

A photograph of a university campus. In the foreground, there are vibrant red and purple flowers. In the middle ground, two students with backpacks are walking away from the camera. In the background, a large blue statue of a person is visible, along with a modern building and trees.

# SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

## Work Harder, Stay Longer? Student Work and Retention

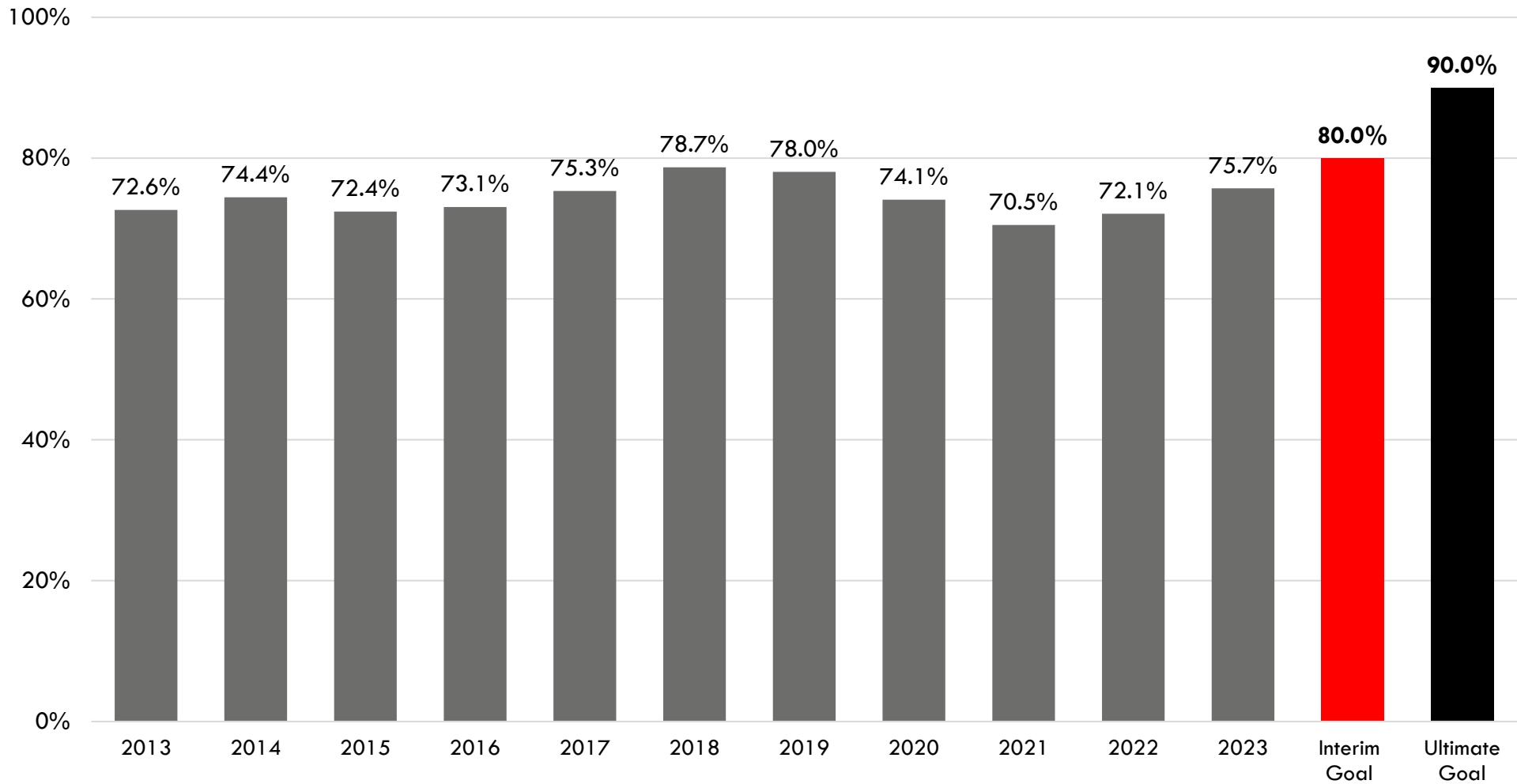
Enrollment Management:  
January 14, 2025

# Overview of Student Work

- It has been argued that student work (generally in the form of federal work study) shows promise for enhancing student persistence and deserves more institutional and public policy attention.
- Federal work study (FWS):
  - Provides opportunity and structure including guidance on acceptable duties and establishing a cap on the amount of time students can work per week
  - Requires that the work is related to the student's educational goal
  - Can be considered a high-impact practice
- Unfortunately, little attention has been paid to the effects of on-campus employment that is not funded by the federal work study program.
- Student work (in all forms) may strengthen students' attachment to the institution (social integration), which may increase retention ([Tinto, 1975](#)).
- Obvious financial benefits associated with student work, which augment traditional financial aid

