



How Can We Collaborate with Local Government to Foster Student Success?

An Exploration of the Indy Achieves Initiative

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What we plan to do...

- Background
- Methods
- Study Results
- Implications and Discussions



About IUPUI

- Fall 2020 enrollment (Indy only): 27,127
- First-time beginners: 3,331
 - 923 from Marion County
 - 1,305 Received Pell in first Fall
 - 576 21st Century Scholars
- External Transfers: 1,228
 - 459 from Marion County
 - 554 Received Pell in first Fall
 - 72 21st Century Scholars
 - 693 from Ivy Tech

About Indy Achieves

- A collaboration between the City of Indianapolis, EmployIndy, IUPUI, & Ivy Tech of Central Indiana
- Through Indy Achieves, Marion County students can receive renewable, 4-year Promise Scholarships that cover the tuition & fees and books & supplies not already covered by students' state, federal, and institutional gift aid.



About Indy Achieves

- Indy Achieves Promise Scholarship eligibility criteria:
 - Marion county home address at time of admission
 - Incoming Freshman or Transfer Student
 - Recipient of the state's Frank O'Bannon Grant or 21st Century Scholars Award
 - Expected Family Contribution (EFC) of $\leq 4,000$
 - Maintain full time enrollment
 - Maintain Satisfactory Academic Progress (SAP)
 - File a FAFSA by the state's April 15th deadline annually
 - Participate in Indy Achieves support programming, including student success coaching
 - Participate in Summer Bridge (if possible)
 - Consent to the release of their academic records to Indy Achieves (EmployIndy) for the purposes of tracking their progress toward their degree and their career success

About Indy Achieves

Promise Scholarship Awarding Formula:

(Tuition & Fees Budget)
+ (Books & Supplies Budget)
– (Federal Gift Aid)
– (State Gift Aid)
– (Institutional Gift Aid)
= Estimated Indy Achieves
Scholarship Amount

Minimum award amount: \$200

Average award amount: \$594



About Indy Achieves



- 2020-2021 Promise Scholarship Recipients:
 - 256 incoming freshman
 - 73 transfer students
 - 268 continuing students

Image Credit: [Indy Achieves: University College: IUPUI](#)

Spring 2021 Indy Achieves Recipients Overview at IUPUI

Metrics	Indy Achieves Promise Scholarship (N = 559)	Indy Achieves Completion Grant (N = 61)
21st Century Scholars	39% (217)	30% (18)
Frank O'Bannon Scholars	61% (342)	46% (28)
African American	30% (168)	21% (13)
Latinx	22% (121)	16% (10)
First Generation	48% (268)	46% (28)
Female	69% (383)	61% (37)
Cumulative GPA	2.89	3.15



Spring 2021 Indy Achieves Recipients Overview at Ivy Tech Indianapolis Campus

Metrics	Indy Achieves Promise Scholarship (N = 178)	Indy Achieves Completion Grant (N = 15)
African American	34%	40%
	(60)	(6)
Latinx	12%	7%
	(21)	(1)
Female	63%	64%
	(113)	(9)
Cumulative GPA	2.78	3.11

Indy Achieves Completion Grant Outcome

IUPUI:

- From Spring 2019 through Fall 2020, the Indy Achieves Completion grant helps 407 students to stay enrolled or graduated.
- In overall, about 43% have graduated and earned a bachelor degree.
- All 32 students who received this grant in summer 2020 have graduated and earned a bachelor degree (100% graduation rate).

Ivy Tech (Indianapolis Campus):

- From Spring 2019 through Fall 2020, 143 students received benefits of Indy Achieves Completion grant.
- 28% earned associates or certificates.

IUPUI Indy Achieves 21st Century

	All 21st Century Grant		2018 Comparison	2019 Comparison
	Recipients – new		Comparable Marion	21st Century new
	Beginners and	Fall 2019 Frank 21st	County 21st Century	students from
	Transfer Students	Century Indy Achieves	new students	surrounding counties
	N=786	Promise Scholars	N=165	N=182
	Fall 2019	N=199		
HS GPA	3.43	3.44	3.30	3.35
High School Honors Diploma	69%	67%	56%	55%
Direct Admit to Degree Granting School	34%	30%	32%	32%
African American	18%	32%	36%	10%
Latinx	25%	33%	19%	9%
First Generation	49%	57%	56%	28%
Woman	65%	68%	61%	60%
Unmet Financial Need First Fall (CDS Definition)	\$4,913	\$5,073	\$5,833	\$4,736
Federal Pell Grant	85%	100%	99%	100%
Lived in Campus Housing	37%	21%	32%	17%
Student Success Outcomes				
Fall-Fall Retention Any IU	74%	76%	60%	74%
Fall-Fall Retention IUPUI IN	72%	76%	60%	72%
Fall-Fall Retention IUPUI IN and AY GPA => 2.00	63%	64%	52%	64%
Academic Year (Fall, Spring, and Summer) Cumulative GPA	2.52	2.47	2.05	2.49
Academic Year Cumulative GPA < 2.00	25%	28%	43%	28%

Note 1: Missing cases are excluded.

