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Exploring On-Campus Student Employment and Student Success

What we plan to do...

- Background
- Methods
- Study Results
- Implications and Discussions



Background

- Who are our student workers?
- Who do they work for?
- How many hours do they work per week?
- How much are they getting paid?
- What is the impact of on-campus employment and student success?



Methodology

- Undergraduate students who were enrolled at Fall, 2017 who held any type of student hourly or contract position on campus between Aug, 2017 and April, 2018.
- Types of on-campus employment include resident hall managers, research assistants, orientation leaders, and Federal Work Study.
- For RC unit and wage information, we consulted pay stub and job records from the Quali Financial Systems (KFS) and Human Resource Management System (HRMS) between Aug, 2017 and April, 2018.



Undergraduate Students Employed on Campus, Fall 2017

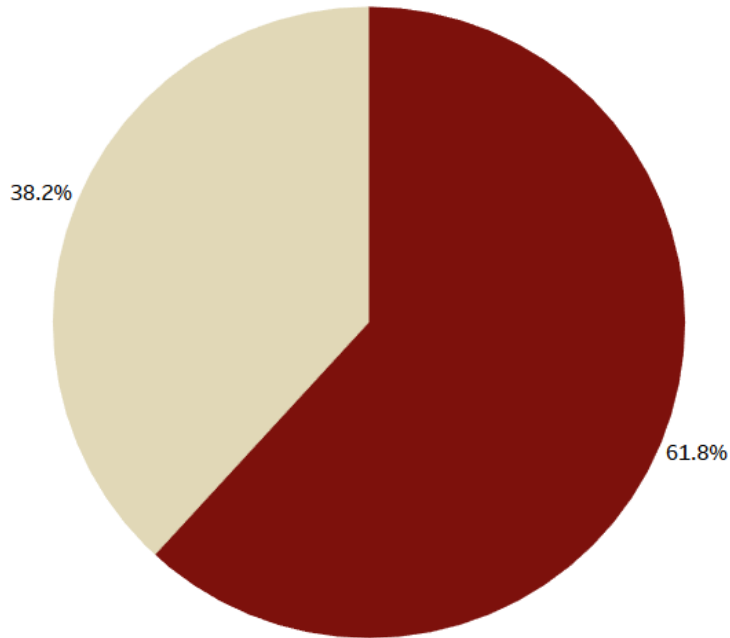
	Student Employees		All Undergraduate Students
	#	%	
Bachelor's Degree Seeking	2,225	11.6	19,177
Not Bachelor's Degree Seeking	28	2.8	1,009
Total	2,253	11.2	20,186

- **2,253 (11.2%)** of Fall, 2017 enrollees were employed in an on-campus student hourly or contract position during the 2017-18 fiscal year.

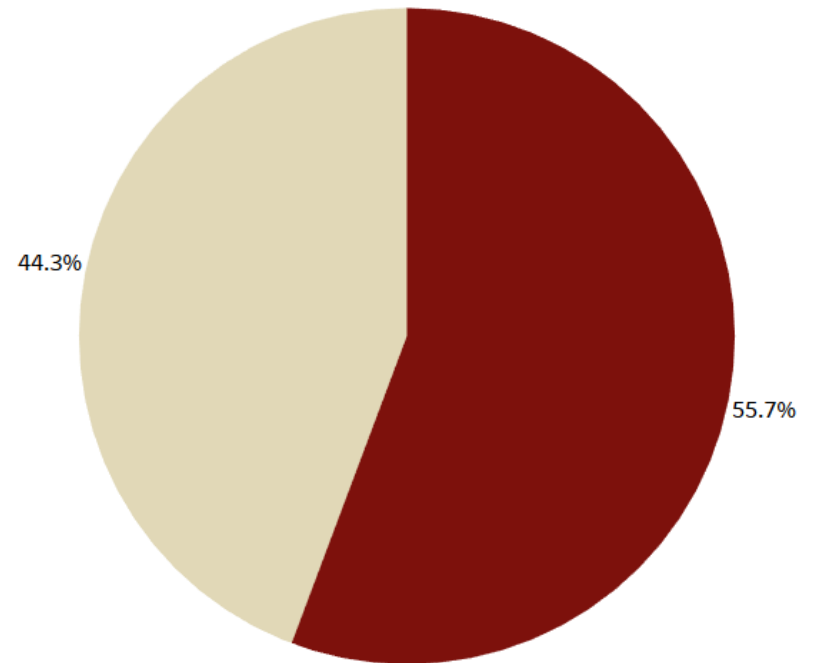


Who are our student workers?