# Retention Trends at SIUE

Fall to Fall Retention among First-Time Full-Time Cohorts

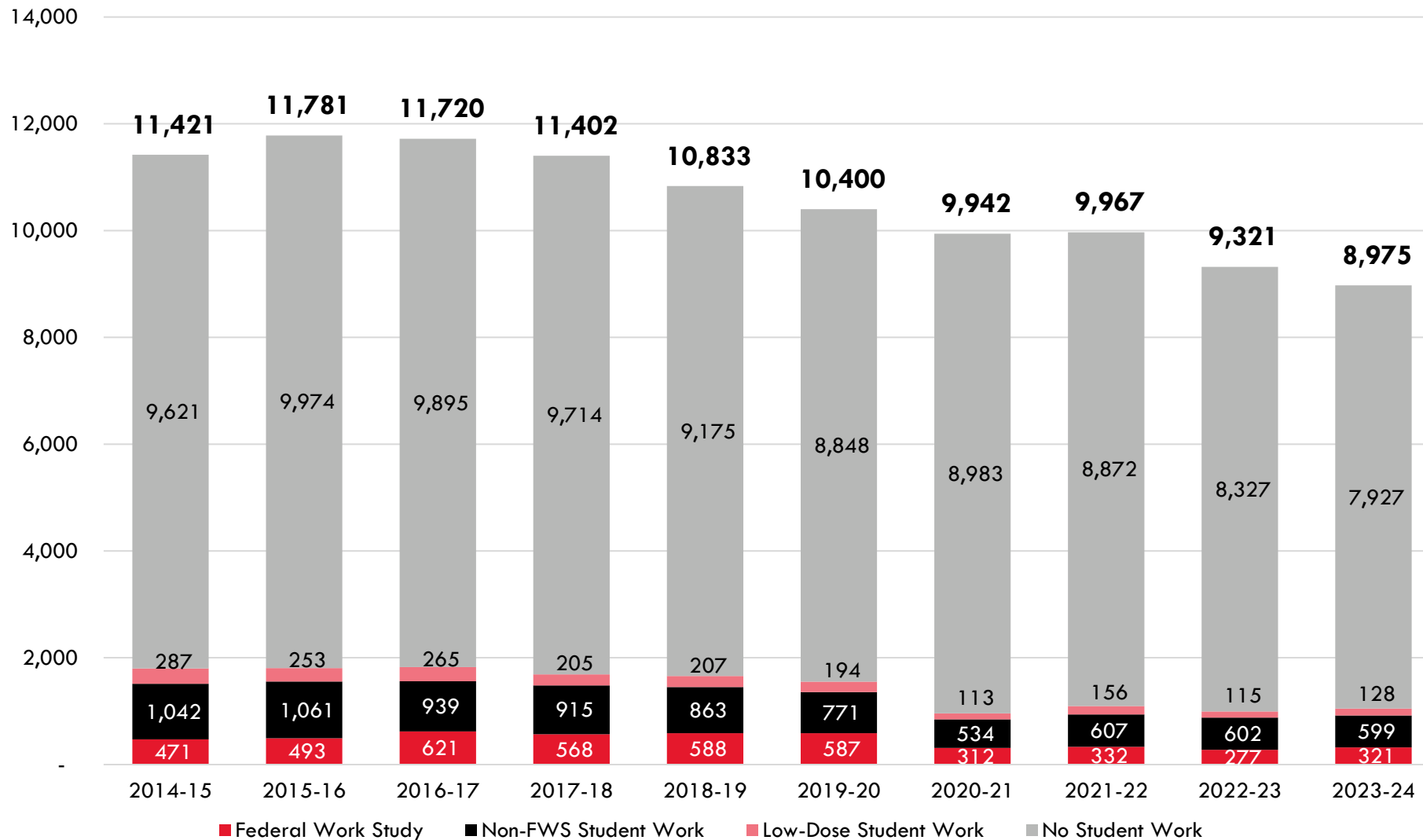


# Operational Definition of Student Work Status among SIUE Undergraduates

- **Student worker:** student employees with any on-campus employment their first year of attendance.
- **Federal work study:** student employees whose wages are primarily subsidized by the federal work study program and work for at least half the payrolls of a fall or spring term in the students' first year of attendance (high dose).
- **Non-FWS student worker:** student employees whose wages are primarily paid through funds apart from the federal work study program and work for at least half the payrolls of a fall or spring term in the students' first year of attendance (high dose).
- **Low-dose student worker:** student employee who worked for fewer than half of the payrolls of a normal term in the students' first year of attendance.

# The number of undergraduate student workers at SIUE had been trending downward, slight increase in 2023-24

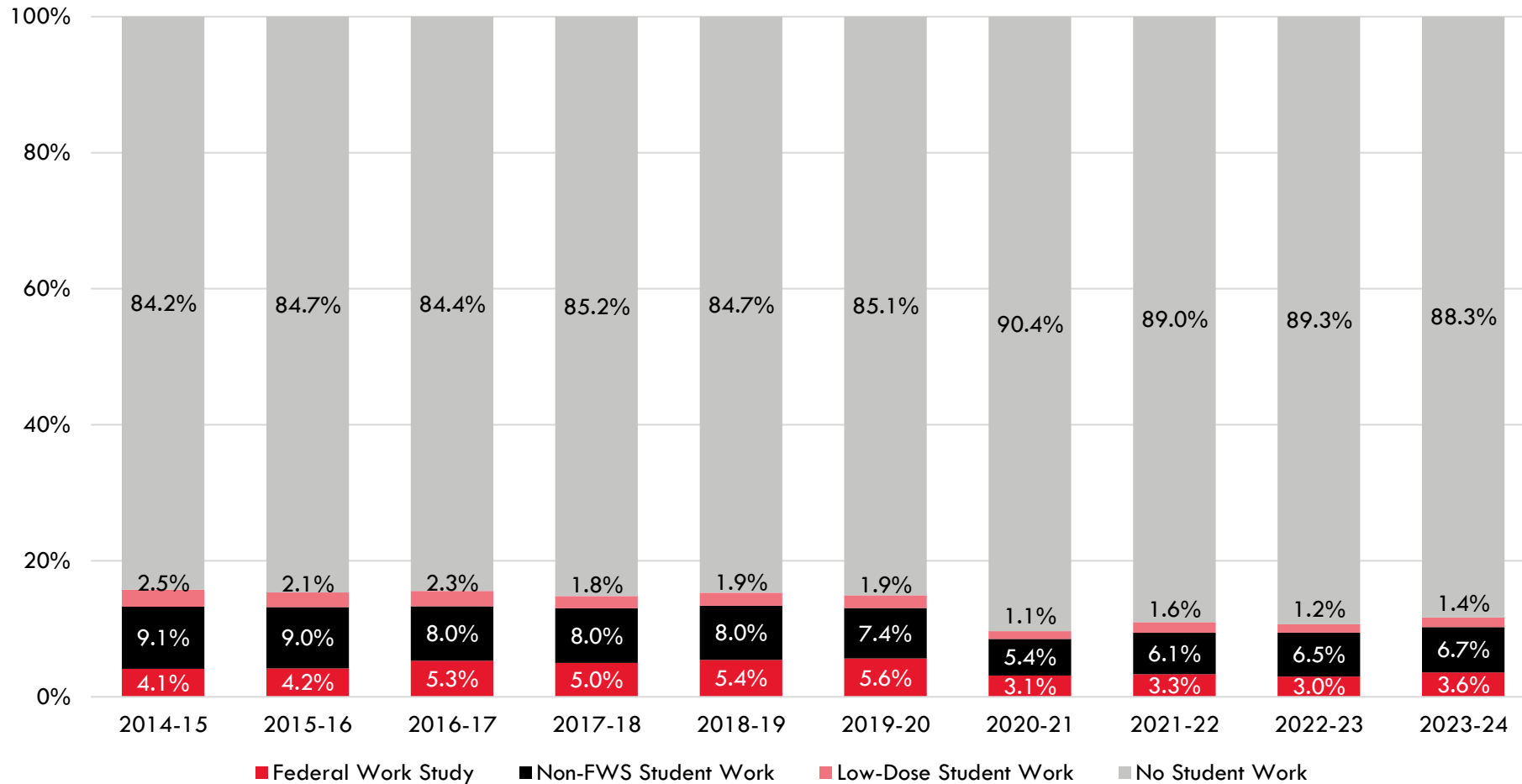
Student Work Status among SIUE Undergraduates: 10-Year Trend



Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.

