempted
  - Credits earned
- First-term GPA
- First-year GPA
- Writing Course grade
- Academic dismissal

- Financial hold
  - In the first term/year
  - Hold or unresolved hold
- SAP cancellation
- Unmet need
- Amount of loans
- Amount of aid

*Focused on variables relevant to all students.
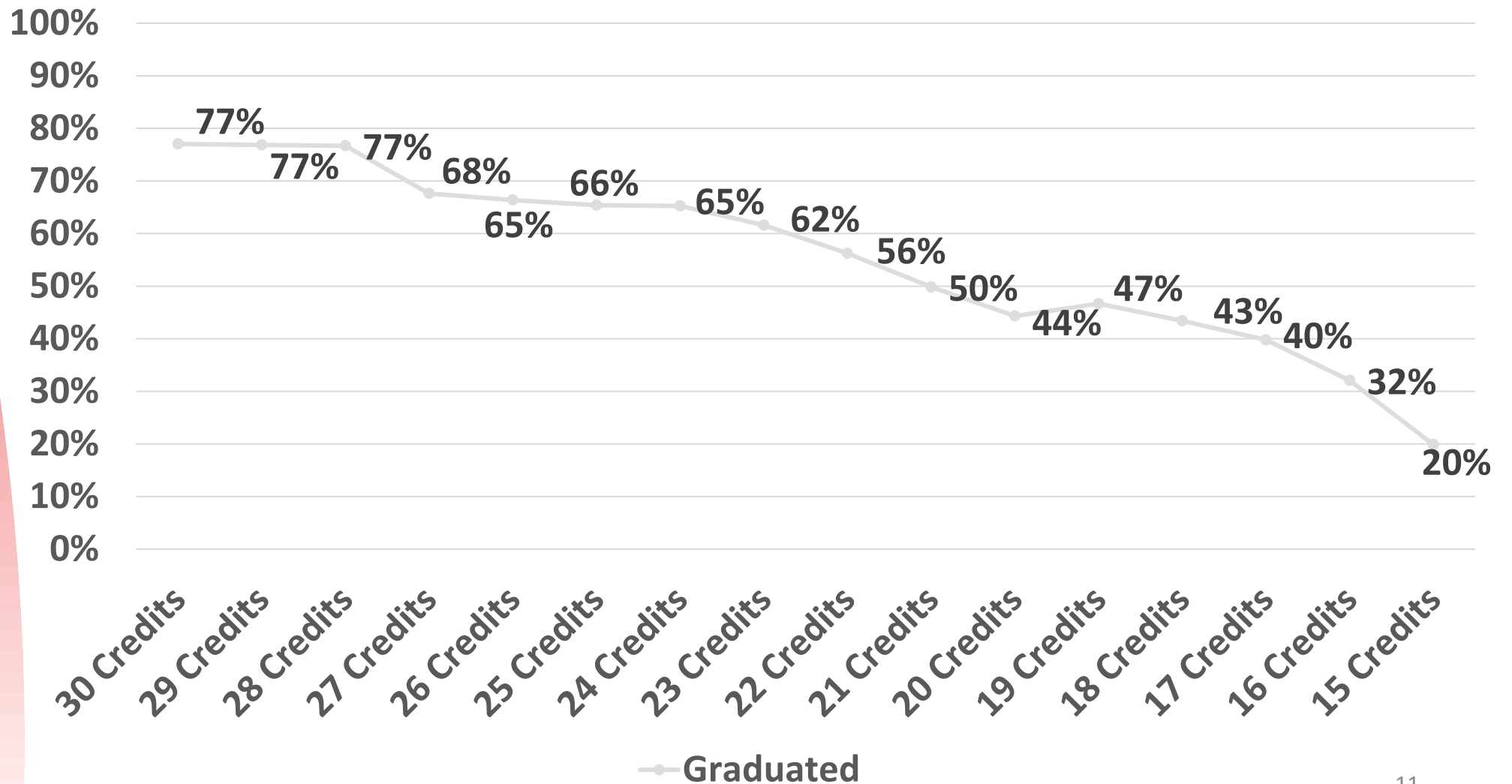*Dichotomous data versus continuous data.