Student Workers



Overall Undergraduate Population



Male

Female



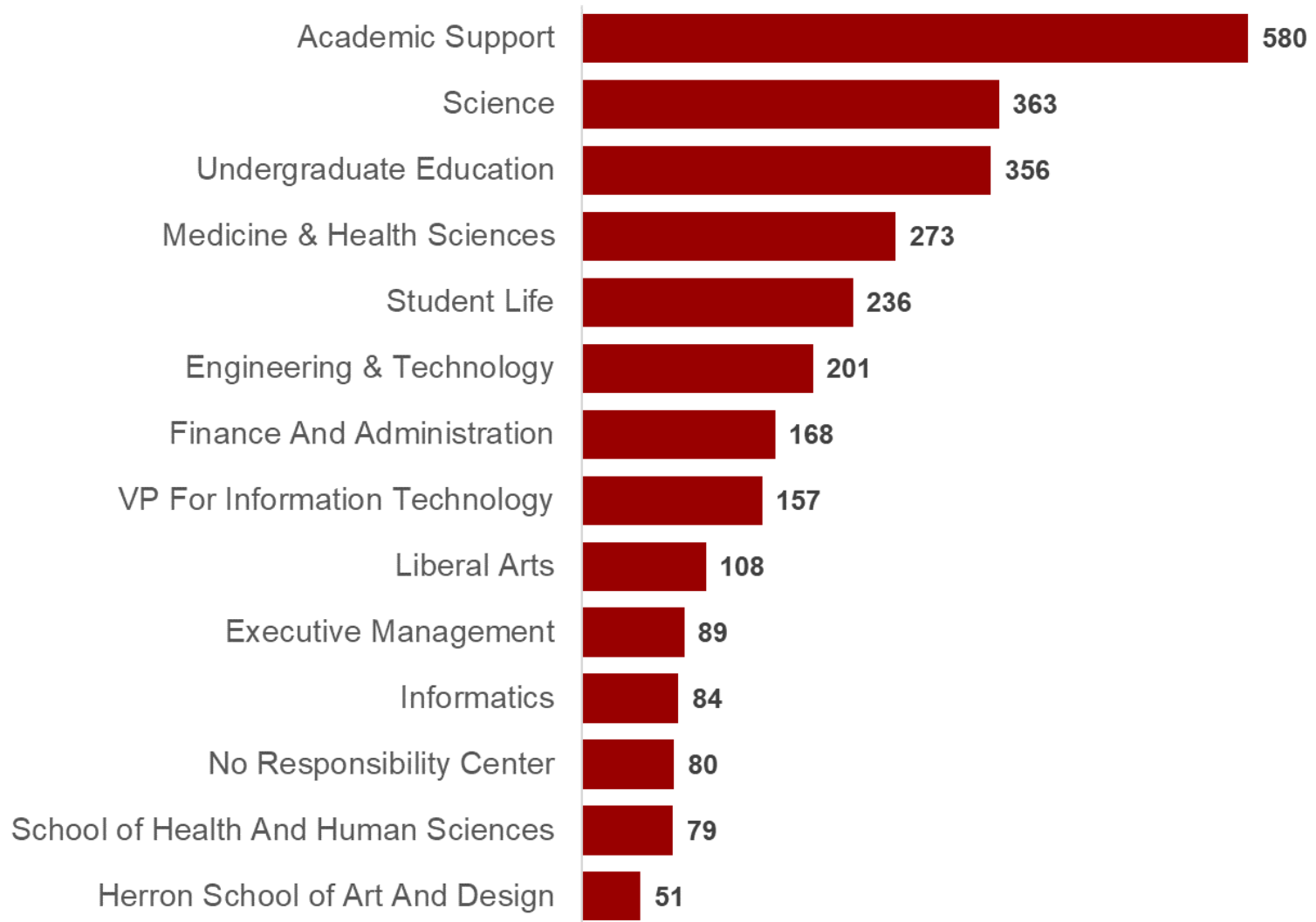
Are Students who Work on Campus different from those who do not?