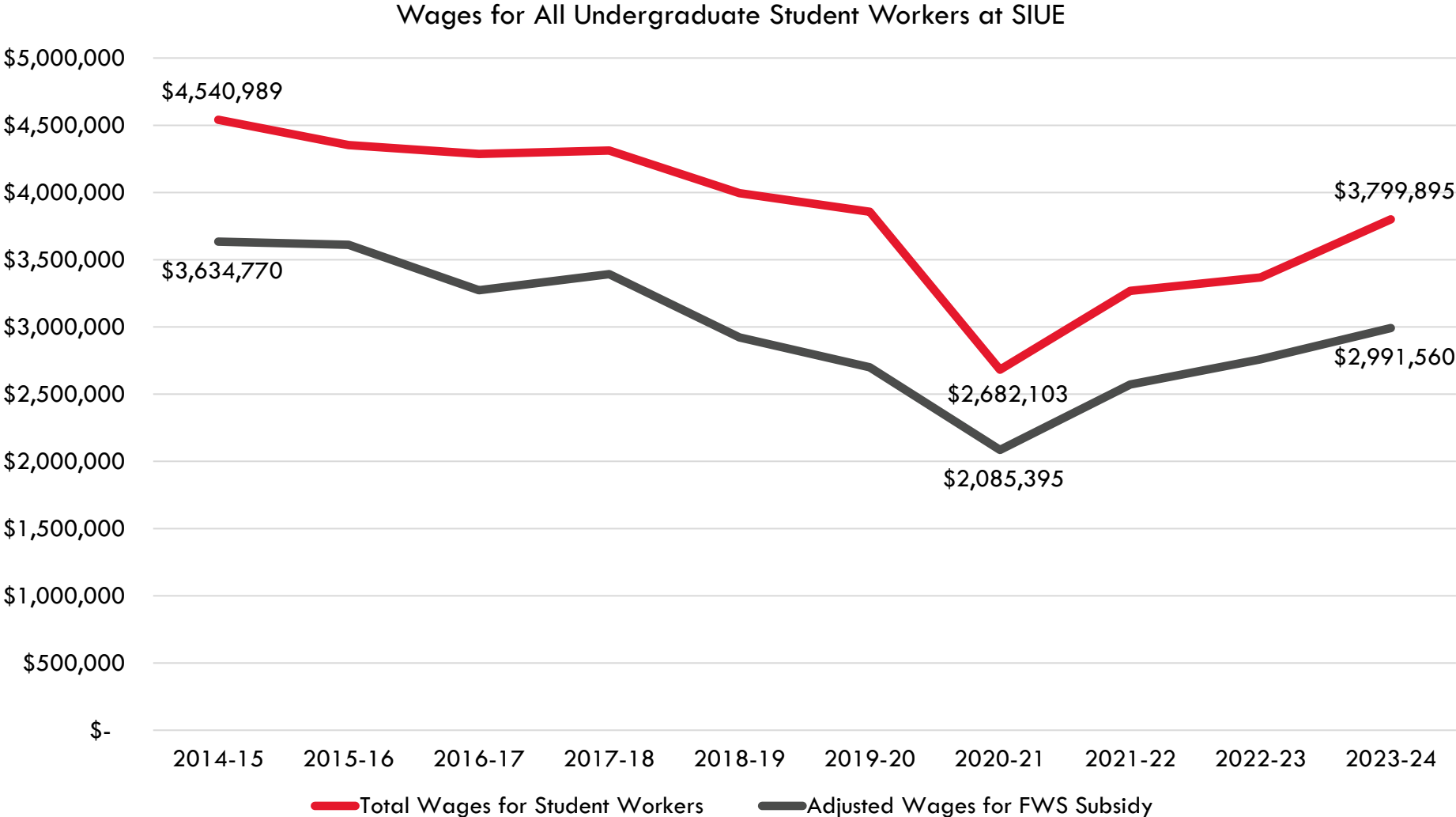
# The proportion of undergraduates involved in student work was mostly steady until the pandemic, with slight increases the last three academic years

Student Work Status among SIUE Undergraduates: 10-Year Trend



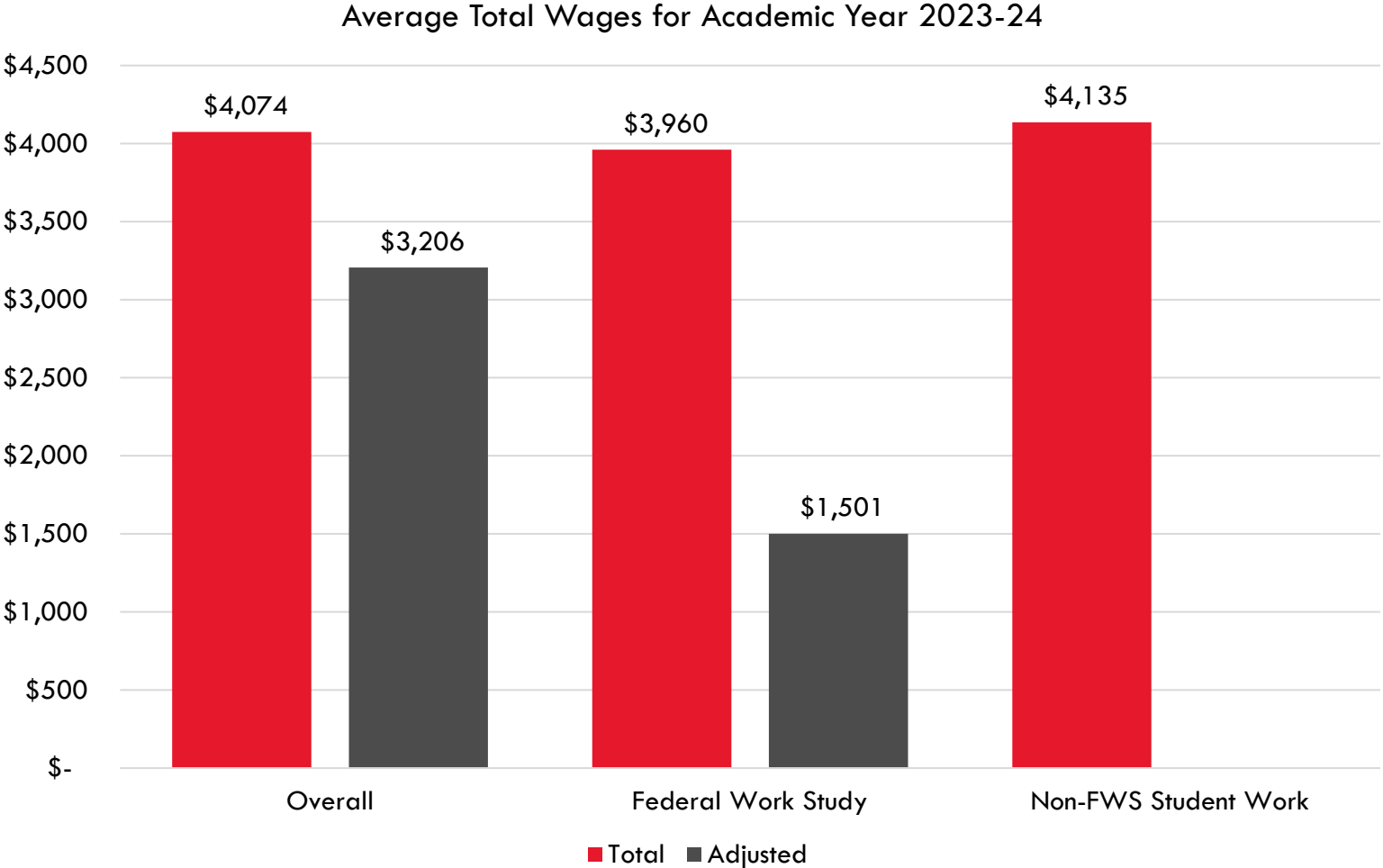
Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.

# Total wages for all SIUE student workers has been trending higher since the pandemic, but still well below 2014-15 levels



Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.

# With the large federal subsidy, what SIUE pays to students on Federal Work Study is substantially lower than their overall wages.