Unresolved Financial Hold During the First Term in College

6-Year Graduation (Cohorts 2009-2011)			
	Not Graduated	Graduated	Total
No Financial Hold or Hold was Resolved	3608 (40%)	5395 (60%)	9003
Unresolved Financial Hold	340 (85%)	60 (15%)	400
Total	3948 (42%)	5455 (58%)	9403

Institutional Credits Earned in the First Year

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Best Initial Model

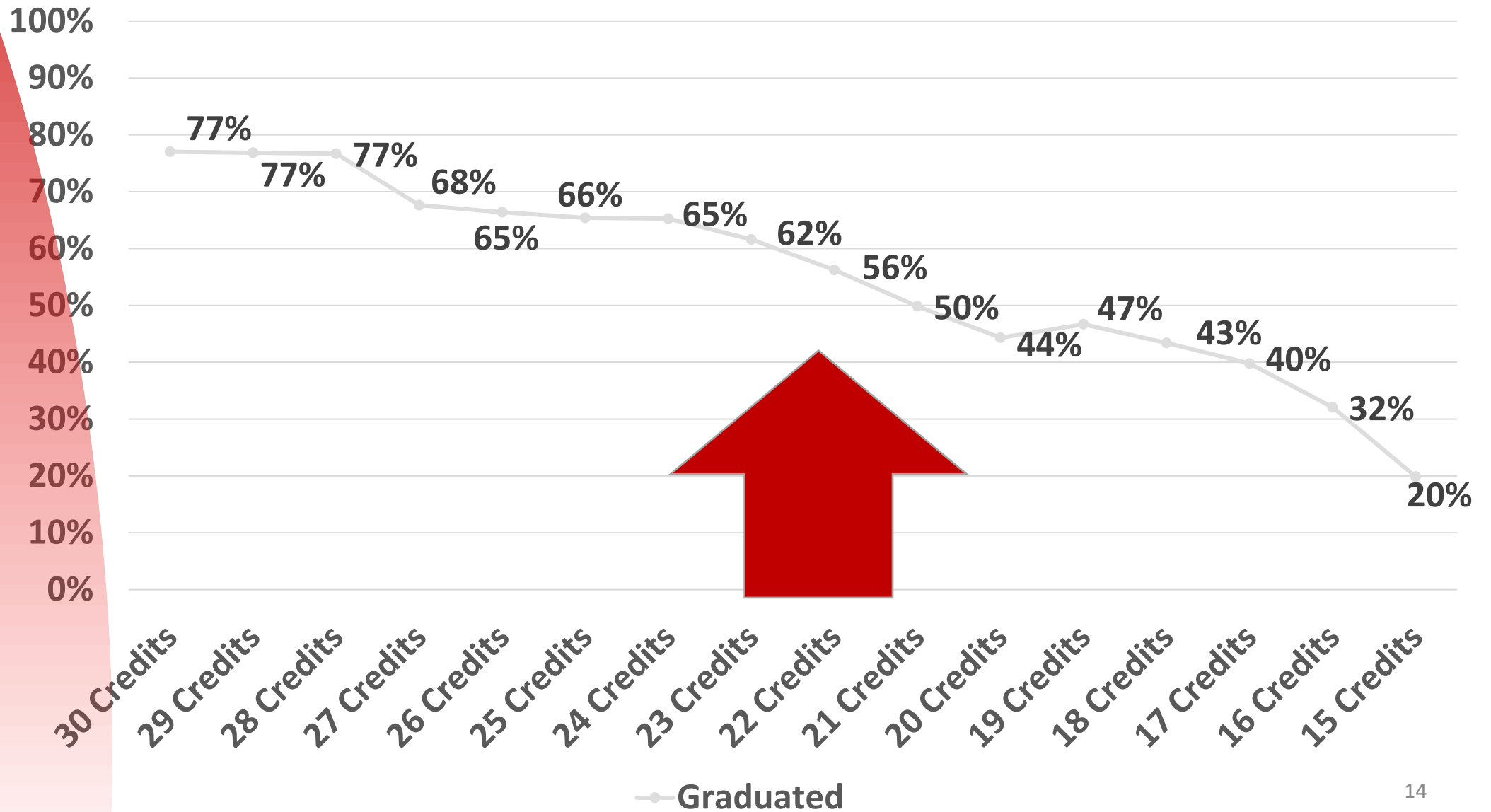| Variables |
| --- |
| GPA During the First Term |
| Credits Earned During the First Year |
| ENGL 160 Grade During First Year |
| No Unresolved Financial Hold in the First Term |
| SAP Cancellation After the First Year |

