

# #NISTS2019 CONFERENCE

## WORKING TOGETHER TO SIMPLIFY TRANSFER

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### **Momentum that Matters: Transfer and Degree Completion for Adult Community College Students**

*Special Populations - Research Spotlight, BKT Dissertation of the Year Award Winner*

How does academic momentum affect adult students' vertical transfer and baccalaureate completion outcomes? This session will present key findings from a longitudinal study of outcomes for first-time-in-college and returning adult community college students. In this study, a momentum point analytic framework that utilized readily available administrative and Clearinghouse data was proposed and tested. Findings from the study can inform research, policy, and practice in support of adult transfer students.

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# Momentum that Matters: Transfer and Degree Completion for Adult Community College Students

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NATIONAL INSTITUTE FOR THE STUDY OF TRANSFER STUDENTS  
2019 CONFERENCE

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# Need for the study: Adult transfer outcomes

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## Outcomes are poor:

- Vertical transfer and baccalaureate completion outcomes for community college students are poor. Outcomes for adult students are even worse.

## Understudied population:

- Adults (25+) as a distinct population are rarely examined in transfer research
  - Most studies examine traditional-age (18-24) or students of any age
- Returning students (vs. first-time-in-college) are rarely studied in transfer literature

	CC students	Adult CC students
Aspire at entry to baccalaureate or higher	33-88%	--
Transfer rates (6 yrs)	23-24%	< 10%
Baccalaureate completion rates (6 yrs)	12-16%	3-8%

# Study Purpose

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The purpose of the study was to examine the

- relative importance of **academic momentum variables**,
- controlling for **individual profile characteristics**,
- in explaining the likelihood of **adult community college students**
- achieving **vertical transfer** and **baccalaureate completion** within six years of enrolling at a community college as first-time or returning college students.

# Population of interest: Adult community college students

- Rarely described in national data
- Members of two overlapping populations, each with challenges

	CC students	Adult students	Adult CC students
Size	7.7 million	5.97 million	<b>2.8 million</b>
% of U.S. undergraduates (UGs)	45%	33%	<b>16% of all UGs 48% of adult UGs</b>
Profile characteristics	Higher % of Black/African-American & Hispanic students; 61% enrolled part-time; work 32 hours/week; average age: 28	Higher % of females; higher % of Black/African-American students; 54-65% enrolled part-time; work 33-35 hours/week	<b>Higher % enrolled part-time as age increases</b>
Transfer rates (6 yrs)	23-27%	--	<b>&lt; 10%</b>
Baccalaureate completion rates (6 yrs)	12-16%	--	<b>3-8%</b>

AACC, 2014; Kienzl et al., 2012; Moore et al., 2009; Shapiro et al., 2014; Skomsvold et al., 2011; Skomsvold, 2014; Snyder & Dillow, 2013

# Theoretical framework

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## **Academic momentum:**

- Variant of human capital investment model; students invest time, tuition & energy
- **Enrollment patterns** can speed up or slow down student progress to degrees (Adelman, 2006)
- Patterns can be observed and momentum can be measured using specific variables in student records (e.g., credit loads, GPA)

## **External domain:**

- **External** and academic domains both related to attrition for non-traditional students; social domain not significant (Bean & Metzner, 1985)
- Extension of classic two-domain (academic and social) student engagement model (Tinto, 1975; 1993)

# Analytic framework

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## Milestone and momentum point frameworks:

- Analytical tools applying academic momentum variables to **student milestones** (e.g., transfer, degree completion) (Leinbach & Jenkins, 2008; Moore et al., 2009)

# Academic momentum model

Student demo/profile (at entry)	➤ Early momentum (year 1)	➤ Degree pathways (years 1 & 2)	➤ Uses of time (community college)	➤ Final outcomes
<ul style="list-style-type: none"> <li>- Age</li> <li>- Gender</li> <li>- Race/ethnicity</li> <li>- Low-income (Pell)</li> <li>- College ready</li> <li>- FTIC</li> <li>- Program of study</li> </ul>	<ul style="list-style-type: none"> <li>- Credit accumulation</li> <li>- Performance (GPA)</li> <li>- Credit efficiency (earned vs. attempted)</li> </ul>	<ul style="list-style-type: none"> <li>- College-level English</li> <li>- College-level Math</li> <li>- Pre-transfer Associate Degree</li> </ul>	<ul style="list-style-type: none"> <li>- Enrollment intensity (load)</li> <li>- Enrollment continuity (breaks)</li> <li>- Summer credits (commitment)</li> </ul>	<ul style="list-style-type: none"> <li>- Vertical transfer</li> </ul> <p style="text-align: center;">↓</p> <ul style="list-style-type: none"> <li>- Baccalaureate completion</li> </ul>