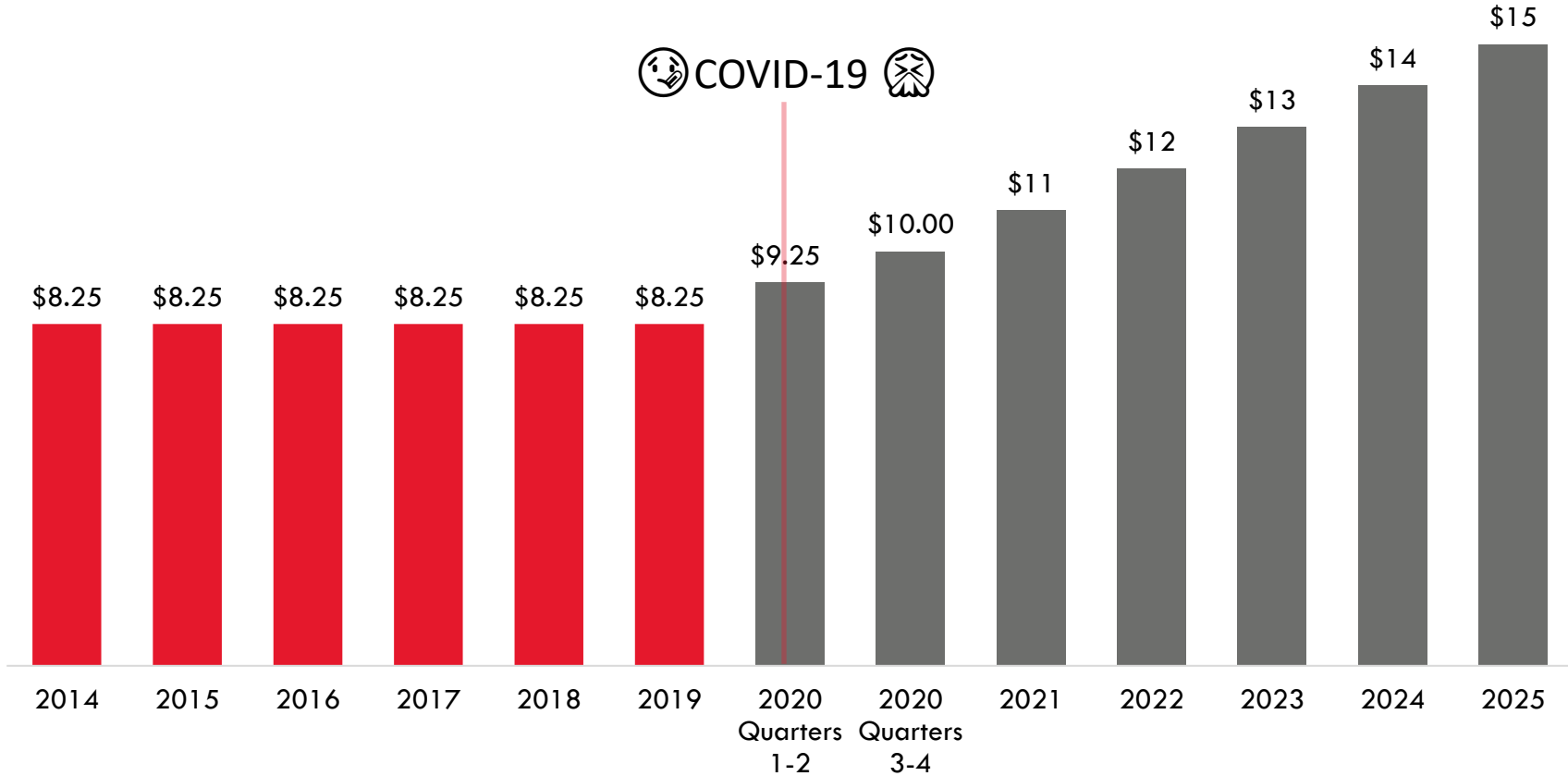


Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies. Based on a 75% subsidy.



# The onset of COVID coincided with the ramp up of the minimum wage in Illinois

Minimum Wage in Illinois Over Time



Source: Illinois General Assembly (<https://www.ilga.gov/legislation/publicacts/101/PDF/101-0001.pdf>)

## Where do undergraduate students work on campus?



## The College of Arts and Sciences, Housing, and Campus Recreation employed the most undergraduate student workers at SIUE last fall.

	Federal Work Study	Non-FWS Student Work	Low-Dose	Total	% FWS	% Non-FWS Student Work
College of Arts and Sciences	41	90	31	162	25%	56%
Housing	51	87	7	145	35%	60%
Campus Recreation	35	52	13	100	35%	52%
MUC Food Service	32	48	9	89	36%	54%
Learning Support Services	9	76	1	86	10%	88%
Intercollegiate Athletics	14	33	26	73	19%	45%
Student Financial Aid	47	4	4	55	85%	7%
MUC Administration	13	20	4	37	35%	54%
Early Childhood Center	14	16	1	31	45%	52%
Student Affairs	3	17	2	22	14%	77%
College of Engineering	9	12		21	43%	57%
Admissions	5	7	8	20	25%	35%
Library	5	13	1	19	26%	68%
Graduate Studies and Research	4	12	2	18	22%	67%
Information Technology	4	12	2	18	22%	67%
Foundation Call Center	2	14	2	18	11%	78%
Equity, Diversity, & Inclusion	4	9	2	15	27%	60%
Textbook Service	6	8		14	43%	57%
Kimmel	2	11		13	15%	85%
School of Business	1	9	1	11	9%	82%
Facilities Management	2	8	1	11	18%	73%
Provost	1	9	1	11	9%	82%

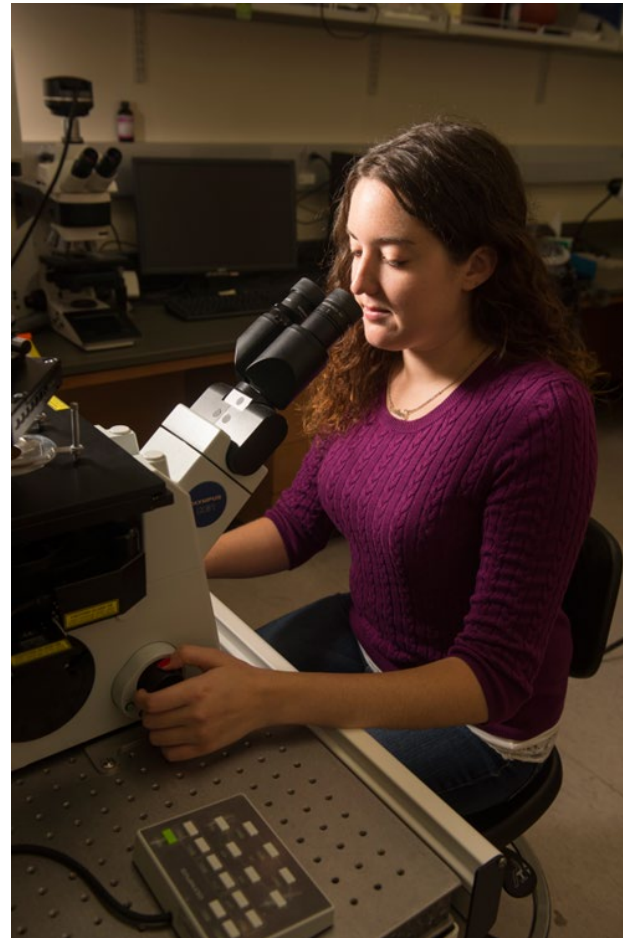
Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.