Compared to Fall, 2017 students who were not employed on campus, those who were employed significantly ($\alpha \leq 0.01$):

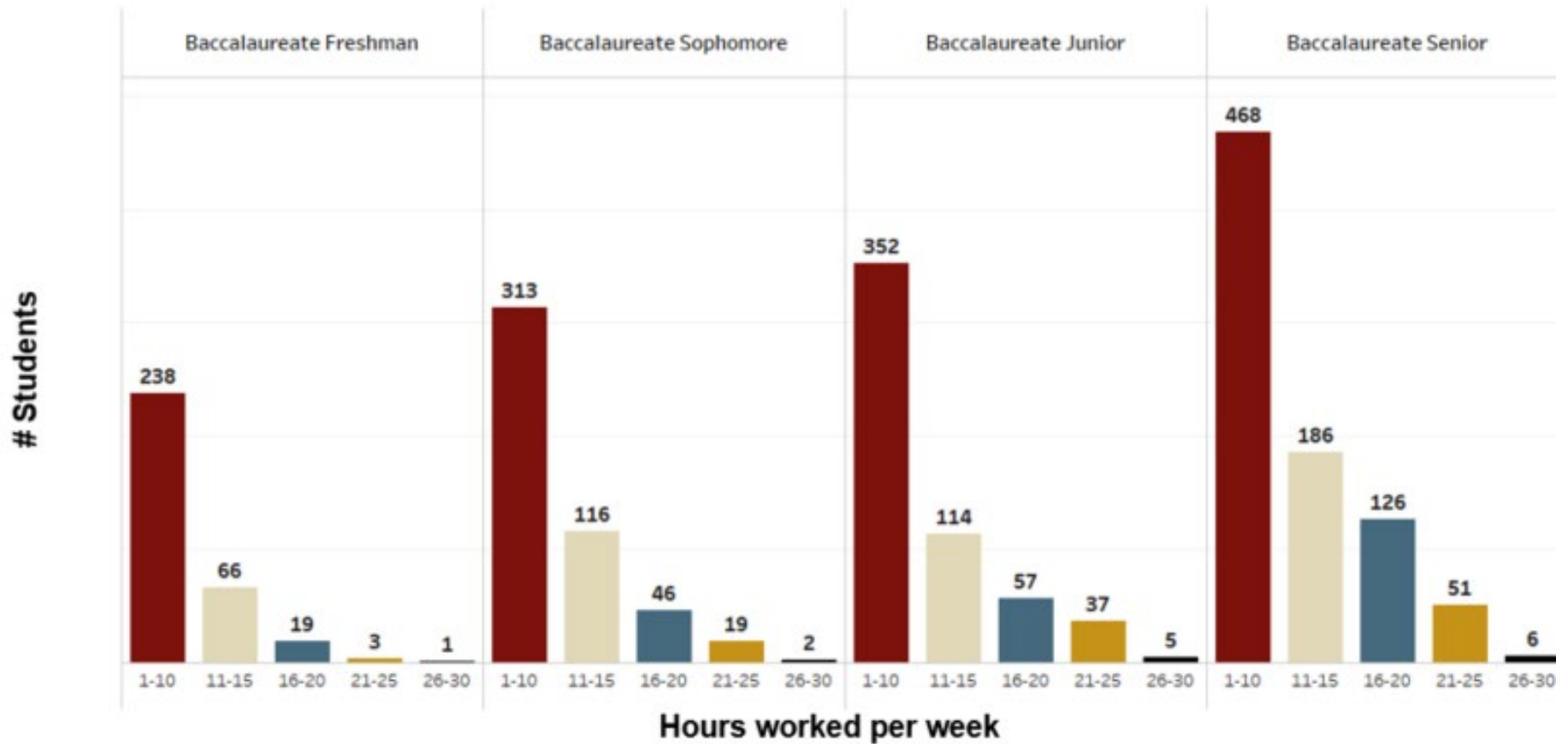
- More likely to be female (62% compared to 55%)
- More likely to be Asian (6% compared to 4%)
- More likely to be Latino/Hispanic (9% compared to 8%)
- More likely to be younger, between 17 to 24 years of age (91% compared to 81%)
- More likely to live on campus housing (18% compared to 11%)
- More likely to be a Pell recipient in the 2017-18 AY (41% compared to 35%)
- Have lower levels of unmet need (mean of 3.8k compared to 5.2K)
- Be more academically prepared, with higher SAT scores (mean of 1095 compared to 1035) and a higher high school or transfer GPA