Can We Simplify the Model?

- The best UIC statistical model had five variables; CPS's model had two variables, both of which had clear thresholds.

- Can we identify on-track thresholds for the college model?

- Can we have similar precision with fewer variables?

Creating Thresholds: First-Year Credits Earned

Chart showing percentage graduated by first-year credits earned:
- 30 Credits: 77%
- 29 Credits: 77%
- 28 Credits: 77%
- 27 Credits: 68%
- 26 Credits: 65%
- 25 Credits: 66%
- 24 Credits: 65%
- 23 Credits: 62%
- 22 Credits: 56%
- 21 Credits: 50%
- 20 Credits: 44%
- 19 Credits: 47%
- 18 Credits: 43%
- 17 Credits: 40%
- 16 Credits: 32%
- 15 Credits: 20%

— Graduated

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Honing in on the Final Model

- Once we were close, we used iterations to identify the best threshold for continuous data.

- For instance, for first-year credits earned, we looked at:
  - 24
  - 23
  - 22 ⬅
  - 21
  - 20

- This was done for each continuous variable.

Can We Simplify the Model?

- Once we had the thresholds for the continuous variables, we checked to see if we could reduce the number of factors.

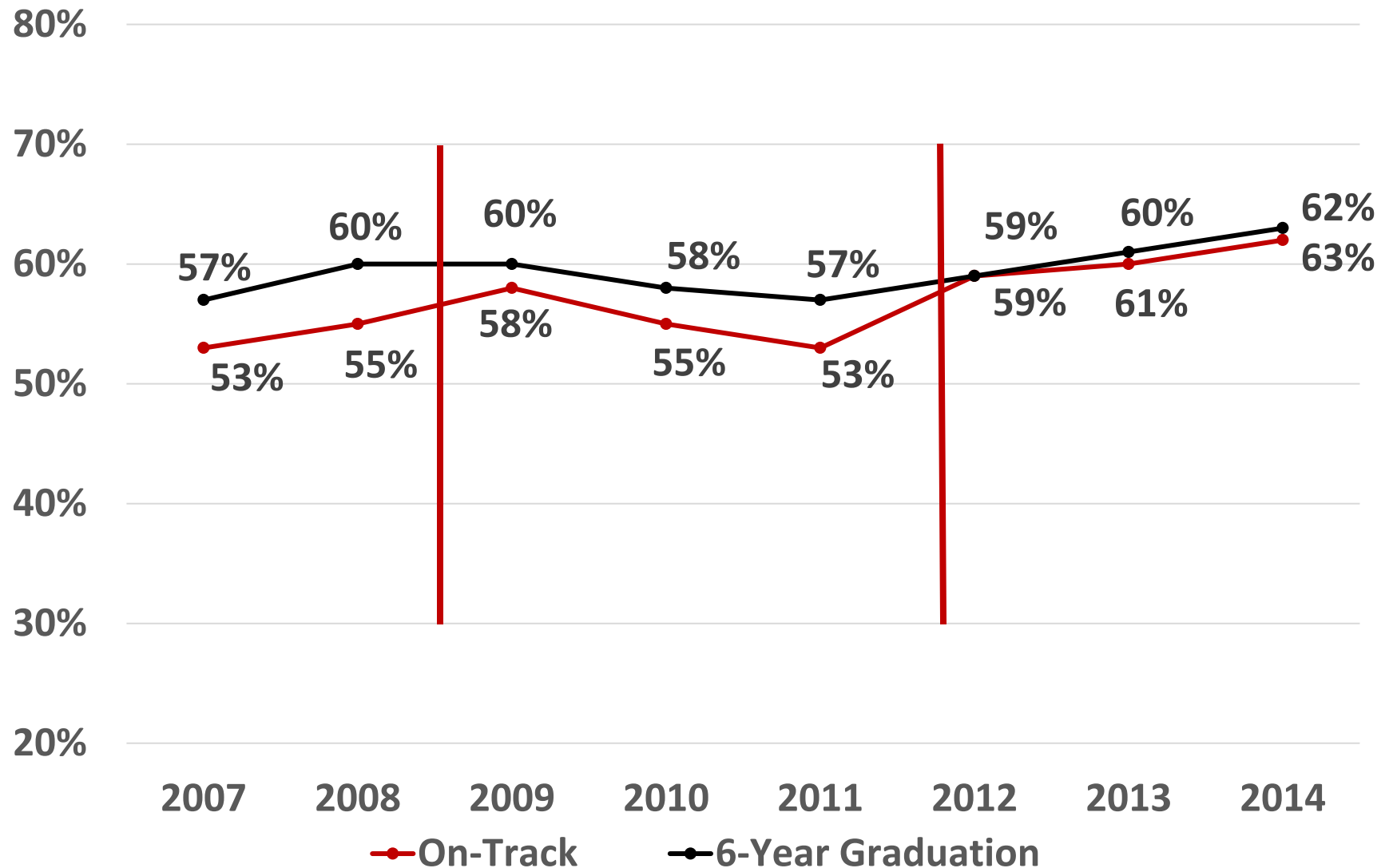| **Variables** |
|---|
| GPA During the First Term |
| Credits Earned During the First Year |
| ENGL 160 Grade During First Year |
| No Unresolved Financial Hold in the First Term |
| ~~SAP Cancellation After the First Year~~ |