# Race/Ethnicity Distribution of Undergraduate Student Workers by Department

Race/Ethnicity for All Undergraduate Student Workers in 2023-24					
	Grand Total	% African American	% White	% International	% Hispanic/Latinx
<b>All Student Workers</b>	<b>1047</b>	<b>20.2%</b>	<b>56.7%</b>	<b>8.1%</b>	<b>4.9%</b>
College of Arts and Sciences	162	8.6%	67.3%	4.9%	7.4%
Housing	145	33.1%	46.9%	4.8%	5.5%
Campus Recreation	100	24.0%	58.0%	3.0%	5.0%
Food Services	89	28.1%	33.7%	30.3%	2.2%
Learning Support Services	86	3.5%	66.3%	4.7%	7.0%
Intercollegiate Athletics	73	13.7%	54.8%	12.3%	6.8%
Student Financial Aid	55	41.8%	43.6%	0.0%	0.0%
Student Center Administration	37	13.5%	67.6%	2.7%	5.4%
Early Childhood Center	31	25.8%	58.1%	6.5%	0.0%
Student Affairs, VC	22	0.0%	81.8%	13.6%	4.5%
School of Engineering	21	14.3%	66.7%	9.5%	0.0%
Admissions	20	65.0%	25.0%	0.0%	0.0%
Library	19	0.0%	63.2%	26.3%	5.3%
Graduate Studies and Research	18	0.0%	88.9%	0.0%	5.6%
Information Technology Services	18	27.8%	50.0%	5.6%	0.0%
Foundation Call Center	18	27.8%	44.4%	22.2%	0.0%
Equity, Diversity & Inclusion	15	60.0%	26.7%	0.0%	0.0%
Textbook Service	14	14.3%	78.6%	0.0%	7.1%
Kimmel Student Involvement Ctr	13	0.0%	76.9%	0.0%	23.1%
School of Business	11	18.2%	72.7%	0.0%	0.0%
Facilities Management	11	9.1%	27.3%	27.3%	27.3%
Provost	11	9.1%	63.6%	9.1%	0.0%

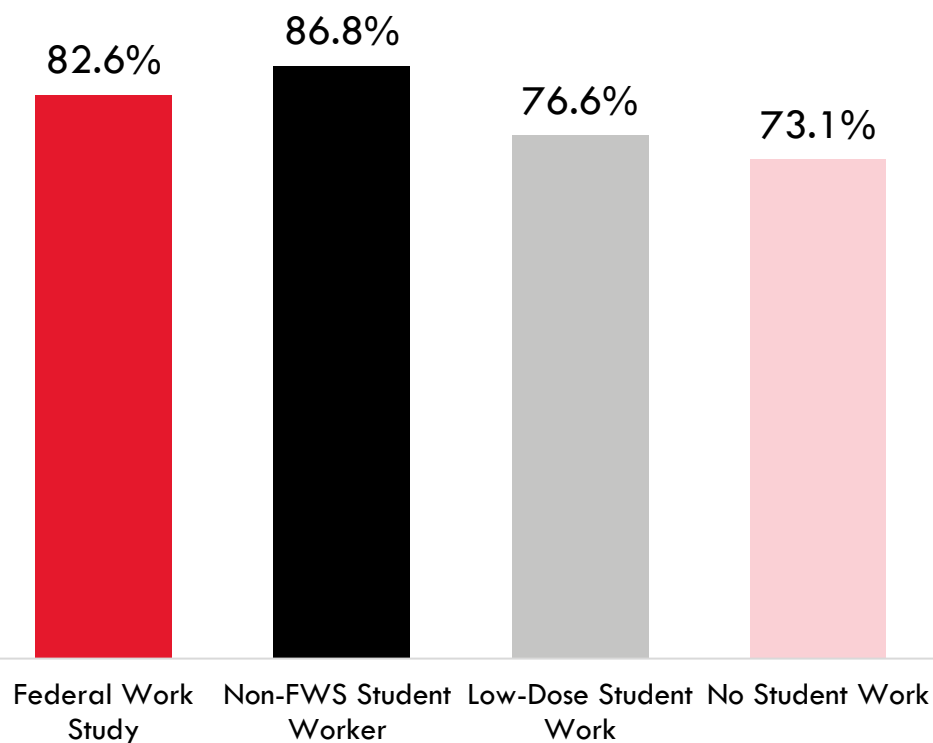
Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.