# From the literature: Impact of profile variables

Variable	Impact on transfer and completion (negative or positive)
Age	Adults (-); increasing age (-)
Gender	Larger recent studies: males (-); smaller older studies: females (-)
Race/ethnicity	Black/African-American; Hispanic; Native American (-); Asian (+) for completion; (-) for transfer
Low-income	Increasing or higher family SES (+)
College ready	Developmental enrollment (-): Traditional-age more negatively impacted; Adults less negatively impacted

\* For traditional-age or any age students except as noted

Calcagno et al., 2007a; Calcagno et al., 2007b; Crisp & Delgado, 2014; Crisp & Nunez, 2014; Dougherty & Kienzl, 2006; Eddy et al., 2006; Leinbach & Jenkins, 2008; Moore et al., 2009; Porchea et al., 2010; Roksa, 2006; Surette, 2001; Wang, 2012

# From the literature: Impact of momentum variables

Variable block	Impact on transfer and completion (negative or positive)
Early momentum (year 1)	1 <sup>st</sup> year credit accumulation (+) 1 <sup>st</sup> year credit efficiency (+) 1 <sup>st</sup> Year GPA (+)
Degree pathways (years 1 & 2)	Completed college-level (gateway) Math (+) Completed college-level (gateway) English (+) Earned pre-transfer associate degree (+): Transfer-oriented (e.g., AA/AS) associate degree (+) Non-transfer-oriented (e.g., AAS) associate degree ( <b>NS</b> )
Uses of time (community college)	1 <sup>st</sup> term or exclusively full-time enrollment (+) Higher intensity enrollment (+) Continuous enrollment with no stop-out terms (+) Summer enrollment (+)

\* For traditional-age or any age students except as noted

Adelman, 2006; Attewell et al., 2012; Crisp & Nunez, 2014; Crook et al., 2012; Crosta, 2014; Crosta & Kopko, 2014; Dougherty & Kienzl, 2006; Doyle, 2009; Doyle, 2011; Eddy et al., 2006; Hagedorn et al., 2008; LaSota, 2012; Leinbach & Jenkins, 2008; Monaghan & Attewell, 2014; Moore et al., 2009; Porchea et al., 2010; Roksa, 2006; Surette, 2001; Wang, 2012

# Research questions

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## #1:

Controlling for demographic and individual profile attributes, to what extent do academic momentum variables explain the achievement of *vertical transfer* for adult community college students?

## #2:

Controlling for demographic and individual profile attributes, to what extent do academic momentum variables explain the achievement of post-transfer *baccalaureate degree completion* for adult community college students?

# Methods

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## **Data sources:**

- Administrative student records from original community college matched with
- Longitudinal national enrollment and degree records from National Student Clearinghouse Student Tracker database

## **Study timeframe:**

- Six years from Fall 2008 through Summer 2014

## **Sequential logistic regression**

- Two dichotomous outcomes: vertical transfer and baccalaureate completion (Peng, Lee & Ingersoll, 2002)
- Blocks of variables entered chronologically
- Separate analyses for each outcome

# Sample: Profile variables

1,712 adults (age 25-64) who entered a single community college (a multi-campus urban college) in the Southwestern US in Fall 2008

Characteristic	n	%
Average age	<i>M</i> = 35.5	
Female	866	51%
Race/ethnicity		
Asian	119	7%
Black/African-American	244	14%
Hispanic	341	20%
Other	263	15%
White	745	44%
Low-income (Pell)	264	15%
College ready (no developmental enrollment)	1,524	89%
First-time-in-college (FTIC)	1,099	64%