The Index

First Year On-Track Indicators
GPA During the First Term >= 2.40
Credits Earned During the First Year >= 22
ENGL 160 Grade During First Year >= C
No Unresolved Financial Hold in the First Term

Occurred	Predicted		
	Would Not Graduate	Would Graduate	Percentage Correct
Did Not Graduate	2239	1639	58%
Graduated Within 6 Years	687	4712	87%
Overall Percentage	2926	6351	75%

Some Key Points Regarding First-Year On-Track

- The index works for cohorts not included in its development
  - Created using 2009-2011; validated using 2006-2008, 2012-2014

- Graduation gaps by race/ethnicity are seen in on-track gaps
  - Valid across racial/ethnic groups

Confirming the Model: On-Track and 6-Year Graduation Rates

Can we identify markers of 4-year college graduation??
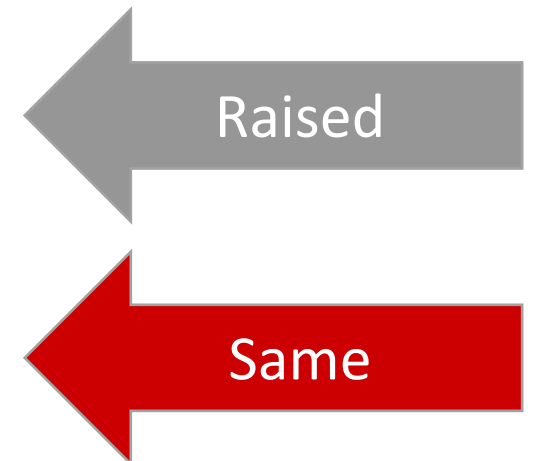
On-Track for Graduating in Four Years

- A parallel process was conducted to identify what it takes to graduate in 4-years.

GPA During the First Term >= 2.75

Raised

Credits Earned During the First Year >= 28

ENGL 160 Grade During First Year >= C

Same

No Unresolved Financial Hold in the First Term

What Factors Predict Being On- and Off-Track?