# What is the relationship between student work and retention?

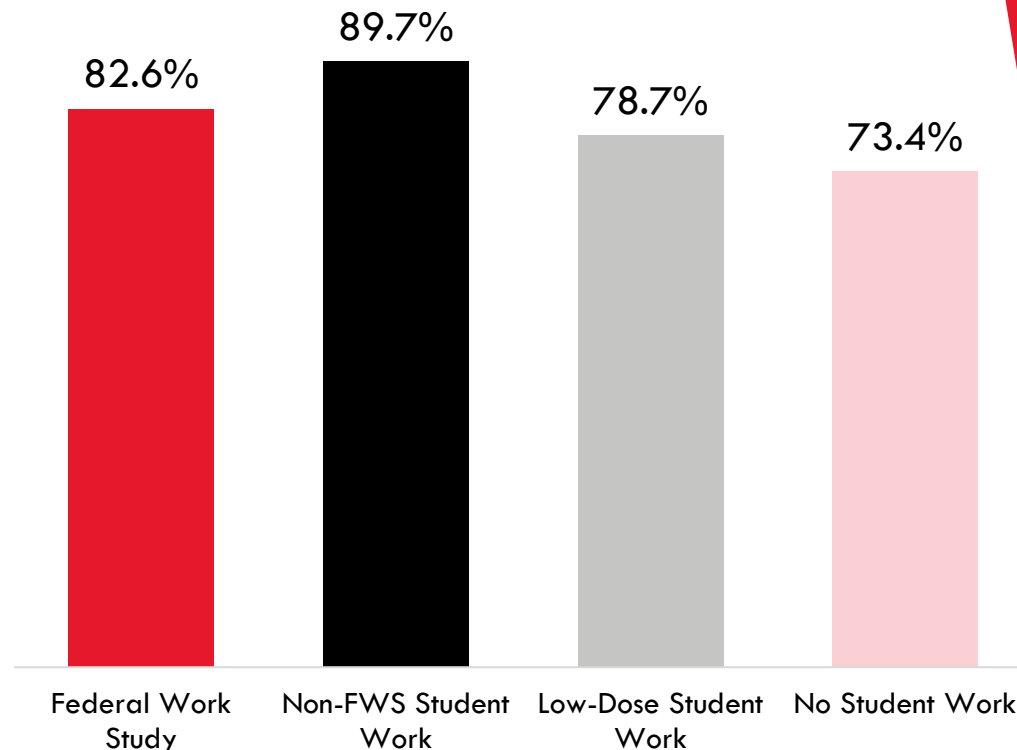


# Across all cohorts, those in all student work categories had higher retention rates than those without student work

### Retention by Student Work Status: All Full-Time Freshmen



### Retention Rates by Student Work Status: Full-Time Freshmen Excluding International Students



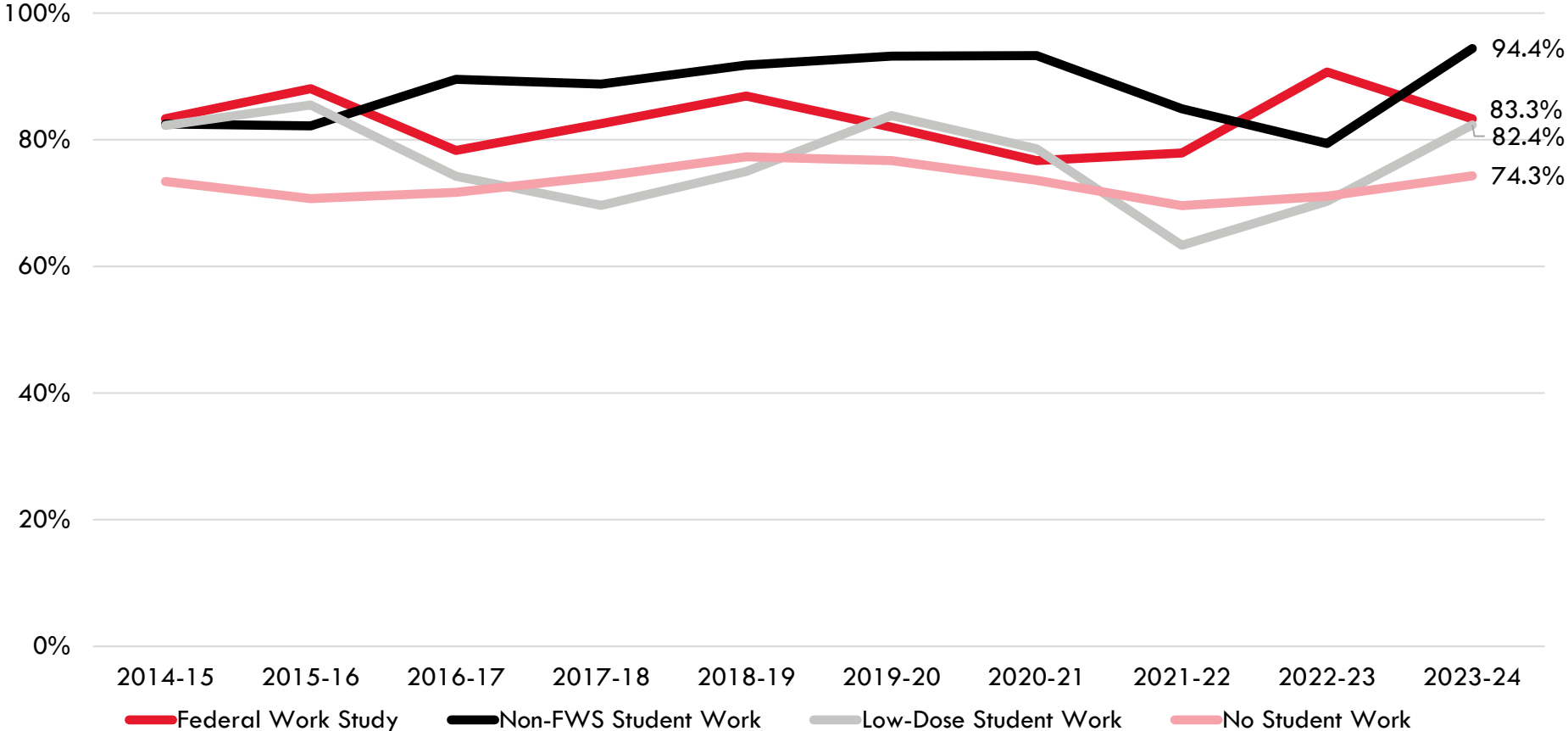
*Note: this includes 10 cohorts: fall of 2014-15 through fall of 2023-24.*

Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.

# Student workers at SIUE consistently had higher retention rates

Nearly 95% of full-time freshmen with non-FWS student work in 2023-24 were retained this fall.

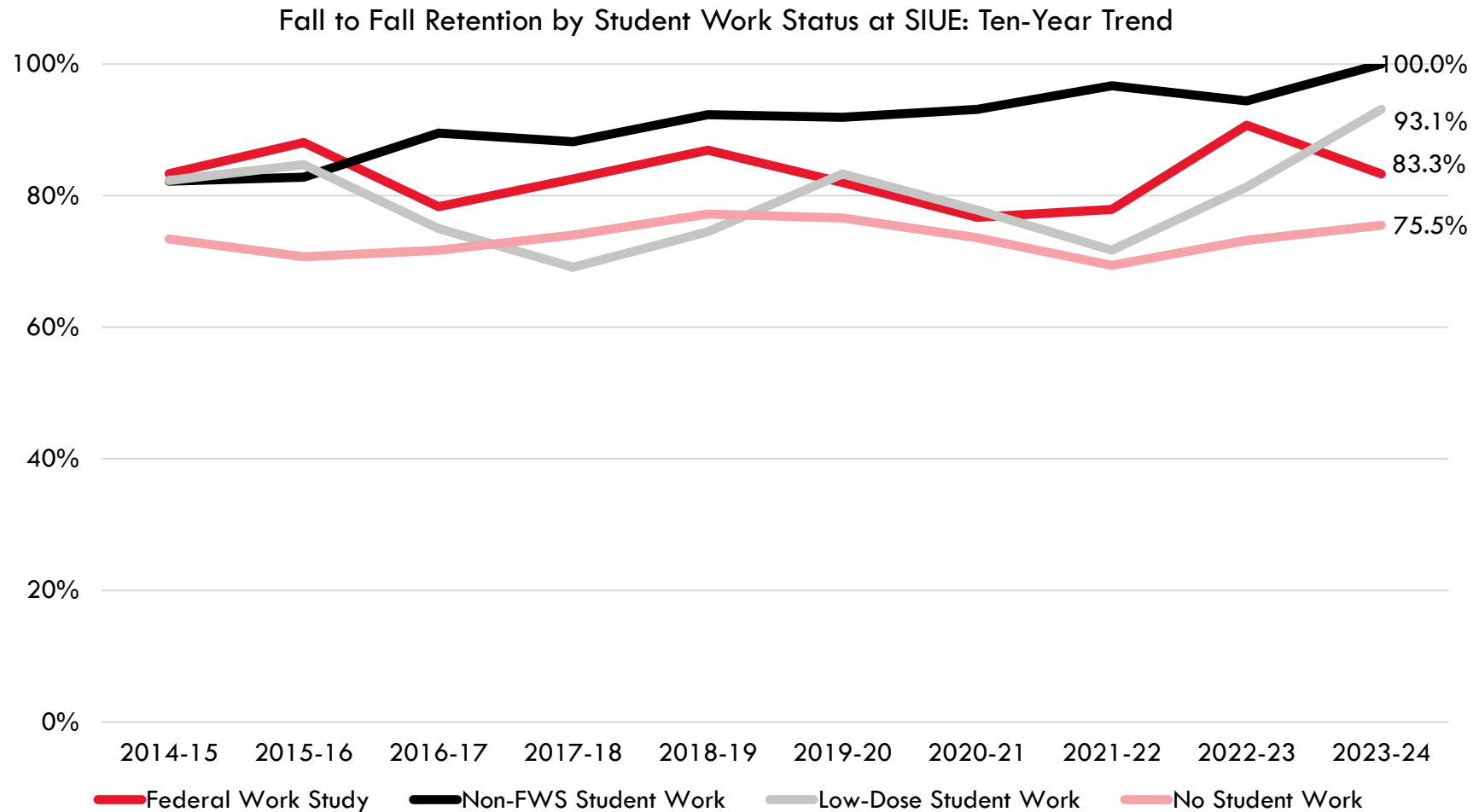
Fall to Fall Retention by Student Work Status at SIUE: Ten-Year Trend



Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.