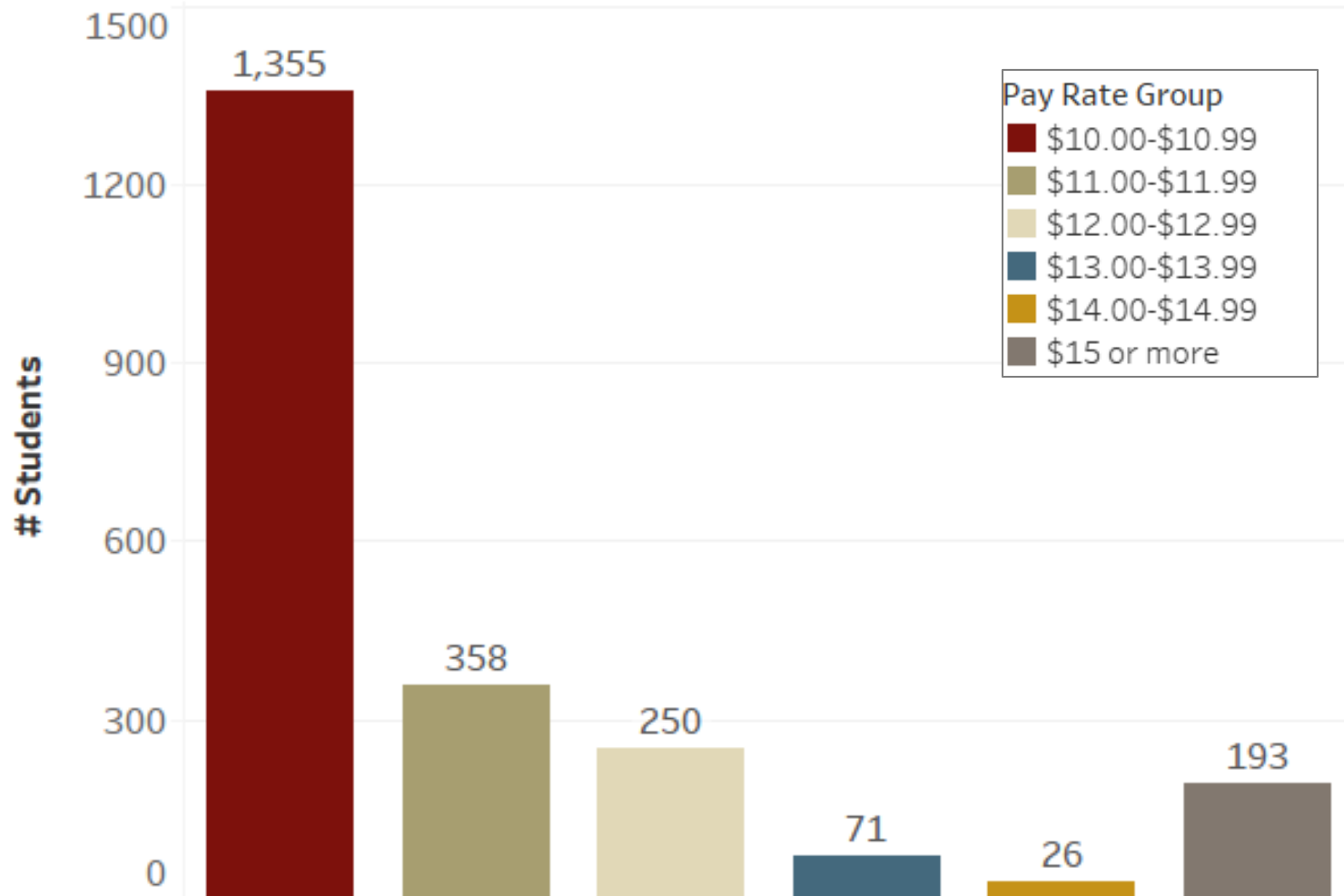
Student Employees by RC Units



Average Hours Worked Per Week by Class Level



Average Pay



Pay Rate Gap

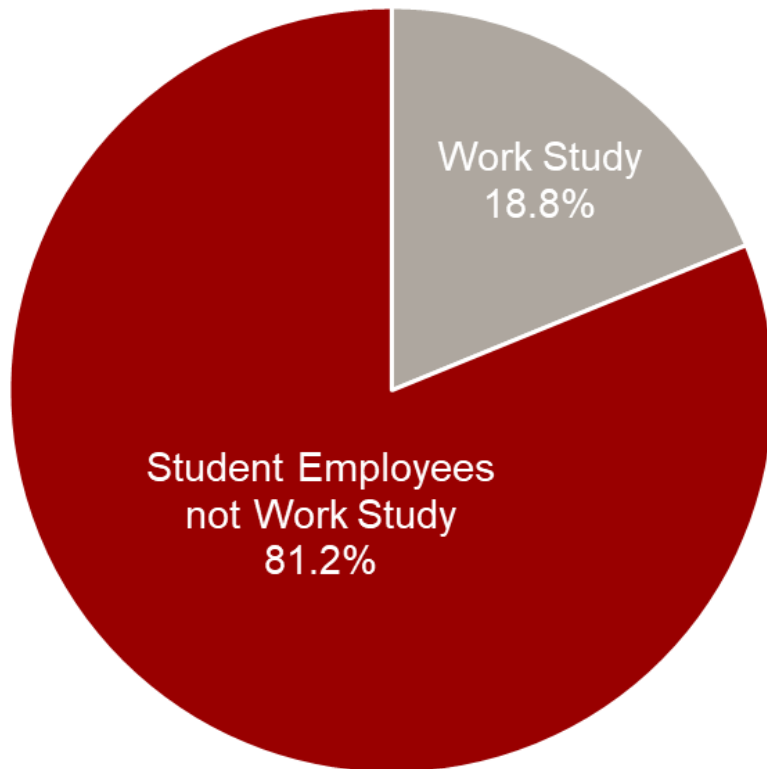
- The average wage for African American students is lower than other groups. The average wage for female students is lower than males.
- data on the type of position or job responsibilities is not available on HRMS.

	Average Pay Rate	# Students
Female	\$11.28	1,393
Male	\$11.62	860
Total Student Employees	\$11.41	2,253

	Average Pay Rate	# Students
American Indian/Alaska Native	\$12.00	1
Asian	\$11.54	134
Black/African American	\$10.96	240
Hispanic/Latino	\$11.13	212
International	\$11.04	98
Native Hawaiian/Pacific Island	\$11.11	3
Two or More Races	\$11.11	96
White	\$11.56	1,465
Unknown	\$10.95	4
Total Student Employees	\$11.41	2,253



Federal Work Study Students



- 424 students participated in the Federal Work-Study Program.
- Work-Study students were more likely to be African American, female and first generation compared to the overall student population.
- Work-Study students showed higher retention rates than students not employed on campus:
 - 73.2 percent vs. 66.0 for retention within IUPUI
 - 82.1 percent vs. 70.3 percent for retention within the IU system.
- However, their retention rate at IUPUI is about **14 percentage points lower** compared to other student workers.



One-Year Retention

Fall 2017 First-Time, Full-and Part-time Students

	Retained at IUPUI	Retained at any IU campus	All IUPUI First-time, Full-time & Part-time Beginners
Student Employee	243 (81.5%)	256 (85.9%)	298 (100.0%)
Not Employed on Campus	2,295 (66.0%)	2,443 (70.3%)	3,477 (100.0%)

- For first-time, full- and part-time cohort, the retention rate for student employees was approximately **16 percentage points higher** than their IUPUI peers who were not employed.



One-Year Retention Fall 2017 Undergraduate Students

	Retained at IUPUI	Retained at any IU campus	Grand Total
Employed on Campus	2,090 (92.8%)	2,117 (94.0%)	2,253 (100.0%)
Not Employed on Campus	14,053 (78.8%)	14,379 (80.7%)	17,827 (100.0%)

- For all Fall, 2017 undergraduates, the retention rate for student employees was approximately **14 percentage points higher** than their IUPUI peers who were not employed.