# Sample: Momentum variables

Variable block	Characteristic	n	%
Program of study	Transfer-oriented	515	30%
	Limited entry	139	8%
	Non-transfer degree	685	40%
	Non-degree	373	22%
Early momentum (year 1)	1 <sup>st</sup> Year GPA	<i>M</i> = 2.6	SD: 1.2
	1 <sup>st</sup> Year credits earned	<i>M</i> = 7.8	SD: 5.9
Degree pathways (years 1 & 2)	Associate degree earned	73	4%
	College-level English completed	314	18%
	College-level Math completed	158	9%
Uses of time (community college)	Credits per term	<i>M</i> = 7.0	SD: 4.3
	Number enrollment breaks	<i>M</i> = 1.2	SD: 0.5
	Any Summer enrollment	394	23%
Outcomes	Vertical transfer achieved	363	21%
	Baccalaureate completion achieved	127	7%

# Results

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## Final models:

- Transfer: Nagelkerke Pseudo- $R^2 = .233$  / Correct classification: **79.1%**
- Baccalaureate Completion: Nagelkerke Pseudo- $R^2 = .281$  / Correct classification: **93.7%**
- Consistent with other attrition studies

## Reported as odds ratios (*OR*):

- *ORs* larger than one show the increase in odds of the outcome given a one-unit increase in predictor; *ORs* smaller than one show the decrease in odds.
- Interpretable as an effect size; smaller effects have *ORs* closer to one (Tabachnick & Fidell, 2013)

# Findings: Vertical transfer

Variable in Adults	OR	% Change in Odds
Program: Transfer	2.47	 147%
Program: Limited entry	2.39	 139%
Program: Non-transfer	2.11	 111%
Any summer enrollment	1.44	 44%
FTIC	0.24	 -76%
No developmental Math or English	0.61	 -39%
Hispanic	0.67	 -33%
Increase entry age by 1 year	0.97	 -3%

\*In the second-to-last step of analysis completing a **college-level Math course** increased the odds of transfer by 60% ( $OR = 1.597$ ). After the uses-of-time block was introduced, college-level Math became non-significant.



# Findings: Baccalaureate Completion

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Variable in Adults	OR	% Change in Odds	
Program: Transfer	5.17	↑	417%
Program: Non-transfer	3.56	↑	256%
Asian	2.59	↑	159%
Any summer enrollment	1.99	↑	99%
Increase 1 <sup>st</sup> Year GPA by 0.10	1.93	↑	93%
FTIC	0.15	↓	-85%
Increase entry age by 1 year	0.97	↓	-3%

# Implications for theory

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## **Academic momentum matters for transfer:**

- Momentum plays a role in transfer and baccalaureate completion.
- Age and race/ethnicity also play a role in transfer and baccalaureate outcomes.

## **Academic momentum matters for adults:**

- Findings support the prior indications in the literature that adults respond differently than traditional-age students to some momentum variables.
  - 1<sup>st</sup> year credits, enrollment intensity, college-level English/Math, and enrollment breaks were non-significant
- Policies based on findings for traditional-age students may have unintended adverse effects on adults.

## **Test of momentum point framework:**

- The study tested the applicability of an adapted milestone and momentum point analytic framework as a straightforward tool for researchers to conduct and repeat longitudinal analyses using readily available administrative data.

# Implications for practitioners

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## Advising and intake:

- Incoming adults should be encouraged to **select degree programs** rather than remaining undecided.
- Even selecting a non-transfer-oriented program has a positive effect on transfer and baccalaureate completion, since student aspirations can change over time.
- Adults should be encouraged to take **Summer courses** to accelerate progress.

## Specialized support:

- **Adult first-time-in-college** (FTIC) students may need additional support or resources to provide “college knowledge.”
- **Underrepresented minority** students may need additional support to achieve transfer goals.

# Limitations of study

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- Based on a single institution
  - Not generalizable
- Heterogeneous sample of adults
  - Included non-degree students; four decades of age range
- Required individually matched student data from two sources
  - Failures to match can be random (incorrect data in matching fields) or non-random (students choosing to block reporting under FERPA)
- Six-year timeframe is very short to accomplish both transfer and baccalaureate completion
  - Right-censored successful outcomes are not included

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# Discussion / Q & A

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Thank you!

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