Note 2: The Common Data Set definition of unmet financial need includes federal subsidized loans, gift aid, scholarships, and State/Federal aid.

Note 3: Bolded and italicized items are significantly different from 2019 Indy Achieves O'Bannon group based on either an independent samples t-test, chi square test results ($p < .05$). Bolded items are practically significant based on magnitude of difference.



IUPUI Indy Achieves O'Bannon

	All O'Bannon Grant Recipients – new Beginners and Transfer Students N=786 Fall 2019	Fall 2019 Frank O'Bannon Indy Achieves Promise Scholars N=199	2018 Comparison Comparable Marion County O'Bannon new students N=165	2019 Comparison O'Bannon new students from surrounding counties N=182
HS GPA	3.40	3.35	3.37	3.41
High School Honors Diploma	61%	51%	58%	57%
Direct Admit to Degree Granting School	42%	40%	33%	46%
African American	15%	25%	20%	4%
Latinx	16%	22%	22%	9%
First Generation	44%	50%	59%	38%
Woman	63%	66%	62%	60%
Unmet Financial Need First Fall (CDS Definition)	\$8,960	\$7,821	\$6,050	\$8,444
Federal Pell Grant	99%	99%	100%	100%
Lived in Campus Housing	28%	12%	11%	20%
Student Success Outcomes				
Fall-Fall Retention Any IU	76%	73%	74%	80%
Fall-Fall Retention IUPUI IN	72%	73%	73%	76%
Fall-Fall Retention IUPUI IN and AY GPA => 2.00	63%	64%	68%	69%
Academic Year (Fall, Spring, and Summer) Cumulative GPA	2.56	2.45	2.54	2.72
Academic Year Cumulative GPA < 2.00	26%	28%	24%	21%

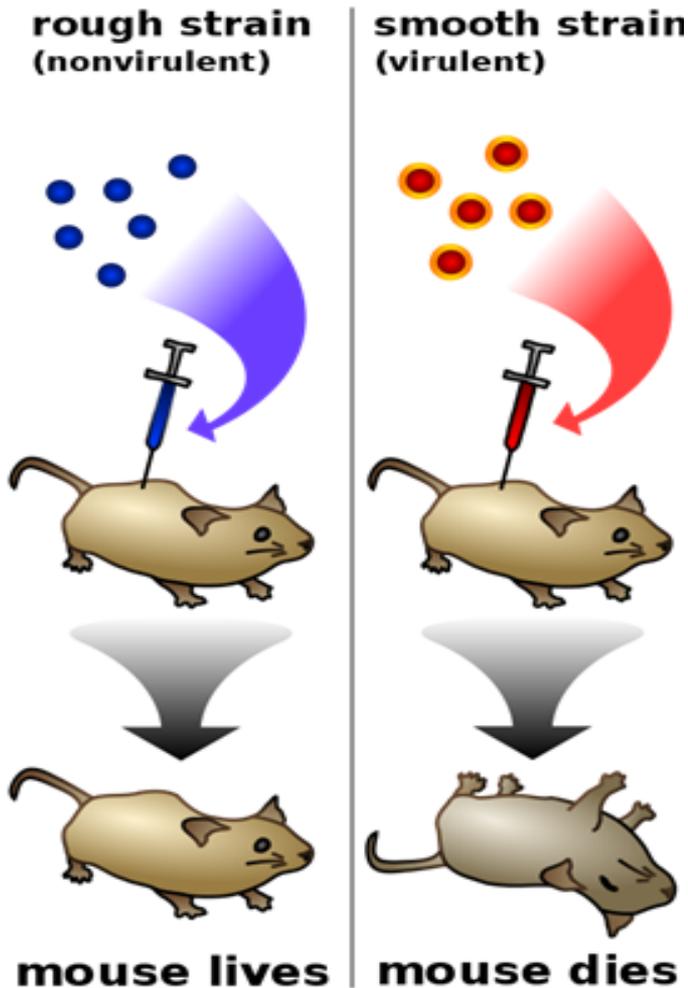
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Implying Causal Inferences



Propensity Score Matching (PSM)

Allow **causal inferences** from non-experimental (quasi-observational) studies.

Minimize **selection bias** and other confounding factors such as gender, race and socioeconomic status.