We primarily used the 2018 cohort, but we switched to 2019 when 2018 was not available.

2018 Cohort: 65% On-Track

2019 Cohort: 69% On-Track

2018 On-Track: Indicators Met

On-Track	First-Term GPA Met	Writing Class Grade Met	Credits Earned in the First Year Met	No/Resolved First-Term Financial Hold Met
65%	74%	93%	76%	92%

On-Track: All 4 Met	3 Indicators Met	2 indicators Met	1 Indicator Met	0 Indicators Met
65%	15%	9%	5%	2%

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2018 Student and Family Demographics and Being On-Track

Race/Ethnicity	On-Track
Asian American	76%
Black	52%
Latinx	57%
White	74%
Gender	
Female	68%
Male	62%
First-Generation in College	
First-Generation	61%
Continuing-Generation	69%
Pell-Eligible	
Pell-Eligible	62%
Non-Pell-Eligible	70%
All Students	65%

	All Students	On-Track	Off-Track
Unmet Need	**$7,215** ($6,520)	**$6,851** ($6,507)	**$7,913** ($6,483)
EFC	**$11,487** ($29,721)	**$12,938** ($29,285)	**$8,825** ($30,536)

Academic Preparation for 2018 Students

	All Students	On-Track	Off-Track
High School GPA	3.35 (.38)	3.44 (.37)	3.18 (.34)
ACT-Composite	23.36 (4.24)	24.10 (4.31)	21.99 (3.74)
AP+ Credits Earned	14.88 (13.30)	16.51 (14.07)	9.54 (8.49)
English Developmental Placement	13%	9%	22%
Math Developmental Placement	28%	21%	40%

Noncognitive Assets Student Survey Data

- Postmatriculation (during the first-year writing program class)
  - 2013 and 2014

- Prematriculation (Prematriculation Inventory, PMI)
  - 2015-current
  - Completed during placement testing

Noncognitive Assets and On-Track for the 2018 Cohort

Positive Associations

- Sense of Belonging
- Time Management
- Academic Motivation
- Academic Goal Engagement
- Academic Self-efficacy
- Perceptions of Academic Readiness
- Help-seeking

Negative Association

- Family-School Conflict

Basic Needs Support

PMI Basic Needs Referral Initiative

- Launched in 2019, this initiative provides an opportunity to assess other potential barriers for student success.
- Domains
  - Food insecurities
  - Housing insecurities
  - Undocumented student supports
  - Disability accommodations
  - Child care
- First-year students are asked if they would like additional information related to the different domains.
  - They do not self-identify.
  - If they say yes, they are referred to the appropriate office.
- This is an intervention- effects may be (and hopefully are) reduced.

Basic Needs Among 2019 Students

		% On-Track
Disability Resource Center		
	Yes	59%
	No	72%
Undocumented Student Support		
	Yes	61%
	No	70%
Child Care		
	Yes	64%
	No	70%

		% On-Track
Food Insecurities		
	Yes	67%
	No	71%
Housing Insecurities		
	Yes	67%
	No	71%
All Students		**69%**

PMI Financial Concerns

Questions on the PMI

Does your family have enough for daily living expenses each month?

Are you concerned about having enough money to pay for:

- college textbooks and materials
- daily living expenses when you are in college
- transportation to-and-from college
- college tuition and fees

Response Options: No, Somewhat, Yes

2019 Student Cohort Financial Concerns

		% On-Track
Family Daily Living Expenses Met		
	Yes	75%
	Somewhat	64%
	No	66%
Textbooks and Materials Concerns		
	Yes	67%
	Somewhat	70%
	No	75%
College Daily Living Expenses		
	Yes	68%
	Somewhat	70%
	No	73%

		% On-Track
Transportation Concerns		
	Yes	67%
	Somewhat	70%
	No	72%
Tuition and Fees Concerns		
	Yes	68%
	Somewhat	71%
	No	75%
All Students		**69%**

Early College Experiences Among 2018 Cohort

Orientation Attendance Month	
	% On-Track
June	72%
July	59%
August	49%
Never	61%
All Students	65%
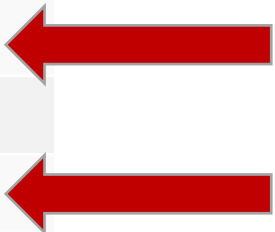
First-Year Seminars	
	% On-Track
Successful	74%
No Seminar	61%
Unsuccessful	21%
All Students	65%

Campus Housing	
On-Campus & On-Track	Off-Campus & On-Track
71%	62%

Why Do Some Students "Recover"?