# Same patterns hold when we exclude international students

All full-time freshmen with non-FWS student work in 2023-24 were retained this fall.



Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.



# Modeling Fall to Fall Retention among First-Time Freshmen



- Previous work by the [SIUE Center for Predictive Analytics \(C-PAN\)](#) contributed to factor selection and modeling choices.
- Relevant factors to student persistence were included, such as student demographics and characteristics, socio-economic indicators, and institutional interventions.
- International students were excluded from the predictive modeling.
- Cohorts were aligned with when [SOAR program](#) cohort data became available (fall of 2014-15)
- We developed logistic regression models to predict the probability of retention.

# Two predictive models (forward conditional stepwise) were developed

## Variables in the Overall Model

- High school GPA
- Race/ethnicity (categorical)
- Pell eligibility
- Unmet need (categorical)
- First generation status (categorical)
- Social vulnerability index
- SOAR participant
- On-campus/Off-campus housing
- Received services from ACCESS
- Student work status: Federal Work Study, non-FWS student work, low-dose student work, no student work
- Attempted credit hours (fall-census)
- Declared major fall semester

## Variables in the African American Model

- High school GPA
- Pell eligibility
- Unmet need (categorical)
- First generation status (categorical)
- SOAR participant
- On-campus/Off-campus housing
- Student work status: federal work study, non-FWS student work, low-dose student work, no student work
- Declared major fall semester

# Overall Model

<u>Variable Name</u>	<u>Odds Ratio</u>	<u>Variable Name (continued)</u>	<u>Odds Ratio</u>
Unmet need = High	1.000	Race/Ethnicity = White	1.000
Unmet need = None	1.614	Race/Ethnicity = AMI/AK	0.625
Unmet need = Low	1.476	Race/Ethnicity = Asian	1.956
Unmet need = Mid	1.100	Race/Ethnicity = Black/AA	0.796
Social Vulnerability Index	0.812	Race/Ethnicity = NHI/OPI	1.031
Fall attempted hours	1.067	Race/Ethnicity = Hispanic/Lat	0.556
ACCESS participation	0.694	Race/Ethnicity = Multiple	0.556
On campus housing	1.113	Race/Ethnicity = Unknown	0.859
SOAR participation	1.328	Student work = No	1.000
High school GPA	3.106	Student work = Non-FWS	2.846
Pell eligibility	0.770	Student work = FWS	1.996
Major declared at fall census	1.285	Student work = low dose	1.386
First generation = No	1.000		
First generation = Unknown	0.845	Constant	0.018
First generation = Yes	0.864		

# African American Model

<u>Variable Name</u>	<u>Odds Ratio</u>	<u>Variable Name (continued)</u>	<u>Odds Ratio</u>
Unmet need = High	1.000	High School GPA	2.107
Unmet need = None	1.805	Pell eligibility	0.675
Unmet need = Low	1.704	Student work = None	1.000
Unmet need = Mid	1.141	Student work = Non-FWS	2.587
On campus housing	1.290	Student work = FWS	1.947
First generation = No	1.000	Student work = low dose	1.431
First generation = Unknown	0.779	Major declared at fall census	1.634
First generation = Yes	0.848		
SOAR participation	1.704	Constant	0.081

# Overall Model - Predictions

Variables in Model	Disadvantaged Case	Typical/Average Case
High School GPA	2.994	3.487
Pell Eligibility	Yes	No
Unmet Need	High	No
First Generation	Yes	No
Social Vulnerability Index	0.785	0.508
SOAR Participant	Yes	No
Race/Ethnicity	White	White
Housing	Off-Campus	On-Campus
Received ACCESS Services	Yes	No
Attempted Credit Hours (end of Fall)	12	15
Declared Major on 10th Day Fall	Undeclared	Undeclared

<b>Non-SW retention chance:</b>	37%	80%
<b>Low-dose SW retention chance:</b>	45%	85%
<b>FWS retention chance:</b>	54%	89%
<b>SW, Non-FWS retention chance:</b>	63%	92%

<b>Impact of Student Work:</b>	8-26% improvement	5-12% improvement
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# African American Model – Predictions

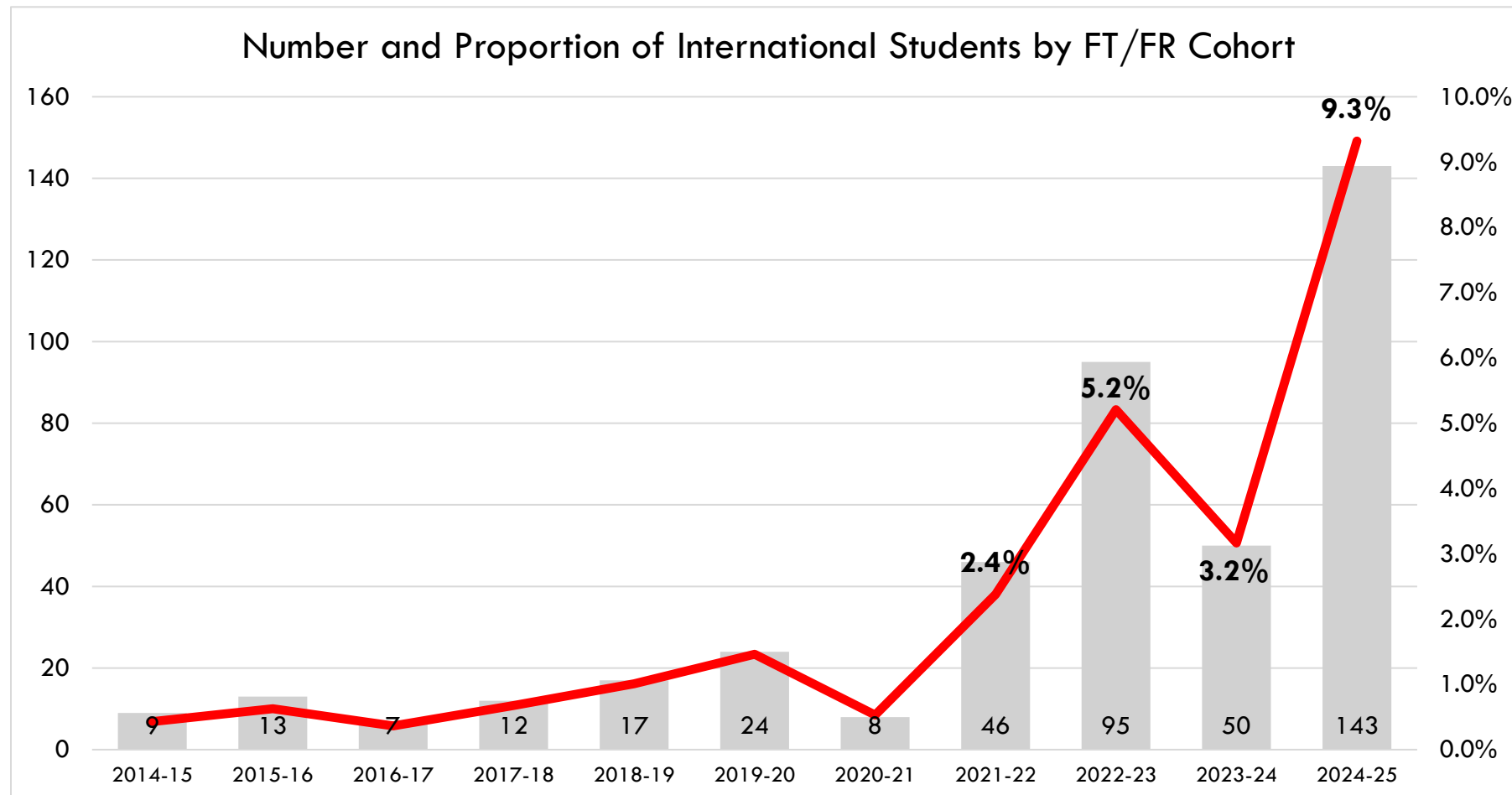
Variables in Model	Disadvantaged Case	Typical/Average Case
High School GPA	2.673	3.197
Pell Eligibility	Yes	Yes
First Generation	Yes	No
Unmet Need	High	No
SOAR Participant	Yes	Yes
On-Campus Housing	No	Yes
Declared Major on 10th Day Fall	Undeclared	Undeclared