Image Source: Wikipedia



Propensity Score Matching (PSM)

Process in PSM

- The logistic regression model was used to estimate the probability that a student would have been a program participant. This probability is called the propensity score.

$$e(x) = \Pr(T = 1 \mid X = x)$$



Propensity Score Matching (PSM)

Process in PSM

- Recommended sample size – $n=100$ in each group.
- Specified a list of confounding variables that may be related to both the treatment assignment and the outcome.
- Fit a logistic regression model, which in turn, was used to estimate the probability that a student would have been an Indy Achieves participant. This probability is called the propensity score.
- Students with exact or similar propensity scores were paired. Our study - nearest neighbor 1:1 matching: one 'treated' subject matched with one 'control' subject.
- Test assumptions.
- After a treatment group and control group have been defined, t-tests and chi-square tests were performed to compare retention rates and GPA between the two groups.



Process in PSM – O'Bannon Indy Achieves

232 non-participants (outside of Marion county)

were matched 232 participants based on the following characteristics:

- Z-score of SAT
- Received an Indiana Honors Diploma (Y/N)
- Identifies as African American (Y/N)
- Identifies as Latinx (Y/N)
- Admit type (new beginner Y/N)
- Standardized high school GPA/transfer GPA
- Unmet Need (ordinal, bands of \$10,000)
- Directly admitted to school of major (Y/N)
- Living in Campus Housing (Y/N)
- First Generation (Y/N)

Important to Note!

Do not include program outcomes in the model such as retention.

Be careful about covariates that perfectly predict program participation, which could cause complete or quasi-complete separation of data points.



O'Bannon Group Comparisons

	O'Bannon Indy Achieves	PSM Comparison group
New External Transfers	33.6% (78)	35.3% (82)
Earned Indiana Honors Diploma	45.7% (106)	47.8% (114)
African American	26.3% (61)	20.3% (47)
Latinx	22.0% (51)	22.4% (55)
First Generation	49.6% (115)	49.1% (114)
Direct Admit	39.7% (92)	38.4% (89)
Living in Campus Housing	10.8% (25)	10.8% (25)



O'Bannon Group Comparisons

	O'Bannon Indy Achieves	PSM Comparison group
High School GPA	3.34 (183)	3.34 (173)
Transfer GPA	3.01 (50)	3.07 (78)
Average SAT	1036 (177)	1051 (178)
Unmet Need (Common Data Set definition)	\$8,190 (232)	\$9,069 (232)



Process in PSM – 21st Century Indy Achieves

**221 non-participants (outside of Marion county) were matched
221 participants** based on the following characteristics:

- Z-score of SAT
- Received an Indiana Honors Diploma (Y/N)
- Identifies as African American (Y/N)
- Identifies as Latinx (Y/N)
- Admit type (new beginner Y/N)
- Standardized high school GPA/transfer GPA
- Unmet Need (ordinal, bands of \$10,000)
- Directly admitted to school of major (Y/N)
- Living in campus housing (Y/N)
- First Generation (Y/N)



21st Century Scholar Group Comparisons

	21st Century	
	Scholar	Indy Achieves
	PSM Comparison group	
New External Transfers	5.9% (13)	7.2% (16)
Earned Indiana Honors Diploma	67.9% (150)	64.3% (142)
African American	30.3% (67)	25.8% (57)
Latinx	34.4% (76)	32.6% (72)
First Generation	59.3% (131)	57.0% (126)
Direct Admit	27.2% (60)	27.6% (61)
Campus Housing	19.9% (44)	22.6% (50)



21st Century Scholar Group Comparisons

	21st Century Scholar Indy Achieves	PSM Comparison group
High School GPA	3.44 (216)	3.41 (212)
Transfer GPA	3.18 (10)	2.96 (15)
Average SAT	1031 (217)	1036 (217)
Unmet Need (Common Data Set definition)	\$4,919 (221)	\$4,702 (221)



Results – Indy Achieves O'Bannon on Outcomes

Variable	N	Raw GPA	Adjusted GPA*	Retained next Fall	Retained with GPA of 2.0 or greater
Indy Achieves	232	2.51	2.60	75.9%	66.0%
Matched group	232	2.47	2.59	73.7%	59.5%

* Adjusted for Incoming GPA (Z-transformed), Admit type, Unmet need (divided by \$1,000, Living in campus housing, earned Indiana Honors Diploma)

No differences were statistically significant.