How do we minimize
Selection Bias?

Does Working on Campus
Increase One-year Retention
Among Student Workers?

Confounding Factors?



Implying Causal Inferences

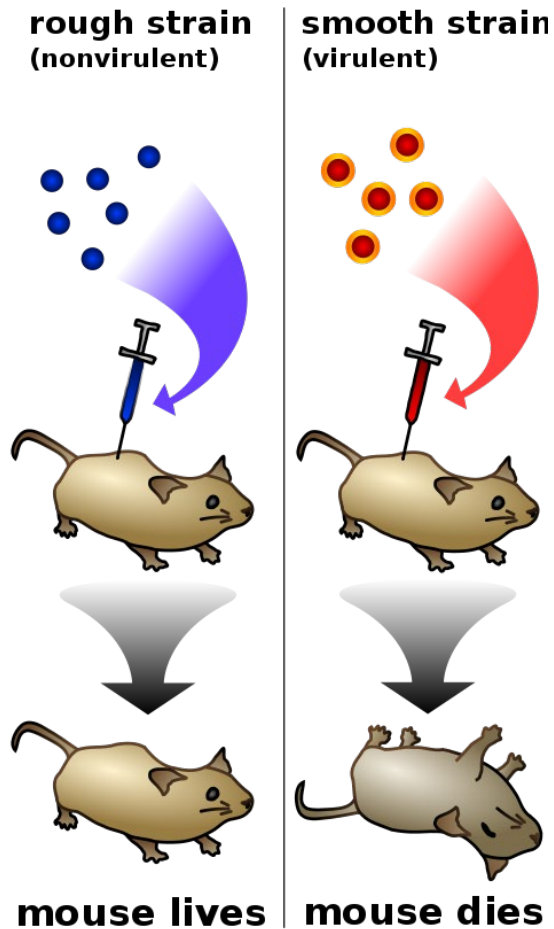


Image Source: Wikipedia

Propensity Score Matching (PSM)

- Allow causal inferences from non-experimental (observational) studies.
- Minimize selection bias and other confounding factors such as gender, race and socioeconomic status.

Propensity Score Matching (PSM)

Process in PSM

1. Identify appropriate data set (> 200 students).
2. Define treatment and control group and outcome.
3. Select covariates of interest based on literature or past studies:
 - Gender, race/ethnicity, unmet financial need, high school GPA
4. Run algorithms to estimate a **propensity score** for each student.
5. Students with exact or similar scores will be matched against each other.
6. Run statistical analysis to compare retention rates between the matched groups.



Propensity Score Matching (PSM) - Example

	STUDENT EMPLOYEE	NOT STUDENT EMPLOYEE
	Student A	Student B
Gender	Female	Female
Ethnicity	Latina	Latina
Age	20	20
# Term Credits Taken	18	17
SAT Composite Score	1030	995
Class Standing	Junior	Junior
School	School of Science	School of Science
Major	Biology BS	Biology BS
Unmet Need Amount	\$453	\$600
Pell Received	Yes	Yes
First Generation	Yes	Yes
Propensity Score	0.41088	0.41088



Outcomes

Propensity Score Adjusted Comparison Of Outcomes Among Student Workers and Non-Student Workers

	Retained at IUPUI		Total # Students
	#	%	
NOT STUDENT EMPLOYEE	1,763	86.6%	2,037
STUDENT EMPLOYEE	1,904	93.5%	2,037
Difference¹		7.1%*	

¹ Average treatment effect among student workers.

* Difference is statistically significant at alpha = 0.05 level.

There was a 7.1 percentage point increase in fall-to-fall retention at IUPUI as a result of working on campus. This difference is statistically significant.



What's Next?

- Study results can be used in internal marketing campaigns aimed at incentivizing on-campus employment for students.
- Creating a better data infrastructure that reduces manual clean-up time on the data side.
- Type of position or job responsibilities could be better documented for student workers.
- Creating an institutional culture that promotes the success of working students.



What's Next?

- Further examine salary inequities that currently disadvantage female students and students of color.
- What are we doing for students whose financial needs can only be met by working off-campus?
- How do retention/GPA look like for off-campus student employees?
- Aligning on-campus work positions with PLUS.



Questions?



References

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