(Students were off-track, but did graduate)

2014 Cohort (N = 3030)

- 1,852 students were on-track

- 423 students were off-track and recovered

- 755 students were off-track and did not graduate (as expected)

Comparing Those Who Recovered and Those Who Did Not

Recovered	Did Not Recover
75% have met 3 indicators, 23% have met 2 indicators, 2% have met 1 indicator, and 0.2% have met 0 indicators.	33% have met 3 indicators, 37% have met 2 indicators, 22% have met 1 indicator, and 7% have met 0 indicators.
First term GPA, mean= 2.42, sd= 0.68	First term GPA, mean= 1.74, sd= 1.09
96% earned a "C" in the writing class	83% earned a C in the writing class
Credits earned in the first year, mean=21.4 (5.2)	Credits earned in the first year, mean=12.8 (8.1)
26% had a financial hold; 3% unresolved financial hold	40% had a financial hold; 13% unresolved financial hold

Retention and SAP Cancellations

Recovered	Did Not Recover
97% were retained from the 1st to 2nd semester	71% were retained from the 1st to 2nd semester
94% were retained from the 1st to 2nd year	43% were retained from the 1st to 2nd year
8% had a SAP cancellation	49% had a SAP cancellation

They are Similarly Prepared for College

	Recovered	Did Not Recover
High School GPA*	3.19 (.33)	3.12 (.37)
AP Credits Earned	7.24 (6.81)	6.03 (5.32)
ACT Composite	23.44 (3.15)	23.25(3.22)

Noncognitive Assets
(Assessed During the First Term)

- Compared to off-track students who did not graduate, recovered students were:
  - Higher on academic self-efficacy, academic goal engagement and well-being
  - Lower on feeling lost in the system

First-Year Seminar Participation

First Year Seminars		
	Recovered	**Did Not Recover**
Successful	48%	37%
No Seminar	48%	51%
Unsuccessful	4%	12%

Why Do Some Students Go Off-Track?: Some Preliminary Findings

(Students were on-track, but did not graduate)

For Those On-Track, How Do the Graduates Compare to the Non-Graduates?

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Graduated	Did Not Graduate
First term GPA, mean= 3.30 (0.47)	First term GPA, mean= 3.13 (1.09)
Credits earned in the first year, mean=29.1 (3.7)	Credits earned in the first year, mean=27.6 (3.6)
16% had a financial hold in fall 2014	22% had a financial hold in fall 2014
100% were retained from the 1st to 2nd semester	100% were retained from the 1st to 2nd semester
99% were retained from the 1st to 2nd year	73% were retained from the 1st to 2nd year
99% were retained to the third year	45% were retained to the third year
0% had a SAP cancellation	0% had a SAP cancellation

Noncognitive Assets and First-Year Seminars

- For noncognitive factors (assessed during the first term), on-track students who did not graduate were also:
  - Lower on sense of belonging, well-being, academic goal engagement, time management

First-Year Seminars		
	Graduated	Did Not Graduate
Successful	64%	43%
No Seminar	35%	54%
Unsuccessful	1%	3%

Next Steps

- Better understand why students recover and why students go off-track
  - What can we do to help students recover and prevent students from going off track?
- For students who go off-track, are they transferring to another school? If so, why?
  - Finances
- We need a deeper understanding of the role of finances and basic needs.
- Other thoughts?

Acknowledgements

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Thoughts? Questions? Ideas?

https://sa.uic.edu/about/student-affairs-assessment/reports/

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