Results – Indy Achieves O'Bannon on AY GPA

Variable	SS III	df	Mean Square	F
Indy Achieves	0.01	1	0.33	0.01
Incoming GPA (Z transformed)	3.10	1	8.88	3.10
Admit Type (TRU)	30.88	1	24.11	30.90*
Unmet Need (divided by \$1,000)	60.41	1	59.29	60.41*
Campus Housing	0.02	1	0.25	0.02
Indiana Honors diploma	0.01	1	0.01	0.01
Black	4.49	1	4.49	4.50*
within	454.68	456	1.00	
Total	550.52	463		

$R^2 = 0.17$ $N = 464$



Results – Indy Achieves O'Bannon on Retention at Indianapolis campus

Variable	b	Standard error	Odds Ratio
Indy Achieves	0.03	0.11	1.05
Incoming GPA (Z transformed)	0.17	0.17	1.19
Admit Type (TRU) *	0.60	0.15	3.29
Unmet Need (divided by \$1,000)*	-0.11	0.02	0.89
Campus Housing	0.53	0.39	1.70
Indiana Honors diploma	0.02	0.27	1.02
African American	-0.10	0.27	0.91
intercept	2.16		

-2 LL empty: 524.03

N=464

-2 LL full: 485.86

McFadden's $R^2 = 0.07$



Results – Indy Achieves O'Bannon on Retention in good academic standing (at least 2.0 GPA)

Variable	b	Standard error	Odds Ratio
Indy Achieves	0.14	0.10	1.31
Incoming GPA (Z transformed)	0.16	0.15	1.17
Admit Type (TRU) *	0.68	0.14	3.92
Unmet Need (divided by \$1,000)*	-0.11	0.02	0.89
Campus Housing	0.20	0.33	1.23
Indiana Honors diploma	0.17	0.25	1.18
African American	-0.44	0.25	0.64
intercept	1.63		

-2 LL empty: 612.90

N=464

-2 LL full: 559.50

McFadden's $R^2 = 0.09$



Results – Indy Achieves 21st Century on Outcomes

Variable		Raw GPA	Adjusted GPA*	Retained next Fall	Retained with GPA of 2.0 or greater
Indy Achieves	221	2.45	2.58	76.5%	64.7%
Matched group	221	2.54	2.64	73.3%	62.4%

* Adjusted for Incoming GPA (Z-transformed), Admit type, Unmet need (divided by \$1,000, Living in campus housing, earned Indiana Honors Diploma)

No differences were statistically significant.



Results – Indy Achieves 21st Century on AY GPA

Variable	SS III	df	Mean Square	F
Indy Achieves	0.42	1	0.42	0.46
Incoming GPA (Z transformed)	26.01	1	26.01	28.27*
Admit Type (TRU)	1.95	1	1.95	2.12
Unmet Need (divided by \$1,000)	44.91	1	44.91	48.82*
Campus Housing	2.12	1	2.12	2.31
Indiana Honors diploma	1.00	1	1.00	1.08
within	389.14	423	0.92	
Total	478.16	429		

$R^2 = 0.19$ N=430



Results – Indy Achieves 21st Century on Retention at Indianapolis campus

Variable	b	Standard error	Odds Ratio
Indy Achieves	0.12	0.12	1.28
Incoming GPA (Z transformed)*	0.43	0.21	1.53
Admit Type (TRU) *	0.83	0.34	5.28
Unmet Need (divided by \$1,000)*	-0.15	0.02	0.86
Campus Housing	0.55	0.31	1.74
Indiana Honors diploma	-0.11	0.27	0.90
intercept	2.25		

-2 LL empty: 498.20

-2 LL full: 438.62

McFadden's $R^2 = 0.12$

N=442



Results – Indy Achieves 21st Century on Retention in good academic standing (at least 2.0 GPA)

Variable	b	Standard error	Odds Ratio
Indy Achieves	0.08	0.11	1.18
Incoming GPA (Z transformed)*	0.66	0.20	1.93
Admit Type (TRU) *	0.40	0.24	2.24
Unmet Need (divided by \$1,000)*	-0.18	0.02	0.83
Campus Housing*	0.61	0.29	1.85
Indiana Honors diploma	0.11	0.25	1.11
intercept	1.03		

-2 LL empty: 579.75

-2 LL full: 486.92

McFadden's $R^2 = 0.16$

N=442



Effects by program

All 21st Century Scholars receive comprehensive support from IUPUI 21st Century Scholars Success Program

- Peer mentoring
- Success coaching
- Perhaps reason for no difference

Indy Achieves O'Bannon Scholars receive success coaching through EmployIndy

- Other O'Bannon students may not receive peer mentoring and success coaching
- May contribute to outcomes



Additional Conclusions

Unmet financial need matters

- More unmet financial need --> worse outcomes

We need better data!

- Dosage effects
- Student feedback/Qualitative

Effects of Marion county?

Pandemic as confounding variable

- Will effects be different?



Implications for Practice

Success coaching seems to be helping O'Bannon students

- Early results are positive

Find ways to reduce unmet financial need

- Has a significant impact on all outcomes



Questions?

Image Credit: IUPUI Center for Service and Learning



IUPUI

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