<b>Non-SW retention chance:</b>	37%	69%
<b>Low-dose SW retention chance:</b>	45%	76%
<b>FWS retention chance:</b>	53%	81%
<b>SW, Non-FWS retention chance:</b>	60%	85%

<b>Impact of Student Work:</b>	8-23% improvement	7%-16% improvement
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# Blind Spot in our Initial Analysis

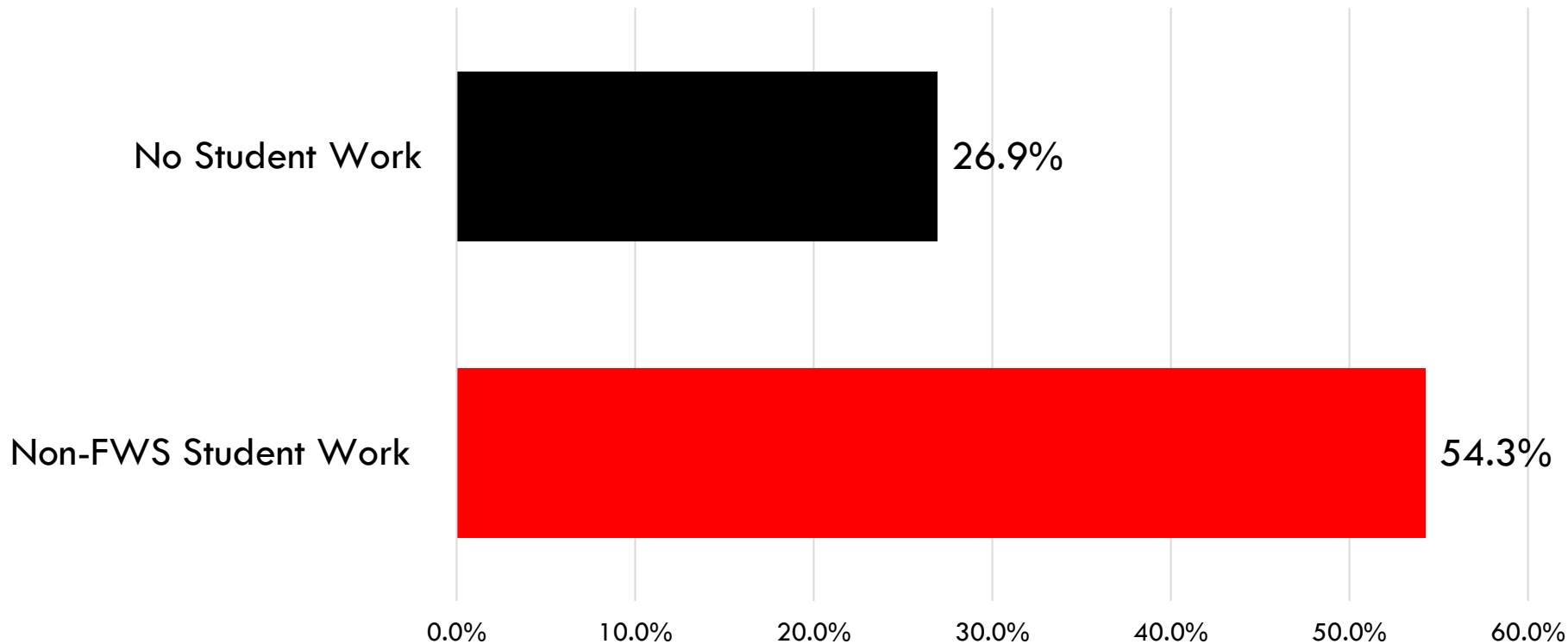
Substantial increase in the number and proportion of international students in the 2024-25 cohort



# Student work also matters for international students

International students with student work had two times the rate of retention as their peers without campus-based employment.

Retention Rates for International Students by Student Work Status



This was based on the three-year combined average for the 2021-22, 2022-23, and 2023-24 cohorts.



# Future Work

- Cost-benefit analysis-applying the model to the fall 2024 freshmen cohort
- Applying the same approach with new transfer cohorts
- Extending the time-horizon for the persistence outcome from fall-to-fall retention to include multiple years
- Off-campus work?
- Quasi-experimental approach (PSM)

# Questions?



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## Overall Model – Predictions: Direct Entry into Majors?

Variables in Model	Disadvantaged Case	Typical/Average Case
High School GPA	2.994	3.487
Pell Eligibility	Yes	No
Unmet Need	High	No
First Generation	Yes	No
Social Vulnerability Index	.785	0.508
SOAR Participant	Yes	No
Race/Ethnicity	White	White
Housing	Off-Campus	On-Campus
Received ACCESS Services	Yes	No
Attempted Credit Hours (end of Fall)	12	15
Declared Major on 10th Day Fall	Declared	Declared

<b>Non-SW retention chance:</b>	43%	84%
<b>Low-dose SW retention chance:</b>	52%	88%
<b>FWS retention chance:</b>	60%	91%
<b>SW, Non-FWS retention chance:</b>	63%	92%

<b>Impact of Student Work:</b>	9-20% improvement	4-8% improvement
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# African American Model– Predictions: Direct Entry into Majors?

Variables in Model	Disadvantaged Case	Typical/Average Case
High School GPA	2.673	3.197
Pell Eligibility	Yes	Yes
First Generation	Yes	No
Unmet Need	High	No
SOAR Participant	Yes	Yes
On-Campus Housing	No	Yes
Declared Major on 10th Day Fall	Declared	Declared

<b>Non-SW retention chance:</b>	49%	78%
<b>Low-dose SW retention chance:</b>	57%	84%
<b>FWS retention chance:</b>	65%	88%
<b>SW, Non-FWS retention chance:</b>	71%	90%

<b>Impact of Student Work:</b>	8-22% improvement	6%-12% improvement
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Source: Southern Illinois University Edwardsville Office of Institutional Research and Studies.